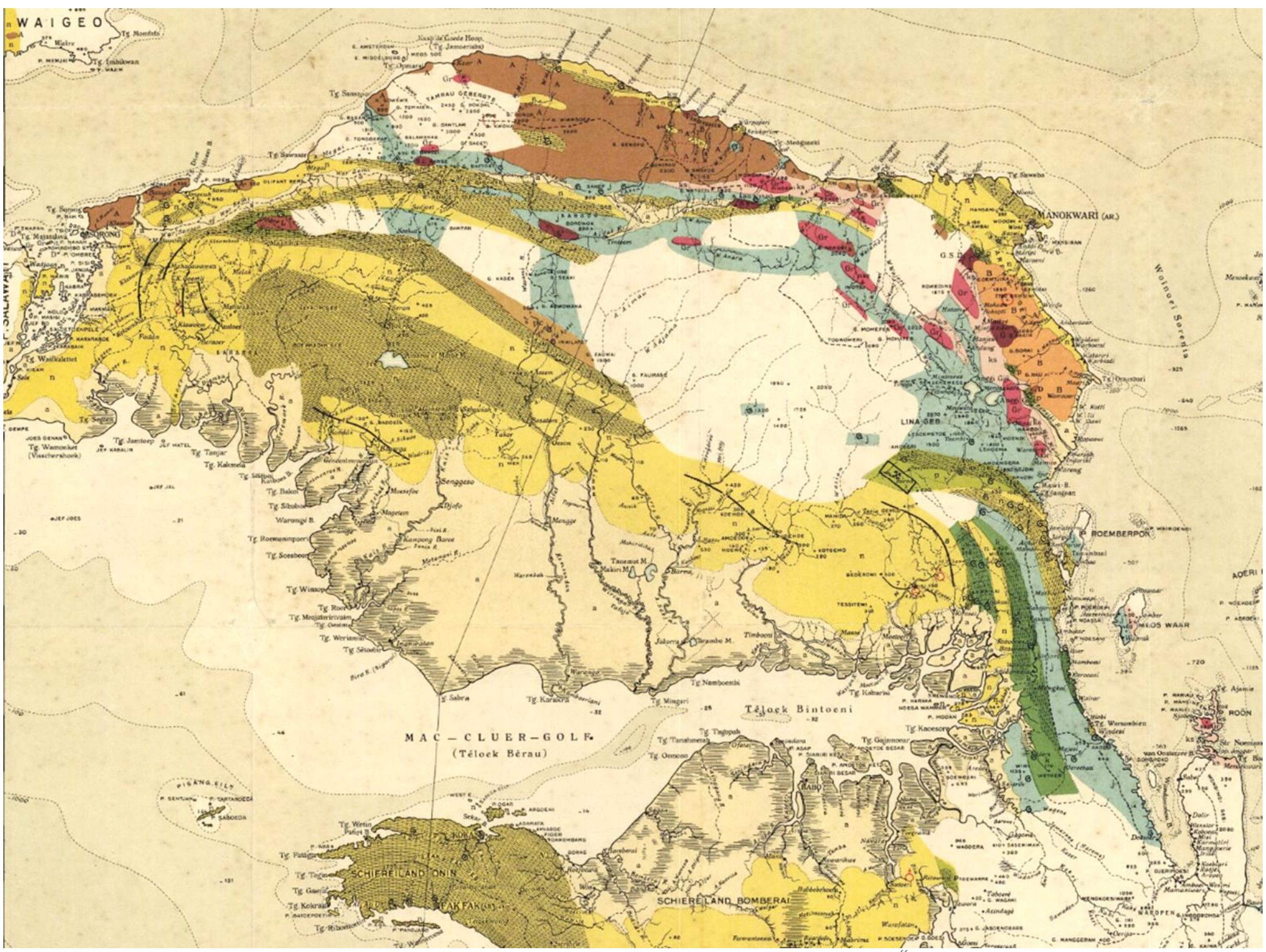
Bibliography of Indonesian Geology

BIBLIOGRAPHY OF THE GEOLOGY OF INDONESIA AND SURROUNDING AREAS

Edition 7.0, July 2018

J.T. VAN GORSEL

VIII. NEW GUINEA (incl. PNG)



(Zwierzycki 1930, Map of Netherlands East Indies- Sheet XIII)

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VIII- NEW GUINEA/ WEST PAPUA and XI- PAPUA NEW GUINEA

This combined volume on New Guinea of Bibliography 7.0 contains 262 pages with >2010 references in six sub-chapters from both the Indonesian western part (West Papua: VIII.1- VIII.3) and the eastern part of New Guinea island (Papua New Guinea; IX.11- IX.13).

The Indonesian, western part of New Guinea island is currently called West Papua; historically it has been known successively as Netherlands New Guinea, Irian Barat and Irian Jaya. The eastern part of the island is the independent nation of Papua New Guinea.

Elegant recent overviews of the regional geology and tectonics of New Guinea are by Baldwin et al. (2012) and Davies (2012) (Figures VIII.1.1, VIII.1.2).

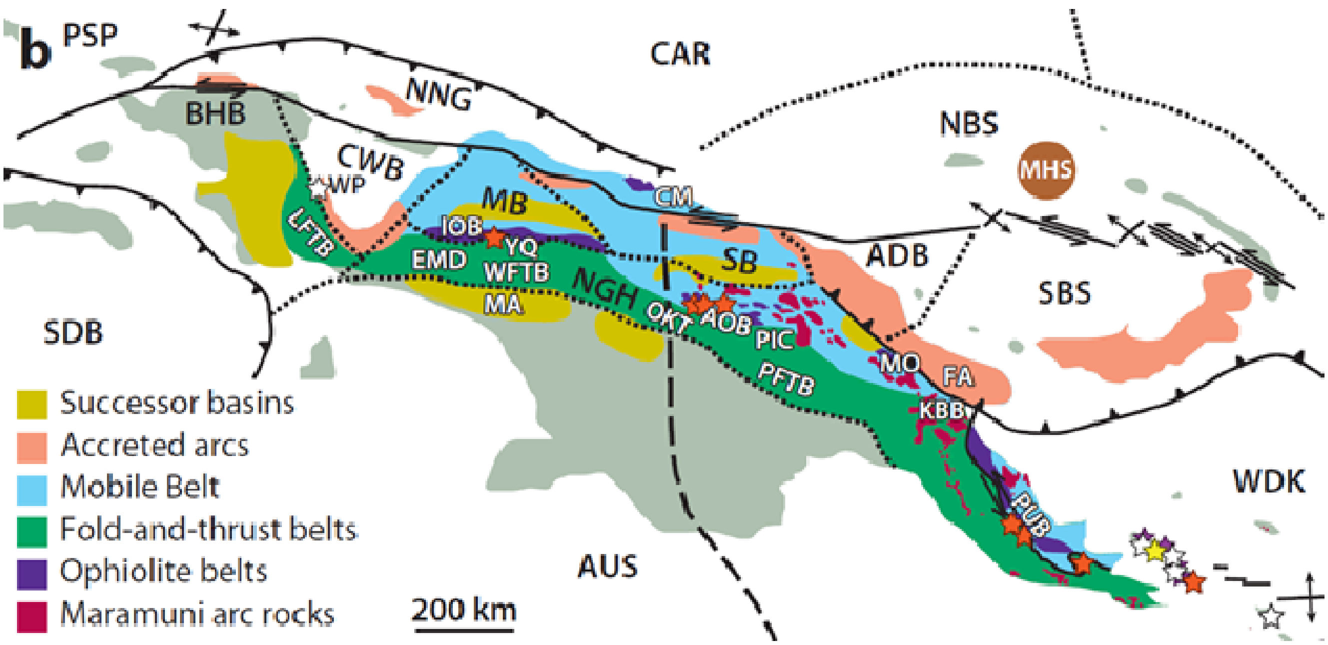

Figure VIII.1.1. Main tectonic elements of the New Guinea region (Baldwin et al. 2012)

Geologically, the main island of New Guinea is composed of:

1. The relatively undeformed Australian continental plate in the South, with Precambrian basement and relatively thin young sediment cover that is thickening into a foreland basin South of the Central Range;
2. Central Range fold-thrust belt of imbricated Mesozoic-Miocene sediments that were deposited along the Australian plate continental margin, and deformed during Miocene collision events with West Pacific arc systems;
3. Northern New Guinea 'Mobile Belt': a tectonically complex collage of Cenozoic Pacific oceanic arc systems, microcontinental blocks, ophiolites, metamorphics and Neogene sedimentary basins, the amalgamation of which was driven by the oblique convergence between the Pacific and Indo-Australian plates.
4. The 'Birds Head' in the NW, which does not readily fit with any of the above three tectonic domains. Its basement of imbricated Silurian-Devonian deep marine sediments intruded by Permian-Triassic granitoids is

much more similar to the Paleozoic accretionary crust of PNG- East Australia than the Precambrian basement overlain by undeformed shallow marine Early Paleozoic of nearby West Papua.

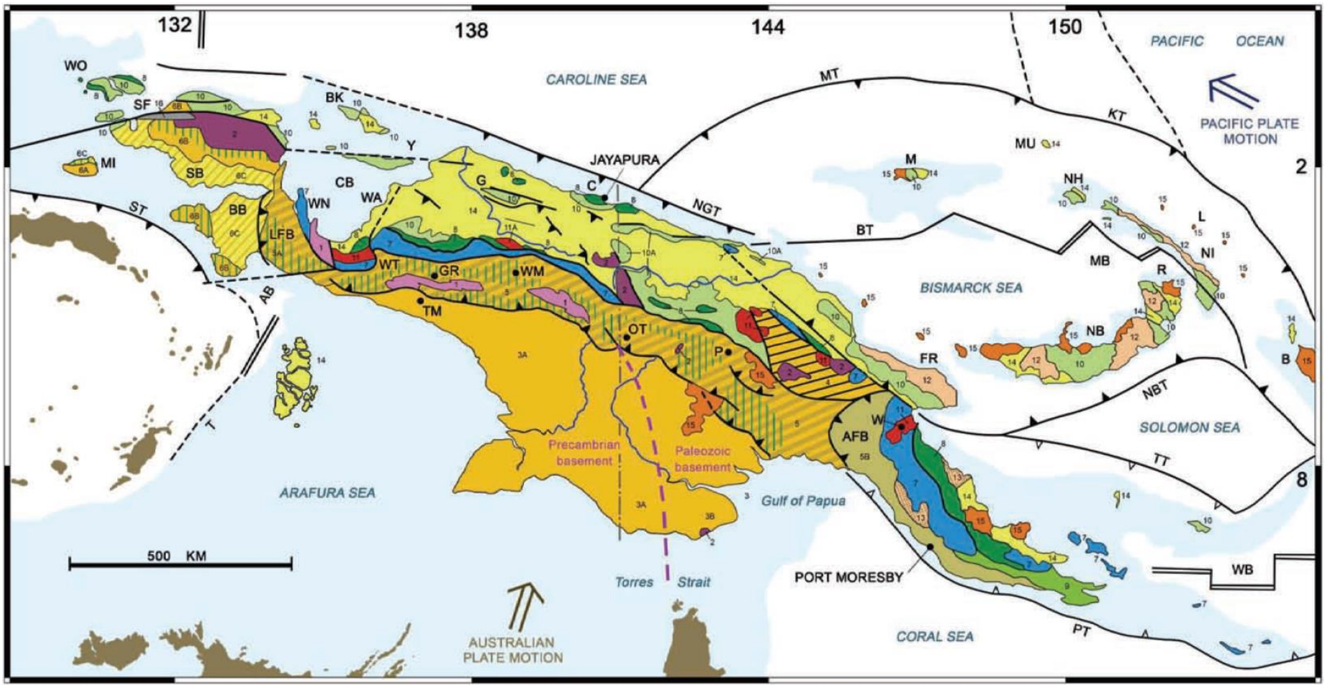

Figure VIII.1.2. Geological map of the New Guinea region (Davies 2012)

Two different basement domains have been distinguished in the Australian Plate domain South of the Central Range, separated by an apparent continuation of the 'Tasman Line' of NE Australia (Figure VIII.1.1; see also Hill and Hall 2003):

1. Precambrian the West is part of the stable Australian craton, with Proterozoic metamorphics and granites, overlain by relatively undeformed Late Proterozoic and Paleozoic cover of shallow marine and non-marine intra-cratonic sediments;
2. Paleozoic: the eastern part (all in PNG) displays characteristics of the Eastern Australia/ Gondwana active margin, with highly deformed early Paleozoic marine sediments intruded by a belt of Permian- Triassic arc intrusives. (the 'Kemum Terrane' of the Birds Head of West Papua also displays these 'Tasmanide' Paleozoic active margin charactistics).

The Central Range is composed mainly of complexly folded marine Jurassic- Early Miocene passive margin sediments. A long belt of ophiolites and associated metamorphic rocks along the northern margin of the Central Range foldbelt marks the suture between the Australian continental margin to the South and Pacific domain volcanic arc and ophiolite complexes in the North. Its emplacement marks the Early? Miocene collision of the Australian continent with an Oligo-Miocene age Philippine Sea volcanic arc.

The Central Range, in both West Papua and Papua New Guinea, also contains a belt of Late Miocene- Recent dioritic intrusives and volcanics, many of which are associated with 'world-class' large porphyry gold-copper mineralizations. Some authors interpreted these intrusives as the result of South-directed subduction of Pacific Ocean (Philippine Sea) oceanic plate, after an older arc collision and subduction reversal.

North of New Guinea island is the domain of the Westward-moving Pacific Ocean, which is composed of several tectonic sub-plates. Most of the oblique convergence with the North-moving Australia-New Guinea-plate is accommodated by subduction at the New Guinea Trench, but a significant component of transpressional deformation can be seen along several major E-W trending, left-lateral fault systems in northern half of New Guinea island (Koulali et al. 2014, etc.).

VIII.1. New Guinea General and West Papua (Irian Jaya)

This sub-chapter VIII.1 of Bibliography 7.0 contains 768 refences on the geology of the Indonesian western part of New Guinea, as well as regional papers that cover the entire New Guinea region.

The most comprehensive publication on the geology West Papua is still Visser and Hermes (1962), which summarizes the geological results of 30 years of petroleum exploration by the NNGPM (Shell-Caltex-Stanvac) consortium. Another book is by Dow et al. (2005), which is based on surface mapping work in the 1980's.

Central Range

The Central Range of West Papua formed as a result of collision of the Australian-New Guinea continental margin with a volcanic arc, along a North-dipping subduction zone. This probably took place before the Middle Miocene, as metamorphic-ophiolitic detritus from the Central Range is found in sandstones of the Middle Miocene Makats Formation North of the foldbelt (Visser and Hermes 1962).

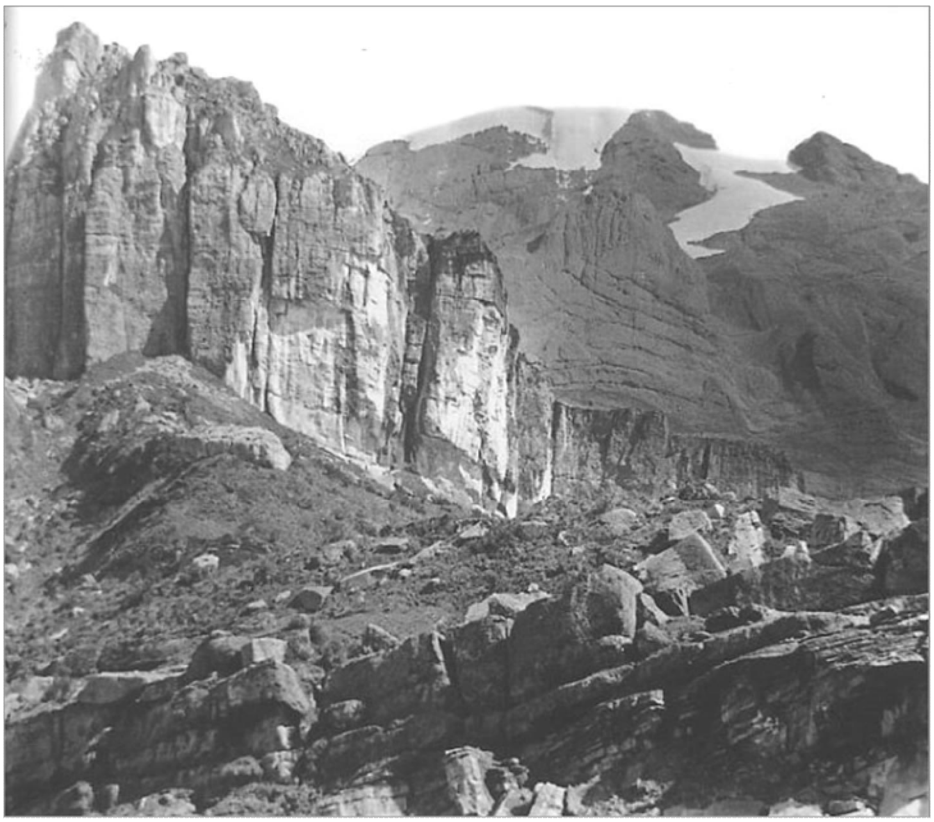

Figure VIII.1.3. Historic photo at ~4000m elevation of the ~4700m high, snow-covered peak of Mt Wilhelmina/ Trikora (Hubrecht, Third South New Guinea Expedition 1912/1913). Showing a ridge (Upper Cretaceous?) bedded sandstone overlain by massive Cenozoic New Guinea Limestone.

The northern margin of this Central Range collision zone is a belt of obductucted ophiolites, that is underlain by a metamorphic sole that represents metamorphosed Jurasssic-Cretaceous deep marine distal continental margin clastics.

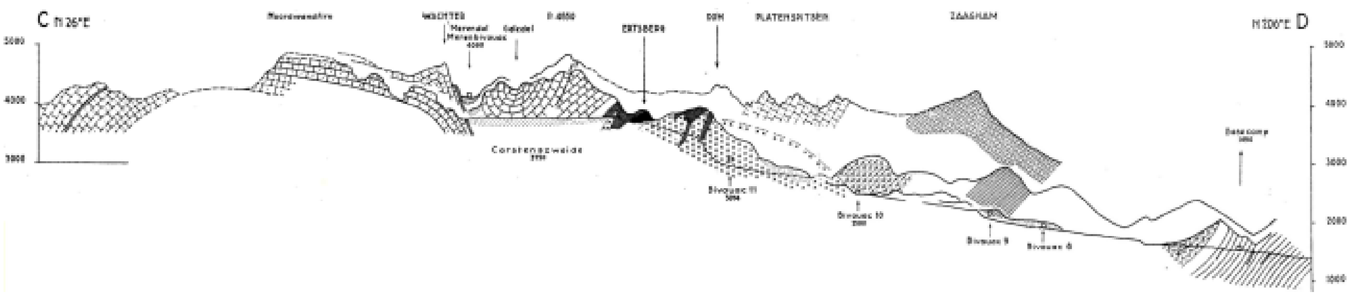

Figure VIII.1.4. N-S x-section of W (highest) part of the Central Range, showing peaks up to 5000m elevation composed of folded Eocene-Oligocene New Guinea Limestone, and the large exposed Ertsberg ('copper mountain') porphyry copper deposit at about 4000m. The lower areas are composed of Paleozoic- Mesozoic clastics and carbonates (Dozy, 1939).

A second phase of uplift in the Late Pliocene-Pleistocene is apparent from the presence of outcrops of Late Pliocene dioritic intrusions, that crystallized at depth of at least a few kilometers, and are now exposed at altitudes of 4000m. Several of these intrusives are associated with world-class porphyry copper-gold mineralizations (Ertsberg, Grasberg, etc.).

This uplift phase can be ascribed to slab breakoff/ collisional delamination after the underthusted Australian continental margin jammed the North-dipping subduction zone (Cloos et al. 2005).

Birds Head paleo-position

The Birds Head may well be a displaced terrane that was removed from a different part of the Australian- New Guinea margin. Today the Birds Head of West Papua moves as an independent microplate relative to the main body of New Guinea, in a SW direction at ~75-80 mm/year, which is twice as fast as any other continental block (GPS measurements in Stevens et al. 2002). Yet, many plate reconstruction models show the Birds Head as being more or less in the same relative position as today since the Mesozoic (Hall, etc.).

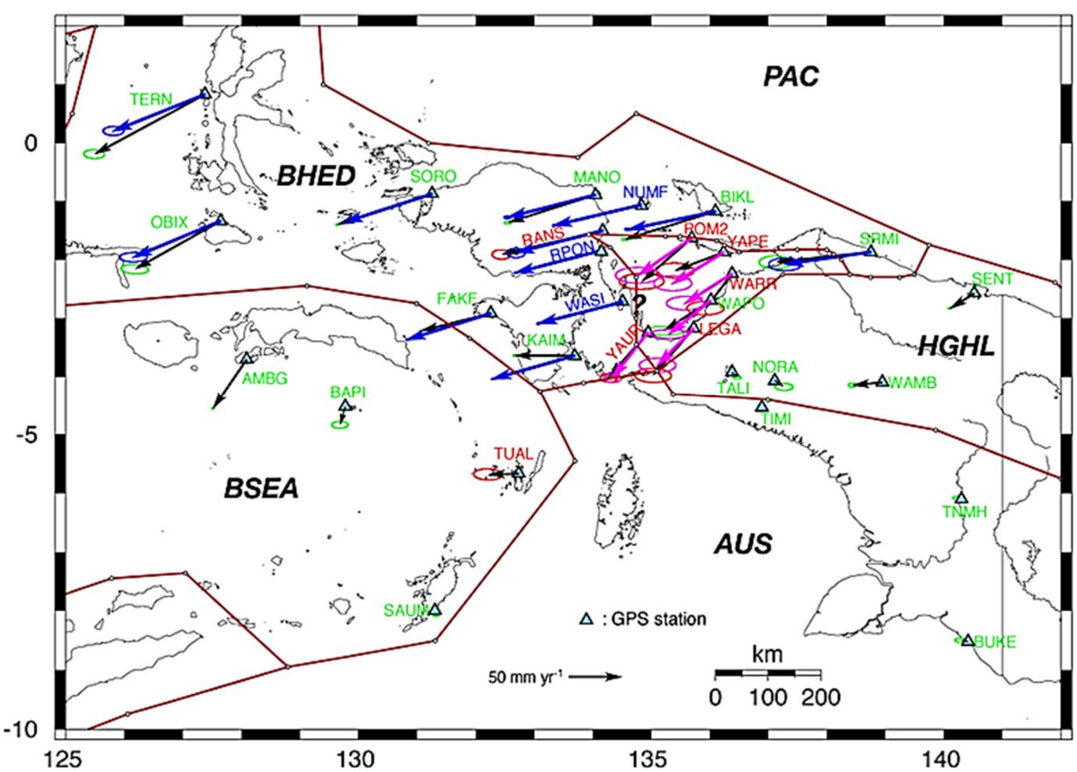

Figure VIII.1.5. Present-day GPS motions show Birds Head as part of a separate plate (BHED) that is very rapidly moving to the WSW relative to South New Guinea- North Australia (Tikku 2008).

An alternative model proposed for the Birds Head is a paleo-position closer to the PNG side of New Guinea or NE Australia (Queensland) until Cretaceous time, when it separated during the opening of the Coral Sea (Pigram and Panggabean 1984, Struckmeyer et al. 1993, 1995, Davies 2012). This model was largely driven by the nature of the Early Paleozoic Kemum Formation basement of the Birds Head, which has a clear 'active margin' character of imbricated, low-metamorphic Silurian-Devonian marine sediments and Permian-Triassic granitoids. This is very much like a part of the Tasmanide eastern margin of Australia-PNG (Hodgkinson Province?), and is very different from the relatively undeformed Paleozoic shallow marine passive continental margin series of the main body of West Papua, South of the Central Range.

A Late(?) Oligocene compression event in the Birds Head created an angular unconformity and deposition of Sirga Sandstone, the only sandy clastics in an Eocene- Miocene carbonate sequence. This was interpreted by Pigram and Davies (1987) and Struckmeyer et al. (1993) as evidence of timing of collision between the Birds Head and the Misool- Onin terrane.

Oil and gas

In West Papua commercial hydrocarbons have only been found in the greater Birds Head region, in onshore and offshore foreland basins (the westernmost of the 'successor basins' of Figure VIII.1.1).

There are four proven oil and gas plays in West Papua, but only the first two have been productive:

1. small oil and gas fields in Late Miocene carbonate buildups in the Salawati and Bintuni basins, Birds Head (numerous papers);
2. large gas fields in Middle Jurassic sandstones, mainly in the offshore Bintuni basin (Tangguh gas province) (Figure VIII.1.4.6) (many papers);
3. a minor but proven gas play in Paleocene deep marine slope and fan sandstones in the Wiriagar Deep, Bintuni Basin (Prihanasto et al. 2011, Mardani and Butterworth 2016, Nauw et al. 2017);
4. a minor but proven gas play in the Plio-Pleistocene clastics Waropen and Ramu Basins of northern West Papua, with an undeveloped gas field in the Mamberamo Delta area (Niengo). Gas is most likely of biogenic origin (Barrett 1999).

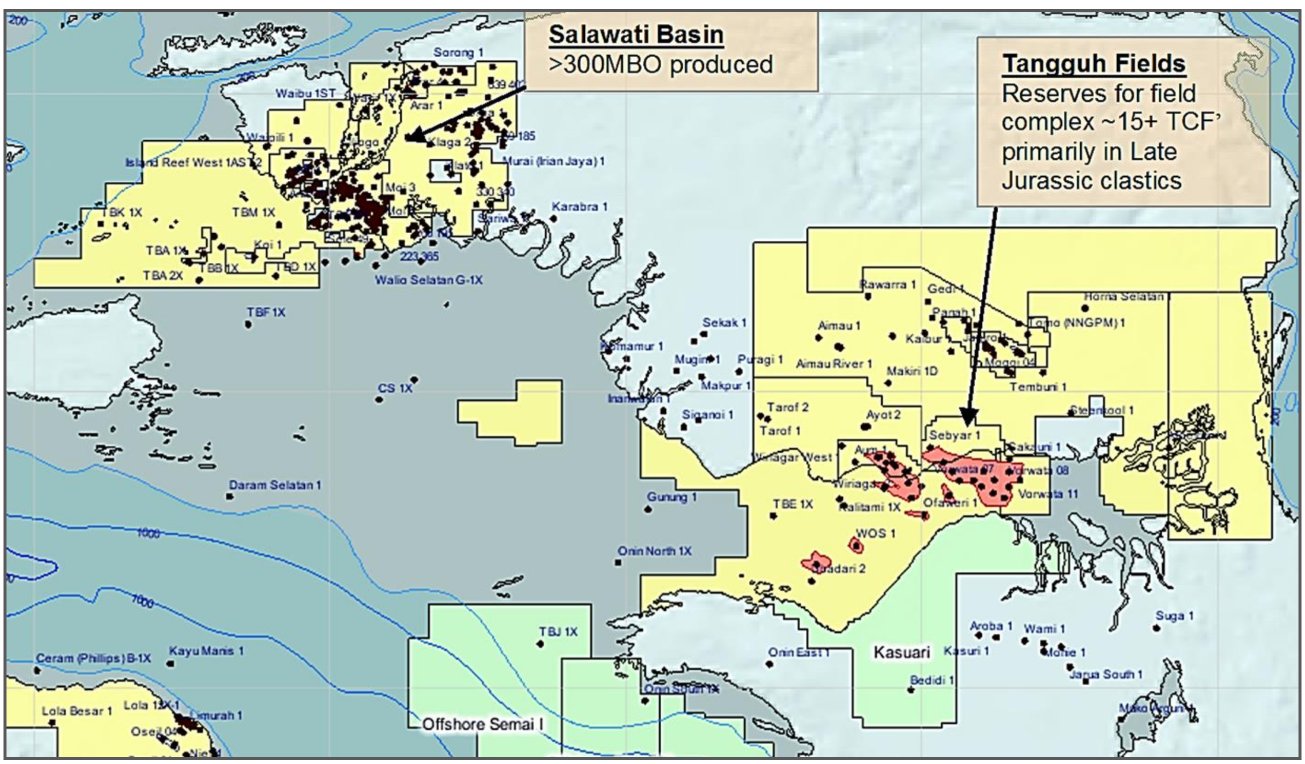

Figure VIII.1.4.6. Map of Birds Head- Bintuni Bay region, with well locations and large gas fields in Bintuni Bay (red) and small oil fields in the Salawati basin (basemap from IHS Energy, 2007).

The Salawati Basin is an asymmetric Miocene foreland basin, rapidly thickening and deepening in NW direction, towards the Sorong Fault Zone (with up to >6000m of Pliocene Klasafet - Klasaman Formation clastics; Wilson 1975), and a backstepping pattern of the Miocene Kais carbonate platform and pinnacle reef development (Figure VIII.1.4.7; Vincelette & Soeparjadi 1976). Oil has been produced here since 1936 from Late Miocene reefal buildups. To date about 30 oil fields have been discovered, most them relatively small (Satyana 2009).

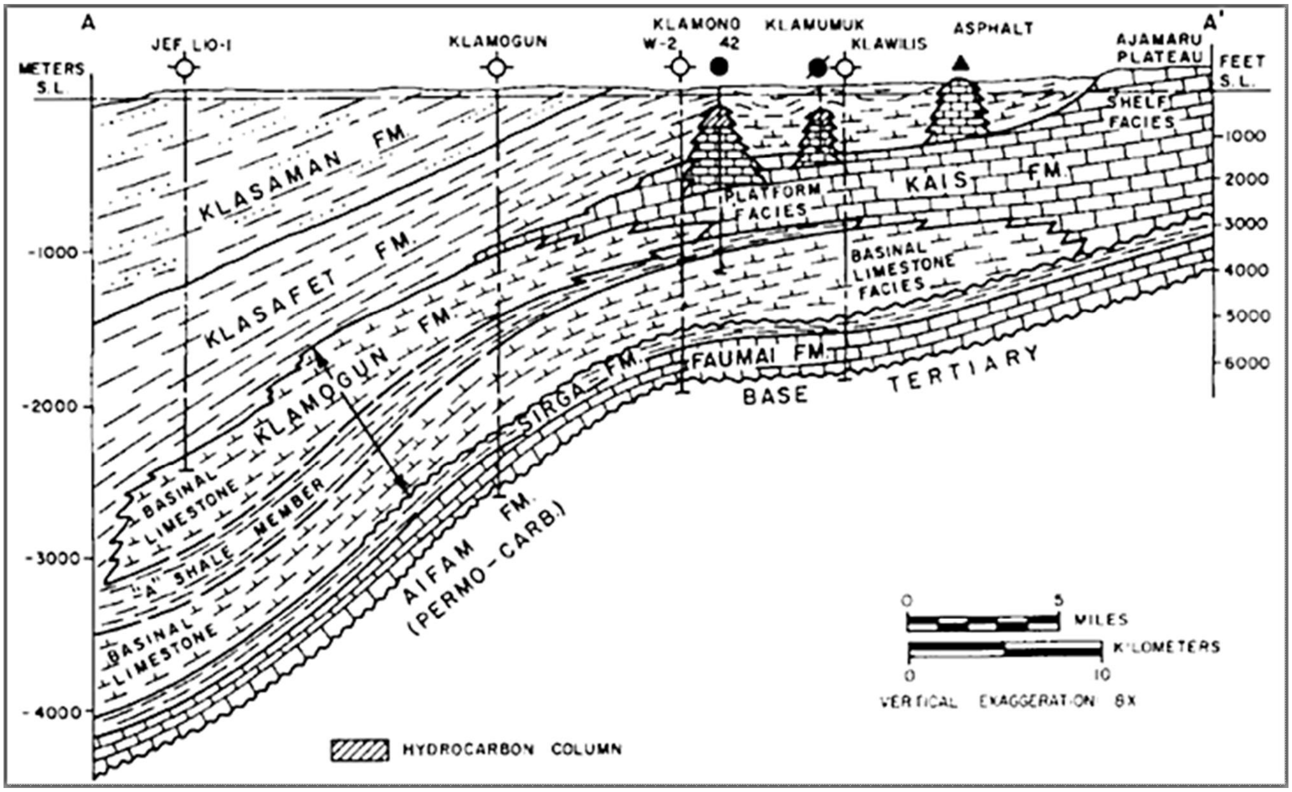

Figure VIII.1.4.7. Schematic W-E cross section through the Salawati Neogene foreland basin, showing backstepping Late Miocene Kais carbonate platform and reefal buildups (Vincelette & Soeparjadi 1976).

A potential oil-gas play is in folded Late Jurassic- basal Cretaceous sandstone reservoirs in the Central Range foldbelt. This is the main oil and gas play in the adjacent Papua New Guinea foldbelt, but has not been extended into West Papua yet, although surface oil seeps and oil shows in wells in the eastern Central Range do suggest potential.

The locally thick Late Miocene- Pleistocene successor basins of onshore North New Guinea have oil and gas seeps and non-commercial gas discoveries (Niengo). This area is geologically complex, remote and vastly underexplored. In adjacent PNG basins a Salwati-style carbonate play has been proposed, but this has barely been explored (Barrett 1996, 1997).

Mining

Both West Papua and Papua New Guinea are important mining provinces, particularly for copper and gold (Figure VIII.1.8).

The largest copper-gold deposits are porphyry coppers associated with a belt of latest Miocene- Pliocene calc-alkaline intrusions along the Central Range foldbelt (Ertsberg, Grasberg, Ok Tedi, Porgera, Frieda River, Yandera, etc.) (O'Connor et al. 1996, Gow et al. 2002, etc.).

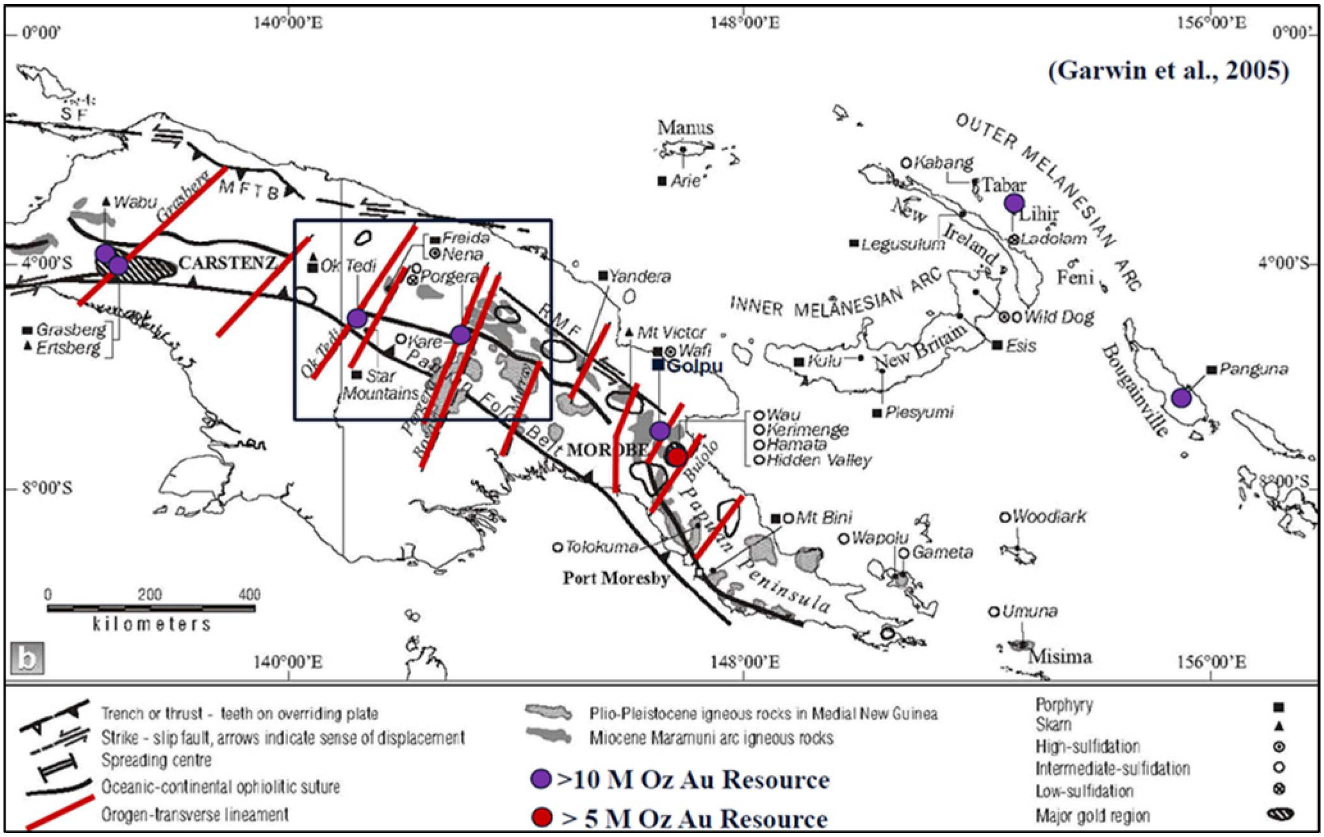

Figure VIII.1.8. Principal copper-gold deposits of New Guinea (Garwin et al. 2005). Major porphyry copper-gold systems are tied to intersections of the magmatic belt and steep transverse faults.

Suggested reading New Guinea General and West Papua *(an incomplete listing)*

General, Tectonics — *Van Bemmelen 1939, 1949, 1953, Visser and Hermes 1962, Hermes 1974, Dow and Sukamto 1984, Pigram and Panggabean 1984, Pigram and Davies 1987, Pigram and Symonds 1991, Dow et al. 1985, 1988, 2005, Audley Charles 1991, Nash et al. 1993, Struckmeyer et al. 1993, Charlton 1996, 1998, 2010, Pubellier and Ego 2002, Stevens et al. 2002, Hill and Hall 2003, Hill et al. 2004, Sapiie and Cloos 2004, Cloos et al. 2005, Riadini and Sapiie 2012, Davies 2012, Baldwin et al. 2012, Gunawan et al. 2014, Fraser 2016, Webb and White 2016, Gold et al. 2017, Harrington et al. 2017, White et al. 2017, Argakoesoemah 2017, 2018, Kurniawan et al. 2018, Jost et al. 2018,*

Stratigraphy — *Pieters et al. 1983, Quarles van Ufford and Cloos 2005*

North New Guinea — *Zwierzycki 1924, 1928, Williams and Amiruddin 1983, Wachsmuth and Kunst 1986, Tregoning and Gorbatov 2004, Permana et al. 2005*

Bintuni Basin — *Koesoemadinata 1976, Collins and Qureshi 1977, Pigram et al. 1982, Chevallier and Bordenave 1986, Dolan and Hermany 1988, Fraser et al. 1993, Perkins and Livsey 1993, O'Sullivan et al. 1995, Ratman 1997, Biantoro and Luthfi 1999, Casarta et al. 2004, Sutriyono 2006, Vera 2009, Lelono et al. 2010, Panuju et al. 2010, Prihanasto et al. 2011, Decker et al. 2009, Sapiie 2010, Handyarso and Padmawidjaja 2017, Birt et al. 2015, 2017, Hendro et al. 2016, Wisesa et al. 2017, Lie et al. 2018, Sahidu et al. 2018*

Salawati Basin — *Redmond and Koesoemadinata 1976, Vincelette and Soeparjadi 1976, Froidevaux 1977, 1978, Phoa and Samuel 1986, Gibson-Robinson et al. 1986, 1990, Samuel et al. 1990, 1991, Djumhana and Syarief 1991, Livingstone et al. 1992, Mujito 1994,*

	Wilson 1995, Subroto et al. 1996, Satyana 2001-2011, Idris et al. 2002, Syam et al. 2008, Arifin et al. 2017, Bernadi et al. 2018, Suseno et al. 2018
Lengguru Foldbelt	*Pigram et al. 1982, Dow et al. 1985, Belford 1989, Robinson et al. 1990, Sulaeman et al. 1990, Brash et al. 1991, Moffatt et al. 1991, Simandjuntak et al. 1994, Sutriyono 1999, 2003, 2005, Sutriyono and Hill 2002, Kendrick et al.. 2003, Oehlers 2005, Pajot and Dhont 2006, Bailly et al. 2009, De Sigoyer et al. 2011, Francois et al. 2016, Saragih et al. 2017*
Cenderawasih Bay	*Dow and Hartono 1982, Tonny and Bagiyo 1993, Hadipandoyo et al. 1996, Baillie et al. 2009, 2011, Sapiie et al. 2010, Noble et al. 2016, Nurwani et al. 2017, Babault et al. 2018*
Ophiolites, Metamorphics:	*Van der Wegen 1971, Weyland 1999, Monnier et al. 1999, 2000, Warren and Cloos 2007, Weiland and Cloos 2007*
Neogene Volcanism, Minerals:	*McMahon 1994a,b, Mertig et al. 1994, O'Connor et al. 1994, Housh and McMahon 2000, Paterson and Cloos 2005, Pollard et al. 2005, Prendergast et al. 2005.*
Copper-gold deposits	*Dozy 1939, 2002, MacDonald and Arnold 1994, O'Connor et al. 1994, McMahon 1994, 1999, Mealey 1996, Rubin and Kyle 1997, Mathur et al. 2000, Sapiie 2000, Akhmad 2002, Prendergast 2003, 2005, Paterson, and Cloos 2005, Garwin 2013, 2015, Gibbins 2006, Leys et al. 2012, Cloos and Sapiie 2013, Hammarstrom et al. 2013, Soebari et al. 2013, Kyle et al. 2014, Henley et al. 2017*

Figure VIII.1.9. Aerial view of the Grasberg copper-gold mine, a ~3 Myr old porphyry copper style mineral deposit (PT Freeport photo).

VIII.2. Misool

This brief sub-chapter VIII.2 contains 57 references of the geology on and around Misool island.

The Misool Islands group between the West Papua 'Birds Head' and Seram, is generally regarded as part of the Birds Head plate, although there are arguments to make it a separate microplate that collided with the Birds Head in Oligocene time (Pigram and Davies 1987).

Misool is part of a long, young anticlinal trend that continues East to the Onin Peninsula, and which is commonly interpreted as the result of a latest Miocene- Early Pliocene inversion event of a Jurassic (or older?) rift system.

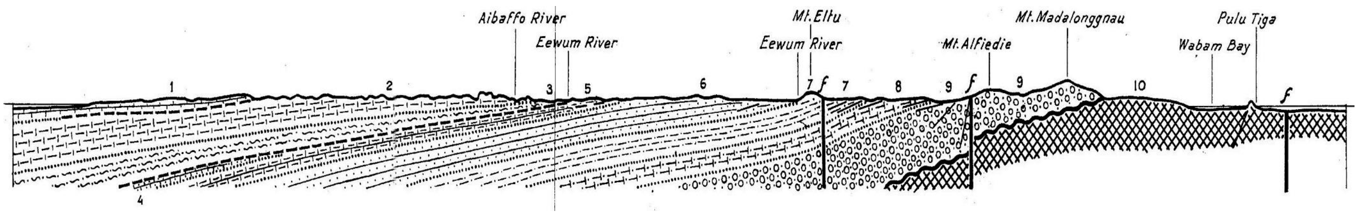

Figure VIII.2.1. N-S cross-section across N-dipping Triassic- Tertiary sediments of C Misool island (Roggeveen 1939 in Van Bemmelen, 1949)

Overall dip of Misool island is to the North, so the South coast and adjacent islands have good outcrops of Paleozoic metamorphics. These are unconformably overlain by a relatively thick Late Triassic marine 'flysch' series and reefal *Misolia* limestone, unconformably overlain by a relatively thin Middle? Jurassic- Cretaceous marine sequence. The Late Jurassic- mid Cretaceous is in bathyal pelagic limestone facies. The overlying Turonian- Maastrichtian marls are rich in *Inoceramus*, but also contain radiolitid rudists (*Durania spp.*).

The Jurassic- Cretaceous of Misool is locally rich in macrofossils (mainly molluscs and belemnites), which have lead to numerous classic paleontology studies (between 1901-1939 mainly German academics: Boehm, Krumbeck, Von Seidlitz, Soergel, Stolley, Wandel, Vogler, etc.; more recently Challinor, Westermann, Hasibuan, etc.). A major recent review of Misool stratigraphy and paleontology is Hasibuan (2012).

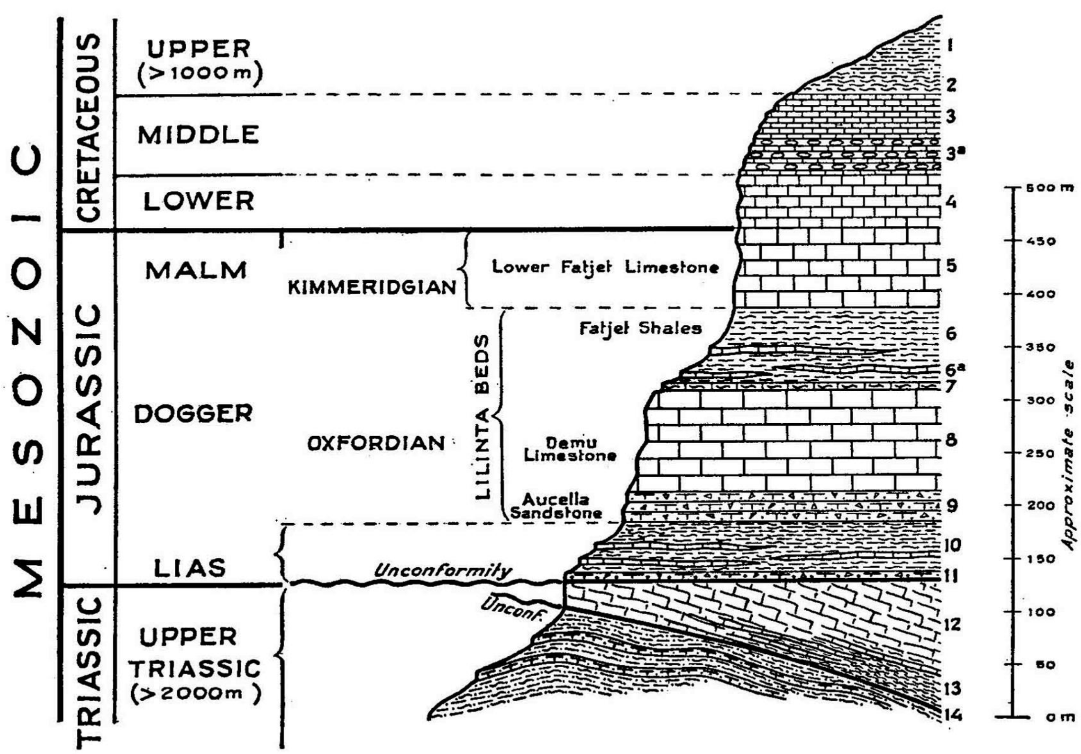

Figure VIII.2.2. . Diagrammatic Mesozoic stratigraphy of Misool islands (Weber 1930, in Van Bemmelen, 1949)

It should be noted that the Paleozoic-Mesozoic stratigraphy of Misool is different from that of the Birds Head, Bintuni and the main 'body' of New Guinea, although some of this could be explained by assuming a contiguous but more distal marine setting for Misool.

Misool has no equivalent of the Permian coaly series or the Jurassic- Cretaceous shallow marine sands known from the Birds Head, Bintuni, Central Range, etc. It does have Late Triassic reefal limestones, rudist-bearing Upper Cretaceous, etc., which are absent elsewhere in New Guinea (except the probably displaced Kubor Terrane in PNG).

The Misool surface geology map and sections clearly show a mid-Oligocene unconformity: Miocene carbonates thin W-ward from >1300m to 100m and overlap successively older rocks, suggesting an Oligocene uplift event, most pronounced in the West (Figure VIII.2.3).

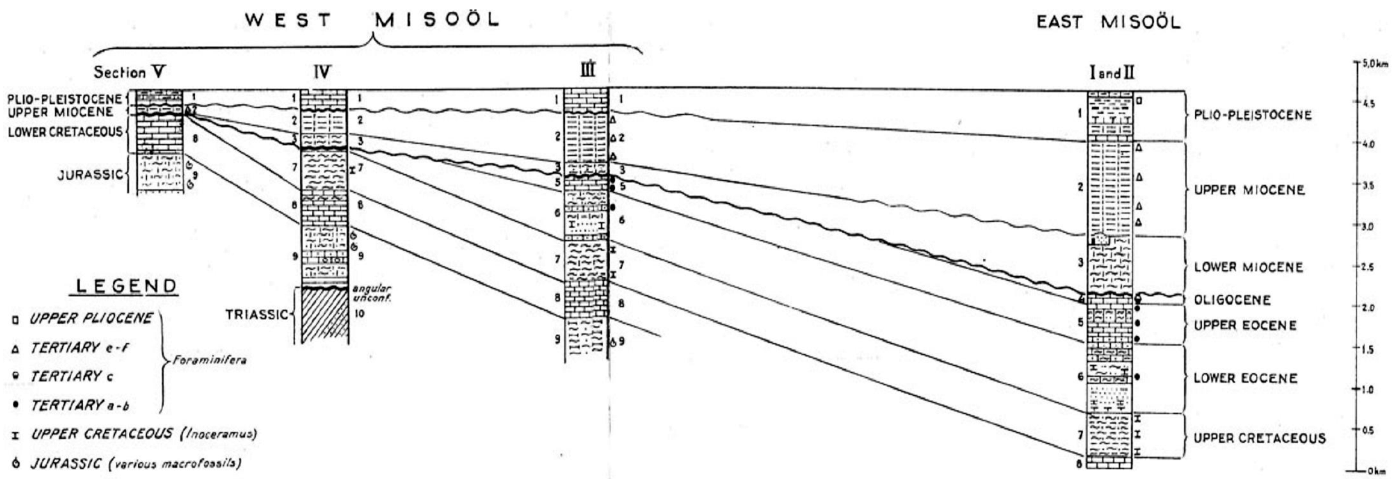

Figure VIII.2.3. W-E stratigraphic cross-section across Misool, showing 'mid-Oligocene' unconformity, most pronounced in West Misool (Roggeveen 1939 in Van Bemmelen, 1949).

Suggested reading Misool *(not a complete listing)*

General, Tectonics:	*Wanner 1910, Boehm 1924, Froidevaux 1974, Skwarko 1981, Pigram et al. 1982, Pairault et al.2003*
Stratigraphy, Paleontology	*Krumbeck 1911, 1913, 1934, Soergel 1913, 1915, Challinor 1989, 1991, Hasibuan 1987-2012.*

VIII.3. Arafura Shelf

This small small sub-chapter VIII.3 of Bibliography 7.0 contains 57 references on the area of the Arafura Shelf. It includes a number of references from the adjacent Australian part of the Arafura Sea.

The Arafura Sea straddles Indonesian and Australian parts of the NW Shelf- West Papua continental margin. The geology of the area is relatively poorly known. A review of the Australian sector of the Arafura Sea is by Struckmeyer et al. (2006).

Recent deep seismic data shows the presence of a locally very thick Precambrian sediment section below much of the Arafura Sea (>15 km; Granath et al. 2012). Below the Arafura Sea shelf is a >700 km long, N-S trending Upper Proterozoic intra-continental rift basin that extends between West Papua in the North to the Australian Goulburn Graben in the South, (Granath et al. 2012, Miharwatiman et al. 2013). It is probably related to the MacArthur basin and other Precambrian basins of North Australia.

The Proterozoic rift series is overlain by a Paleozoic passive margin section (Cambrian- Permian?), which is gently folded and unconformably overlain by thin, undeformed Cretaceous- Tertiary sediments.

Two recent dry wells were drilled in 2010-2011, Aru-1 and Mutiara Putih-1. The Mutiara Putih well penterated a 15,000' thick Ordovician- Permian section, with a Permian/ Ordovician unconformity. Reservoir quality of the Paleozoic section was found to be extremely poor in both wells, and is suggestive of significant uplift and erosion below the Base Jurassic unconformity (15,000' at the Aru 1 structur;) Miharwatiman et al. 2013).

There is thickening of post-Precambrian sediments in three different areas and times. The NW-SE trending Goulburn Graben in the Australian sector of the Arafura Sea preserves a relatively thick Paleozoic section. This rift system was inverted in the Triassic and significantly eroded after that. No equivalent system is known from the indonesian sector, except perhaps the thick Paleozoic section outcropping immediately South of the West Papua onshore Central Range foldbelt.

Jurassic- Cretaceous sediments thicken towards the present-day continental margin in the West, in the direction of the Banda Sea. Significant thickening of Oligocene and younger sediments is observed to the North, towards the South coast of West Papua, reflecting increased subsidence in the foredeep of the New Guinea Central Range foldbelt.

The Aru Islands appear to be part of a broad arch of upwarped Neogene shelf deposits, parallel to adjacent trench, and may represent part of a young, discontinuous 'forebulge' on the downgoing Australian passive margin plate.

Suggested reading Arafura Shelf *(not a complete listing)*

General, Tectonics:	*Katili 1986, Bradshaw et al. 1990, Struckmeyer et al. 2006 Subroto and Noeradi 2008, Dinkelman et al. 2010, Granath et al. 2010, 2011, 2012, Miharwatiman et al. 2013, Livsey 2016, Gumilar 2017*
Aru Trough	*Adhitama et al. 2016, 2017*

IX.11. Papua New Guinea (main island)

Although not in Indonesian territory, the geology of Papua New Guinea is a continuation of the geology of West Papua, and therefore of interest for the understanding of West Papua and also microcontinental terranes in Eastern Indonesia.

The reference list for sub-chapter IX.11 of Bibliography 7.0 contains 806 titles. Many of the classic papers on the regional geology of Papua New Guinea are by H. Davies, D. Dow, K. Hill and J. Milsom.

The Papua New Guinea chapter is subdivided into:
IX.11. Papua New Guinea (East half of New Guinea main island)
IX.12. Papua New Guinea (Bismarck Sea, Solomon Sea, Woodlark Basin)
IX.13. Papua New Guinea (Gulf of Papua, Coral Sea)

The geology and physiography of the main island of Papua New Guinea is a continuation of that of West Papua, albeit with several differences. Elevations of the PNG foldbelt are generally lower than in the West Papua Central Range. This presumably reflects that it is underlain by weaker basement of Paleozoic accretionary crust, in contrast with West Papua's relatively rigid Proterozoic and older continental crust (Hill and Hall, 2003).

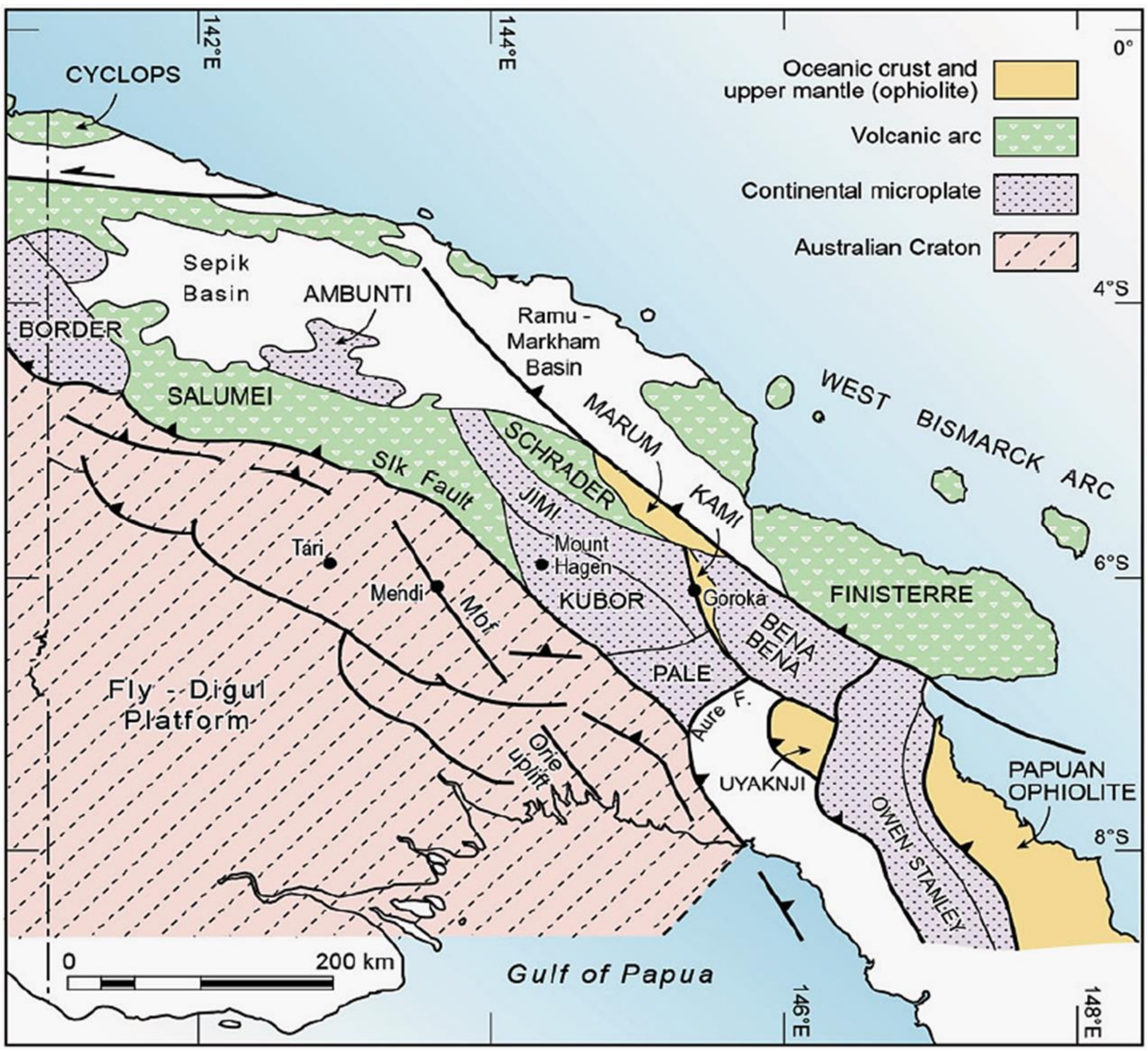

Figure IX.11.1. Tectonostratigraphic terranes of Papua New Guinea main island. Slk Fault= Stolle-Lagaip-Kaugel fault that separates autochthonous Australian plate in South from allochthonous accreted terranes in North (Glen et al. 2016, after Davies et al. 1996)

From South to North (Figures IX.11.1 and IX.11.2):

1. The 'Fly Platform', part of the relatively stable Australian continental plate in the South, with undeformed Mesozoic- Paleocene shelfal sediments, deposited in the Papuan foreland Basin above Paleozoic accretionary basement;
2. The 'Papuan foldbelt', which forms the Central Range backbone of the island and consists of Mesozoic-Tertiary Australian passive margin sediments, folded and thrusted in a south-vergent fold-thrust belt, formed mainly during Late Miocene- Pliocene collision of the NE Australian continental margin with a Pacific magmatic arc (Finisterre Arc). A belt of ophiolites with a metamorphic sole of High-P metamorphics runs along the North side of the foldbelt.
3. Northern belt of accreted terranes, including volcanic arcs (M-L Eocene Salumei Arc, Late Oligocene-Early Miocene Adelbert-Bliri-Finisterre intra-oceanic volcanic arcs), ophiolites and microcontinental blocks of metamorphic and igneous rocks (Kubor, Jimi, Bena-Bena, Border Blocks). These are overlain by Neogene successor basins (Sepik, Ramu-Markham), with surface oil and gas seeps, but no commercial hydrocarbon accumulations (yet).

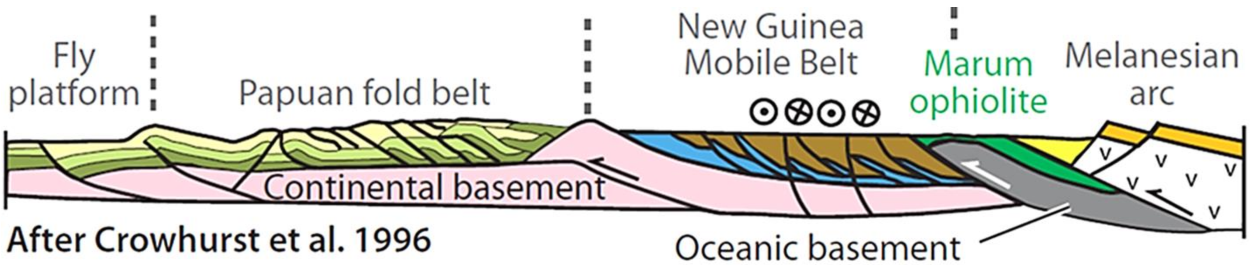

Figure IX.11.2. Diagrammatic S-to-N cross-section of Papua New Guinea, showing Marum ophiolite obduction and South-directed folding- thrusting due to the Late Miocene and younger collision of the Melanesian arc (Adelbert, Finisterre, and Huon blocks) (Baldwin et al. 2012).

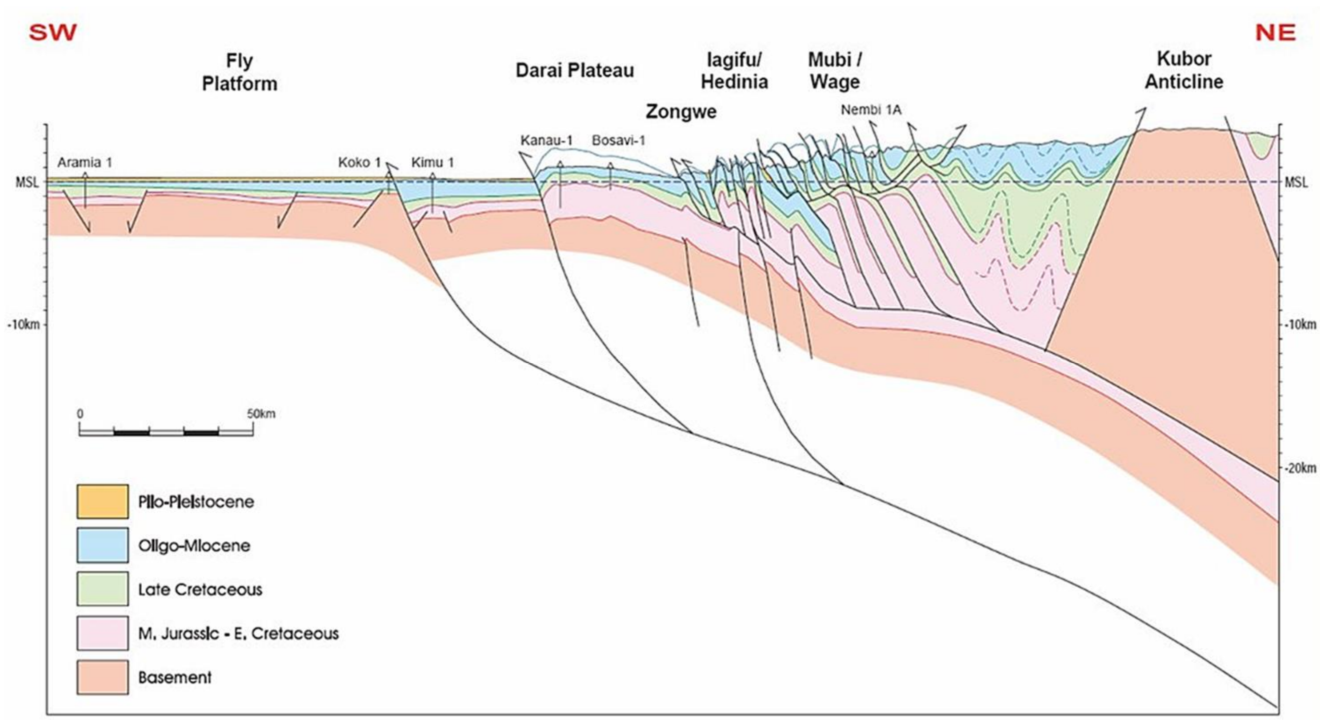

Figure IX.11.3. Regional SW-NE cross-section across the Central Range of PNG (Oil Search, 2015, online).

Additional discussions on tectonostratigraphic history of the Papua New Guinea foreland and the Central Range/ Papuan foldbelt see Home et al. 1990, Glen et al. 2016, etc.

Papua New Guinea main island- Basement

Two different basement complexes underlie the Papua New Guinea main island. In the South is Australian plate continental basement, which here is represented by accretionary basement of the Paleozoic active Australian eastern margin. The Central Range is the folded cover of its northern margin of the continent, and the obducted ophiolites in the northern Central Range are in the collision zone with northern New Guinea terranes.

Northern New Guinea is underlain by collided blocks with arc volcanics, ophiolites, metamorphic rocks and continental basement blocks. It looks like these blocks carry a deformation history much of which is pre-Miocene and is therefore best described as one or more composite terranes, and named 'Scrapland' by Rogerson and Hilyard (1990).

South of the central foldbelt basement in PNG is composed mainly of folded Late Permian- Early Triassic low-grade metasediments, intruded by ?Permian-Triassic granites, much like the 'Tasmanide' belt along the eastern margin of Australia (e.g. Hill and Hall 2003, Holm et al. 2013).

Since not much of this basement is exposed, one tool to determine the position of the Tasman Line in New Guinea, that separates Precambrian basement in the West from Paleozoic Tasmanides is from Quaternary volcanics in PNG: volcanism in more intense in the East, and inherited zircons include Paleoproterozoic ages (~1850 Ma) in the West; while Permian-Triassic age peaks (~250, 270 Ma) are conspicuous in the East (Holm et al. 2013).

Mesozoic rifting and passive margin

Middle Triassic and Early Jurassic rifting of the continental margin (Home et al 1990) was followed by Late Jurassic- Early Cretaceous post-rift subsidence in a passive margin setting, with deposition of marine shales interbedded with quartz-rich reservoir sandstones. Much of the late Early Cretaceous (and later?) is in marine shale facies, which forms the regional seal for hydrocarbon accumulations Figure IX.11.4).

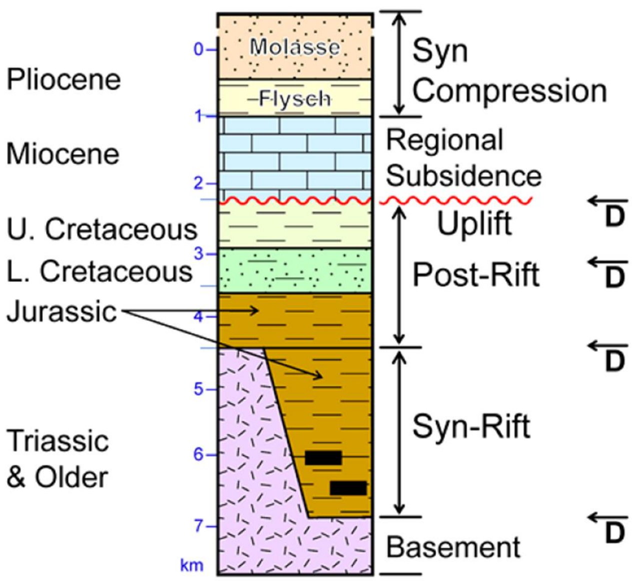

Figure IX.11.4. Diagrammatic stratigraphy of Mesozoic- Tertiary of Papua- New Guinea foldbelt, with approximate thicknesses. (Juha field; Hanani et al. (2016). Mesozoic rift- passive margin sequence, Upper Cretaceous uplift event, Plio-Pleistocene syn-compressional flysch and molasse. D= detachment surfaces.

End- Cretaceous uplift

A regional uplift/erosion event at the end of the Cretaceous is suggested by a regional hiatus, in which latest Cretaceous- Eocene sediments are missing. The span of the hiatus appears to increase in easterly direction through the Papuan foldbelt.

Widespread Oligocene- Middle Miocene limestone deposition took place in and South of the Papuan foldbelt (Darai Limestone).

latest Miocene?- Pliocene- ?Pleistocene compression/ folding event

The Papuan fold-thrust belt is composed mainly of south-directed thrusts. Many of the major anticlinal trends appear to originate as inversions of Mesozoic rift-bounding normal faults.

The time of deformation of the PNG foldbelt appears to be mainly Pliocene (Jenkins 1974, Davies 1990). Late Miocene (~10 Ma; Home et al. 1990) inversion event tied to collision of the N Papuan margin and a Melanesian island arc. Most of the compressional activity, with syn-collisional flysch and molasse-facies deposits have been dated as Pliocene- Pleistocene (e.g. Dixon 1996, Kloppenburg and Hill 2015, Hanani et al. 2016)

The Darai Plateau in the Papuan foreland is a large Plio-Pleistocene anticlinal inversion of a Mesozoic half-graben. (Hulse and. Harris, 2000).

Ultramafic belts

PNG main island is home to three main ultramafic complexes, along the north sides of the Central Range/ Papuan foldbelt and the Owen Stanley Range (Figure IX.11.5). All are believed to be the result of mid-Tertiary arc-continent collisions (Davies and Jaques 1984). A ~Langhian age has been suggested for ophiolite obduction in northern PNG.

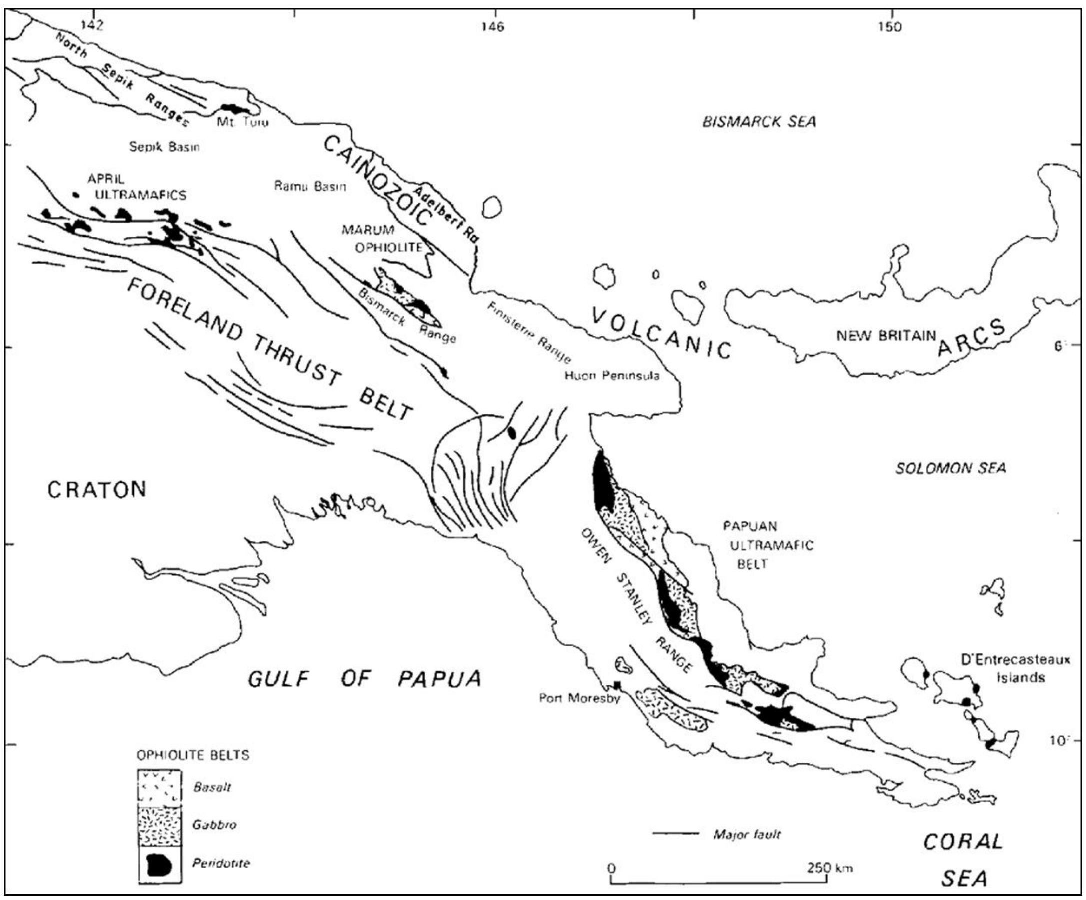

Figure IX.11.5. Major ophiolite complexes of Papua New Guinea (Davies and Jaques, 1984)

The ophiolite sheets generally overlie a metamorphic sole that may include high-P/T eclogite and and High P glaucophane-epidote metamorphic facies rocks. Metamorphic grade decreases away from the ophiolite, generally into non-metamorphic protoliths of continental margin sediments (Figure IX.11.6)

The Papuan Ultramafic Belt is a 400km long/40km wide belt peridotites, gabbros, and basalt. In early classic studies by Davies (1968, 1969, 1971, 1980) is was already recognized as remnants of Cretaceous oceanic crust and mantle and crust, that were obducted onto continental crust, probably in mid-Tertiary time

The Central Range ophiolite(s) (April ultramafics) is probably a continuation of the ultramafic complex along the north side of the West Papua Central Range (Dow) It has more complex structure and probably developed as a series of thrust sheets in a subduction system (Davies and Jaques, 1984).

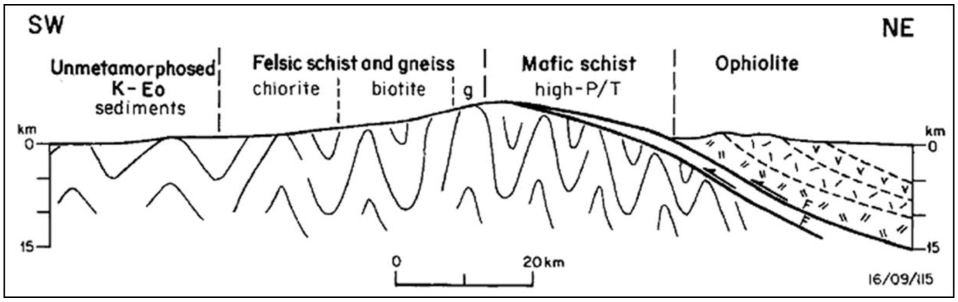

Figure IX.11.6. Cross-section through the Owen Stanley Range of SE Papua New Guinea, showing ophiolite in NE overlying a typical metamorphic sole, in which grade of metamorphism gradually decreases away from the ophiolite, from High P-T felsic metamorphics to non-metamorphic Cretaceous- Eocene sediments away from the ophiolite (Davies and Jaques, 1984).

Oil and gas plays

The most significant collections of papers on oil and gas in Papua New Guinea is in the proceedings volumes of the four Papua New Guinea Petroleum conventions in Port Moresby in 1990 and 1993 (edited by G.J. & Z. Carman) and 1996 and 2000 (edited by P.G.Buchanan).

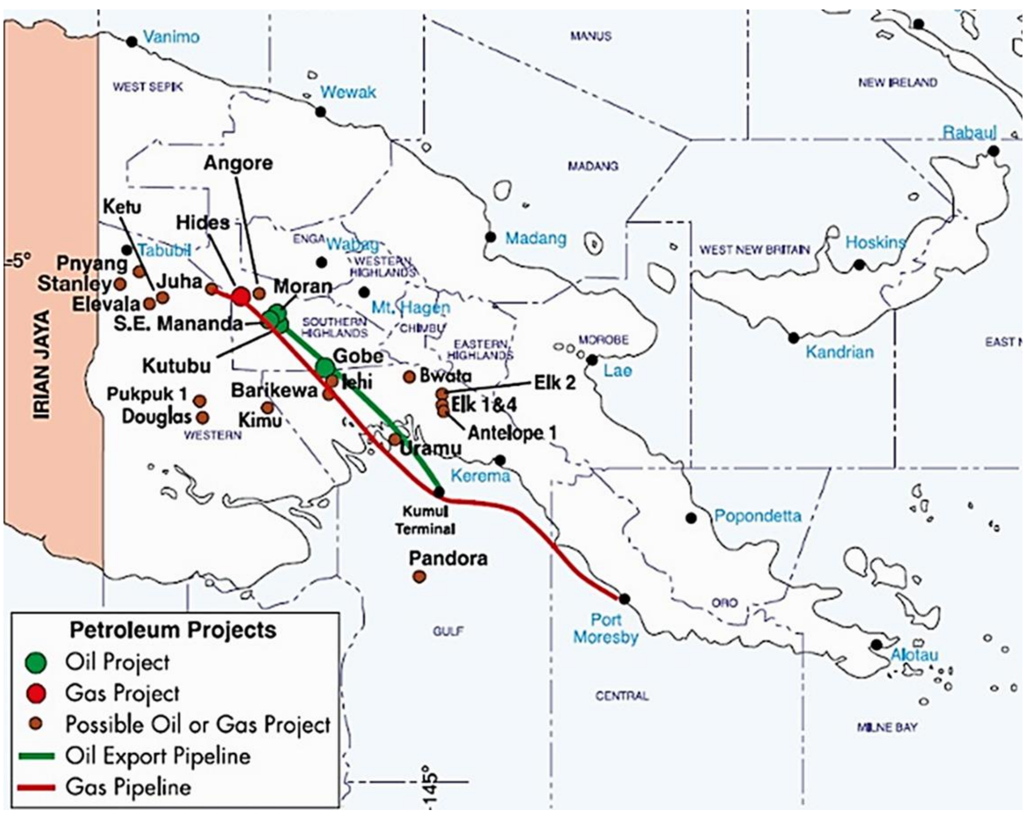

Figure IX.11.7. Location map of main oil and gas fields of PNG (PNG Chamber of Mines and Petroleum).

Most of the oil and gas accumulations in PNG are in the frontal thrusts of the central foldbelt (Figure IX.11.7, IX.II.8). Reservoirs are Late Jurassic- Early Cretaceous quartz sandstones. So far, this foldbelt play has not been commercially successful in the Central Range of West Papua, although most of the play elements are similar.

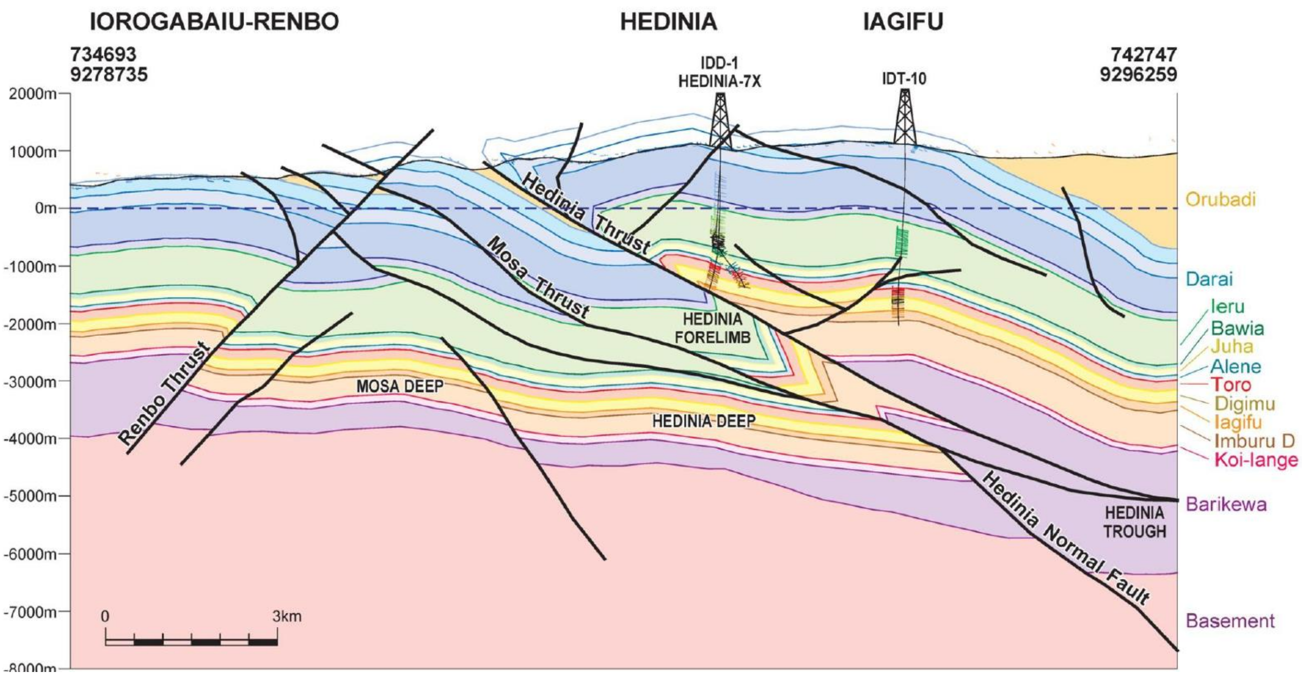

Figure IX.11.8. Cross section of Iagafu- Hedinia field in frontal fold of PNG Central foldbelt (Hill et al. 2012)..

The principal source rocks in the foldbelt play are in the Middle-Late Jurassic Imburu Fm, a marine source rocks with higher plant derived organic matter, deposited in sub-oxic to oxic environment (Ahmed et al 2012). Main reservoirs are Late Jurassic- Early Cretaceous sandstones of the Toro, Digimu and Iagifu Formations.

The first commercial oil discovery in the foldbelt was in 1986 (Iagafu- Hedinia), with first oil production in 1992. A large LNG gas production project led by ExxonMobil, producing from a cluster of Highlands fields, has been operational since 2014.

A secondary proven play is in Oligo-Miocene limestones in the foreland basin (Elk, Antelope), and on the offshore Fly Platform (Pandora)

Magmatic arcs and mineral deposits

A significant number of gold mines has been discovered and exploited in PNG, most of them associated with Late Neogene intrusives in the Central foldbelt (Figure IX.11.9).

Figure IX.11.10 shows the main Cenozoic magmatic arc systems in the PNG area. The Melanesian Arc (New Britain, etc.) probably started at ~43 Ma and terminated at ~20 Ma (collision of Ontong Java Plateau). The locking of the Melanesian Trench probably led to SW Pacific plate reorganizations, including onset of the Maramuni Arc.

Much of the mineralization in PNG is associated with the Early-Middle Miocene Maramuni arc. This arc formed above a North-dipping subduction zone (Pocklington Trough and its western continuation), that started to lock up around 12 Ma with the arrival and initial subduction of the northern Australian continental margin. From ~12-9 Ma subduction-zone magmas contain increasing amounts of crustal components. This was followed by slab breakoff/ crustal delamination around 7 Ma, which gave rise to multiple porphyry intrusions and renewed uplift of the New Guinea orogen after 6 Ma (Holm et al. 2013, 2015).

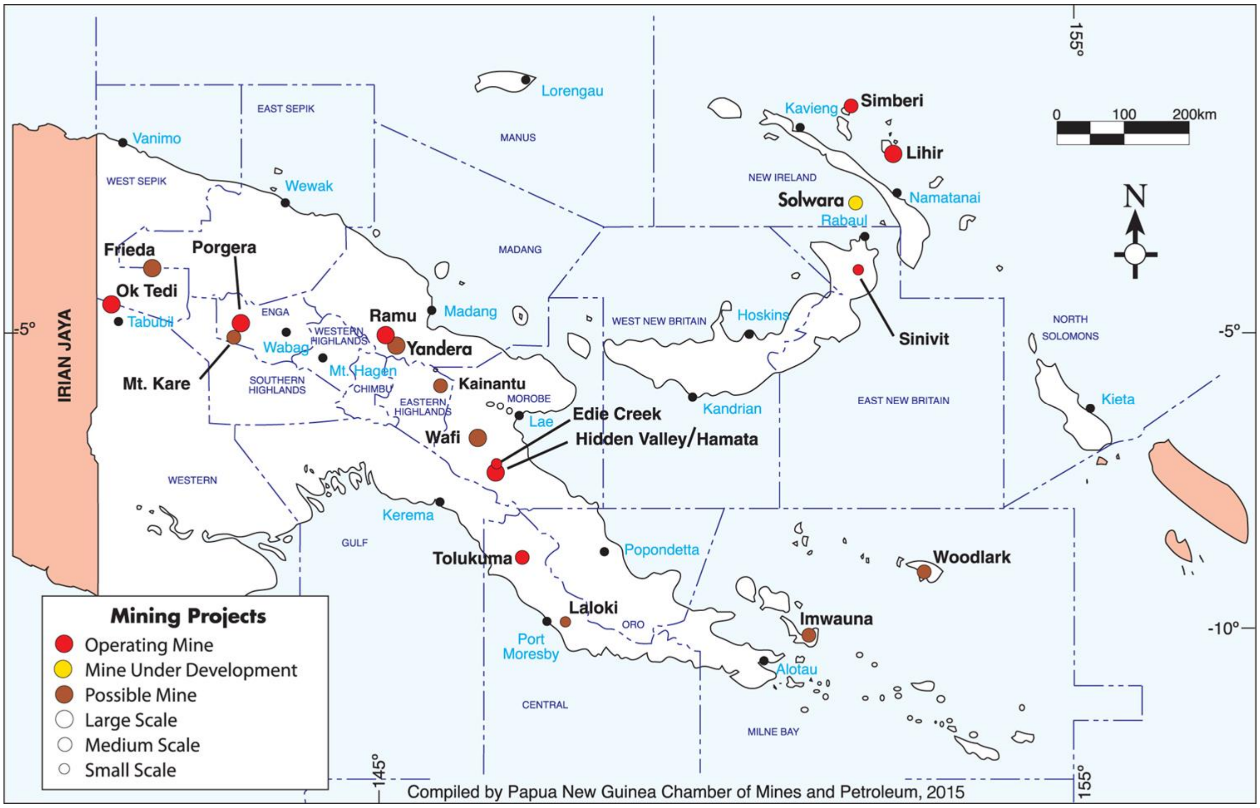

Figure IX.11.9 . Map of main mining operations in Papua New Guinea.

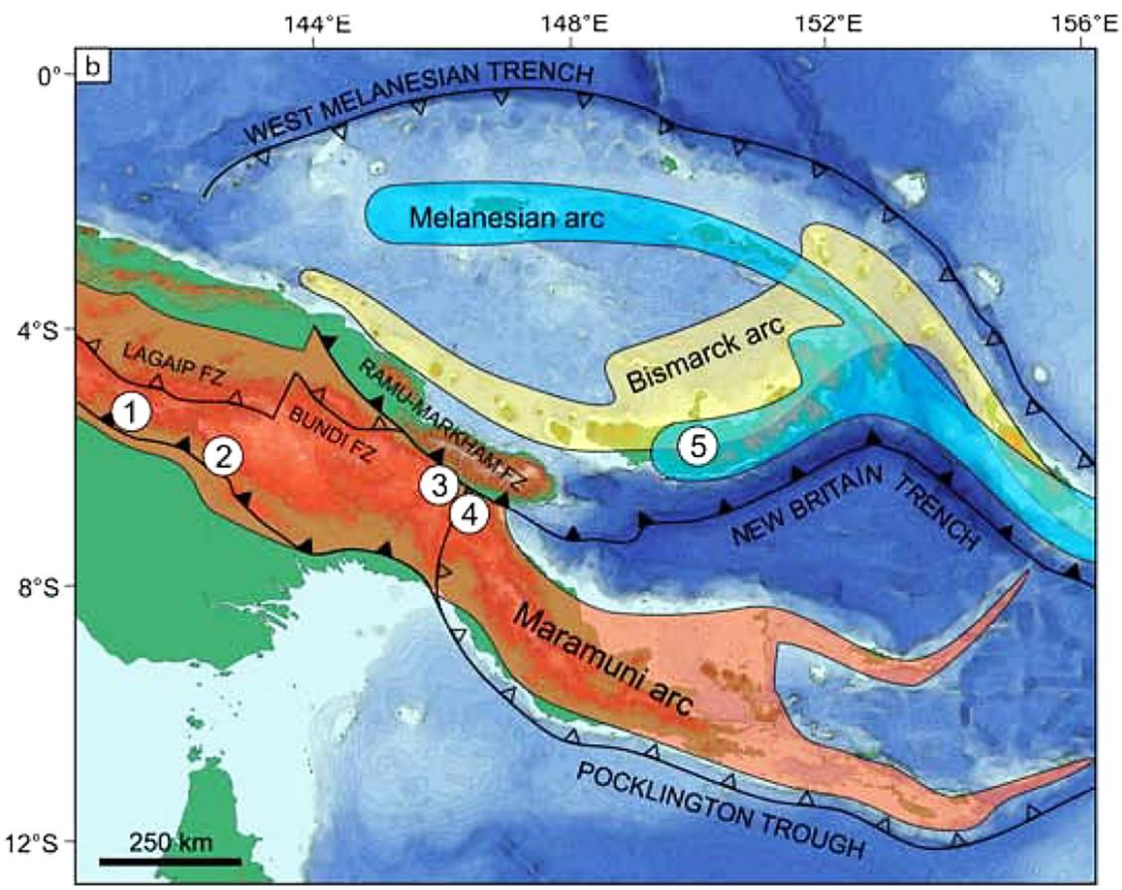

Figure IX.11.10. Neogene- Recent magmatic arcs of Papua New Guinea, with corresponding subduction zones (Holm et al. 2013).

Suggested reading - Papua New Guinea main island *(incomplete llisting)*

General, Tectonics:	*Glaessner 1950, Davies and Smith 1971, Dow 1977, Davies 1978, 1990, 2012, Davies et al. 1997, Milsom 1973, 1974, 1981, 1991, Dow 1977, Home at al. 1990, Hobson 1986, Cooper and Taylor 1987, Hill 1987, 1991 and others, Rogerson and Hilyard 1987, 1990, Smith 1990, Silver et al. 1991, Harrison and Milsom 1996, Thornton et al. 1996, Mason 1996, Webb and Woyengu 1999, Van Wyck and Williams 2002, Hill and Hall 2003, Hill et al. 2008, 2010, 2012, Pigram et al. 1989, 1990, Struckmeyer 1991, Klootwijk et al. 1993, 2003, Baldwin et al. 2012*
Mesozoic Paleontology	*Schluter 1928, Glaessner 1945, Skwarko 1967-1983, Davey 1988, 1999, Challinor 1990, Matsumoto, and Skwarko 1991, 1993, Grant-Mackie et al. 2006, Bidgood et al. 2015*
Oil-gas fields, plays	*Wade 1927, APC 1961, Durkee et al. 1987, Carey 1990, Matzke et al. 1992, Barndollar 1993, Grainge 1993, Murray et al. 1993, Surka 1993, Valenti 1993, Waples and Wulff 1996, Barrett 1996, 1997, 1999, Kaufman et al. 1997, Hebberger et al. 2000, Johnstone and Emmett 2000, George et al. 2004, Kawagle 2007, Bradey et al. 2008, Ahmed et al. 2012, Hanani et al. 2016, Boyd et al. 2016, Warburton et al. 2017*
Papuan Ultramafic Belt	*Davies 1968, 1969, 1971, 1980, Milsom 1973, 2003, Connelly 1979, Jaques et al. 1978, 1980, 1981, 1983, Lus et al. 2004, Smith 2013,*
Magmatic arcs, volcanism	*Johnson et al. 1971, 1973, 1978, 1982, MacKenzie et al. 1972, 1976, 1984, Page 1976, Holm 2013, Johnson 2013, Smith and Milsom 1984, Smith 2014.*
Mining	*Bamford 1972, Page and McDougall 1972, Grant and Nielsen 1975, Page and McDougall 1972, Page 1976, Mason and McDonald 1978, Titley et al. 1978, Watmuff 1978, Mason and Heaslip 1980, Asami and. Britten 1980, Lowenstein 1982, Fleming et al. 1986, Richards et al.1990, 1991, 1993, Hall et al. 1990, Corbett 1994, 2009, Gow et al. 2002, Van Dongen et al. 2007, 2010, 2013, Roberts et al. 2013, Hammarstrom et al. 2013, Pollard 2014, Large et al. 2018, Rinne et al. 2018*

IX.12-13. Papua New Guinea (surrounding marginal basins and arcs)

Sub-chapters IX.12-13 contain 326 references for the areas surrounding the eastern side of Papua New Guinea main island:

- IX.12. Papua New Guinea (Bismarck Sea, Solomon Sea, Woodlark Basin) (279 papers)
- IX.13. Papua New Guinea (Gulf of Papua, Coral Sea) (47 papers)

It is a very tectonically complex and active region mosaic of multiple oceanic marginal basins, separated by active and extinct volcanic-magmatic arcs and accretionary, ophiolite and metamorphic terranes (Figure): A good recent review of the tectonics of the area is by Baldwin et al. (2012).

The Coral Sea marginal basin opened in Late Cretaceous. The Solomon Sea opened in Eocene and is actively closing. The Bismarck Sea (Manus Basin) and Woodlark Basin, are currently opening, partly due to oblique convergence between the Pacific and Australia plates.

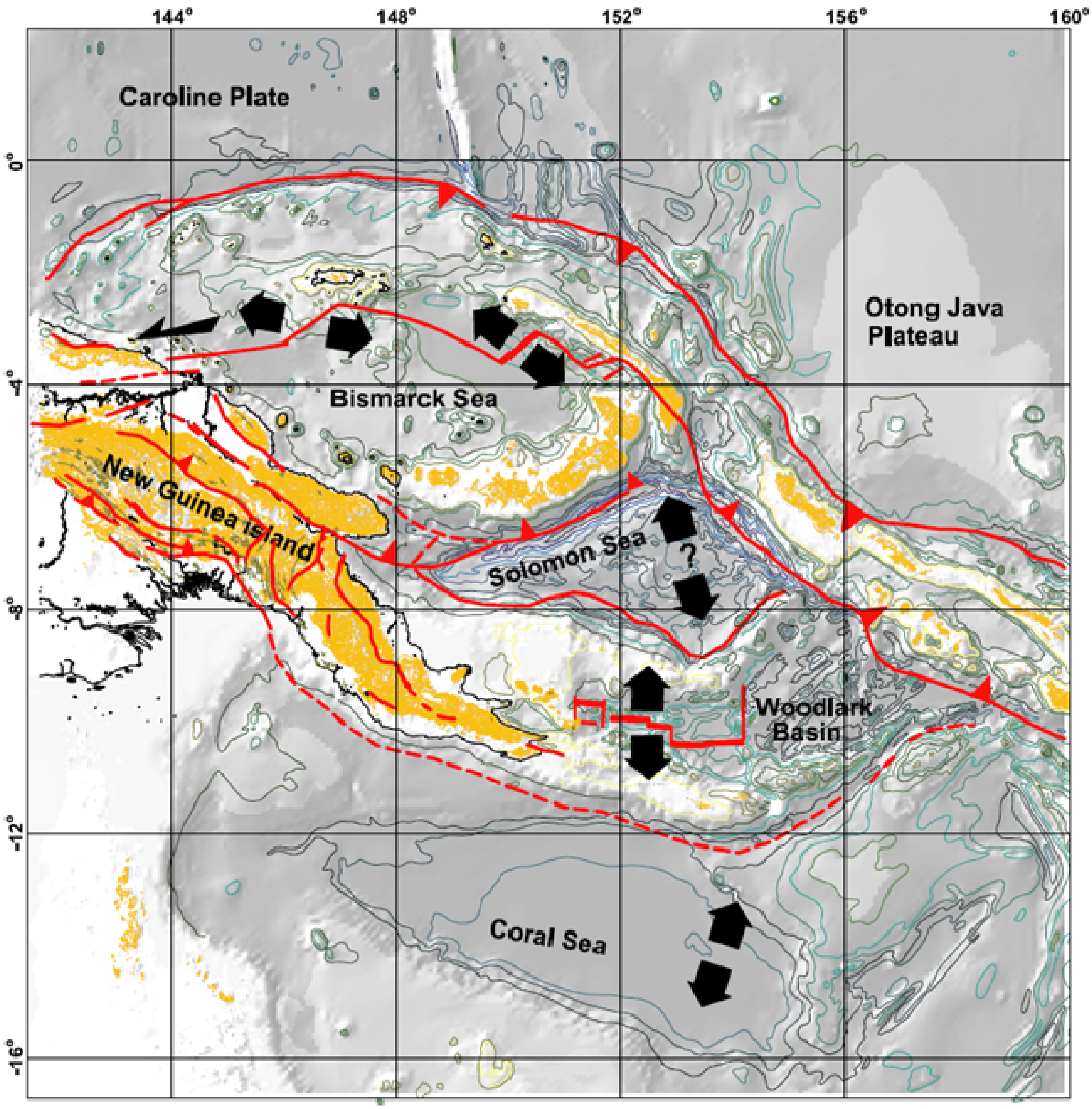

Figure IX.12.1. Oceanic marginal basins developed NE and SE of Papua New Guinea main island, in zone of oblique convergence between the Australian and Pacific plates is now taken up at the New Guinea Trench and the Bismarck Sea spreading center(Manus Basin?) (Pubellier et al. 2004).

VIII 1-3. WEST PAPUA (WEST NEW GUINEA)

VIII.1. New Guinea General and West Papua

Adhitama, R., R. Hall & L. White (2016)- Structural styles of Adi Basin and the implications of Tarera- Aiduna Fault. Proc. GEOSEA XIV and 45th Ann. Conv. Indon. Assoc. Geologists (IAGI) (GIC 2016), Bandung, p. 383-392.
(Adi Basin narrow, deep water (1-3.5km) offshore basin E of Seram accretionary complex, N of Kai Island and Aru basin and SW of Lengguru foldbelt. Basin formation started in Late Miocene (after deposion of New Guinea Limestone; no wells?) and still active today. Adi-Aru Basin structures dominated by normal faults with NNE-SSW strike direction. Multiple episodes of subsidence, marked by unconformities in syn-extension units. Basin development influenced by sinistral movement of Tarera-Aiduna Fault, visible at N side of basin showing normal fault offset. Subsidence driven by slab pull of Australian subducting plate)

Adhitama R., R. Hall & L.T. White (2017)- Extension in the Kumawa block, West Papua, Indonesia. Proc. 41st Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA17-125-G, 16p.
(Kumawa and Aru basins part of narrow N-S trending extensional system in Aru Trough, E of Kai Besar island-Kai Arch and E of Seram accretionary prism. Basin formation started in Late Miocene, with several periods of subsidence, marked by unconformities within syn-extension units. Tarera-Aiduna fault zone dies out to W, S of Lengguru fold belt)

Adisaputra, Mimin K. (2000)- Umur batugamping Waripi dan Yawee di Wamena dan Formasi Faumai dan Ainod di Timika, Papua, berdasarkan foraminifera besar. J. Geologi Sumberdaya Mineral 10, 108, p. 16-27.
('Age of the Waripi and Yawee limestone in Wamena and the Faumai and Ainod Formations in Timika, Papua, based on larger foraminifera'. New Guinea limestone in Wamena area include Late Eocene (Tb) with Nummulites djokdjakartae, E Oligocene (Tcd) with Nummulites fichteli, Late Oligocene (Te1-4) with Heterostegina borneensis, Spiroclypeus and Lepidocyclina (Eulepidina), E Miocene (Te5) with Miogypsinoides dehaarti and E-M Miocene (Te/Tf1) with Miogypsina thecidaeformis, Lep. (N) sumatrensis. Sample from Ainod Hit Road N near Tembagapura with Late Oligocene (Te 1-4) with Miogypsinoides bantamensis, Spiroclypeus)

Ajam, S.O., L.A. Henzell, J. Wang, A. Syarif & H. Soedirja (1982)- Well-site log evaluation of the Miocene carbonates in Salawati Basin. Proc. 11th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 1, p. 357-378.
(Mainly log analysis methodology)

Akhmad, F. (2002)- Stratigraphy and structural analysis in the Gunung Bijih (Ertsberg) mining district, Irian Jaya. Proc. 28th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 335-343.
(Analysis of fractures suggests NE-SW shortening, NW-SE extension in Ertsberg District, W Papua)

Allen, J.M., G.J. Artmont & K. Palmer (1995)- Application of alluvial gold mineralogy to exploration of the Central Ranges, Irian Jaya, Indonesia. Proc. PACRIM '95 Conf., Australasian Inst. of Mining and Metallurgy (AusIMM), Carlton/Melbourne, 9/95, p. 7-12.
(Alluvial gold ideal exploration tracer to bedrock source and mineralisation style. Mineralogy of gold in ophiolite, skarn, porphyry, mesothermal vein and possible VHMS environments is characterised from alluvial and bedrock samples, and use of gold mineralogy in prospecting is demonstrated)

Allison, I. (1975)- Morphology and dynamics of the tropical glaciers of Irian Jaya. Zeitschrift Gletscherkunde Glazialgeologie 10, 1-2, p. 129-152.

Allison, I. & P. Kruss (1977)- Estimation of Recent climate change in Irian Jaya by numerical modeling of its tropical glaciers. Arctic and Alpine Research 9, 1, p. 49-60.
(On climatic change from retreat of tropical Carstensz Glacier and Meren Glacier in W Papua Central Range)

Allison, I. & J.A. Peterson (1976)- Ice areas on Mt. Jaya: their extent and recent history. In: G.S. Hope et al. (eds.) The Equatorial glaciers of New Guinea. Results of the 1971-1973 Australian Universities Expedition to Irian Jaya: survey, glaciology, meteorology biology and paleoenvironments, Balkema, Rotterdam, p. 27-38.
(online at: http://papuaweb.org/dlib/bk/hope1976/03.pdf)
(Area covered by perennial ice and snow in Carstenz (Puncak Jaya) area 6.9 km2 at end 1972)

Allison, I. & J.A. Peterson (1989)- Glaciers of Irian Jaya, Indonesia. In: Glaciers of Irian Jaya, Indonesia, and New Zealand, U.S. Geol. Survey (USGS) Prof. Paper 1386-H, 48p.
(online at: http://pubs.usgs.gov/pp/p1386h/indonesia/indonesia.html)

Amiruddin (1998)- Proterozoic- Cenozoic lithology sequence of the Central Range, Irian Jaya. J. Geologi Sumberdaya Mineral, 8, 79, p. 10-24.
(Review of Precambrian- Cenozoic stratigraphy of Australian continental margin exposed in Central Range of W Papua (most complete in Indonesian region). Precambrian Karim Fm of >2500m of low-metamorphic mudstones with dolerites and diorite (K-Ar ages ~820-1160 Ma). Neoproterozoic Nerenip/ Awitagoh Fm low metamorphic fine clastics, marbles and pillow basalts, possibly marine rift section, with Langda diorite dated as 847 Ma. E Paleozoic includes Kora Fm clastics with Ordovician graptolites (Nemagraptus gracilis zone) and Silurian- Devonian Modio Dolomite with Frasnian and older corals. Unconformably overlain by Permian Aiduna Fm deltaic-marine clastics with thin calcarenites and high-rank coal. Tipuma Fm commonly assigned to Triassic but palynomorphs only show Late Permian and M Jurassic ages. M Jurassic Mapanduma and Kopai Fms deep marine M Jurassic shales- sandstones. Etc. Eilanden Metamorphics in E believed to be of Permo-Triassic age. Late magmatism/volcanism (7.1- 2.6 Ma), geochemically more shoshonitic than calk-alkaline)

Amiruddin (1998)- Geologi dan geokimia kerabat granit Anggi Permo-Trias di Blok Kemum, Kepala Burung, Irian Jaya. J. Geologi Sumberdaya Mineral, 8, 83, p. 11-24.
('Geology and geochemistry of the Permo-Triassic Anggi granite in the Kemum Block, Birds Head, Irian Jaya'. Permian- Triassic Anggi Granite along NE/ E margin of exposed Kemum Block. Associated with Kemum Fm metamorphosed Silurian-Devonian sediments (age metamorphism ~222-258 Ma), with contact aureole several 100m to 2 km wide. Mainly S-type granite, peraluminous adamellite, probably from partial melting of pelitic sediments. Also some quartz diorite. Associated with tin/ cassiterite mineralization (see also Amiruddin 2000))

Amiruddin (1999)- Characteristics of allochronous and autochronous suites with relation to the possibility of tin mineralization in Birds Head Region, Irian Jaya. In: I. Busono & H. Alam (eds.) Developments in Indonesian tectonics and structural geology, Proc. 28th Ann. Conv. Indon. Assoc. Geol. (IAGI), Jakarta, 1, p. 121-130.
(Two (Permian-) Triassic granite suites in Birds Head: Netoni Suite (I-type; allochthonous Tamrau Block, 225-245 Ma, post-tectonic?)) and Anggi Suite (S-type; autochthonous Kemum Block, 225-295 Ma, collision-volcanic arc?. Sn-W bearing pegmatitic float in Kemum Block points to presence of tin granite))

Amri, C., B.H. Harahap, P.E. Pieters & G.M. Bladon (1990)- Geology of the Sorong Sheet area, Irian Jaya. 1:250,000. Explanatory Notes. Geol. Res. Dev. Centre (GRDC), Bandung, 70p.
(Explanatory notes with map sheet of western Birds Head/ Salawati-Batanta Islands region)

Amri, C., P. Sanyoto, B. Hamonangan, S. Supriatna, W. Simanjuntak & P.E. Pieters (1990)- Geological map of the Sorong Sheet, Irian Jaya, 2814, 1:250,000. Geol. Res. Dev. Centre (GRDC), Bandung.
(Geologic map of westernmost part of Birds Head and Salawat, Batanta, Kofiau and Gag islands. With Kofiau-Batanta islands Late Eocene- E Miocene island arc volcanics and Sorong Fault tectonic melange zone in N. In S Salawati Late Miocene- Pliocene foreland basin with oil fields. Gag SW of Waigeo composed of ?Late Jurassic- Cretaceous? Gag ophiolite)

Anonymous (1920)- Verslag van de militaire exploratie van Nederlandsch Nieuw Guinee 1907-1915. Departement van Oorlog in Nederl. Indie, Landsdrukkerij, Weltevreden, p. 1-440.
('Report of the military exploration of Netherlands New Guinea 1907-1915'. Book summarizing general reconnaissance expeditions by Netherlands Indies military into various parts of the then unexplored territories of W Papua, including observations on geology)

Anshori, R. (2018)- Chemostratigraphy of the Permian sediments in Bintuni area, Papua Barat Province. Proc. 42nd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA18-77-G, 17p.
(Permian sediments penetrated by several wells in Bintuni area mainly non-marine and deltaic facies, with gas in Vorwata-1 and Mogoi Deep-1 wells. Chemo-stratigraphy aids in stratigraphic correlation. Sediments likely sourced from acid-intermediate provenance)

Anshori, R., E.V. Yudhanto, D. Pasaribu, M.S. Wulansari, S.F. Konyorah & R. Mardani (2010)- Tertiary petroleum system elements overview in the Onin Peninsula, Papua. Proc. 34th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA10-G-036, 11p.
(Outcrop traverse of Onin Peninsula. Two types of E Oligocene- M Miocene limestone: (1) well-bedded argillaceous globigerinid limestones and thin marls (Onin Lst) in S and (2) karst limestone (Ogar Lst) in N. Thickness of Oligocene shale exposed in center and North >5m, but poor source rock)

Aquantino, S., A. Muhartanto & T. Purwanto (2014)- Analisis fasies batugamping pada Formasi Kais berdasarkan data core, well log dan seismik pada lapangan KTR, Blok Walio, Papua Barat. MINDAGI (Trisakti University) 7, 1, p. 45-56.
('Limestone facies analysis of the Kais Formation based on core, well log and seismic data of KTR field, Walio Block, W Papua'. Study of Miocene carbonate buildup of oil field in Salawai Basin. 59 wells, 5 growth phases)

Archbold, N.W. (1981)- Permian brachiopods from western Irian Jaya, Indonesia. Geol. Res. Dev. Centre (GRDC), Bandung, Seri Paleontologi 2, p. 1-25.
(Early Permian (Latest Artinskian- early Kungurian) brachiopods in Aifat Fm in Taminabuam area, Birds Head. Assemblage 'remarkably similar to age-equivalent faunas in Ratburi Lst of (Peninsular) Thailand), suggesting geographic proximity of (Peninsular) Thailand and West Papua')

Archbold, N.W. (1981)- *Quinquenella magnifica* sp. nov. (Chonetidina, Brachiopoda) from the Permian of Irian Jaya, Indonesia: a study of the ontogeny of a chonetid brachiopod. Geol. Res. Dev. Centre (GRDC), Bandung, Seri Paleontologi 2, p. 2, 27-34.

Archbold, N.W. (1981)- New Permian trilobite from Irian Jaya, Indonesia. Geol. Res. Dev. Centre (GRDC), Bandung, Seri Paleontologi 2, p. 35-41.
(New species of Early Permian trilobite)

Archbold, N.W. (1991)- Late Paleozoic brachiopod faunas from Irian Jaya, Indonesia. In: D.I. McKinnon, D.E. Lee & J.D. Campbell (eds.) Brachiopods through time. Proc. Second Int. Brachiopod Congress, Dunedin 1990, Balkema, Rotterdam, p. 347-353.
(M Carboniferous- Permian brachiopods from Aifam- Aifat Formations of Birds Head)

Archbold, N.W. (1991)- Early Permian brachiopoda from Irian Jaya. BMR J. Australian Geol. Geophysics 12, p. 287-296.
(online at: https://d28rz98at9flks.cloudfront.net/81296/Jou1991_v12_n4_p287.pdf)
(New E Permian (E Artinskian) brachiopod fauna from Aiduna Fm, from float boulder in upper Mapia River, S flank of Charles Louis Mountains, SW West Papua. New species of Neochonetes, Chonetinella, Aulostege, etc.. Significant links with E Permian faunas of W Australia and Peninsular Thailand)

Archbold, N.W., C.J. Pigram, N. Ratman & S. Hakim (1982)- Indonesian Permian brachiopod fauna and Gondwana-South-East Asia relationships. Nature 296, p. 556-558.
(First description of late E Permian articulate brachiopods in Birds Head. Assemblage similar to Peninsular Thailand Rat Buri Limestone, suggesting geographical proximity of Thailand and Irian Jaya in E Permian)

Archbold, R., A.L. Rand & L.J. Brass (1942)- Results of the Archbold Expeditions No. 41. Summary of the 1938/1939 New Guinea expedition. Bull. American Museum Natural History 79, 3, p. 197-288.

(Report on geographic-biological expedition to Central Range of West Papua. First westerners to visit Baliem valley. Little or no geology)

Argakoesoemah, R.M.I. (2017)- Foldbelt exploration play in East Papua, Indonesia. Proc. Joint Conv. HAGI-IAGI-IAFMI-IATMI (JCM 2017), Malang, 6p.
(Brief review of under-explored fold-thrust belt of West Papua. Not much new. Proven hydrocarbon system, but, unlike in adjacent Papua New Guinea, no commercial discoveries)

Argakoesoemah, R.M.I. (2018)- Paleogeography of Early Cretaceous Woniwogi and Toro sandstones, and Late Jurassic Kopai sandstone in Papua region (Indonesia) and Papua New Guinea.. Proc. 42nd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA18-257-G, 23p.
(Review of E Cretaceous Woniwogi and Toro Sst and Late Jurassic Kopai Sst as crucial hydrocarbon reservoir targets. All are products of regression pulses during E Triassic- Late Cretaceous overall transgression. Valanginian Woniwogi (Alene) Sst well-developed in Birds Body and extends E into PNG. Berriasian Toro Sst only present in Digul region and PNG. Sediment provenance from Kemum and Arafura landmasses)

Argakoesoemah, R.M.I. & J.D.E. Hughes (2017)- A review of Mesozoic exploration plays in the southern part of onshore East Papua. In: Petroleum systems of the Eastern Indonesia region- Guidance for hydrocarbon exploration in Eastern Indonesia, SKK Migas Memoir 1, Jakarta, p. 427-474.
(Review of Mesozoic hydrocarbon plays in Central Range foldbelt and foreland of eastern West Papua and Papua New Guinea. No commercial oil in Indonesian part of main New Guinea island, but oil shows in Cross Catalina 1 and oil and gas in Kau 2 foreland basin well prove working Mesozoic petroleum system)

Arifin, A.S., A. Fakhri, R.P. Putra, Soffan M.H. & N. Hayati (2017)- The important of new petroleum system developing in mature basin : a preliminary study of Pre Tertiary petroleum system in Salawati Basin. Proc. Joint Conv. HAGI-IAGI-IAFMI-IATMI (JCM 2017), Malang, 4p.
(Kawista 1 well (2013) in W Salawati basin tested oil in Eocene Faumai Lst different from oils in shallower horizons:, very low in oleanane, and probably derived from Pre-Tertiary source (e.g. Fusulina-bearing Permian in Orba 1, Jurassic- Cretaceous in Sele 39 and Klamogun 1)

Aswan, N.I. Basuki & Thaw Zin Oo (2017)- Jurassic and Paleocene ichnofossil study of core camples from Bintuni Basin- Eastern Indonesia- comparison between shallow and deep marine ichnofossil associations. Proc. Joint Conv. HAGI-IAGI-IAFMI-IATMI (JCM 2017), Malang, 4p.
(Study of ichnofossils in neritic Jurassic and deep marine Paleocene reservoir sandstones of unnamed wells in Bintuni basin)

Atmawinata, S., A.S. Hakim & P.E. Pieters (1989)- Geological map of the Ransiki Sheet Area, Irian Jaya, 1:250,000 Scale. Geol. Res. Dev. Center, Bandung.
(Geologic map of E part of Birds Head. Most of sheet Kemum Paleozoic continental terrane with E Triassic Anggi granite intrusive. Kemum Block bordered in NE by Arfak Volcanics, separated by Ransiki Fault. In SE corner NE termination of Lengguru foldbelt and Bintuni Basin)

Atmawinata, S. & N. Ratman (1982)- Struktur geologi Pulau Yapen dan hubunganya dengan Lajur sesar Sorong. Proc. 11th Ann. Conv. Indon. Assoc. Geol. (IAGI), p. 1-6.
('Geological structure of Yapen Island and its relation with the Sorong fault')

Atmawinata, S., N. Ratman & P.E. Pieters (1989)- Geology of the Yapen Sheet Area, Irian Jaya, Explanatory notes and Geological map, 1:250,000 scale, Yapen Sheet, Quadrangles 3114 and 3214, Geol. Res. Dev. Center, Bandung, 33p.

Atmawinata, S., N. Ratman & P.E. Pieters (1989)- Geological map of the Yapen Sheet Area, Irian Jaya, Geological map, 1:250,000 scale, Geol. Res. Dev. Center, Bandung.

(Yapen Island outcrops dominated by Late Eocene- E Miocene Yapen Fm arc volcanics, underlain by basic ?Cretaceous-Paleocene? basic volcanics, and overlain by E-M Miocene Wurui Limestone. Young WNW-ESE fault systems; Jobi Fault system in NE with ophiolitic breccia with serpentinite, gabbro, basalt)

Atmoko, P.W., S. Chandrahayat & R. Avianto (2014)- Identification of geological structures and its implication for hydrocarbon opportunities in Semai III Block, West Papua. Proc. 43rd Ann. Conv. Indon. Assoc. Geol. (IAGI), Jakarta, PIT IAGI 2014-005, 10p.
(Semai III offshore block between Onin Island in NE and Seram Trough in SW. 2D seismic shows NW-SE trending anticline and thrust fault resulting from sinistral strike-slip system of Sorong Fault Zone. Crest of anticline in Semai III blocks higher than surrounding blocks in offshore Semai area)

Audley-Charles, M.G. (1991)- Tectonics of the New Guinea Area. Annual Review Earth Planetary Sci. 19, p. 17-41.
(Review of New Guinea tectonic/ geology. With little or no new data)

Audretsch, F.C. dô, R.B. Kluiving, & W. Oudemans (1965)- Economic geological investigation of the N.E. Vogelkop (New Guinea). Verhandelingen Kon. Nederl. Geologisch Mijnbouwkundig Genootschap, Geol. Serie 23, p. 1-151.
(NE Birds Head geological survey. Arfak Mountains with Oligocene- E Miocene Auwewa Fm volcanics)

Axelrod, D.I. & P.H. Raven (1982)- Paleobiogeography and origin of the New Guinea flora. In: J.L. Gressitt (ed.) Biogeography and ecology of New Guinea, Junk, The Hague, p. 919-941.

Babault, J., M. Viaplana-Muzas, X. Legrand, J. Van Den Driessche, M. Gonzalez-Quijanoe & S.M. Mudd (2018)- Source-to-sink constraints on tectonic and sedimentary evolution of the western Central Range and Cenderawasih Bay (Indonesia). J. Asian Earth Sci. 156, p. 265-287.
(Cenderawasih Bay contains >8 km thick series undated sediments. Suggest sediments started to accumulate in Cenderawasih Bay and onshore Waipoga Basin in Late Miocene since inception of growth of Central Range (12 Ma), resulting in up to 12.2 km sediment accumulation. Basin fill probably mainly siliciclastics from Ruffaer Metamorphic Belt and equivalent in Weyland Overthrust, with minor contributions from ophiolites, volcanic arc rocks and diorites. Local transtensional tectonics may explain unusually high rates of sedimentation in overall sinistral oblique convergence setting)

Bachri, S. (2014)- Kontrol tektonik dan struktur geologi terhadap keterdapatan hidrokarbon di daerah Papua. J. Geologi Sumberdaya Mineral 15, 3, p. 133-141.
(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/53/55)
('Tectonic and structural geological geological controls on the occurrence of hydrocarbon in the Papua region')

Bachri, S. & Surono (2002)- Identification of the active Rombebai fault zone, Papua (Irian Jaya) and its sedimentological aspects. Bull. Geol. Res. Dev. Centre 22, p. 41-48.
(Left-lateral Rombebai Fault zone is onshore continuation of E-W trending Yapen fault zone)

Bachri, S., Surono & S.S. Bawono (1997)- A Pliocene deltaic- tidal flat succession of the Kurudu Formation in Irian Jaya, Eastern Indonesia. J. Geologi Sumberdaya Mineral 7, 68, p. 11-20.
(Outcrop study of Pliocene Kurudu Fm sands-shales at S coast of Kurudu Island near Yapen, off NW New Guinea mainland coast. Kurudu Fm unconformably overlies ?Miocene Jobi Ophiolite Breccia, Miocene Wurui Lst and Late Eocene- E Miocene Yapen Volcanics. Provenance 'Recycled Orogen', probably from Yapen Volcanics and Mesozoic- E Tertiary Rosburi Schist)

Baharuddin (2007)- Ciri petrologi dan geokimia batuan gunungapi Yapen, Papua. J. Sumber Daya Geologi 17, Spec. Issue (163), p. 3-10.

('Petrology and geochemistry of volcanic rocks of Yapen, Papua'. Volcanic rocks exposed on Yapen mainly basalt-andesites of Tertiary Arfak Volcanic complex. Geochemistry of island arc type, inferred to be related to subduction of Pacific Plate beneath Papua continental crust)

Bailey, S.W., J.F. Banfield, W.W. Barker & G. Katchan (1995)- Dozyite, a 1:1 regular interstratification of serpentine and chlorite. American Mineralogist 80. p. 65-77.
(Dozyite new mineral involving interstratification of serpentine and chlorite units. Occurs as colorless crystals in altered skarn adjacent to Ertsberg East copper-gold mine in W Papua. Named after J.J. Dozy, Dutch Shell geologist who discovered and named Ertsberg ore province in 1936)

Bailly, V., M. Pubellier & J.C. Ringenbach (2008)- Structure of the Lengguru fold-and-thrust belt, New Guinea island: consequence of rapid kinematic changes. Abstracts 33rd Int. Geol. Congress, Oslo 2008 *(Abstract)*
(Main structures of Lengguru Foldbelt controlled by Late Miocene- E Pliocene NE-SW compression against ophiolitic or arc backstop. Thin-skinned thrusting of Mesozoic and Tertiary sediments over previously structured basement followed by thick-skinned thrusting. Late Pliocene-Quaternary deformation (still active) is extensional with exhumation of Wandamen Metamorphic Complex in internal zone and NE-SW collapses along high-angle normal faults (Triton Bay) cross-cutting folds in external zone. Structuring of LFTB over short time; NE-SW compression in Late Miocene-E Pliocene and Late Pliocene-Quaternary extension in whole range)

Bailly, V., M. Pubellier, J.C. Ringenbach, J. de Sigoyer & F. Sapin (2009)- Deformation zone ójumpsô in a young convergent setting; the Lengguru fold-and-thrust belt, New Guinea Island. Lithos 113, p. 306-317.
(online at: http://www.geologie.ens.fr/spiplabocnrs/IMG/pdf/Bailly_et_al-_2009.pdf)
(Lengguru foldbelt young orogen. Shortening ceased recently and now under extension. Two superimposed prisms of stacked Mesozoic marine sediments of Australian margin against crustal buttress, formed after 11 Ma. Internal part of Lengguru fold belt active E-W extension, coeval with transition from compressive to transtensional regime in C Range, and onset of Tarera-Aiduna and Paniai left-lateral faults. Late Miocene NE-SW compression linked to subduction. Evolution of belt reflects rapid changes in accommodation of oblique shortening, with isolated orogenic wedge of Lengguru fold-and-thrust belt left to collapse. At lithospheric scale, deformation remains rooted at suture zone, but at surface shortening spread over large area in short time span prior to being transferred to other plate boundary)

Bailly, V., J. de Sigoyer, M. Pubellier & J.C. Ringenbach (2011)- The Bird's Neck: new data, new interpretation. Proc. 35th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA11-G-229, 7p.
(Lengguru foldbelt formed by Late Miocene- E Pliocene NE-SW compression linked to subduction, followed by Late Pliocene- Quaternary extension in whole range and exhumation of high pressure metamorphic rocks. Last stage linked to deformation zone jump to S onto Seram wedge. Wandamen Peninsula metamorphics new high P and T estimates (S1 high P schistosity ~12 kbar, 600°C, followed by S2 N-S stretching at 6-8 kbar, 680-730°C). Zircon metamorphic rims in samples characterized by high P paragenesis ages of ~8-7 Ma, zircon ages from more retrogressed samples ~5- 6 Ma. Zircon cores ages of 388±27 Ma, 636±32, 736±30 Ma and 1484±49 Ma)

Baker, G. (1955)- Basement complex in the Cycloop Ranges-Sentani Lake region of Dutch New Guinea. Part 1. Distribution, nature and chemical composition. Nova Guinea 6, 2, p. 307-328.
(Cyclops Ranges of N New Guinea metamorphic rocks with dominant amphibole minerals actinolite-glaucophane. With serpentinites (derived from harzburgite and dunite), gabbro, tholeiitic dolerite)

Baker, G. (1956)- Basement complex in the Cycloop Ranges-Sentani Lake region of Dutch New Guinea. Part II: Opaque minerals in the basement complex rocks. Nova Guinea 7, 1, p. 15-31.

Baker, G. (1956)- Basement complex in the Cycloop Ranges-Sentani Lake region of Dutch New Guinea. Part III: Comparisons, suggested origin and formational history of the basement complex rocks. Nova Guinea 7, 1, p. 31-39.

Baldwin, S.L., P.G. Fitzgerald & L.E. Webb (2012)- Tectonics of the New Guinea Region. Annual Review Earth Planetary Sci. 40, p. 495-520.

(online at: http://www.uvm.edu/~lewebb/papers/Baldwin%20et%20al%202012%20New%20Guinea.pdf)
(New Guinea region evolved in obliquely converging Australian-Pacific plate boundary zone, with microplate formation and rotation, lithospheric rupture to form ocean basins, arc-continent collision, subduction polarity reversal, collisional orogenesis, ophiolite obduction and exhumation of high-pressure metamorphic rocks)

Baline, L.M. (2007)- Hydrothermal fluids and Cu-Au mineralization of the Deep Grasberg porphyry deposit, Papua, Indonesia. Master's Thesis University of Texas, Austin, p. 1-269. *(Unpublished)*
(Deep Grasberg is deepest explored part of Grasberg Igneous Complex (GIC) at elevations between 2450-3050m (>1100m below pre-mining surface). Copper-gold deposit hosted by three quartz-monzonite to diorite units, emplaced at ~3 Ma)

Bar, C.B., H.J. Cortel & A.E. Escher (1961)- Geological results of the Star Mountains (Sterrengebergte) expedition (Central Range, Netherlands New Guinea). Nova Guinea (Geology) 4, p. 39-99.
(Central Range characterized by block faulting rather than folding, is bordered to N by intensely folded metamorphic complex and to S by relatively stable zone. Basic igneous intrusive and extrusive rocks overlain by hard, silicified fine-grained probably lower Paleozoic clastics, Mesozoic Bon and Kembelangan Fms and thick Upper Tertiary deposits)

Bar, C.B. & K.A. Rijsterborgh (1958)- Geological survey of the East Digoel hinterland. Nederlands Nieuw Guinea Petroleum Maatschappij (NNGPM), Geol. Report 441, p. . *(Unpublished)*

Bartstra, G.J. (ed.) (1998)- Bird's Head approaches. Modern Quaternary Research in Southeast Asia 15, Balkema, Rotterdam, p. 1-258.
(Symposium volume with geologic overviews of Birds Head, followed by archeology papers)

Beets, C. (1986)- Neogene Mollusca from the Vogelkop (Bird's Head Peninsula), West Irian, New Guinea. Scripta Geologica 82, p. 101-134.
(online at: www.repository.naturalis.nl/document/148746)
(Description of molluscs collected by BPM in Klasaman Fm of West Birds Head in 1930. Subsequently dated as 'Late Miocene- Plio-Pleistocene' on basis of foraminifera by NNGPM. 35 species identified. Age determination difficult. Some species belong to genera whose living species are restricted to Australian waters)

Belford, D.J. (1974)- Foraminifera from the Ilaga valley, Nassau Range, Irian Jaya. Bureau Mineral Res. Geol. Geoph. Bull. 150, p. 1-26.
(online at: www.ga.gov.au/corporate_data/116/Bull_150.pdf)
(Foraminifera from rocks collected by Dow on way to Carstensz peak include Late Eocene (Discocyclina, Nummulites, Lacazinella, etc.), Late Oligocene and E-M Miocene larger forams from Carstensz limestone and Late Oligocene N3 planktonics from marly interbeds)

Belford, D.J. (1989)- Early Eocene planktonic foraminifera, Irian Jaya. Geol. Res. Dev. Centre (GRDC), Bandung, Seri Paleontologi 5, p. 22-49.
(Description of rich Early Eocene zone P9 planktonic foram fauna from deep water calcareous siltstones in Lengguru foldbelt, Birds Neck, W Papua)

Bemelmans, J.L.H. (1955)- Verslag van een geologisch onderzoek in de oostelijke vogelkop, Nieuw - Guinea- Slotrapport. IIe Technische Hogeschool Expeditie 1953, Delft, TH Geol. Lab. Rapport 10, p. 1-39.
('Report on a geological investigation of the eastern Birds Head- Final report of 2nd geologic expedition of Delft Technical University')

Bemelmans J.L.H. (1956)- Uebersicht der Ergebnisse der II geologischen Expedition der Technischen Hochschule nach Niederlandisch Neu Guinea in 1953. Nova Guinea, n.s., 7, 2, p. 147-152.
('Overview of the results of the 2nd geologic expedition of Delft Technical University to Netherlands New Guinea in 1953'. Investigated economically unimportant Plio-Pleistocene lignite bed S of Sorong and possible

ore deposits in granite contact zones of Anggi lake and Ransiki regions. Evidence of pegmatitic- pneumatolytic processes, but no economically significant ore deposits found)

Bensaman, B., R. Al Furqan, M.F. Rosana & E.T. Yuningsih (2015)- Hydrothermal alteration and mineralization characteristics of Gajah Tidur Prospect, Ertsberg Mining District, Papua, Indonesia. In: ICG 2015, 2nd Int. Conf. and 1st Joint Conf. Faculty of Geology Universitas Padjaran and University of Malaysia Sabah, p. 17-25.
(online at: http://seminar.ftgeologi.unpad.ac.id/wp-content/uploads/2016/02/Hydrothermal-Alteration-and-Mineralization-Characteristics-of-Gajah-Tidur-Prospect-Ertsberg-Mining-District-Papua-Indonesia.pdf)
(Gajah Tidur prospect is deepest explored part of Grasberg Igneous Complex at elevation 1600- 3000m, almost 2.5 km below pre-mining surface. Bottom of Grasberg Cu-Au porphyry ore body seems to terminate at ~2750m elevation)

Benz, H.M., M. Herman, A.C. Tarr, G.P. Hayes, K.P. Furlong, A. Villasenor, R.L. Dart & S. Rhea (2013)- Seismicity of the Earth 1900-2012, New Guinea and vicinity. U.S. Geol. Survey (USGS) Open File Report 2010-1083-H, 1p.
(online at: http://pubs.usgs.gov/of/2010/1083/h/)
(Earthquake distributions from Sulawesi/Sumba in W to New Hebrides Trench in E)

Bernadi, B., A. Reksahutama, I.G.A.N. Intan, Sarah, D.K. Duha, E.S. Silalahi & D. Miraza (2018)- Revitalization of Walio mature oil fields by identifying untapped oil in low quality reservoirs. Proc. 42nd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA18-158-E, 28p.
(Walio oil field 1973 discovery in Salawati Basin, mainly producing from Miocene-Kais reefal limestone. Producing since 1975 from >300 wells, with oil production peak at 57,800 BOPD in 1977-1978. Current oil production ~2200 BOPD with >99% water-cut. Oil API 33.1°. Strong aquifer support contributed to rel. high reservoir recovery factor (~44%). Poor-quality reservoir intervals may still be untapped))

Bertoni, C. & J.A. García (2012)- Interplay between submarine depositional processes and recent tectonics in the Biak Basin, Western Papua, Eastern Indonesia. Berita Sedimentologi 23, p. 42-46.
(online at: www.iagi.or.id/fosi/)
(Bathymetry and seismic data suggest offshore Biak Basin, between Biak and Yapen Islands, is transtensional pull-apart basin. Deposition along basin margins is strongly influenced by young, active faulting)

Biantoro, E. & A. Luthfi (1999)- The pre-collision basin configuration in Bintuni area, Irian Jaya: an alternative idea of hydrocarbon potential in Pre-Tertiary sediments. In: I. Busono & H. Alam (eds.) Developments in Indonesian tectonics and structural geology, Proc. 28th Ann. Conv. Indon. Assoc.Geol. (IAGI), Jakarta 1999, 1, p. 17-32.
(Bintuni Basin three tectonic phases: Permo-Triassic pre-rift, Jurassic- E Tertiary synrift (NW-SE half-grabens and re-activated folds) and Tertiary syntectonic phase. Latest tectonic phase Plio-Pleistocene (Sorong FZ, Lengguru foldbelt))

Bijlmer, H.J.T. (1938)- De Mimika-expeditie 1935-1936 naar centraal Nieuw Guinea. Tijdschrift Kon. Nederlands Aardrijkskundig Genootschap (2), 54, p. 240-260.
(Summary of (mostly anthropological) Mimika Expedition to W part Central Range of West Papua)

Biq, C.C. (1978)- Taiwan vis-a-vis New Guinea: a comparison of their continent-arc collisions. Acta Oceanographica Taiwanica 8, p. 22-42.
(online at: tao.wordpedia.com/pdf_down.aspx?filename=JO00001053_8_22-42)
Taiwan and New Guinea collisional belts represent comparable continental platform- foldbelt- arc (ocean) successions. Sutures on both islands are zone of ophiolitic melange)

Birt, C., B. Boyd & A. Nugraha (2015)- Evolution and karstification of the Eocene-Miocene carbonates overlying the Tangguh gas fields in Western Papua- observations from 3D seismic and impact on drilling operations. Proc. 39th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA15-G-302, 17p.

(Tangguh structures NW-SE trending anticlines formed in Late Eocene- Oligocene due to collision between Australian and Pacific plates, modified by Late Miocene-Pliocene transpression, when Lengguru Foldbelt and Bintuni foreland basin developed. Eocene-Miocene Faumai and Kais karsted carbonates overlie Jurassic-reservoired gas fields of Tangguh area and present significant drilling challenges. E-M Eocene Faumai Fm with angular unconformity below E-M Miocene Base Kais (missing time-gap ~14 Myrs) (not recognized as significant time-gap elsewhere in Birds body of Papua?)

Birt, C., S. Dee, S. Wospakrik & M. Fitriannur (2017)- Estimating the amount of lateral movement on re-activated strike slip faults at the Tangguh gas fields- implications for reservoir mapping and structural compartmentalization. Proc. 41st Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA17-389-G, 24p.
(Bintuni Bay area with Tangguh gas fields with 3-way and 4-way closures formed by strike-slip movement. Long tectonic history: (1) Permian extension generated NW-SE grabens; (2) Inversions in Late Triassic, causing truncations at Base Jurassic unconformity and onlapping E-M Jurassic, thickening to S and E;(3) ?M-L Eocene-Oligocene ENE-WSW left-lateral strike-slip faults, with ~2 km or more displacement, and truncation at Base Oligocene unconformity (base Kais carbonate); (4) Late Miocene- E Pliocene tilting due to flexural loading of Lengguru FB, and (5) Late Pliocene-Pleistocene left-lateral strike slip after Lengguru FB lockup, with several 100m of displacement)

Bladon, G.M. (1988)- Catalogue, appraisal and significance of K-Ar isotopic ages determined for igneous and metamorphic rocks in Irian Jaya. Geol. Res. Dev. Centre (GRDC), Bandung, Prelim Geol. Report, p. *(Unpublished)*
(2.2-2.9 Ma intrusions in Birds Head, Enarotali, Waghete, etc., areas (Pigram & Sukanto 1989). Netoni granite in N Birds Head hornblende K-Ar ages between 241-208 Ma, but younger ages from biotite, plagioclase. Anggi Granite 243-225 Ma, Wariki Granodiorite (258-226 Ma, etc.)

Boehm, G. (1913)- Unteres Callovien und Coronaten-Schichten zwischen MacCluer Golf und Geelvink-Bai. Nova Guinea- Resultats des expeditions scientifiques a la Nouvelle Guinee en 1903, 6, Geologie, 1, Brill, Leiden, p. 1-20. *(online at: https://ia800301.us.archive.org/10/items/novaguinearsulta61913nede/novaguinearsulta61913nede.pdf)*
('Lower Callovian and Coronatus beds between MacCluer Gulf (Bintuni Bay) and Geelvink (=Cenderawasih) Bay' M Jurassic (Bajocian- Lower Callovian) ammonites collected from Upper Aramasa River, S of Bintuni Bay, and by Wichmann from Mamapiri and Papararo rivers in Wendesi area on W side Cenderawasih Bay. Most common species Macrocephalites keeuwensis and Phylloceras mamapiricum)

Boro, H. & B. Sapiie (2003)- Structural geology of Ertsberg intrusion and its relationship to Papua foldbelt in the Guning Bijih mining district, Papua. Proc. 29^{th} Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 1-12.
(Two deformation events around Ertsberg mine: (1) Mio-Pliocene NW trending foldbelt, (2) Pliocene left-lateral strike-slip deformation, with emplacement of Ertsberg Intrusion)

Boureau, E. & W.J. Jongmans (1955)- *Novoguineoxylon lacunosum* n.gen., n.sp., bois fossile de la Nouvelle-Guinee hollandaise. Revue Gen. Botanique 62, p. 720-734.
('Novoguineoxylon lacunosum n.gen., n.sp., fossil wood from Netherlands New Guinea'. New wood species of supposedly Jurasssic age from fluvial 'Jass Formation' of Birds Head (but very similar to Australoxylon mondii described from U Permian of East Antarctica; Permian age more likely according to Bamford & Philippe 2001))

Brash, R.W., L.F. Henage, B.H. Harahap, D.T. Moffat & R.W. Tauer (1991)- Stratigraphy and depositional history of the New Guinea limestone group, Lengguru, Irian Jaya. Proc. 20th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 67-84.
(Mobil field program in Lengguru Foldbelt. Extensive Paleocene- early Late Miocene carbonate platform, 1000-1600m thick. 6-7 zones distinguished. Middle-Late Eocene limestone in backreef facies with with Lacazinella wichmanni. In most places Early Oligocene unconformable over M Eocene. After Rupelian erosion (with reworked Eocene clasts) carbonate deposition resumed by latest E Oligocene with deposition of Sirga Fm with Nummulites fichteli and Lepidocyclina (Eulepidina) (zone Td))

Broili, F. (1924)- Zur Geologie des Vogelkop (N.W. Neu-Guinea). Dienst Mijnbouw Nederlandsch Oost-Indie, Wetenschappelijke Mededeelingen 1, p. 1-15.
('On the geology of the Birds Head (NW New Guinea)'. Early paper on Birds Head geology, recognizing Permo-Carboniferous with brachiopods (Chonetes, Martinia) and solitary coral (Amplexus coralloides) from Kamoendan River area, Late Jurassic (Oxfordian) with belemnites (Belemnites gerardi) and molluscs (Inoceramis galoi, Posidonomya) from Itegere River, NE Birds Head, etc. Good cross-section)

Brouwer, H.A. (1924)- Bijdrage tot de geologie der Radja Ampat eilanden-groep (Waigeoe, Salawati, etc.). Jaarboek Mijnwezen Nederlandsch Oost-Indie, Verhandelingen 52 (1923), p. 63-136.
(‘Contribution to the geology of the Raja Ampat islands’. Early paper on geology of Waigeo, N Salawati, Pulau Snapan, Batang Pale and Jen islands)

Bulman, O.M.B. (1964)- Lower Palaeozoic plankton. Quart. J. Geol. Soc. London 120, p. 455-476.
(General review of graptolites, with mention of Late Silurian Monograptus turriculatus from Kemum Fm of North Central Birds Head, collected by NNGPM geologists)

Casarta, L.J., J.P. Salo, S. Tisnawidjaja & S.T. Sampurno (2004)- Wiriagar Deep: the frontier discovery that triggered Tangguh LNG. In: R.A. Noble et al. (eds.) Proc. Deepwater and Frontier Exploration in Asia & Australia Symposium, Jakarta, Indon. Petroleum Assoc. (IPA), p. 137-157.
(Wiriagar Deep-1 first commercial pre-Tertiary gas discovery in Indonesia (1994). Five subsequent gas discoveries combined in Tangguh LNG Project, with reserve potential of 24 TCF. Two main M Jurassic reservoir horizons, sourced from Late Permian coals. Unconformity between Late Permian- Jurassic, with Triassic sediments generally absent or thin redbeds. Jurassic sands shallow marine in transgressive systems tract, onlapping ‘Permo-Triassic Rift Unconformity’ in N direction. Cretaceous uplift, Late Cretaceous subsidence, Oligocene early compression phase, Miocene NW-SE trending anticline formation. Late Miocene-Pleistocene Bintuni Basin foreland creation lead to maturation)

Challinor, A.B. (1989)- Early Cretaceous belemnites from the central Bird's Head, Irian Jaya, Indonesia. Publ. Geol. Res. Dev. Center, Bandung, Seri Paleontologi 5, p. 1-21.
(Description of belemnites from central Birds Head collected by Skwarko from Jass Fm calcareous mudstone and sandstone, assigned Hauterivian age)

Charlton, T.R. (1991)- Evolution of the Sorong Fault Zone, Northeast Indonesia. American Assoc. Petrol. Geol. (AAPG) Bull. 75, 3, p. 75.
(Abstract only; Sorong FZ zone of left-lateral shear at triple junction of three plates, with fragments of New Guinea margin detached and translated W until collision with E margin of Eurasia in Sulawesi. Recent investigations suggest less mobilist interpretation. Closest inter-island geological correlations are between geographically closest islands (e.g. Banggai-Sula-S Obi; N Obi-Bacan; W Halmahera-E Halmahera-Waigeo; Misool-Buru-Seram), favoring more conservative reconstructions. Although arc-continent collision started in New Guinea in M Oligocene and slightly later in Sulawesi, SFZ did not develop before Late Miocene)

Charlton, T.R. (1996)- Correlation of the Salawati and Tomori basins, eastern Indonesia: a constraint on left-lateral displacements of the Sorong fault zone. In: R. Hall & D. Blundell (eds.) Tectonic evolution of Southeast Asia, Geol. Soc. London, Spec. Publ. 106, p. 465-481.
(Birds Head Salawati Basin and E Sulawesi Tomori Basin similar Mesozoic-Tertiary stratigraphies and may have formed one single basin prior to the development of the Sorong Fault Zone)

Charlton, T.R. (1998)- Yapen island: a right-lateral paradox in the left-lateral ôNorth New Guinea megashearö: implications for the biogeography and geological development of the Bird's Head, Irian Jaya. In: J. Miedema et al. (eds.) Perspectives on the Bird's Head of Irian Jaya, Indonesia, Editions Rodopi, Amsterdam, p. 783-796.
(Early movement along Yapen Fault Zone (M-L Miocene- E Pliocene); left lateral, since later E Pliocene. Proposes Pliocene anticlockwise rotation of Birds head as mechanism for opening of Cenderawasih Bay)

Charlton, T.R. (2000)- Late Cretaceous evolution of the Birdôs Head, Irian Jaya: a failed rift ? AAPG Int. Conf., Bali 2000 *(Abstract)*
(Late Cretaceous Jass Megasequence bathyal succession with local volcanics varies in thickness and developed above Intra-Cretaceous unconformity. Sediments above unconformity onlap onto structural high near Kalitami-1, C Bintuni Basin. Late Cretaceous Birds Head was site of N-S extension, probably related to separation of continental terrane from N of E Irian Jaya/PNG. Extension started in ~Turonian and continental margin terrane separated from Greater Australia in Maastrichtian. By end-Cretaceous C and S Bird's Head formed subsiding block-faulted terrane, with emergent Kemum block high to N. Oligocene initiation of arc-continent collision produced structures in Mesozoic section and structural ridges on which Miocene Kais reefs nucleated)

Charlton, T.R. (2010)- The Pliocene-Recent anticlockwise rotation of The Bird's Head, the opening of the Aru Trough- Cendrawasih Bay sphenochasm, and the closure of the Banda double arc. Proc. 34th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA10-G-008, 18p.

Chevallier, B. & M.L. Bordenave (1986)- Contribution of geochemistry to the exploration in the Bintuni Basin. Proc. 15th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 1, p. 439-460.
(Late Tertiary clastics and carbonates in Bintnui Basin marginal source potential and mostly immature. Oils from Wasian, Mogoi, Wiriagar thermally mature. Mogoi and Wasian oils may be sourced by Permian Aifat Fm, Wiriagar oil from M Jurassic)

Cloos, M. (1997)- Anatomy of a mine: the discovery and development of Grasberg. Geotimes Jan. 1997, p. 16-20.

Cloos, M. (1997)- Geology and the Grasberg: a model for joint industry and academic research. Geotimes, Sept. 1997, p. 19-22.

Cloos, M. (2008)- Grasberg porphyry copper-gold deposit, Papua, Indonesia- structural setting and hydrothermal system. In: The Pacific Rim: mineral endowment, discoveries and exploration frontiers, Proc. Pacrim 2008 Conference, Gold Coast, p. 3-6.

Cloos, M. (2013)- Origin of the giant Cu-Au ore bodies of the Ertsberg District in Papua, Indonesia: collisional delamination, a bubbling magma chamber, and throttling cupolas. In: N.I. Basuki (ed.) Proc. Papua and Maluku Mineral Resources, Indon. Soc. Econ. Geol. (MGEI) Ann. Convention, Kuta, Bali, p. 151-158.

Cloos, M. & T.B. Housh (2008)- Collisional delamination in New Guinea: implications for porphyry-type Cu-Au ore formation. In: J.E. Spencer & S.R. Titley (eds.) Ores and orogenesis: Circum-Pacific tectonics, geologic evolution and ore deposits, Arizona Geol. Soc. Digest 22, p. 235-244.

Cloos, M. & B. Sapiie (2013)- Porphyry copper deposits: strike-slip faulting and throttling cupolas. Int. Geology Review 55, 1, p. 43-65.
(Continuation of Sapiie & Cloos (2013) paper of Grasberg C-Au deposit in Central Range of W Papua. Porphyry copper ore deposits form where strike-slip movements are concurrent with early stages of deep-seated bubbling (6 km) along walls of rapidly cooling stock of magma. Supergiant deposits form where bubbling front extends into top of parent batholith)

Cloos, M., B. Sapiie, A. Quarles van Ufford, R.J. Weiland, P.Q. Warren & T.P. McMahon (2005)- Collisional delamination in New Guinea: the geotectonics of subducting slab breakoff. Geol. Soc. America (GSA), Spec. Paper 400, p. 1-51.
(Central Range began to form when Australian passive margin entered N-dipping subduction zone in M Miocene, 15-12 Ma. Jamming of subduction zone at ~8 Ma initiated thick-skinned deformation (Mapenduma anticline basement-involved block). Magma generation between 7.5-3 Ma. Contractional deformation in W Highlands ends at ~4 Ma. Rupturing of subducting lithosphere caused short-lived magmatic event and up to 2.5 km of vertical uplift, starting at ~8 Ma and propagating from W to E at ~150 km/ My)

Cockcroft, P.J., D.A. Gamber & H.M. Hermawan (1984)- Fracture detection in the Salawati basin of Irian Jaya, Proc. 13th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 2, p. 125-151.
(Wireline logging responses in fractured carbonate reservoirs of Salawati Basin)

Colijn, A.H. (1939)- Naar de eeuwige sneeuw van tropisch Nederland. Scheltens & Giltay, Amsterdam, p. 1-286.
('To the eternal snow of tropical Netherlands'. Travel book on first succesful expedition to climb the snow-capped Carstensz peaks in Nieuw Guinea, with geologist Dozy discovering world-class Ertsberg porphyry copper deposit en route to the top)

Collier, B., N. Sabirin; S. Sirait, F.B. Widodo et al. (eds.) (2011)- Tembagapura: the mining community, the uniqueness, and the natural beauty of our surroundings. PT Freeport Indonesia, p.

Collins, J.L. & M.K. Qureshi (1977)- Reef exploration in the Bintuni Basin and Bomberai Trough. Proc. 6th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 2, p. 43-67.
(Bintuni Basin over 22,000' of Tertiary marine carbonates and shales. In SUN contract blocks E Tertiary broad carbonate platform over most of Bomberai Peninsula. Basinal pelagic limestones E of platform. End Oligocene downwarp of platform margin resulted in W-ward migration of basin and transgression by Klasafet shales and marls. Further subsidence in Plio-Pleistocene time, with deposition of thick shallow marine clastics. Portion of platform likely area for pinnacle reefs development)

Courteney, S., P. Cockcroft, R.S.K. Phoa & A.W.R. Wight (1989)- Indonesia-Oil and Gas Fields Atlas, VI, Eastern Indonesia. Pertamina, p.

Coutts, B P., H. Susanto, N. Belluz, D. Flint & A.C. Edwards (1999)- Geology of the Deep Ore Zone, Ertsberg East Skarn System (EESS), Irian Jaya. Proc. 28th Ann. Conv. Indon. Assoc. Geol. (IAGI), Jakarta, 2, p. 181-202.
(In Indonesian. Similar to Coutts et al. (1999) below)

Coutts, B P., H. Susanto, N. Belluz, D. Flint & A.C. Edwards (1999)- Geology of the Deep Ore Zone, Ertsberg East Skarn System, Irian Jaya. In: G. Weber (ed.) Proc. PACRIM '99 Congress, Bali, Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, p. 539-547.
(Deep Ore Zone in Tertiary Waripi and Faumai Fms carbonates in lower portion of Ertsberg East Skarn System. Ertsberg Mining District underlain by folded Jurassic-Tertiary siliclastic-carbonate formations. Intrusion of igneous bodies post-dates folding and faulting. Formation of skarn system by contact metamorphism during intrusion of Ertsberg Diorite)

Crespin, I. (1961)- Foraminiferal rocks from the Nassau Range, Netherlands New Guinea. Bureau Mineral Res., Canberra, Record 1961/104, p. 1-5.
(online at: www.ga.gov.au/corporate_data/10831/Rec1961_104.pdf)
(Micropaleontology of rocks collected by D. Dow in W Papua Central Range. Localities of Eocene limestone with larger forams (Lacazinella, Nummulites, Asterocyclina, etc.). Meleri River sample near Tiom E Miocene limestone with reworked 'Asian-Pacific' Eocene Pellatispira-Biplanispira. Marls from Ilaga valley with E Miocene planktonic forams)

Crick, R.E. & A.I. Quarles van Ufford (1995)- Late Ordovician (Caradoc-Ashgill) ellesmerocerid *Bactroceras latisiphonatum* of Irian Jaya and Australia. Alcheringa 19, 3, p. 235-241.
(Ordovician nautiloid originally described as Irianoceras antiquum Kobayashi 1971 from Irian Jaya is synonym of Bactroceras latisiphonatum Glenister, described from SE Australia. New material extends geographic range and documents presence of U Caradoc- Lower Ashgill strata in Irian Jaya. (Fossils in nodules, purchased in Karubaga in N part of Central Range; locality unknown; appear to be commonly found near Jurassic-Cretaceous outcrops where no E Paleozoic rocks are known; see also Van Gorsel 2014))

Dam, R.A.C. (1998)- Cenozoic geological development and environmental settings of the Birdôs Head of Irian Jaya. In: J. Miedema et al. (eds.) Perspectives on the Birdôs Head of Irian Jaya, Indonesia. Proc. Conf., Leiden October 1997, Editions Rodopi, Amsterdam, p. 757-781.
(Mainly literature review of Birds Head geological history, contrasting reconstructions of Hall 1996 and Pigram et al. 1985/ Struckmeyer et al. 1993)

Dam, M.A.C. & T.E. Wong (1998)- The environmental and geologic setting of the Bird's Head, Irian Jaya. In: G.J. Bartstra (ed.) Bird's Head approaches; Irian Jaya studies; a programme for interdisciplinary research. Modern Quaternary Research in Southeast Asia 15, Balkema, Rotterdam, p. 1-28.
(Brief review of Quaternary geography and environmental setting and geology of Birds Head peninsula)

Davies, H.L. (2009)- New Guinea, Geology. In: R.G. Gillespie & D.A. Clague (eds.) The encyclopedia of islands, University of California Press, Berkeley, p. 659-665.
(Brief review of geology of New Guinea island)

Davies, H.L. (2010)- Shallow-dipping subduction beneath New Guinea and the geologic setting of the Grasberg, Ok Tedi, Frieda River and Porgera mineral deposits. In: 20th Australian Geol. Convention, Canberra 2010, Geol. Soc. Australia, Abstracts 98, p. 249. *(Abstract only)*
(Late Cenozoic igneous activity in C Range of New Guinea associated with large copper-gold deposits at Grasberg, Ok Tedi, Frieda River, Porgera, etc. May be related to S-ward shallow-dipping subduction of oceanic lithosphere from plate boundary at New Guinea Trench. Slab interpreted from tomography by Tregoning and Gorbatov (2004). S-ward progress of slab beneath island would explain S-ward migration of igneous activity through Late Cenozoic and transfer of stress from N to S front of Papuan Fold Belt)

Davies, H.L. (2012)- The geology of New Guinea - the cordilleran margin of the Australian continent. Episodes 35, 1, p. 87-102.
(online at: www.episodes.co.in/contents/2012/march/p87-102.pdf)
(Elegant overview of West Papua and Papua New Guinea geology. Fold and thrust belt marks outer limit of Australian craton. To N, E and W is aggregation of continental and oceanic volcanic arc terranes that accreted since Late Cretaceous, driven by oblique convergence between Pacific and Indo-Australian plates and include two great ophiolites. Plate boundary is complex system of microplates. In E opening of Woodlark Basin causes extension of continental crust and exhumation of Pliocene eclogite. Similar extensional structures and exhumation of Pliocene eclogite in W New Guinea Wandamen Peninsula. Flat and shallow oblique subduction at New Guinea Trench caused deformation of Plio-Quaternary sediments in Mamberamo Basin, deformation and Pliocene igneous activity in Central Range, and SW motion of Bird's Head)

De Boer, A.J. & J.P. Duffels (1996)- Historical biogeography of the cicads of Wallacea, New Guinea and the West Pacific. Palaeogeogr. Palaeoclim. Palaeoecology 124, p. 153-177.
(Cicadas species distribution explained as result of plate tectonic evolution of E Indonesia/ New Guinea)

Decker, J., S.C. Bergman, P.A. Teas, P. Baillie & D.L. Orange (2009)- Constraints on the tectonic evolution of the Birdôs Head, West Papua, Indonesia. Proc. 33^{rd} Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA-G-139, p. 491-514.
(M Jurassic Tangguh reservoir sandstones in Bintuni Basin interpreted as incised valley that was attached to Australian NW Shelf. Birds Head and translated N at least 500 km and rotated CCW by 50º-90º along dextral strike slip fault system during Late Neogene to current position)

De Graaff, W.P.F.H. (1960)- Tertiary foraminifera from Northwest Dutch New Guinea. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, 63, p. 368-373.
(On foraminifera in samples of Miocene (Te-Tf) limestone from western Birds Head and adjacent islands)

De Groot, P.F. (1940)- Kort verslag over de werkzaamheden van de IIIde expeditie der N.V. Mijnbouwmaatschappij Nederlands Nieuw Guinea in 1938-1939. De Ingenieur in Nederlandsch-Indie (IV), 7, 9, p. 123-135.

('Brief report on the activities of the Third expedition of the Netherlands New Guinea Mining company in 1938-1939'. Minerals explration expedition in Upper Digul, Birim, Moejoe Rivers areas in W Papua, S of Central Range between ~140-141°E near PNG border and in Keerom-Bewani area around Lake Sentani NE West Papua. 'Mijnbouw Maatschappij Nederlandsch Nieuw-Guinea' was consortium lead by Billiton. Locally traces of gold in river alluvium. Not much geology detail. Rock samples described in Van Bemmelen (1940), comments by Terpstra (1941))

De Jong, G., W. Sunyoto & M. Cloos (2015)- Composition, lithochemistry and radiogenic isotopes of porphyritic and equigranular intrusions in the Ertsberg mining District, Papua, Indonesia. In: Proc. PACRIM 2015 Congress, Hongkong, Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, Publ. Ser. 2/2015, p. 347-356. *(Extended Abstract)*
(Ertsberg Mining District with at least six major prophyry intrusions identified (Grasberg, Karume, Lembah Tembaga, Ertsberg, Kay, Wanagon), plus new discovery of hidden porphyry Gajah Tidur. Igneous activities in short time span (3.4- 2.7 Ma zircon ages))

De Jong, G., S. Widodo, B. Antoro, N. Wiwoho, A. Perdana & P.Q. Warren (2008)- Geological review of Broken Limestone surrounding the Cu-Au Grasberg open pit- Papua, Indonesia. Proc. 37th Ann. Conv. Indon. Assoc. Geol. (IAGI), Bandung, 1, p. 813-826.
('Broken Limestone' zones of fractures and karst in mineralized Oligo-Miocene Kais Limestone in NE and SW areas of Grasberg mine, trending parallel to regional NW-SE faults. Kais Fm surrounding Grasberg cut by steep dipping regional NW-SE trending faults (also in 38th Conv. 2009))

De Koning, G. & R.K. Steup (1959)- Geological reconaissance survey of the Meervlakte. Nederlandsch Nieuw Guinea Petroleum Maatschappij (NNGPM), Report 31803, p. *(Unpublished)*
(Geological reconnaissance and gravity survey along Idenburg River)

De Sigoyer, J., M. Pubellier, V. Bailly, F. Sapin & J. Ringenbach (2007)- First discovery of eclogite in West Papua (Wandamen Peninsula). EOS Transactions AGU 88 (52), AGU Fall Mtg. Suppl., San Francisco, p.
(Poster Abstract. Boulders of fresh eclogites and large garnets in schist in Wandamen Peninsula, in zone of oblique Pacific- Australian plates convergence. E-W metamorphic gradient from unmetamorphosed Lengguru sedimentary prism to metamorphic Wandamen Peninsula. Peninsula may represent inner part of Lengguru belt and may be continuation of inner part of C Range of Papua farther East. Eclogite occurs as lenses in metasedimentary rocks. Sediments look like Cenozoic of internal zone of Lengguru FTB. Migmatites and leucogranite cross cut eclogite, indicating later HT event. Miocene pebbles in conglomerate overlying E flank of Wandamen massif without metamorphic/ magmatic pebbles, suggesting eclogite exhumation after Miocene)

De Sigoyer J., C. Francois, A. Cocherie, M. Pubellier, V. Bailly & J.C. Ringenbach (2011)- Very young and fast exhumation, between 8 and 5 Ma, for the high pressure metasediments of Lengguru prism, W Papua. Geophysical Res. Abstracts, 13, EGU2011-6601-1, 2011, 1p. *(Abstract only)*
(High-pressure metasediments with retrogressed eclogites and migmatites in internal part of Lengguru foldbelt (Wandamen Peninsula). Lengguru prism built between 11-2 Ma. Metasediments from N Wandamen show high-P metamorphism, followed by second stage related to N-S stretching. Zircons from metagreywackes show metamorphic rims around inherited cores. Rims sugggest high P event ages of ~8-7 Ma, associated with subduction, followed by exhumation associated with migmatisation only 1-2 Ma after burial (fastest exhumation ever documented for high P rocks))

Dickins, J.M. & S.K. Skwarko (1981)- Upper Palaeozoic pelecypods and gastropods from Irian Jaya, Indonesia. Geol. Res. Dev. Centre (GRDC), Bandung, Seri Paleontologi 2, p. 43-52.
(Early Permian (Artinskian or Kungurian) Aimau Fm pelecypods from Birds Head)

Dipatunggoro, G. (2007)- Nikel lateritik di daerah Tanah Merah, Tablasufa dan Ormo, Kabupaten Jayapura, Propinsi Papua. Bull. Scientific Contr. (UNPAD) 5, 3, p. 173-181.
(online at: http://jurnal.unpad.ac.id/bsc/article/view/8150/3723)

('Lateritic nickel in the Tanah Merah, Tablasufa and Ormo regions, Jayapura Regency, Papua Province'. Up to 6% nickel (associated with Fe, Co and Cr) in laterites on weathered ultramafic rocks around Jayapura. Pretertiary ultramafic and metamorphic rocks of uplifted and exposed since E Miocene- present tectonics)

Djoehanah, S., S. Indarto & M.S. Siregar (1996)- Penyebaran foraminifera besar dalam batugamping di daerah Wamena, Irian Jaya. In: Sampurno et al. (eds.) Pros. Seminar Nasional Geoteknologi III, LIPI, Bandung, p. 462-472.
('Distribution of larger foraminifera limestones in the Wamena area, Irian Jaya'. Eocene- Miocene New Guinea Limestone in Wamena area ~240m thick. Basal part with Eocene Nummulites, Discocyclina, Pellatispira. Oligo-Miocene part with Lepidocyclina, Miogypsina, Spiroclypeus, etc. No plates)

Djuharlan, J. (1993)- Structural control of Ertsberg East orebody, Tembagapura, Irian Jaya. Proc. 22nd Ann. Conv. Indon. Assoc. Geol. (IAGI), Bandung, 2, p. 906-912.
(Ertsberg East skarn mineralization in Eocene-Oligocene limestone, associated with Pliocene (3.1 Ma) biotite-hornblende diorite. Orebody continuous for ~1.5 km from surface (~4100-2890m))

Djumhana, N. & A.M. Syarief (1991)- Pliocene carbonate build-ups a new play in the Salawati Basin, Irian Jaya. Proc. 19th Ann. Conv. Indon. Assoc. Geol. (IAGI), Bandung, 1, p. 119-135.
(Traditional Salawati Basin play is Miocene Kais Fm carbonate, but additional detrital limestone play in overlying Pliocene Klasafet and buildups in Late Pliocene Klasaman Fms. Terumbu 1 well, in NW Salawati basin 1.8 km W of Klalin 1, tested 17.5 MMCFD of biogenic gas in 758' thick coralline Pliocene buildup)

Dolan, P.J. & Hermany (1988)- The geology of the Wiriagar field, Bintuni Basin, Irian Jaya. Proc. 17th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 53-87.
(1981 oil discovery in Upper Miocene Kais Limestone. Trap combination of structural, stratigraphic and diagenetic processes. Reefs probably developed on local highs, produced by Late Oligocene folding. Subsequent E-W directed compression in Pliocene created structural trap. Most likely source of oil is Jurassic Kembelangan Fm, although more than one source suggested by fluid inclusions and geochemical analysis)

Douglas, E.A. (1913)- Korte beschrijving van eenige rolstenen uit de Digoelrivier verzameld door den mijningenieur O.G. Heldring. Jaarboek Mijnwezen Nederlandsch Oost-Indie 40 (1911), Verhandelingen, p. 199-202.
('Brief descriptions of float from Digul river, collected by Heldring': granite, syenite, diorite, gabbro, andesite)

Douglas, E.A. (1913)- Korte beschrijving van eenige rolstenen uit de Eilanden-rivier verzameld door den mijningenieur O.G. Heldring. Jaarboek Mijnwezen Nederlandsch Oost-Indie 40 (1911), Verhandelingen, p. 203-204.
('Brief descriptions of float from Eilanden river, collected by mining engineerHeldring'. Description of rock types in Eilanden River, S of Central Range, incl. diorite, diabase, etc.)

Douglas, E.A. (1913)- Korte beschrijving van eenige rolstenen uit de Setakwa-rivier verzameld door den mijningenieur O.G. Heldring. Jaarboek Mijnwezen Nederlandsch Oost-Indie 40 (1911), Verhandelingen, p. 205-206.
('Brief descriptions of float from Setakwa river, collected by mining engineer Heldring': diorites)

Douville, H. (1923)- Sur quelques foraminiferes des Moluques orientales et de la Nouvelle Guinee. Jaarboek Mijnwezen Nederlandsch-Indie 50 (1921), Verhandelingen 2, p. 107-116.
('On some foraminifera from the eastern Moluccas and from New Guinea'. Brief description of Eocene larger forams in samples collected by Brouwer in Halmahera (Nummulites, Discocyclina, Alveolina), Roti (large Nummulites, Discocyclina), Seram (E Miocene Lepidocyclina in breccia with reworked angular clasts of Upper Cretaceous pelagic limestone), New Guinea, Kai Besar (rounded fragments of Eocene Lacazina in quartz sandstone, etc. No location info)

Dow, D.B. (1968)- A geological reconnaissance in the Nassau Range, West New Guinea. Geologie en Mijnbouw 47, 1, p. 37-46.
(https://drive.google.com/file/d/0B7j8bPm9Cse0UTVnaWlrNVh3LVk/view)
(1961 reconnaissance of N side of W Papua Nassau Range (NE of Carstenz Peak/ Puncak Jaya) found clean quartz sandstone of probable Mesozoic age below U Eocene- E Miocene Tertiary Carstensz Limestone. Sedimentation punctuated, probably in Lower Miocene, by andesitic volcanism. Well-preserved erosion features and moraine deposits due to extensive late Pleistocene glaciation above ~12,000'. Tertiary rocks generally only gently folded. Present-day erosion almost entirely due to dissolution of limestone. Long, slightly curved, faults of considerable vertical displacement show many feature characteristic of transcurrent faults)

Dow, D.B. & B. Hamonangan (1981)- Preliminary geological map of the Enarotali quadrangle, Irian Jaya, 1:250,000. Geol. Res. Dev. Centre (GRDC), Bandung.
(see also 'final' map of Harahap et al. 1990)

Dow, D.B., B. Harahap & S. Hakim (1990)- Geology of the Enarotali Sheet area, Irian Jaya, 1:250,000 (Quad. 3112). Geol. Res. Dev. Centre, Indonesia, Bandung, 57p.
(see also Harahap et al. 1990)

Dow, D.B. & U. Hartono (1982)- The nature of the crust underlying Cendrawasih (Cendrawasih) Bay, Irian Jaya. Proc. 11th Ann. Conv. Indon. Petroleum Assoc., p. 203-210. (also in Bull. Geol. Res. Dev. Centre 6, p. 30-36.
(Much of Cenderawasih Bay is oceanic crust and Pacific Plate island arc volcanics. SW margin Wandamen zone Paleozoic crystalline basement, rocks of continental affinity extending on islands over 50 km into bay. Hydrocarbon potential in bay limited to Neogene sediments which may include thick carbonates. Clastics likely mostly poorly sorted, immature sediments with limited oil source potential)

Dow, D.B. & U. Hartono (1984)- The mechanism of Pleistocene plate convergence along Northeastern Irian Jaya. Proc. 13th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 145-150.
(Main structures along N edge Irian Jaya are probably M Pleistocene, resulting from SW directed relative convergence of Pacific and Australian plates)

Dow, D.B., G.P. Robinson, U. Hartono & N. Ratman (1986)- Geological map of Irian Jaya, 1:1,000,000 scale, Geol. Res. Dev. Center, Bandung.

Dow, D.B., G.P. Robinson, U.B. Hartono & N. Ratman (1988)- Geology of Irian Jaya. Preliminary geological report. GRDC/BMR Irian Jaya Mapping Project Report, Geol. Res. Dev. Center, Bandung, 298p.
(Overview of Irian Jaya geology. See also published version in 2005)

Dow, D.B., G.P. Robinson, U.B. Hartono & N. Ratman (2005)- Geology of Irian Jaya. Geol. Res. Dev. Center, Bandung, Spec. Publ. 32, p. 1-208.
(Printed publication of 1988 GRDC 'preliminary report')

Dow, D.B., G.P. Robinson & N. Ratman (1985)- Large-scale overthrusting during the Pliocene in western Irian Jaya. Bull. Geol. Res. Dev. Centre (GRDC), Bandung 11, p. 29-41.
(Main structural elements of W Irian Jaya formed in Pliocene. K-Ar cooling ages of Wandamen Metamorphics 6.9 and 5.0 Ma. Stratigraphic similarities suggest Birds Head was probably not far removed from Irian Jaya-Australian continent during most of Tertiary. Cenderawasih Bay probably underlain by E Tertiary island arc volcanics originating on Pacific Plate. Weyland Range of Derewo metamorphics, ophiolite and large M Miocene Utawa Diorite intrusion S-directed thrust with 25 km S-ward displacement and 4-5 km of uplift)

Dow, D.B., G.P. Robinson & N. Ratman (1985)- A new hypothesis for formation of Lengguru foldbelt, Irian Jaya, Indonesia. American Assoc. Petrol. Geol. (AAPG) Bull. 69, 2, p. 203-214. *(also in Bull. Geol. Res. Dev. Centre 11, p. 14-28, 1985)*

(Lengguru foldbelt is slab of folded platform sediments at N margin Australian continent and was thrust SW ward, rotated 30-35°, and dragged along transcurrent faults to S)

Dow, D.B. & R. Sukamto (1984)- Western Irian Jaya: the end-product of oblique plate convergence in the Late Tertiary. Tectonophysics 106, 1-2, p. 109-139.
(Late Miocene- Recent tectonic history of Birds Head- Cenderawasih Bay- W Papua area. Birds Head assumed to have been in approximately same relative position since Late Paleozoic. Late Miocene collision of Australia-New Guinea with Pacific arc caused clockwise rotation. Cenderawasih Bay underlain by Pacific domain crust)

Dow, D.B. & R. Sukamto (1984)- Late Tertiary to Quaternary tectonics of Irian Jaya. Episodes 7, 4, p. 3-9.
(online at: www.episodes.co.in/www/backissues/74/ARTICLES--3.pdf)
(Review of 1978-1982 Indonesian-Australian Irian Jaya mapping project. Melanesian Orogeny, started in latest Miocene and continues today, involving underthrusting of Australian continent by Pacific Plate)

Dow, D.B. & R. Sukamto (1984)- Western Irian Jaya: the end-product of oblique plate convergence in the Late Tertiary-Reply. Tectonophysics 121, 2-4, p. 348-350.
(Reply to critique by Pigram (1986) Discussion of Dow & Sukamto (1984) paper, who argued that Birds Head and W Irian Jaya are separate crustal fragments. D&S doubt this as lithologies of Late Paleozoic- mid-Tertiary shelfal sediments in both areas is almost identcal)

Dow, D.B., D.S. Trail & B. Harahap (1984)- Geological data record Enarotali 1:250,000 sheet. GRDC/BMR Irian Jaya Mapping Project Report, p. 1-133.

Dozy, J.J. (1937)- Geologie, topografie. In: A.H. Colijn (1937) Naar de eeuwige sneeuw van tropisch Nederland, Scheltens & Giltay, Amsterdam, p. 231-253.
(Brief description of geology and topography of area traversed during first successful ascent of the previously inexplored Carstensz Peak (Puncak Jaya) by Colijn mountaineering expedition. First report of Ertsberg copper deposit)

Dozy, J.J. (1939)- Geological results of the Carstensz expedition 1936. Leidsche Geol. Mededelingen 11, 1, p. 68-131.
(online at: www.repository.naturalis.nl/document/549782 (text)
and at: www.repository.naturalis.nl/document/549783 (plates)
(Geology along traverse from Timika to Carstensz Peak (Puncak Jaya), W Papua, by NNGPM geologist. Paleozoic- Miocene rocks, generally dipping to N. Oldest rocks Simpang series slates.U Paleozoic sandstones with brachiopods Spirifer and Chonetes cf. variolata. Alpine zone of Carstensz Mts entirely composed of folded Eocene (with Fasciolites, Spiroclypeus)- Miocene (with Lepidocyclina, Miogypsinoides, etc.) limestones. Also discovery of Ertsberg world-class porphyry copper-gold deposit. With chapter by Erdman on fossil molluscs)

Dozy, J.J. (2002)- Vom hochsten Gipfel bis in die tiefste Grube. Entdeckung und Erschliessung der Gold- und Kupfererz- Lagerstatten von Irian Jaya, Indonesien. Bull. Angewandte Geologie 7, 1, p. 67-80.
(online at: www.angewandte-geologie.ch/Dokumente/Archiv/Vol71/7_1Dozy-Erz.pdf)
('From the highest peak to the deepest valley: discovery and development of the copper ore deposits of Irian Jaya'. Large gold-bearing copper-ore deposits of W Papua discovered (by this author) during mountaineering expedition to Carstensz-mountains (4884 m) in fall of 1936. Exploitation of Ertsberg deposit at altitude of 3700m began in 1973, followed by Grasberg at >4000m in 1988. Ore bodies are metasomatic replacement deposits related to magmatic intrusions, pipes and skarn in Tertiary limestones)

Druif, J.H. (1954)- Voorlopig rapport inzake de resultaten der Geologisch Mijnbouwkundige Expeditie der Technische Hogeschool in 1953. Nieuw Guinea Rapport Geol. Lab. Technische Hogeschool Delft 6, p.
('Preliminary report on the results of the geological-mining expedition of Delft Technical University in 1953')

Edwards, P. (1992)- Hydrocarbon exploration in the Central Fold Belt of Irian Jaya. In: Eastern Indonesia Exploration Symposium, IPC, Jakarta 1992, 3p.

(Summary of results of Esso- Pertamina Joint study fieldwork in Central Range of West Papua)

Ego, F. & M. Pubellier (2001)- Onset of post collision strain partitioning (New Guinea). EGS XXVI, Nice 2001. *(Abstract only)*

Ellison, J. (2005)- Holocene palynology and sea-level change in two estuaries in Southern Irian Jaya. Palaeogeogr. Palaeoclim. Palaeoecology 220, p. 291-309.
(SW New Guinea extensive tidal deltas on low gradient equatorial coastline. Palynology of cores in Ajkwa and Tipoeka estuaries showed mangroves at levels well below present tidal range, with tectonic subsidence in recent period, with Late Holocene relative sea-level rise of 0.67 mm/year)

Eloni, Riangguna, M.R.H. Sahidu, I. Panggeleng, C.S. Birt & T. Manning (2016)- From chaos to caves- an evolution of seismic karst interpretation at the Vorwata Field. Proc. 40th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA16-165-G, 21p.
(Vorwata giant gas field in Bintuni Bay in M Jurassic sands, with 15 wells drilled from 2 offshore platforms. Overburden complex and includes thick, karstified carbonate of Kais and Faumai Fms. At Vorwata field angular unconformity between folded Eocene carbonates overlain by gently dipping platform carbonates of Kais Fm. Lost-circulation almost always at one of significant sequence boundaries in Faumai unit, although partial losses often start in Oligocene Unconformity or within overlying Kais platform carbonates. New reprocessing better imaging of karst features)

Endharto, M. (1990)- Pola struktur dan tanan tektonik Irian Jaya serta kaitannya dengan kemungkinan keterdapatan hidrokarbon. Proc. 19th Ann. Conv. Indon. Assoc. Geol. (IAGI), Bandung, 2, p. 91-104.
('Structural geology and tectonic setting of Irian Jaya related to hydrocarbon prospectivity')

Endharto, M.A.C. (1996)- Mendala struktur geologi regional Irian Jaya, implikasi terhadap perangkap hidrokarbon. J. Geologi Sumberdaya Mineral 6, 53, p. 17-26.
('Regional geological structure of Irian Jaya and implications for hydrocarbon traps'. Brief review of W Papua regional geology)

ERI (Earth Resources Institute) (1990)- Geological data from NE Warim, Irian Jaya, Indonesia: results of the 1989/90 fieldwork program. CONOCO, 129p.

Faber, F.J. (1955)- The first geological expedition (1952) of the Technical University at Delft in Netherlands New Guinea. Nova Guinea, New Ser. 6, 1, p. 177-183.
(Summary of survey work in N New Guinea Cyclops Mountains by Delft Technical University in 1952. Mainly evaluation of residual Ni-cobalt ores in laterite cover developed on harzburgite of Cyclops mountains)

Fachri, M., B. Sapiie, W. Sunyoto, S. Widodo, Yudihanri & W. Margotomo (2005)- Analogue fractured reservoir characterization in Grasberg Igneous Complex (GIC) and New Guinea Limestone Group, Papua. Proc. 30th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 1, p. 543-558.
(Study of fractures in limestone and igneous rocks exposed in Grasberg open pit. Numerous shear fractures, interpreted as a result of a left-lateral Riedel shear system trending ~N60°W)

Fearne, M.C. (1985)- Exploration drilling in the Mamberamo Region of Irian Jaya: an operations review. Proc. 14th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 582-603.

Felix, J. (1912)- Uber eine pliocane Korallenfauna aus Hollandisch Neu-Guinea. Berichte Verhandlungen Konigl. Sachsischen Gesellschaft Wissenschaften, Math.-Phys. Klasse, Leipzig, 64, 6, p. 429-445.
(online at: https://babel.hathitrust.org/cgi/pt?id=njp.32101078345475;view=1up;seq=469)
('On a Pliocene coral fauna from Netherlands New Guinea'. Material from Mamberamo River/Van Rees Mountains, North New Guinea. Additional coral species from this area described in Felix (1921, p. 60-61) paper on Borneo corals)

Feuilleteau de Bruyn, W.K.H. (1921)- De Schouten- en Paidadoe eilanden. Mededelingen Encyclopedisch Bureau 21, p. 1-193.
(Geographic- geologic description of Schouten and Paidadioe islands, N of West Papua. Much young coral limestone, also serpentinite and slate with quartz veins, unconformably overlain by sandstones. Coral limestone on Supiori 100m above sea level, in Biak up to 600m above s.l.)

Feuilleteau de Bruyn, W.K.H. (1921)- Contribution a la geologie de la Nouvelle Guinee. Dissertation, Universite de Lausanne, Bull. Lab. Geol., Geogr. Phys. Min. Pal. Universite Lausanne 30, p. 1-172.
(Early work on New Guinea geology as part of 'military exploration' expeditions. Descriptions of N New Guinea (Mamberamo area), S New Guinea and Schouten and Padaido Islands. Identified Late Devonian brachiopods, etc., from Noordwest River float)

Feuilleteau de Bruyn, W.K.H. (1936)- Komen er in het Arfak Gebergte vulkanen voor? Tijdschrift Nieuw Guinea 1, p. 1-6.
('Are there volcanoes in the Arfak Mountains?' On possible presence of active volcanoes in NE Birds Head. Rejected by Tjia (1980) and others)

Fink, D., M. Prentice & J. Peterson (2003)- The last glacial maximum and deglaciation events based on Be-10 and Al-26 exposure ages from the Mt. Trikora region, Irian Jaya, Indonesia. In: 16th INQUA Congress, Shaping the Earth; a Quaternary perspective, Reno, USA, p. 231.
(Paired 10Be and 26Al exposure ages from high altitude Mt. Trikora (~3500m). Five major moraine systems in lower valley section sampled. Last Glacial Maximum in Irian Jaya started at least 21.5 ka ago, reaching peak at ~18 ka. Inner moraine system formed at 15.2 ± 1.2ka during last deglaciation and represents youngest glacial feature here)

Flint, D.E. (1972)- Geology of the Ertsberg copper deposit, Irian Barat, Indonesia. Bull. Nat. Inst. Geol. Mining (NIGM), Bandung 4, 1, p. 23-28.
(Ertsberg copper deposit is black hill at E side of Aghawagon River valley at 3460m elevation in W Papua Central Range (remnant of glacial erosion). First discovered by Dozy in 1936 on mountain climbing expedition. Revisited in 1960 by Freeport party, followed by 1967-1968 drilling campaign. Paleozoic-Mesozoic rel. simple structure, dipping 20-50° N. Exposed ore body 140m above valley floor, extends down 360m)

Fortey, R.A. & L.R.M. Cocks (1986)- Marginal faunal belts and their structural implications, with examples from the Lower Palaeozoic. J. Geol. Soc. London 143, p. 151-160.
(New record of Ordovician (Llanvirn) graptolites in shale from Heluk River, E Irian Jaya (4°25'S, 139°17'E). Assigned to isograptid biofacies and taken as evidence of Ordovician ocean margin here. Also record of early Ordovician graptolites from centre of N Borneo?)

Francois, C., J. de Sigoyer, M. Pubellier, V. Bailly, A. Cocherie & J.C. Ringenbach (2016)- Short-lived subduction and exhumation in Western Papua (Wandamen peninsula): co-existence of HP and HT metamorphic rocks in a young geodynamic setting. Lithos 266-267, p. 44-63.
(Lengguru fold-thrust wedge of W Papua younger than 10Ma and result of oblique and fast subduction of Birds Head under Melanesian Arc. High P rocks in core of wedge in Wandamen peninsula, with metabasic eclogites and amphibolites observed as sheared 'knockers' in Mesozoic metasediments. Metasediments HP (~13-17 kbar; burial depth ~32-44 km); metabasic rocks peak pressure 17-23 kbar and 700-800 °C (burial depth 43-66 km?). U-Pb dating of zircons shows some magmatic cores with ages >300 Ma (= Australian craton margin volcanic arc). Most zircons metamorphic origin and Late Miocene age (5.6± 0.04 Ma- 8.1± 1.1Ma). N- S normal faults cross cut limb of anticline associated with present-day E-W extension. Young metamorphic ages suggest rapid subduction and exhumation event)

Franssen Herderschee, A. (1911)- De wetenschappelijke uitkomsten der Mamberamo-expeditie 1909-ô10. Tijdschrift Kon. Nederlands Aardrijkskundig Genootschap 28, p. 448-461.
('The scientific results of the 1910-1911 Mamberamo expedition')

Fraser, T.H. (2015)- A hydrocarbon exploration history of Papua. Proc. SE Asia Petroleum Expl. Soc. (SEAPEX) Conf., Singapore 2015, 4.2, p. 1-16.
(History of geological and hydrocarbon exploration in W Papua, PNG and Seram. In W Papua two main and 2 minor plays: Permian gas (Mogoi Deep; non-commercial), M Jurassic sandstones gas (Vorwata), Miocene Kais Fm reefal limestones (Jaya, Kasim, Walio) and Plio-Pleistocene gas (Niengo))

Fraser, T. (2016)- Risk and (possible) reward in West Papua: a tale of two PSC's. In: 2016 Technical Symposium Where from, where to, Indon. Petroleum Assoc. (IPA), Jakarta, p.

Fraser, T.H., J. Bon & L. Samuel (1993)- A new dynamic Mesozoic stratigraphy for the West Irian micro-continent, Indonesia, and its implications. Proc. 22nd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 707-761.
(Thorough overview of Mesozoic stratigraphy on and around Birds Head- Bintuni Bay, W Papua. Jurassic-basal Cretaceous subdivided into three 'polysequences', separated by stratigaphic breaks: Inanwatan (Toarcian- Bajocian), Roabiba (Callovian- E Kimmeridgean) and Sebyar (mid-Tithonian- E Valanginian). Cretaceous Jass sequence mainly Coniacian and younger; E -M Cretaceous rocks probably deposited, but eroded probably in Aptian or Albian (or later?))

Friehauf, K.C., S.R. Titley & S.L. Gibbins (2005)- Porphyry-style mineralisation in the Ertsberg Diorite, Gunung Bijih (Ertsberg/Grasberg) District, West Papua, Indonesia. In: T.M. Porter (Ed.) Super porphyry copper and gold deposits - a global perspective, PGC Publishing, Adelaide, 2, p. 357-366.

Froidevaux, C.M. (1977)- Tertiary tectonic history of the Salawati area, Irian Jaya, Indonesia. Proc. 6th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 199-220.
(Same paper as Froideveax 1978)

Froidevaux, C.M. (1978)- Tertiary tectonic history of Salawati area, Irian Jaya, Indonesia. American Assoc. Petrol. Geol. (AAPG) Bull. 62, p. 1127-1150.
(Salawati Island was attached to Irian Jaya during Miocene-E Pliocene reef development, and separated in M Pliocene- Pleistocene, by opening of Sele Strait rift zone, after creation of left-lateral Sorong fault zone. Island moved 17.5 km SW after ~13° CCW rotation. Motion triggered during widespread magmatic intrusion of Sorong fault zone, when basalt infiltrated right-lateral fault system in Sele Strait area. Rifting along three parallel left-lateral strike-slip faults, later site of down-to-NW normal faulting, accommodating subsidence from Pliocene-Pleistocene load from northern basaltic mountains. If Salawati is placed in former Irian Jaya frame, and N compartment of left-lateral Sorong fault zone moved back E, Miocene landscape appears characterized by widespread carbonate development with reefs thriving at edge of early New Guinea landmass facing open sea on W. Original distribution of reefs different from present)

Froidevaux, C.M. (1980)- Radar, an optimum remote sensing tool for detailed plate tectonic analysis and its application to hydrocarbon exploration (an example in Irian Jaya, Indonesia). In: Radar geology; an assessment report of the Radar geology workshop, Jet Propulsion Lab. (JPL), Pasadena, Publ., p. 457-501.
(Geometric, geomorphic, and structural information derived from radar imagery and combined with geologic and geophysical evidences strongly indicates that Salawati Island was attached to Irian Jaya mainland at time of Miocene-lower Pliocene reef development, and that it was separated in M Pliocene- Pleistocene time, opening Sele Strait rift zone. Island moved 17.5 km SW after initial 13° CCW rotation. Rift zone is subsequent to creation of left lateral Sorong fault zone)

Fugro (2007)- Offshore Semai hydrocarbon prospectivity study. Multi-client study, 6 vols. *(Unpublished)*
(Petroleum evaluation study of SW Bintuni Basin between onshore Bintuni/Onin and Seram thrust belt)

Gafoer, S. & T. Budhistrisna (1995)- Geological map of the Sarmi and Bufareh sheets, Irian Jaya, 3313-3314, 1:250,000. Geol. Res. Dev. Centre (GRDC), Bandung.
(Geologic map of central West Papua, N of Central Range and Meervlakte. Part of the 'Pacific Oceanic Domain', with common folding-thrusting as young as Pliocene. Incl. Gauttier Mts, cored by Eocene?- E

Miocene Auwewa Fm volcanics, associated with Eocene-Oligocene Biri Fm limestones, shales and pillow basalts and Late Oligocene- E Miocene Darante Fm reefal limestones interbedded with volcanics. Overlain by folded M-L Miocene Makats Fm flysch-type clastics with ultramafic detritus, Mamberamo Gp clastics and widespread Quaternary? chaotic, sheared rock. Locally common mud volcanoes. Oil seep at Teer River in NE)

Gandler, L.M. (2006)- Calc-silicate alteration and Cu-Au mineralization of the Deep MLZ skarn, Ertsberg District, Papua, Indonesia: M.S. Thesis, University of Texas at Austin, p. 1-273. *(Unpublished)*

Gandler, L.M. & J.R. Kyle (2008)- Stratigraphic controls of calc-silicate alteration and copper-gold mineralization of the Deep Mill Level Zone skarn, Ertsberg District, Papua, Indonesia. In: The Pacific Rim: mineral endowment, discoveries and exploration frontiers, Proc. PACRIM 2008 Conf., Gold Coast, p. 313-317.

Garwin, S. (2013)- The tectonic and geological framework of New Guinea and the relationships to gold copper metallogeny. In: Proc. Papua & Maluku Resources, Indonesian Soc. Econ. Geol. (MGEI) Ann. Conv., Bali, p. 125-138.

Garwin, S. (2015)- The tectonics, geology and gold-copper metallogeny of New Guinea. In: Proc. PACRIM 2015 Congress, Hongkong, Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, Publ. Ser. 2/2015, p. 151-164.
(Since Eocene, New Guinea tectonics driven largely by SW-directed collision of accreted arc terranes with N margin of Australian Craton, and subsequent W-directed transport of these exotic terranes by left-lateral strike-slip fault systems. Two major magmatic belts, both with world-class Cu-Au mineralisation: (1) M-L Miocene Maramuni arc (Frieda River, Nena, Wafi-Golpu, etc. deposits), tied to subduction of Solomon Sea plate beneath NE New Guinea; (2) Medial New Guinea magmatic belt (Grasberg, Ok Tedi, Porgera porphyry and epithermal deposits) localised by dilational zones formed at intersections of NE-trending reactivated basement faults and N-dipping reverse faults related to S-ward progression of Papuan fold belt in Late Miocene- Pleistocene. These deposits probably formed during short mantle-derived magmatic episodes in zones of regional isostatic uplift, attributed to delamination of lithospheric mantle beneath New Guinea)

Gautama, A.B. (1982)- Geologi daerah Carstensz Pyramide- Platen Spitz, Pegunungan Jayawijaya, Irian Jaya. Proc. 11th Conv. Indon. Geol. Assoc. (IAGI), Jakarta, p. 31-54.
(Geology of the Carstensz peaks region (+4884m) near Freeport copper mine, Central Range of West Papua. Outcrops from U Cretaceous- Recent. Paleocene-Oligocene Faumai Lst >2000m thick, with Lacazinella, Alveolina, etc. in lower part. Kais Lst Oligocene- E Miocene. Plio-Pleistocene Birim Fm volcanics)

Gealey, W.K. (1980)- Ophiolite obduction mechanism. In: A. Panayiotou (ed.) Ophiolites, Proc. Int. Ophiolite Symposium, Cyprus 1979, Geol. Survey Dept. Cyprus, Nicosia, p. 228-243.
(Good discussion of ophiolite obduction model. Includes discussion of New Guinea main ophiolite belt along N margin of Central Range of W Papua and PNG and continuing into New Caledonia, where 'ophiolite obduction' is result of Oligocene collision between N Australian passive continental margin and Auwewa volcanic arc. K-Ar ages on gabbros in E New Guinea 147 and 150 Ma (latest Jurassic)

Gerth, H. (1927)- Ein neues Vorkommen der bathyalen Cephalopoden Fazies des mittleren Jura in Niederlandisch Neu Guinea. Leidsche Geol. Mededelingen 2, 3, p. 225-228.
(online at: www.repository.naturalis.nl/document/549577)
('A new occurrence of the bathyal cephalopod facies of the Middle Jurassic in Netherlands New Guinea'. Small collection of M Jurassic ammonites supposedly from the Birds Head (but unlikely from there; Visser and Hermes 1962, p. 54), donated to Leiden Museum by government official from Fakfak. Reportedly from Wairor River and its Weriangki tributary, presumably near Fak Fak. Ammonites in geodes from hard black limestone, similar to those from Cenderawasih Bay and Sula islands. From Werianki River: Macrocephalites keeuwensis, Sphaeroceras cf. bullatum and Peltoceras, probably Callovian age. From Wairori River two Stephanoceras species, probably Bajocian age)

Gerth, H. (1927)- Eine *Favosites* Kolonie aus dem Palaozoikum von Neu-Guinea. Leidsche Geol. Mededelingen 2, 3, p. 228-229.
('A Favosites colony from the Paleozoic of New Guinea'. Brief report on discovery of Paleozoic tabulate coral in dark limestone float in Noord River, S of Central Range, W Papua. Age range of genus is Silurian-Permian (but in Australia most common in U Silurian- M Devonian; JTvG))

Gerth, H. (1965)- Ammoniten des mittleren und oberen Jura und der altesten Kreide von Nordabhang des Schneegebirges in Neu Guinea. Neues Jahrbuch Geol. Palaont., Abhandl. 121, 2, p. 209-218.
('Middle and Upper Jurassic and lowermost Cretaceous ammonites from the North flank of the Snow Mountains in New Guinea'. Callovian- Berriasian ammonites collected by Faber from two 'Kembelangan Fm' localities, Lambek in W and Amarai 100 km to E. Callovian Macrocephalites keeuwensis, Oxfordian Mayites, Perisphictes and Inoceramus galoi, etc. similar to Sula Islands ammonites. Berriasian with Blanfordiceras, incl. B. novaguiense n.sp., Berriasella)

Getty, T.A. (1967)- Jurassic and Cretaceous ammonites from the Kemaboe Valley, West Irian (West New Guinea). Masters Thesis, McMaster University, Hamilton, p. 1-111.
(online at: https://macsphere.mcmaster.ca/handle/11375/17830)
(Ammonites from Kembelangan Fm black calcareous mudstones, collected by LeRoux in 1939-1940 near Kemabu, NE of Paniai Lakes, NW Central Range of W Papua. Fauna from M Jurassic sowerbyi Zone to U Valanginian. Ammonites most closely related to faunas of Pacific Realm and Ethiopian province of Tethyan Realm. Half of material is new genus Sulaites (E Jurassic?); also M Jurassic Fontannesia, Bullatimorphites and Macrocephalites, Late Jurassic Himalayites and Blanfordiceras and Valanginian Olcostephanus)

Gheyselinck, R.F.C.R. (1953)- Petroleum. In: W.C. Klein (ed.) Nieuw Guinea: de ontwikkeling op economisch, sociaal en cultureel gebied in Nederlands en Australisch Nieuw Guinea, I, Staatsdrukkerij (Dutch Govt. Printing Office), The Hague p. 311-350.
(Overview of pre-1949 Netherlands New Guinea petroleum activities. Oil exploration since 1905 by BPM and after 1935 by NNGM consortium (BPM 40%/ Stanvac 40%/ Caltex 20%). First discovery Klamono field in W Birds Head, in shallow hole drilled in 1936 near surface oil seep, followed by Mogoi and Wasian in 1939-1940 in SE Birds Head. All discoveries to date in Miocene 'Klasafet Limestone' reefs. First systematic use of gravity surveys and aerial photo geology in oil exploration?)

Gibbins, S.L. (2006)- The magmatic and hydrothermal evolution of the Ertsberg intrusion in the Gunung Bijih (Ertsberg) mining district, West Papua, Indonesia. Ph.D. Thesis University of Arizona, Tucson, p. 1-384.
(online at: http://arizona.openrepository.com/arizona/handle/10150/195874)
(Ertsberg complex in W Papua intrusion- and carbonate-hosted mineralization associated with 3.28-2.97± 0.54 Ma multi-phase intrusive complex)

Gibbins, S., S. Titley & K. Friehauf (2003)- Age, origin, petrology and petrography of the Ertsberg Diorite, West Papua, Indonesia. Geol. Soc. America, 2003 Ann. Mtg., Boulder, Abstracts with Programs 35, 6, p. 400.
(Abstract only. Ertsberg Diorite hosts several major copper-gold-bearing skarns in sediments along margins and in roof pendants. U-Pb dates on zircons indicate crystallization age of ~3 Ma. Biotite-clinopyroxene assemblage suggests depths <2 km, similar to formation of adjacent Grasberg. Mineralization at Ertsberg soon after crystallization of main igneous body)

Gibson-Robinson, C., N.M. Henry, S.J. Thomson & H.T. Raharjo (1990)- Kasim and Walio Fields-Indonesia Salawati Basin, Irian Jaya. In: E.A. Beaumont & N.H. Foster (eds.) American Assoc. Petrol. Geol. (AAPG), Treatise of Petroleum Geology, Stratigraphic traps I, Atlas of Oil and Gas Fields, p. 257-295.
(Walio and Kasim, discovered in 1973 are two largest fields in Salawati Basin. Main production from Late Miocene Kais Fm reefal limestones, minor production from 'U' and 'Textularia 2' limestones above Kais Fm)

Gibson-Robinson, C. & H. Soedirdja (1986)- Transgressive development of Miocene reefs, Salawati Basin, Irian Jaya. Proc. 15th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 1, p. 377-403.

(Salawati Basin Miocene reefs grew on extensive carbonate platform during transgressive episodes in Miocene. Three main stages of transgressive reef growth, followed by regressive phases of termination)

Giddings, J.W., W. Sunata & C.J. Pigram (1993)- Reinterpretation of paleomagnetic results from the Birdôs Head, Irian Jaya: new constraints on the drift history of the Kemum terrane. Exploration Geophysics 24, p. 283-290.
(Paleomag sampling of Permian- Tertiary sediments in central Birds Head of W Papua supports derivation of Kemum terrane from East, from NE Australian margin near ~150° E. Large-scale Neogene clockwise rotation can be ruled out. Sometime between Late Triassic? and Eocene 55° CCW rotation (most likely latest Cretaceous- E Tertiary rifting from Australia N margin). After Eocene Kemum Terrane rafted W-ward. Amalgamation of Kemum and Misool terranes took place in latest Oligocene; then amalgamated with Australian cration in M Miocene, causing composite terrane to rotate 10° CCW)

Giddings, J.W., W. Sunata & C.J. Pigram (1993)- Palaeomagnetic results from the Bird's Head, Irian Jaya: a new look at old data. In: C. Klootwijk (comp.) Paleomagnetism in Australasia, Seminar Abstracts, Australian Geol. Survey Org. (AGSO) Record 1993/20, p. 76-79.
(online at: www.ga.gov.au/corporate_data/14623/Rec1993_020.pdf)
(Extended Abstract. see also Giddings et al. 1993 above)

Ginting, C.S.P. & S.F. Baok (2008)- Hydrocarbon exploration trend at Akimeugah Basin Papua based on structural and tectonostratigraphic control. Proc. 37th Ann. Conv. Indon. Assoc. Geol. (IAGI), Bandung, 1, p. 463-475.
(Summary of Tertiary Akimeugah foreland basin S of W Papua Central Range. No new data)

Gisolf, W.F. (1923)- On the rocks of Doorman top in Central New Guinea. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, 24, p. 191-198.
(online at: www.dwc.knaw.nl/DL/publications/PU00014930.pdf)
(Petrographic description and chemical analysis of rocks from Doorman peak, W Papua Central Range, collected by Hubrecht during Mamberamo expedition: dark green peridotite, rich in magnetite, olivine, but without pyroxene or serpentine)

Gisolf, W.F. (1923)- Over het gesteente van den Doormantop in Centraal Nieuw Guinea. Verslagen Afd. Natuurkunde, Nederl. Akademie Wetenschappen, Amsterdam, 32, p. 160-167.
('On the rocks of the Doorman peak in central New Guinea'. Dutch version of paper above)

Gisolf, W.F. (1924)- Microscopisch onderzoek van gesteenten van Noord-Nieuw-Guinea. Jaarboek Mijnwezen Nederlandsch Oost-Indie 50 (1921), Verhandelingen 1, p. 133-161.
('Microscopic investigations of rocks from North New Guinea'. Descriptions of igneous and metamorphic rocks collected by Zwierzycki in Cyclops Mountains, etc.)

Glenister, B.F., L.M. Glenister & S.K. Skwarko (1983)- Lower Permian cephalopods from western Irian Jaya, Indonesia. Geol. Res. Dev. Centre (GRDC), Bandung, Seri Paleontologi 4, p. 74-85.
(Late Early Permian (Artinskian) cephalopods from Aifam B (Aifat) Fm mudstones in Aifam River, Tamiabuan sheet, Birds Head, associated with rich brachiopod fauna described by Archbold (1982). Incl. Pseudoschistoceras irianense n.sp. from Aifat Fm (also known from Timor?))

Gochioco, L.M., I.R. Novianti & R.V. Pascual (2002)- Resolving fault shadow problems in Irian Jaya (Indonesia) using prestack depth migration. The Leading Edge 21, 9, p. 911-912.
(Geophysics paper with little or no geology)

Goenadi, R.M., U. Pamuntjak & N. Surdhana (1977)- Geology and mining of the Gunung Bijih ore, Irian Jaya, Indonesia. In: A. Prijono et al. (eds.) Proc. First Indonesian mining symposium; the Indonesian mining industry, its present and future, Indonesian Mining Assoc., Jakarta, p. 288-312.

Gold, D.P. (2018)- The effect of meteoric phreatic diagenesis and spring sapping on the formation of submarine collapse structures in the Biak Basin, Eastern Indonesia. Geomorphology, p. *(in press)*
(Neogene carbonate units that extend offshore into Biak Basin SW of Biak and Supiori islands, with pockmarks, headless canyons and semi-circular collapse structures, identified in multibeam bathymetric imagery)

Gold, D.P., P. Burgess & M. Boudagher-Fadel (2017)- Carbonate drowning successions of the Birdôs Head, Indonesia. Facies 63, 25, p. 1-23.
(online at: https://link.springer.com/content/pdf/10.1007%2Fs10347-017-0506-z.pdf)
(Anggrisi River section in E Birds Head of W Papua shows E Miocene (Te) Kais Lst platform carbonates overlain by ~20m thick heterolithic Burdigalian- Serravallian drowning sequence of progressively upward-deepening marine units. Uppermost brown packstone bed with Katacycloclypeus annulatus and Miogypsina antillea. Drowning sequence overlain by Tortonian Klasafet/ Klamogun marine clastics. Cause of platform drowning attributed to reduction in rates of carbonate accumulation due to excess nutrients. Duration of drowning event across Birds Head region ~9.5 My (18.0- 8.6 Ma))

Gold, D., R. Hall, P. Burgess & L. White (2014)- The Biak Basin and its setting in the Birdôs Head region of West Papua. Proc. 38th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA14-G-298, p.
(Seismic and multibeam data across Sorong Fault Zone E of Birds Head. Drowning of Kais Limestone platform in Biak Basin may be linked to initiation of strike-slip movements on Fault Zone and parts of Biak Basin sequences may be deposits of Mamberamo River delta now displaced W)

Gold, D., R. Hall & P. Burgess (2014)- Neogene structural history of Biak and the Biak Basin, Eastern Indonesia. American Geophys. Union (AGU), Fall Mtg., San Francisco, T53C-4705, 1p. *(Poster Abstract)*
(Biak Basin between Biak and Yapen underlain by Paleogene intra-oceanic island arc basement. Structural history three stages: (1) E Miocene compression, tied to collision of arc with N edge of Australian continental margin, with E Miocene carbonate deposition following collision; (2) M-L Miocene rifting and (3) Pliocene-Pleistocene strike-slip, tied to initiation of major regional faults that accommodated convergence between Pacific and Australian plates and uplifted Miocene carbonates as pop-up structures)

Gold, D.P., L. White, I. Gunawan & M. Boudagher-Fadel (2017)- Relative sea-level change in western New Guinea recorded by regional biostratigraphic data. Marine Petroleum Geology 86, p. 1133-1158.
(Paleogeography of W New Guinea from Carboniferous- Present. Biostratigraphic data suggests two major transgressive-regressive cycles in regional relative sea-level, with highest sea levels in Late Cretaceous and Late Miocene and terrestrial deposition prevalent in Late Paleozoic and E Mesozoic. Sea levels dropped between Late Cretaceous and Paleogene, with widespread shallow water carbonate platform development in the M-L Eocene. Minor transgressive event in Oligocene. E Miocene collision marked by regional unconformity. Carbonate drowning event in M Miocene, etc.)

Gouwentak, C.J. (1939)- De exploratie naar goud in Nederlands Zuidwest Nieuw Guinea. Tijdschrift Kon. Nederlands Aardrijkskundig Genootschap 56, 2, p. 220-235.
('The exploration for gold in Netherlands SW New Guinea'. Travel account of 1937 expedition up Lorentz/ Noordoost/ Van der Sande Rivers area S of Central Range by 'Mijnbouwmaatschappij Nederlandsch Nieuw Guinea' expedition. Limited geology info: occasional outcrops of marine sediment, further upstream Eocene-Miocene Nummulites- Lepidocyclina limestones, coal and older rocks. One flammable gas seep along Noordoost River. Frequent earthquakes. Very little or no traces of gold in surveyed area)

Gow, P.A & J.L. Walshe (2005)- The role of preexisting geologic architecture in the formation of giant porphyry-related Cu ± Au deposits: examples from New Guinea and Chile. Economic Geology 100, 5, p. 819-833.
(Development of giant porphyry copper/ gold deposits in New Guinea and Chile during Tertiary magmatic events that overprinted earlier extensional tectonic settings. During collision deeply detached listric faults inverted and focused uplift, exhumation and fluid flow. Steep transverse faults activated to form wrench systems, pathways for magma or fluid. Ore deposits commonly in hanging wall of thrusts. Competent flat-lying

packages formed plates, like Darai/Mendi Limestone or equivalents in New Guinea, overlying folded, weaker units underneath. These plates appear impeded magma ascent and formed cap)

Graham, S., N. Pearson, S. Jackson, W.Griffin & S.Y. O'Reilly (2004)- Tracing Cu and Fe from source to porphyry; in situ determination of Cu and Fe isotope ratios in sulfides from the Grasberg Cu-Au deposit. Chemical Geology 207, 3-4, p. 147-169.
(Cu and Fe isotope variations occur within Grasberg porphyry and skarn sulfides, showing isotopes can be important tool for interpretation of hydrothermal processes)

Granath, J.W. & R.M.I. Argakoesoemah (1989)- Variations in structural style along the eastern Central Range thrust belt, Irian Jaya. Proc. 18th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 1, p. 79-89.
(Warim block in E part of West Papua Central Ranges part of S-vergent thin-skinned fold and thrust belt. East of 140°E thick-skinned structures, which persist into PNG. Structures in thin-skinned part of belt appear to be in process of overprinting by major strike-slip zone)

Granath, J.W. & S.A. Hermeston (1993)- Relationship of the Toro formation and the Alene Sands of Papua New Guinea to the Woniwogi Formation of Irian Jaya. In: G.J. & Z. Carman (eds.) Petroleum exploration and development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby, p. 201-206.
(Central Irian Jaya unconformity between M Jurassic Kopai clastics and Late Valanginian. Woniwogi sst mainly of Hauterivian- E Barremian age, and equivalent of PNG Alene sst of PNG, not Berriasian- Valanginian Toro sst)

Granath, J.W., T.O. Simanjuntak & M.S. Gage (1992)- Cretaceous stratigraphy of Eastern Irian Jaya. Abstracts AAPG Int. Conf. Sydney 1992, American Assoc. Petrol. Geol. (AAPG) Bull. 76, 7, p. 1103. *(Abstract only)*
(C Irian Jaya U. Valanginian-Lw Hauterivian Woniwogi sst transgressive over M Jurassic clastics, with more complete Jurassic- Lw Cretaceous section in E Irian Jaya. Coniacian- Campanian Ekmai sst marks abrupt downward shift in relative sea level, followed by transgression. Angular unconformity in Maastrichtian-Paleocene Waripi Fm suggest Late Cretaceous tectonics overprinting passive margin subsidence)

Granath, J.W., K.A. Soofi & J.B. Mercer (1991)- Applications of SAR in structural modeling of the Central Ranges thrust belt, Irian Jaya, Indonesia. In: R.H. Rogers (ed.) Proc. 8th Conf. Geologic remote sensing; exploration, engineering and environment, Denver, p. 105-116.

Gregory, C.H. (2004)- Subsurface meso-scale structural geology and petrology near Big Gossan ore body, Ertsberg (Gunung Bijih) mining district, Irian Jaya, Indonesia. M.Sc. Thesis University of Texas, Austin, p. 1-213. *(Unpublished)*

Gunawan, I., R. Hall, C. Augustsson & R. Armstrong (2014)- Quartz from the Tipuma Formation, West Papua: new insights from geochronology and cathodoluminescence studies. Proc. 38th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA14-G-303, 14p.
(Triassic or Jurassic-age Tipuma Fm sandstones of E Birds Head with common quartz of volcanic and low-grade metamorphic origin. Zircons mainly Permo-Triassic age (205-275 Ma; peak ~230-250 Ma). Also Proterozoic populations of ~975 Ma, 1.4-1.6 Ga and 1.8-2.0 Ga; few Archean grains (2.8-3.2 Ga). Two main sources: (1) volcanoes at active N New Guinea margin, N of Tasman Line, and (2) Precambrian basement of N Australia (or nearby Kemum Terrane provenance?; JTvG). Detrital zircon ages in 'Tipuma Fm' sample from Birds Body (Tembagapura area) differ from Birds Head: absence of Late Permian-Triassic, but with common Permian-Devonian grains (292-412 Ma) and few Silurian- Ordovician grains, suggesting sample is either older(E Permian?), or was deposited further from Permo-Triassic N Andean type volcanic arc)

Gunawan, I., R. Hall & M.A. Cottam (2011)- Age, character and provenance of the clastic Tipuma Formation, West Papua, Indonesia: new insights from detrital zircon dating. In: Conf. Sediment provenance studies in hydrocarbon exploration & production, Geol. Soc., London, 2011, p. 30 *(Abstract only)*
(Tipuma Fm of Birds Head poorly dated fluvial deposits between Permian- Cretaceous, 90-150m thick. Detrital zircon age populations from Lower Mb Triassic, Permian and Carboniferous and Proterozoic peaks. Ages in

Middle Mb mainly Triassic-Carboniferous with few Ordovician grains. Upper Mb has important M Triassic and Late Permian populations, also Carboniferous, Devonian, Silurian and Ordovician. Maximum depositional ages for Tipuma Fm Late Triassic (Lower Mb ~214 Ma, Middle Mb 229 Ma, Upper Mb 205 Ma). No strong evidence for rifting event. Common Late Triassic subhedral zircons in Upper and Lower Members suggest volcanic activity in Birds Head)

Gunawan, I., R. Hall & B. Sapiie (2014)- Triassic reservoir characteristics of the Bird's Head, New Guinea, Indonesia: new insight from provenance study. Int. Petroleum Techn. Conference (IPTC), Kuala Lumpur, 9p.
(Triassic- Jurassic Tipuma Fm sandstones and conglomerates sourced from acid volcanic, metamorphic and recycled sedimentary rocks to N and from N Australian Craton. Quartz provenance dominated by low-T metamorphics and volcanics with little plutonic origin. Youngest zircon ages indicate deposition in Triassic. Recycled zircon populations Permo-Triassic (205-275 Ma) and Proterozoic (~975 Ma, 1.4-1.6 Ga and 1.8-2.0 Ga) populations), with few grains of Archean age (2.8-3.2 Ga). Tipuma Fm probably not deposited in simple continental setting. Decline of volcanic quartz and increase in Carboniferous-Proterozoic zircons in Middle Member indicate reduced contribution of sediment from arc and increased contribution from N Australia)

Gunawan, I., R. Hall & B. Sapiie (2015)- Late Neogene history of the Bird's Head area, West Papua, Indonesia: an insight from detrital zircon. AAPG/SEG Int. Conf. & Exh., Melbourne 2015, Search and Discovery Art. 51245, 44p. *(Abstract + Presentation)*
(online at: www.searchanddiscovery.com/documents/2016/51245gunawan/)
(Detrital zircon age groups in M Miocene clastic Klasafet, E Pliocene Steenkool/ Klasaman Fms and Pleistocene fluvial quartz-rich Konjah Fm (formerly mapped as Sirga Sst?): Pliocene (~3 -5 Ma; only in Konjah Fm), Miocene (~12-20 Ma; from Lembai diorite?), and Permian-Triassic (~205-275 Ma) and Proterozoic (~0.9-1.2 Ga, ~1.4-1.6 Ga, ~1.8-2.0 Ga). Increase in Precambrian zircons from M Miocene-Lower Pliocene, probably reflecting unroofing of NE Birds Head (Kemum High). Second phase of acid igneous activity in Pliocene reflected by E-M Pliocene zircons in Konjah Fm and may derive from nearby dacite intrusions (~3.5 Ma). M Pliocene unconformity in Bird's Head, continuing offshore, probably related to Sorong Fault and predating Seram Trough development)

Gunawan, I., R. Hall & I. Sevastjanova (2012)- Age, character and provenance of the Tipuma Formation, West Papua: new insights from detrital zircon dating. Proc. 36th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA12-G-027, p. 1-14.
(SHRIMP U-Pb ages of detrital zircons from 11 Tipuma Fm sandstone samples show Permo-Triassic (234-280 Ma), Mesoproterozoic (1.4-1.6 Ga) and Paleoproterozoic (1.8-2.3 Ga) age peaks. Maximum age of deposition of Tipuma Fm Late Triassic (~202 Ma). Tipuma Fm immature lithic sandstone; lithic fragments mainly sedimentary and metamorphic rocks. Fresh volcanic quartz and zircon suggest acid igneous activity in Birds Head during deposition in M-L Triassic)

Haberle, S.G., G.S. Hope & Y. Defretes (1991)- Environmental change in the Baliem Valley, montane Irian Jaya, Republic of Indonesia. J. Biogeography 18, p. 95-40.

Hadipandoyo, S., Mujito & T. Wibowo (1996)- Hydrocarbon resource assessment of carbonate and coarse clastic sediment plays, Cenderawasih Bay area, Irian Jaya, Indonesia. In: S.Y. Kim et al. (eds.) Proc. 32nd Ann. Sess.Coord. Comm. Coastal Offshore Geosc. Progr. E and SE Asia (CCOP), Tsukuba 1995, p. 69-78.
(Cenderawasih Bay area belongs to W part of Waipoga- Waropen- Mamberano basin, N New Guinea. Assumed to be underlain by Pre-Tertiary volcanics and metamorphics, part of Pacific Plate. Tertiary clastic middle wedge play and carbonate basal wedge plays present. Oil potential as high as 126 M Tons, expected value 43 MTons (risked values 52 and 8.4 MTons resp.). Total gas potential 1,060 Gm3, expected value 505 Gm3)

Hakim, A.S., Baharuddin & E. Susanto (1995)- Geological map of the Gunung Doom Quadrangle, Irian Jaya, 3213, 1:250,000. Geol. Res. Dev. Centre (GRDC), Bandung.
(Geologic map of Rouffaer Mts in NW part of West Papua. E-W trending young anticlines, mainly cored by M-L Miocene Makats Fm, overlain by Late Miocene- Pleistocene clastics. Oldest formation is ~Oligocene Auwewa Volcanics, in SW corner of map only)

Hakim, A.S. & B.H. Harahap (1993)- Geologi Lembar Waren (Pulau Ratewa). Geol. Res. Dev. Centre (GRDC), Bandung, Spec. Publ. 14, p. 42-53.
('Geology of the Lembar Sheet (Ratewa Island')

Hakim, A.S. & B.H. Harahap (1994)- Geological Map of the Waren Quadrangle Irian Jaya, 3113, 1:250,000 Scale. Geol. Res. Dev. Center, Bandung.
(Map sheet at E side of Cenderawasih Bay. Mainly Pliocene and younger rocks. Offshore Moor Island with Eocene Moor Limestone with Pellatispira and Nummulites. Small outcrop of (Late) Oligocene marine sandstone-limestone at G. Sanoringga near W coast (odd?))

Hakim, A.S., Harahap, B.H. & N. Ratman (2003)- Neotektonik Papua (Irian Jaya). In: Pros. Forum Penelitian dan Pengembangan Energi dan Sumberdaya Mineral, Badan Litbang Energi Sumberdaya Mineral, p. 500-517.
('Neotectonics of Papua (Irian Jaya)')

Hall, R. (2001)- Extension during Late Neogene collision in East Indonesia and New Guinea. J. Virtual Explorer 4, p. 17-24.

Hall, R., J. Ali, C. Anderson, S. Baker et al. (1992)- The Sorong Fault Zone. Processes and rates of terrane amalgamation. University of London SE Asia Research Group, Rept. 111, 211p. *(Unpublished)*
(Stratigraphy, paleomagnetism, volcanism, etc. of Halmahera, Obi, Sula, Waigeo, etc. Regional unconformity at 45 Ma-Mid Eocene. Collision of Philippine Sea arc and Australian continent at ~25 Ma ends volcanism and starts strike slip zone)

Hammarstrom, J.M., B.T. Setiabudi, D.N. Sunuhadi, G.R. Robinson, C.L. Dicken, S. Ludington, A.A. Bookstrom & M.L. Zientek (2013)- Porphyry copper assessment for Tract 142pCu7205, Moon-Utawa-Ular Merah Areas-Indonesia. In: J.M. Hammarstrom et al., Porphyry copper assessment of Southeast Asia and Melanesia, U.S. Geol. Survey, Scient. Invest. Rept. 2010-5090-D, Appendix L, p. 186-196.
(online at: http://pubs.usgs.gov/sir/2010/5090/d/sir2010-5090d_text.pdf)
(Assessment of porphyry copper deposits in M Miocene Moon Arc along N margin of Birds Head and coeval rocks in Utawa Arc (SE Birds Neck) and Ular Merah areas N of western Central Range (age-equivalent to Maramuni Arc in Mobile Belt of PNG). May have formed in N-facing arc along passive continental margin prior S-directed thrusting in Late Miocene (Melanesian orogeny). Ular Merah area centered on late E Miocene (17.4-16.6 Ma) porphyry system that intruded allochthonous Central Ophiolite Belt. No known deposits)

Hammarstrom, J.M., B.T. Setiabudi, D.N. Sunuhadi, G.R. Robinson, C.L. Dicken, S. Ludington, A.A. Bookstrom & M.L. Zientek (2013)- Porphyry copper assessment for Tract 142pCu7203, Western Medial New Guinea Magmatic Belt- Indonesia. In: J.M. Hammarstrom et al., Porphyry copper assessment of Southeast Asia and Melanesia, U.S. Geol. Survey, Scient. Invest. Rept. 2010-5090-D, Appendix M, p. 197-211.
(online at: http://pubs.usgs.gov/sir/2010/5090/d/sir2010-5090d_text.pdf)
(Assessment of porphyry copper deposits in Central Highlands of West Papua. Tract represents western part (W of Tasman Line) of 1800km long Medial New Guinea magmatic belt, an, E-W belt of discontinuous exposures of late Miocene- Pliocene igneous rocks in foldbelt of central New Guinea Island (incl. Central Birds Head) ('post-Maramuni Arc', more alkaline magmatism). No well-defined subduction zone associated with belt, although seismic tomography suggests existence of old subduction slabs in mantle under New Guinea. Includes Grasberg supergiant porphyry copper-gold deposit (~3 Ma))

Hammarstrom, J.M., B.T. Setiabudi, D.N. Sunuhadi, G.R. Robinson, C.L. Dicken, S. Ludington, A.A. Bookstrom & M.L. Zientek (2013)- Porphyry copper assessment for Tract 142pCu7204, Rotanburg-Taritatua Area- Indonesia. In: J.M. Hammarstrom et al., Porphyry copper assessment of Southeast Asia and Melanesia, U.S. Geol. Survey, Scient. Invest. Rept. 2010-5090-D, Appendix N, p. 212-218.
(online at: http://pubs.usgs.gov/sir/2010/5090/d/sir2010-5090d_text.pdf)
(Assessment of porphyry copper deposits in poorly-known Late Miocene to Pliocene-Pleistocene intrusive rocks N of Central Range. No mines, prospects, or known copper or gold occurrences in this segment)

Hammarstrom, J.M., B.T. Setiabudi, D.N. Sunuhadi, G.R. Robinson, C.L. Dicken, S. Ludington, A.A. Bookstrom & M.L. Zientek (2013)- Porphyry copper assessment for Tract 142pCu7208, Inner Melanesian arc terranes I- Indonesia. In: J.M. Hammarstrom et al., Porphyry copper assessment of Southeast Asia and Melanesia, U.S. Geol. Survey, Scient. Invest. Rept. 2010-5090-D, Appendix R, p. 261-267.
(online at: http://pubs.usgs.gov/sir/2010/5090/d/sir2010-5090d_text.pdf)
(Assessment of porphyry copper deposits in 1000 km-long Inner Melanesian Arc, a calc-alkaline arc that developed in Eocene- E Oligocene from SW-ward subduction of Pacific Plate. Corresponds with Melanesian Arc terrane of Cloos et al. (2005). In Indonesia in Birds Head/ N Coastal Irian Jaya Arc (incl. Waigeo, Yapen, Cycloops Mts?). Age-equivalent to accreted terranes in Adelbert-Finisterre area of PNG and New Britain Island. No known porphyry copper deposits or prospects)

Hampton, O.W. (1997)- Rock quarries and the manufacture, trade, and uses of stone tools and symbolic stones in the Central Highlands of Irian Jaya, Indonesia: ethnoarchaeological perspectives. Ph.D. Thesis Texas A & M University, College Station, p. 1-887. *(Unpublished)*
(online at: http://anthropology.tamu.edu/papers/Hampton-PhD1997.pdf)
(Mainly anthropological study of stone tool usage in highlands of W Papua. Stone tools from 4 main quarry areas. In West: two quarry areas in metamorphics-ophiolite belt along N side of Central Range, Yeineri (glaucophane schist, epidote amphibolite, epidote chlorite schist) and Tagime (meta-argillite). In East: Sela and Langda (lighter colored basalts-andesites and meta-basalts))

Hanafi, B.R. & B. Priadi (2010)- Indikasi keberadaan endapan melange di wilayah Kotaraja dan sekitarnya, Kota Jayapura, Papua. Proc. 39th Ann. Conv. Indon. Assoc. Geol. (IAGI), Lombok, PIT-IAGI-2010-036, 4p.
('Indications for the occurrence of melange deposits in the Kotajaya district, Jayapura, Papua'. Outcrops of chaotic, sheared rocks with fragments of peridotite, gabro, sandstone, limestone, schist, gneiss, quartzite, ranging in size from 2cm- 15m or more, floating in greenish grey scaly clay matrix. Related to Late-Miocene (subduction) tectonic activity)

Handyarso, A. & T. Padmawidjaja (2017)- Struktur geologi bawah permukaan Cekungan Bintuni berdasarkan data gaya berat. J. Geologi Sumberdaya Mineral 18, 2, p. 53-65.
(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/125/284)
('Subsurface geological structures of the Bintuni Basin based on gravity data analysis'. Identification of NW-SE trending folds onshore southern Birds Head)

Hanzawa, S. (1947)- Note on *Lacazina wichmanni* Schlumberger from New Guinea. In: Recent progress of natural sciences in Japan, Nihon Shizen Kagaku Shuho (Japanese J. Geology Geography), 20, 2-4, p. 1-4.
(Descriptions of Eocene larger foram Lacazina wichmanni from subsurface limestone of Birds Head region, New Guinea (now generally assigned Lacazinella Crespin; JTvG))

Harahap, B.H. (1996)- New age results from the Tertiary succession of the Yera anticline, south Central Range of Irian Jaya. J. Geologi Sumberdaya Mineral 6, 63, p. 2-9.
(Yera Anticline in Waghete map sheet in SW part of W Papua Central Range contains ~2500m of folded Pre-Permian- Cretaceous clastic sediments, overlain by Tertiary New Guinea Limestone. Permian Aiduna Fm (~1300m) sandstones-shales with up to 40cm thick coals with common palynomorphs incl. Protohaploxypinus limpidus, P. amplus, Cordaitina, etc. ?Triassic Tipuma Fm (280m) reddish mudstones-sandstones barren of fossils. No fossil evidence for Triassic or Jurassic ages. Kembelangan Gp entirely of Cretaceous age: (1) Kopai Fm (90m) glauconitic quartz sst with Late Berriasian- Barremian palynomorphs (Muderongia spp., etc.), (2) M-L Barremian Woniwogi Sst (60m) 'orthoquartzite' with Ovodinium cinctum, Muderongia mcwhaei, M. australis, etc. (= E Aptian?), (3) Late Aptian- E Albian Pinya Fm (565m) with Muderongia tetracantha, Dingodinium cerviculum and (4) Santonian- Maastrichtian Ekmai Fm (380m) glauconitic sst)

Harahap, B.H. (1997)- The metamorphic complex of the Central Range of Irian Jaya, with special reference to Enarotali Quadrangle. J. Geologi Sumberdaya Mineral 7, 67, p. 16-25.
(Derewo metamorphic complex of Central Range of W Papua located between deformed Australian margin

platform sediments in S and ultramafic Irian Jaya ophiolite in N. Metamorphics mainly low T and low P black slate, phyllite and schist, with some metavolcanic intercalations and quartzite. Metamorphic increases gradually from S to N. Original rocks Mesozoic and possibly also E Tertiary-age fine marine slope deposits. Complex isoclinally folded structures suggest at least two phases of deformation. Initial metamorphism during Pacific Plate obduction, probably in Oligocene (in PNG Late Eocene foraminifera in slightly metamorphosed rocks, Late Oligocene- E Miocene forms in unmetamorphosed rocks; Dow 1977). In M Miocene local intrusions by Utawa diorite, then deformed by Late Miocene- Pleistocene Melanesian orogeny)

Harahap, B.H. (1997)- Central Range of East Irian Jaya: review of gold exploration. Bull. Geol. Res. Dev. Centre (GRDC), Bandung 21, p. 63-77.
(Gold mineralization associated with Plio-Pleistocene calc-alkaline and alkaline intrusives and volcanics. At least 25 intrusive bodies identified in Central Range of E Irian Jaya)

Harahap, B.H. (1997)- Konstruksi penampang kesetimbangan antiklin umar Irian Jaya Barat. GRDC Geosurvey Newsletter 17, p. 16-19.
('Construction of balanced cross-sections of the Umar anticline, W Irian Jaya')

Harahap, B.H. (2009)- Tectonostratigraphy of the Phanerozoic continental province succession in Southern Papua, Eastern Indonesia. In: 11^{th} Reg. Congress Geology, Mineral and Energy Resources of Southeast Asia (GEOSEA 2009), Kuala Lumpur, p. 55-56. *(Abstract)*
(online at: www.gsm.org.my/products/702001-101669-PDF.pdf)

Harahap, B.H. (2010)- Tectonostratigraphy of the Phanerozoic continental province succession in Southern Papua, Eastern Indonesia. Meeting IGCP Project 507, Paleoclimates in Asia during the Cretaceous, Yogyakarta 2010, p. 67-71. *(Abstract only)*
(online at: http://igcp507.grdc.esdm.go.id/abstracts/74-..)

Harahap, B.H. (2012)- Tectonostratigraphy of the southern part of Papua and Arafura Sea, Eastern Indonesia. J. Geologi Indonesia 7, 3, p. 167-187.
(online at: http://jgi.bgl.esdm.go.id/index.php/JGI/article/view/33/25)
(Review of Paleozoic- Cenozoic stratigraphy of S Papua, tied to tectonic events)

Harahap, B.H., A.S. Hakim & D.B. Dow (1990)- Geological map of the Enarotali sheet, Irian Jaya,1:250,000 (Quad. 3112). Geol. Res. Dev. Centre (GRDC), Bandung.
(Map of west part of Central Range and area to North. Complex geology with three domains: (1) New Guinea Platform in SE, with folded Triassic- Miocene; (2) Oceanic Realm in N, with ultramafic rocka and amphibolite, overlain by Eocene- E Miocene Auwewa Gp basaltic-andesitic arc volcanics with E Oligocene Nanamajiro Nummulites Limestone, LateMiocene Nabire Volcanics; (3) 'Transitional zone' of Oligocene? Derewo Metamorphics intruded by ~100km long M Miocene Utawa Diorite, etc.)

Harahap, B.H., A.S. Hakim & U. Hartono (1998)- Upper Paleozoic- Lower Mesozoic magmatic intrusions in Western Irian Jaya. J. Geologi Sumberdaya Mineral 8, 87, p. 2-14.
(Suite of granitoids in N and NE Birds Head and E side of 'Birds Neck', fringing Kemum Block and intruded into folded Silurian-Devonian Kemum Gp 'flysch' and metasediments. K-Ar dating suggests two age groups: (1) E Carboniferous (Melaiurna; 324, 328 Ma) and (2) Permian- Triassic (Kwatisore-197 Ma, Maransabadi- 231, 278 Ma, Netoni -158-241 Ma, Anggi-227-295 Ma, Wariki- 226-258 Ma and Warjori- 294, 295 Ma). Possibly related to Permian- Triassic granitoids in PNG (Kubor granite/ 224 Ma, Kimil diorite). Group 2 of potassic affinity, rel. high Nb, etc., not typical calk-alkaline, but more likely tied to extensional periods along N part of Australian- New Guinea Gondwana margin?)

Harahap, B.H. & Y. Noya (1995)- Geological map of the Rotanburg (Idenburg Barat), Irian Jaya (Quad 3312). Geol. Res. Dev. Centre (GRDC), Bandung.
(Geologic map of central part of West Papua: N part of Central Range and 'Meervlakte' of Idenburg River. Central Range mainly folded Jurassic- Cretaceous continental margin deposits, along N side overthrust by

isoclinally folded Derewo Metamorphics with glaucophane schist and ultramafic rocks, overlain by Auwewe volcanics. Pliocene Timepa granodiorite Intrusives (~3-5 Ma) possibly genetically associated with Ilaga volcanics and Ertsberg- Grasberg Intrusives in Central Range and suggestive of Pliocene S-directed subduction episode)

Harahap, B.H. & H. Panggabean (2003)- Potensi hidrokarbon dengan acuan khusus terhadap singkapan batuan di daerah Aiduna dan Taporomay, Kabupaten Mimika, Papua. In: Pros. Forum Penelitian dan Pengembangan Energi dan Sumberdaya Mineral, Badan Litbang Energi dan Sumberdaya Mineral, p. 358-376.
('Hydrocarbon potential with special reference to rocks in the Aiduna and Tapomay areas, Timika, Papua')

Harahap, B.H. & U. Sukanta (1996)- Tectonostratigraphy of the Mesozoic- Cenozoic Pacific Province succession in northeastern Irian Jaya, Eastern Indonesia. J. Geologi Sumberdaya Mineral 6, 57, p. 17-31.
(NE Irian Jaya part of N New Guinea Mobile Belt, part of Pacific Province. Basement Jurassic ophiolites, associated with glaucophane-bearing metamorphics, obducted in Oligocene and exposed in Irian Ophiolite Belt, Cyclops Mts and Sorong-Yapen Fault Zone. Overlain by >10,000m of Cenozoic volcanic and non-volcanic sediments. Paleocene- Oligocene- E Miocene Auwewa Gp volcanics with pillow lavas, tuffs and limestone lenses, >4000m thick (island arc deposits above N dipping subduction zone; equivalent of Bliri Volcanics in PNG). Around paleo-highs up to 850m of U Oligocene- M Miocene Darante Fm reefal limestones, with impressive reef outcrops in Gauttier Mts. Unconformably overlain by ~1850m thick Makats Fm of late E Miocene- early Late Miocene flysch-type clastics, with limestone lenses and conglomerates with reworked Cretaceous claystone clasts. Overlain by >5000m of Late Miocene-Pleistocene Mamberamo Fm flysch)

Harahap, B.H. & U. Sukanta (1996)- Tectonostratigraphy of the Mesozoic- Cenozoic Pacific province succession in northeastern Irian Jaya, Eastern Indonesia. In: Sampurno et al. (eds.) Pros. Seminar Nasional Geoteknologi III, LIPI, Bandung, p. 518-538.
(Same paper as Harahap & Sukanta (1996))

Harahap, B.H. U. Sukanta & E. Rusmana (1994)- Structure of West Irian Jaya identified from Landsat imagery. Bull. Geol. Res. Dev. Centre (GRDC), Bandung 17, p. 13-21.

Harahap, B.H., J.B. Supandjono, Sukido, U. Margono & Y. Noya (1996)- Geology of the Rotanburg region. J. Geologi Sumberdaya Mineral 6, 55, p. 17-28.
(In Rotanburg map sheet of NE part of West Papua, N of Wamena area, Central Range. Three belt, from S to N: (1) 'Irian Jaya Platform' (= Central Range foldbelt): M Jurassic- Miocene sediments deformed in Late Miocene-Pliocene; (2) E-W trending belt of low-grade Oligocene? Derewo metamorphics thrust S-ward, probably continental slope sediments (in PNG with E Miocene cooling ages); (3) Ophiolite belt/ ultramafic complex, representing obduction zone. Metamorphic and ultramafic belts intruded by 8 stocks of Pliocene Timepa monzonite dioritic batholiths (probably subduction-related volcanic arc, similar to Ilaga Volcanics of Dow et al. 1986). ~500m thick Awewa Fm island arc volcanics on ultramafic rocks on N slope (= Pacific Plate). Also on N slope Miocene flysch-type deposits of Makats Fm)

Hardjono, T.S. Asikin & J. Purnomo (1998)- Heat flow estimation from seismic reflection anomalies in a frontier area of the Sebakor Sea, Irian Jaya, Indonesia. In: J.L. Rau (ed.) Proc. 33rd Sess. Co-ord. Comm. Coastal Offshore Geosc. Progr. E and SE Asia (CCOP), Shanghai 1996, 2, p. 56-83.
(Bottom-simulating seismic reflector in deep water between Seram and Onin Peninsula related to presence of gas hydrate. Sub-seafloor depth of hydrate (300-600m in water depth 1100-1600m) used to estimate heat flow in frontier area without well data. Calculated heat flow values 0.83-1.43 ucal/cm2/sec (average 1.14); average geothermal gradient 3.9°C/ 100m)

Harrington, L., S. Zahirovic, N. Flament & D. Muller (2017)- The role of deep Earth dynamics in driving the flooding and emergence of New Guinea since the Jurassic. Earth Planetary Sci. Letters 479, p. 273-283.
(In New Guinea area periods of flooding and emergence since Jurassic inconsistent with magnitudes of global sea level changes, and suggest long-wavelength dynamic topography changes driven by subduction-driven mantle flow. Subduction at E Gondwana margin locally enhanced high eustatic sea levels from E Cretaceous

(~145 Ma) to generate long-term regional flooding. Miocene dynamic subsidence associated with subduction of Maramuni Arc caused long-term inundation of New Guinea during period of global sea level fall)

Hartono, O. Verdiansyah & I.M. Surata (2011)- Porphyry and skarn copper-gold discovery in Pegunungan Bintang, Papua. Proc. 36th HAGI and 40th IAGI Ann. Conv., Makassar, JCM2011-023, 16p.
(On a 2009 copper-gold discovery in Star mountains, Central Range near PNG border. In Indonesian)

Hartono, U., C. Amri & P.E. Pieters (1989)- Geological map of the Mar sheet, Irian Jaya, 1:250,000. Geol. Res. Dev. Centre (GRDC), Bandung.
(Geologic map of N part of Birds Head. Two main domains, separated by E-W trending Sorong Fault. In S Paleozoic Kemum terrane with folded Silurian- Devonian turbiditic metasediments, (Permian absent here), overlain by ?Triassic Tipuma Fm, Late Oligocene Sirga Fm and Miocene Kais Lst. N of Sorong FZ melange is Tamrau Block with Tamrau Fm Jurassic- Cretaceous metasediments, overlain by Miocene Koor Fm limestone and M Miocene Moon Volcanics. Farther N Tosem Mts with Late Eocene- E Miocene Mandi volcanics (= part of 'Auwewa Arc?))

Hartono, U., U. Sukanta & N. Ratman (1989)- Pre- and post-Late Tertiary collision magmatic activity in Irian Jaya, Indonesia. In: B. Situmorang (ed.) Proc. 6th Regional Conf. Geology Mineral Hydrocarbon Resources of Southeast Asia (GEOSEA VI), Jakarta 1987, IAGI, p. 61-71.
(Eo/Oligocene-E Miocene island arc volcanics associated with Pacific Plate result of N-ward subduction of Australian Plate found in Birds Head, N coast of body, small outcrops in Gauttier Mts and N flank Central Range. M Miocene and Plio-Pleistocene volcanics and intrusives in Birds Head, Neck and Central Range may be associated with M-L Miocene S-ward subduction)

Heads, M. (2001)- Birds of paradise, biogeography and ecology in New Guinea: a review. J. Biogeography 28, 5, p. 893-925.
(Biogeographic distributions of birds of paradise and other biota compatible with New Guinea accreted terrane tectonic model of Pigram & Davies (1987), including massive lateral strike-slip movement)

Heads, M. (2002)- Regional patterns of biodiversity in New Guinea animals. J. Biogeography 29, 2, p. 285-294.
(Distribution of 622 modern animal species analysed. Centres of diversity in various groups of animals related to three main geological regions: Australian craton, accreted terranes and Cenozoic volcanic arcs)

Hefton, K.K., G.D. MacDonald, L.C. Arnold, A.L. Schappert & A. Ona (1995)- Copper-gold deposits of the Ertsberg (Gunung Bijih) Mining District, Irian Jaya. In: D. Mayes & P.J. Pollard (eds.) Geology and copper-gold deposits of the Ertsberg (Gunung Bijih) Mining District, Irian Jaya, Indonesia. 17th Int. Geochem. Expl. Symp., James Cook University, Townsville, EGRU Contr. 53, p. 1-43.
(Overview of Freeport copper-gold mining project in W Papua. World's highest grade porphyry Cu-Au deposit, associated with Pliocene diorite intrusions)

Heim, A. (1953)- Geological observations in the Wisselmeer region. Eclogae Geol. Helvetiae 46, p. 23-27.
(online at: http://retro.seals.ch/cntmng?type=pdf&rid=egh-001:1953:46::479&subp=hires)
(Geological observations along traverse from Uta on S coast to Enarotali on Paniai Lake. Common Eocene limestones. Eroded anticlinal structures with Paleocene and Eocene outcrops Thick Eocene limestones with Lacazinella and other large forams. Above end-Eocene discontinuity abundant Upper Oligocene larger forams. Also Paleocene and U Tertiary marls and sandstones)

Heldring, O.G. (1912)- De Zuidkust van Niew-Guinea. Jaarboek Mijnwezen Nederlandsch Oost-Indie 38 (1909), p. 83-203.
('The South coast of New Guinea'. Early reconnaissance survey of S coast of W Papua)

Heldring, O.G. (1913)- Verslag over Zuid Nieuw Guinea. Jaarboek Mijnwezen Nederlandsch Oost-Indie 40 (1911), Verhandelingen, p. 40-207.

(Report on geological observations during 1909-1910 'military expedition' along S New Guinea rivers Digul, Eilanden, Setakwa, etc. Did not reach Central Range and stayed mostly in Tertiary and younger sediments. Most observations of rocks on loose material in river banks: Eocene limestones, igneous rocks, etc.)

Helmcke, D., K.W. Barthel & A. von Hillebrandt (1978)- Uber Jura und Unterkreide aus dem Zentralgebirge Irian Jayas (Indonesian). Neues Jahrbuch Geol. Palaont., Monatshefte 1978-11, p. 674-684.
('On Jurassic and Lower Cretaceous from the Central Range of Irian Jaya'. Late Jurassic- E Cretaceous ammonites mainly as loose float from dark shaly beds in N part Irian Jaya foldbelt. Ages mainly Oxfordian (Perisphinctes, Epimayaites), also Bajocian, Callovian, Tithonian and Early Cretaceous (incl. Blanfordiceras wallichi, Kilianella, Berriasella). U Jurassic ammonite faunas similar to Himalayan faunas of Spiti, Nepal)

Henage, L. (1993)- Mesozoic and Tertiary tectonics of Irian Jaya: evidence for non-rotation of Kepala Burung. Proc. 22nd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 763-792.
(Rather unique interpretation of New Guinea tectonics)

Hendarjo, K.S. & R.E. Netherwood (1986)- Palaeoenvironmental and diagenetic history of Kais Formation, K.B.S.A., Irian Jaya. Proc. 15th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 1, p. 423-438.

Hendro H.N., D, Andi K., B.D.H. Sasmita, Suwondo, Sapto H.W., A. Bachtiar, W. Utomo, Fatchur Z., N. Witasta & Y. Wijaya (2016)- Facies model of Upper Kais Member; a case study of the Miocene carbonates reservoir in Bintuni Basin, West Papua. Proc. 40th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA16-644-G, 13p.
(U Miocene Upper Kais Lst reservoir study in area of Mogoi-Wasian fields, Bintuni Basin. Fields carbonate buildups on Oligocene NW-SE trending anticlines, initially discovered in 1939-1941. Kais Lst subdivided into (1) lower Kais-Porous (~80m), (2) middle Wasian Lst (~45m) and Sekau Shale and (3) upper Mogoi Lst (70m). Main units subdivided into sequences. Porosity-permeability controlled by matrix porosity and fractures)

Henley, R.W., F.J. Brink, P.L. King, C. Leys, J. Ganguly, T. Mernagh, J. Middleton, C.J. Renggli et al. (2017)- High temperature gas-solid reactions in calc-silicate Cu-Au skarn formation; Ertsberg, Papua Province, Indonesia. Contrib. Mineralogy Petrology 172, 11-12, 106, 19p.
(On 2.7-3.0 Ma Ertsberg East Skarn System, adjacent to Grasberg diorite intrusion and 2.5 km from giant 3.3 Ma Grasberg porphyry copper deposit. Formed through flux of magma-derived fluid through carbonate rock sequences at T> 600° C and P<50 MPa (~2 km depth?))

Henry, C. & S. Das (2002)- The Mw 8.2, 17 February 1996 Biak, Indonesia, earthquake: rupture history, aftershocks, and fault plane properties. J. Geophysical Research107, B11, 2312, doi:10.1029/2001JB000796, 20p.
(Large earthquake E of Biak on shallow dipping thrust fault (strike 109°, dip 9°). Rupture propagated bilaterally on fault extending 180 km W and 50 km E of hypocenter)

Herdiyanti, A.N.A., A. Moris, A. Fakhri, R.P. Putra & I. Oktafirman (2015)- Evaluation of underexplored *Textularia* layer in the Salawati Basin, Eastern Indonesia. Proc. Joint Conv. HAGI-IAGI-IAFMI-IATMI, Balikpapan, JCB2015-348, 3p.
(Thin (5-10m) limestone bed in clastic U Miocene Klasafet Fm, formerly called Textularia II marker bed, is secondary oil producer in Walio area of Salawati Basin. Also proven oil in Kasuari, Payao, etc. Greatest thickness in S. Potential underexplored hydrocarbon play)

Hermes, J.J. (1968)- The Papuan geosyncline and the concept of geosynclines. Geologie en Mijnbouw 47, 2, p. 81-97.
(online at: https://drive.google.com/file/d/0B7j8bPm9Cse0Rmd5ay1rcmhNR3c/view)
('Pre-plate tectonics' review of geologic history of W Papua, in 'Papuan geosyncline' is described in terms like miogeosyncline and eugeosyncline. Deformed by collision between Asian and Australian continent, during which segment of the Papuan geosyncline was torn loose, bent and broken, leading to present sinuous shape of

W part of New Guinea island. Sorong fault zone recognized as major up- to-10km- wide, left-lateral fault zone with gigantic tectonic breccias)

Hermes, J.J. (1974)- West Irian. In: A.M. Spencer (ed.) Mesozoic-Cainozoic orogenic belts. Geol. Soc. London, Spec. Paper 4, p. 475-490.
(Overview of W New Guinea geology/ stratigraphy, using geosynclinal terminology. Age of metamorphism in N Central Range most likely Late Oligocene. Also Late Oligocene 'Sirga phase' of deformation. Deformation in Mamberamo basin is Pleistocene)

Hermes, J.J. (1982)- On the alleged rotation of the island of New Guinea. Pacific Geology 16, p. 53-57.
(No major rotations between New Guinea and Australia, but good evidence for transcurrent movement between North New Guinea and Central New Guinea provinces. M Miocene Makats Fm in N New Guinea has detritus from apparently metamorphosed and uplifted Central Range)

Hermes, J.J. & F.C. Schumacher (1961)- Summary of stratigraphy of New Guinea. Proc. 9th Pacific Science Congress Bangkok 1957, 12, p. 318-324.
(Overview of Silurian- Pliocene stratigraphy of W New Guinea. Kemum Fm in Birds Head contains Lower Silurian Monograptus. Permo-Carboniferous rel. widespread clastics and sandy limestones with spiriferid brachiopods and Glossopteris flora, etc.)

Hidayati, S., A. Cipta, A. Omang, R. Robiana & J. Griffin (2013)- Earthquake hazard map of Papua, Indonesia. In: Proc. 49th Annual Session Coord. Comm. Geoscience Progr. E and SE Asia (CCOP), Sendai, p. 61-72.
(online at: www.ccop.or.th/download/as/52as2.pdf)
(Probabilistic seismic hazard model, based on recognition of 9 tectonic plates, 14active thrust and strike-slip faults,2-3 subduction segment, and 9 zones for diffuse earthquakes (from historic earthquakes))

Hill, K.C. & R. Hall (2003)- Mesozoic- Cenozoic evolution of Australia's New Guinea margin in a West Pacific context. In: R.R. Hillis & R.D. Muller (eds.) The evolution and dynamics of the Australian Plate. Geol. Soc. America (GSA), Spec. Paper 372 and Geol. Soc. Australia Spec. Publ. 22, p. 265-290.
(Island of New Guinea at N Australian margin. Complex evolution, largely masked by Mio-Pliocene orogenesis. In Paleozoic, New Guinea contained boundary ('Tasman Line') between Late Paleozoic active margin in E and extensional margin in W. Permian- Early Triassic active margin with widespread M Triassic granite intrusions. Triassic-Jurassic rifting followed by Cretaceous passive margin subsidence and renewed rifting in Late Cretaceous- Paleocene. Rapid N-ward movement of Australian Plate since Eocene resulted in Mio-Pliocene collision with Philippine-Caroline Arc, which commenced in Late Oligocene and orogenesis continues today. Change in character of New Guinea lithosphere from thick and strong in W to thin and weak N and E of Tasman Line important influence on style and location of Mesozoic and Cenozoic deformation)

Hill, K.C., N. Hoffman, P. Lunt & R. Paul (2002)- Structure and hydrocarbons in the Sareba Block, 'Birdôs Neck', West Papua. Proc. 28th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 227-248.
(E Birds Neck- W Cenderawasih Bay NE- trending Sareba Graben, originated in Late Jurassic- Early K. Cretaceous- M Miocene starved basinal facies. Adjacent Lengguru foldbelt formed by collision of Weyland Terrane with Birds Neck, consuming Papeocene oceanic crust of Cenderawasih Bay. Thin-skinned thrusting in Late Miocene, thick-skinned thrusting/ uplift in Pliocene, Pleistocene orogenic collapse into Cenderwasih Bay Pliocene oceanic crust, leaving <2 Ma metamorphic core compex on Wandamen Peninsula)

Hill, K.C., J.T. Keetley, R.D. Kendrick & E. Sutriyono (2004)- Structure and hydrocarbon potential of the New Guinea foldbelt. In: K.R. McClay (ed.) Thrust tectonics and hydrocarbon systems, American Assoc. Petrol. Geol. (AAPG), Mem. 82, p. 494-514.
(Papuan Fold Belt structures inverted extensional faults and asymmetric detachment folds that break through overturned forelimb. Previous fault-bend foldmodel flawed. PNG deformation front has not yet impinged on strong Australian lithosphere, so low fold belt occupies its own foreland basin. W PNG Fold Belt gas-condensate province just impinged on strong lithosphere, developing foreland basin and basement-cored anticlines. Irian Jaya Fold Belt deformation front encountered strong Australian lithosphere, causing 15km-

thick Paleozoic- Mesozoic sequence thrust to surface along previously extensional basin-margin fault. Focusing deformation on one fault created mountains 5km high and adjacent foreland basin. Birds Neck Lengguru Fold Belt resembles oil province in Papuan Fold Belt, but Pleistocene extensional faulting may cause breaching)

Hill, K.C., R.D. Kendrick, P.V. Crowhurst & P.A. Gow (2002)- Copper-gold mineralisation in New Guinea: tectonics, lineaments, thermochronology and structure. Australian J. Earth Sci. 49, 4, p. 737-752.
(Late Miocene-Pliocene copper-gold deposits tied to intrusives (of mantle origin, not subduction-related). Richest deposits at intersections of N-NE trending transfer faults and inverted Mesozoic extensional faults. Mineralisation during inversion of these faults and correlates with propagation of orogenesis from NE to SW)

Hill, K.C., P.B. OöSullivan, K. Lumbanbatu et al. (1998)- Tectonics and hydrocarbons in Irian Jaya, constraints from zircon fission track analysis. Proc. 26th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. *(Poster Abstract)*
(Zircons ages reflecting ages of volcanism: U. Miocene- Pliocene, Paleocene, M Cretaceous, Late Triassic- E Triassic, Late Carboniferous- E Permian and Proterozoic-E Paleozoic)

Hirschi, H. (1908)- Reisen in Nordwest Neu-Guinea. Jahresbericht Geographisch-Ethnogr. Gesellschaft, Zurich 1907-1908, Von Lohbauer, Zurich 1908, p. 71-106.
(online at: https://www.e-periodica.ch/digbib/view?pid=ghl-001:1907-1908:8#87)
('Travels in NW New Guinea'. Mainly travel log of traverses from Fakfak to Cenderawasih Bay by BPM geologist. Collected M Jurassic ammonites at Wendesi, Cenderawasih Bay, described by Boehm 1913)

Hobson, D.M., A. Adnan & L. Samuel (1997)- The relationship between Late Tertiary basins, thrust belt and major transcurrent faults in Irian Jaya: implications for petroleum systems throughout New Guinea. In: J.V.C. Howes & R.A. Noble (eds.) Proc. Petroleum Systems of SE Asia and Australasia Conf., Jakarta 1997, Indon. Petroleum Assoc. (IPA), p. 261-284.
(Irian Jaya fold-thrust belt two Tertiary uplift phases. Older structures formed ahead of oceanic crustal slabs during obduction onto N Australian Plate margin. Younger structures formed after oceanic obduction ceased, and since Late Pliocene. Folds and thrusts controlled by restraining bends in NE-SW dextral, transcurrent fault system. Extensional basins along releasing bends. Younger structures formed after hydrocarbon generation ceased. Two ages of compressive structures also in Papuan Thrust Belt, but formed ahead of discrete accreted terranes. In most of Thrust Belt only one generation of folds. In PNG plate-bounding, transcurrent fault systems well N of Thrust Belt, and deformation affects only N Papuan basins)

Hope, G.S. (1983)- The vegetation changes of the last 20,000 years at Telefomin, Papua New Guinea. Singapore J. Tropical Geography 4, p. 25-33.

Hope, G.S., J.A. Peterson, U. Radok & I. Allison (eds.) (1976)- The equatorial glaciers of New Guinea. Results of the 1971-1973 Australian Universities Expedition to Irian Jaya: survey, glaciology, meteorology biology and paleoenvironments, A.A. Balkema, Rotterdam, p. 1-256.
(online at: http://papuaweb.org/dlib/bk/hope1976/)
(Results of 1971-1973 Australian Universities Expedition to Carstensz glaciers, W Irian Jaya. No geology)

Hope, G.S. & J. Tulip (1994)- A long vegetation history from lowland Irian Jaya, Indonesia. Palaeogeogr. Palaeoclim. Palaeoecology 109, p. 385-398.
(Pollen analysis of 10m core from mire at 780m altitude and 2°S latitude on ultrabasic soils on N coastal range of W Papua, believed to cover ~60,000 yr B.P. Montane forest grew around site continously through Late Pleistocene with increases in higher-altitude taxa from 25- 10.5 ka, the time of glacial maxima. Fine charcoal record after 10.9 ka, probably anthropogenic disturbance)

Hopping, C.H. & R.H. Wagner (1962)- In: W.A. Visser & J.J. Hermes, Geological results of the exploration for oil in Netherlands New Guinea, Kon. Nederl. Geologisch Mijnbouwkundig Genootschap (KNGMG), Geol. Serie 20, Enclosure 17, Photographs of fossils, p. 1-11.

(Identifications and photos of Early Permian plant fossils from Birds Head outcrops and well cores (Poeragi 1). Both Gondwanan (Glossopteris spp.) and Cathaysian (Taeniopteris, Pecopteris, Sphenophyllum) elements)

Housh, T. & T.P. McMahon (2000)- Ancient isotopic characteristics of Neogene potassic magmatism in Western New Guinea (Irian Jaya, Indonesia). Lithos 50, 1-3, p. 217-239.
(Collision-related Central Range Late Miocene- Pleistocene intrusives and volcanics with unique isotope compositions, probably reflecting interaction of mantle derived parent magma, Proterozoic or Archean lower crust and possibly younger crust. Some of the ~3 Ma zircons with Proterozoic-age cores (1295-1773 Ma))

Hubrecht, P. (1913)- Beknopt geologisch verslag der derde Zuid-Nieuw Guinea expeditie 1912-1913. Maatschappij Bevordering Natuurhistorisch Onderzoek Nederland Kolon., Bull. 68, p. 37-51.
('Brief geological report of the Third South New Guinea Expedition 1912-1913'. Expedition from S coast, up Lorentz/ Noord River to Wilhelmina / Trikora Peak in Central Range)

Hubrecht, P.F. (1918)- Rapport over Nieuw Guinea. Typescript at Bureau of Mines office, Jayapura, p. 1-25.
(Geological observations in New Guinea and 1913 traverse from S Coast to Wilhelmina peak in Central Range)

Hubrecht, P.F. (1921)- Beknopt geologisch verslag van de wetenschappelijke Noord Nieuw-Guinea expeditie. Publ.?
('Brief geological report of the scientific North New Guinea Expedition')

Hughes, S. & N. Wiwoho (2005)- The discovery, geology, alteration and mineralization of the Deep MLZ deposit, Papua. In: S. Prihatmoko et al. (eds.) Indonesian mineral and coal discoveries, Indon. Assoc. Geol. (IAGI) Spec. Issue, p. 18-30.
(Deeper level of Cu-Au mineralization in East Ertsberg skarn system, identified in 2004. Associated with Ertsberg Diorite intruded into Paleogene limestone)

Hutasoit, L.M. & Y. Ashari (1998)- The origin of saline spring water in Baliem Valley, Irian Jaya based on its isotopic composition. Proc. 27th Ann. Conv. Indon. Assoc. Geol. (IAGI), 1, p. 114-120.

Hutubessy, S. (1998)- Konfigurasi struktur geologi bawah permukaan hasil analisa data gayaberat dan seismologi di dataran tinggi Wamena, Irian Jaya. J. Geologi Sumberdaya Mineral 8, 85, p. 12-23.
('Deep structural configuration from gravity and seismological data analysis in Wamena high valley, Irian Jaya')

Idris, R., Tasiyat & N. Djumhana (2002)- Geological reservoir of the Matoa Field Salawati Basin, Irian Jaya. Proc. 31st Ann. Conv. Indon. Assoc. Geol. (IAGI), Surabaya, 1, p. 236-264.
(Matoa field NNE-SSW trending anticlinal structure discovered in 1991. Producing from Late Miocene Kais Limestone reservoir, with larger foraminifera Marginopora vertebralis and Alveolinella quoyi. Both reefal facies (porosity 18-22%, perm 10-40 mD) and non-reefal (platform) facies (porosity 15-20%, perm 10-30 mD). Reef reservoir not connected to platform facies reservoir. Cum. production from 30 wells ~12.3 MMBO)

Ikhwanudin, F. & C.I. Abdullah (2015)- Indication strike slip movement a part of Sorong Fault Zone in Yapen Island, Papua, Indonesia. GSTF J. Geol. Sciences (JGS) 2, 1, p. 25-33.
(online at: http://dl6.globalstf.org/index.php/jgs/article/view/1224/1515)
(Major NE-SW stress produced NW-SE Jobi sinistral-slip fault on Yapen, interpreted as part of E-W Sorong strike slip fault zone. Yapen stratigraphy: Late Eocene- earliest Miocene Yapen Fm tuffaceous sst (deep marine island arc volcanoclastics), E-M Miocene Wurui Fm Lst, Late Miocene cataclastic breccia with basalt, gabbro clasts, E Pliocene Kurudu Fm Sst)

Ikhwanudin, F. & C.I. Abdullah (2015)- Stratigraphy, facies and diagenesis of limestone in Wurui Formation, Yapen Island, Papua, Indonesia. In: 77th EAGE Conf. Exhib., Madrid, Tu N110 06, 5p. *(Extended Abstract)*
(Study of Wurui Fm limestone in Dawai Village, E part of Yapen Island. Age of limestone Te5-Tf2 (E-M Miocene). Depositional environment inner-middle neritic, diagenesis mixed marine-phreatic)

Ikhwanudin, F. & C.I. Abdullah (2016)- The connection between ophiolite occurance and Yapen-Sorong Fault Zone (YSFZ), Papua, Indonesia. In: 78th EAGE Conf. Exh., Vienna 2016, Th P5 08, 5p.
(Sheared and brecciated ophiolitic rocks on NE Yapen island, unconformable over Wurui Limestone Fm (M Miocene?). Drifted and brecciated mainly in Late Miocene-Pliocene. Ophiolite is carried by Yapen-Sorong Fault Zone in strike-slip compressional regime)

Indarto, S. (1996)- Potensi batupasir kuarsa di daerah Aikimia, Wamena, Irian Jaya. Proc. 25th Ann. Conv. Indon. Assoc. Geol. (IAGI), 1, p. 56-66.
('Quartz-sand potential of the Aikimia area, Wamena, Irian Jaya'. (probably on quartz-rich (95-99%) Upper Cretaceous Ekmai sandstone outcrops in Baliem Valley, Central Range of W Papua; JTvG)

Indarto, S., N. Sumawijaya, A. Bukit & N. Sastra (1987)- Geologi daerah Wamena dan Depapre Jayapura Irian Jaya. Pusat Penelitian Geoteknologi LIPI, 24p.
('Geology of the Wamena and Depapre Jayapura areas, Irian Jaya'. Lithologic analysis of sandstones and dolomitic limestones in Wamena area, Central range. Petrographic analysis of (Cretaceous?; JTvG) sandstone in Aikima area 95-99% quartz. Depapre-Sentani-Jayapura in NE Irian Jaya common harzburgite, lateritized, overlain by limestone)

Indarto, S., M. Syafei, Praptisih & S. Djoehanah (1999)- Provenance study of shaly-sandy unit of Kembelengan Formation, Wamena, Irian Jaya. Proc. 28th Ann. Conv. Indon. Assoc. Geol. (IAGI), Jakarta, 3, p. 75-82.
(U Cretaceous Kembelangan sandstones in Wamena area, Central Range, 20-30 cm thick beds and thinning upward. Petrography shows quartz (58-70%), clay (10-12%), feldspar (6-8%), calcite, muscovite (3-7%), glauconite, and is classified as quartz wacke of recycled orogen provenance)

Insley, M. & M. Tocher (1999)- Comparison of field development in the frontal regions of the fold and thrust belts of PNG/Irian Jaya and Pakistan. In: C.A. Caughey & J.V.C. Howes (eds.) Proc. Conf. Gas habitats of SE Asia and Australasia, Jakarta 1998, Indon. Petroleum Assoc. (IPA), p. 225-236.

Jablonski, D. (2007)- Geology and exploration potential of the offshore S.W. Bintuni Basin, Semai-Gorong Basin, Eastern Indonesia. Proc. SE Asia Petrol. Soc. (SEAPEX) Conf., Singapore, 2p. *(Abstract only)*
(No wells in SW Bintuni Basin, but large structures. Three provinces: Seram Thrust Belt in W, Seram Trough in centre and Seram Fold Belt in E. Area underlain by older extensional regime, overprinted by latest Miocene-Recent compressional pulses, younging to NE. W part of area imbricate thrusts, E area gentle folds. Source rocks may include Permian paralic shales and coals, M-U Triassic restricted marine claystones, and L-M Jurassic paralic coals and clays. Plays: (1) Paleozoic rift fault blocks, (2) Triassic limestone build-ups, (3) Triassic-M Jurassic rift fault blocks, (4) Callovian-Oxfordian fractured limestone, (5) Upper Cretaceous-Lower Tertiary sandstones associated with M Palaeocene Coral Sea rifting, (6) Miocene build-ups (Kais Fm-equivalent); (7) Imbricate thrusts in Seram Thrust Belt and (8) Gentle folds in Seram Fold Belt in E)

Jackson, J.E. (2010)- Neogene intrusions in the Western Central Range, Papua, Indonesia: petrologic, geochemical, and isotopic comparison of the Miocene Ular Merah and Pliocene Komopa Magmatic Districts. M.Sc. Thesis University of Texas at Austin, p. 1-360. *(Unpublished)*
(Two belts of Neogene igneous rocks in New Guinea Central Range, with Miocene (20-10 Ma) belt outcropping N of Pliocene (7-3 Ma) belt. Miocene magmatic rocks in PNG (Maramuni Volcanic Arc) intruded Australian continental rocks; those in W Papua intruded allochthonous arc/forearc terranes. Pliocene magmatic rocks young from W to E, and emplaced into Australian continental crust at highest elevations in C Range. Two magmatic districts in W Central Range studied here: (1) Komopa Pliocene (3.9-2.9 Ma) quartz monzodiorites, granodiorite and monzogranites, emplaced into Australian passive margin strata, shoshonitic, similar to intrusions from Minjauh Volcanic Field, Ertsberg Mining District and Etna Bay (products of collisional delamination tectonism as leading edge of Australian continental lithosphere jammed N-dipping subduction zone beneath Irian Ophiolite) and (2) Ular Merah late E Miocene (17.4-16.6 Ma) calc-alkaline, porphyritic diorites and monzodiorites, emplaced into allochthonous Irian Ophiolite Belt. Adakite-like characteristics sugges partial remelting of garnet-bearing plutons emplaced into mantle beneath allochthonous ophiolite)

Jongmans, W.J. (1940)- Beitrage zur Kenntnis der Karbonflora von Niederlandisch Neu Guinea. Mededelingen Geol. Stichting 1938-1939, p. 263-274.
('Contributions to the knowledge of the Carboniferous flora of Netherlands New Guinea'. Description of mixed 'Cathaysian' flora (Taeniopteris, Pecopteris spp.) and Gondwanan 'Glossopteris' fauna from two localities in Otakawa River, Central Range foothills, S of Carstensz Peaks. Here believed to be of Late Carboniferous age, but regarded as Permian by Hopping and Wagner (in Visser & Hermes, 1962), or Late Permian by McLoughlin (1993), based on correlation with Bowen Basin (Glossopteris, etc.; Identifications re-evaluated by Rigby (1997)and Playford & Rigby (2007); JTvG) (JWJ, p. 265-266 also mentions several occurrences of possible Carboniferous or Permian wood (Calamites, Dadoxylon) and plant fossils (Pecopteris arborescens) from NW Kalimantan and Sarawak; not published elsewhere?))

Jongmans, W.J. (1941)- Elementen der *Glossopteris* flora in het Carboon van Nieuw Guinea. Handelingen 28e Nederlandsch Natuurkundig Geneeskundig Congres, C, p. 267-271.
('Elements of the Glossopteris flora in the Carboniferous of New Guinea'. Occurrence in S Papua of Carboniferous flora with mixed Gondwanan (Glossopteris) and Asian (Cathaysian) species (now deemed to be of Permian age; JTvG))

Jordan, L. (1931)- Foraminifera from the Pliocene of New Guinea. M.S. Thesis, Dept. of Geology, Massachussets Institute of Technology (MIT), p. *(Unpublished)*

Jost, B.M., M. Webb & L.T. White (2018)- The Mesozoic and Palaeozoic granitoids of north-western New Guinea. Lithos 312-313, p. 223-243.
(Late Paleozoic and E Mesozoic granitoids of NE Birds Head mainly small-medium size intrusions of Late Devonian- E Carboniferous (363–328 Ma) and latest Permian-Triassic (257-223 Ma) ages, intruding Silurian-Devonian Kemum Fm metasediments. Most peraluminous and derived from partial melts of metasedimentary continental crust. Minor mantle-derived material, especially in Permian-Triassic. Devonian-Carboniferous granitoids (Mariam Ngemona, Wasiani, etc. granites/granodiorites) and volcanics locally restricted. Late Permian-Triassic intrusions (Sorong, Anggi, Maransabadi, Kwatisore, Netoni, Sorong, etc.) likely part of long active continental margin subduction system spanning length of New Guinea, E Australia and Antarctica)

Kamaruddin, C.H. (2012)- Deliniasi zona ubahan porfiri Cu-Au di daerah Orion, Pegunungan Bintang, Papua. Proc. 41st Ann. Conv. Indon. Assoc. Geol. (IAGI), Yogyakarta, 2012-M-10, p.
('Delineation of Cu-Au porphyry alteration in the Orion area, Star Mountains, Papua')

Kambu, M.R. (2014)- Geologi dan karakteristik batuan beku ultramfik sebagai bahan baku konstruksi di daerah Lembah Sunyi, Kelurahan Angkasapurah, Kota Jayapura, Provinsi Papua. J. Ilmiah Magister Teknik Geologi (UPN) 7, 1, 6p.
(online at: http://jurnal.upnyk.ac.id/index.php/mtg/article/view/265/227)
('Geological characteristics and ultramafic igneous rocks as a raw material in the construction at the Lembah Sunyi area, Angkasapurah Village, Jayapura, Papua Province'. Widespread serpentinized ultramafic rocks)

Kambu, Y. & W. Permana (2008)- Permian- Cretaceous hydrocarbon prospectivity at Berau- Papua. Proc. 32nd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IP08-SG-080, 9p.
(Small Permian, Triassic, Jurassic, Cretaceous paleogeographic maps of Berau area, offshore S side Birds Head, most of them showing NW-SE trending facies belts, becoming more marine to SW)

Kamtono, E. Soebowo & Praptisih (1991)- Geologi daerah Pass Valley, Irian Jaya. J. Riset Geologi Pertambangan (LIPI) 10, 1, p. 29-36.
('Geology of the Pass Valley area, Irian Jaya'. Pass Valley area NE of Wamena with outcrops of folded Cretaceous Kembelangan Fm and Tertiry New Guinea Limestone Gp)

Katchan, G. (1982)- Mineralogy and geochemistry of Ertsberg (Gunung Bijih) and Ertsberg East (Gunung Bijih Timur) skarns, Irian Jaya, Indonesia and the Ok Tedi skarns, Papua New Guinea. Ph.D. Thesis, University of Sydney, NSW, p. 1-498. *(Unpublished)*

Kato, M., D. Sundari & S.K. Skwarko (1999)- First description of Carboniferous corals from Western Irian Jaya, Indonesia. Geol. Res. Dev. Centre (GRDC), Bandung, Seri Paleontologi 9, p. 9-41.
(Two new species of rugose corals from central Birds Head float samples in area of Aimau Fm and Aifat mudstone outcrops reportedly suggest Late Carboniferous age and Eurasian affinity)

Keho, T. & D. Samsu (2002)- Depth conversion of Tangguh gas fields. The Leading Edge 21, 10, p. 966-971.
(Depth maps for Top Kais Lst and Base Cretaceous. Adding Late Jurassic shale isopach -derived from wells to seismically derived Base Cretaceous depth map created Top Roabiba Reservoir Sand depth map)

Keijzer, F.G. (1941)- Fossielen van het Palaeozoicum van Zuidelijk Centraal Nieuw-Guinea. Handelingen 28e Nederlandsch Natuur- Geneeskundig Congres 28, Utrecht, 4, p. 271-272.
('Fossils from the Paleozoic of South Central New Guinea'. Summary of macrofossils reported from >1500m thick Paleozoic section. Includes Devonian-to Permian brachiopods and rugose and tabulate corals of Silurian (Halysites), Devonian (Heliolites barrandei, Favosites reticulatus, Cyathophyllum anisactis, C. douvillei, etc.) and Permian (Lonsdaleia) ages)

Kemmerling, G.L.L. (1919)- De geologie van Nederlanisch Noord Nieuw Guinea. Handelingen 1st Nederl.-Indisch Natuurwetenschappelijk Congres, Weltevreden 1919, p. 230-237.
('The geology of North Netherlands New Guinea'. Brief review of early geologic reconnaissance geological reconnaissance work in W Papua northern coastal regions (reported inmore detail by Zwierzycki 1921))

Kemmerling, G.L.L. (1928)- Eenige jaren mijnbouwkundig-geologische exploratie op Nederlandsch Nieuw Guinea. Jaarboek Mijnbouwkundig Vereeniging Delft, 1926-1928, p. 166-204.
('A few years of mining-geological exploration on Netherlands New Guinea'. Brief review of 1917-1922 expeditions, of which very little was published elsewhere)

Kendrick, R.D. (2000)- Structure, tectonics and thermochronology of the Irian Jaya fold belt, Irian Jaya, Indonesia. Ph.D. Thesis La Trobe University, Melbourne, p. 1-379. *(Unpublished)*

Kendrick, R.D. & K.C. Hill (2002)- Hydrocarbon play concepts for the Irian Jaya fold belt. Proc. 28th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 353-367.
(Irian Jaya foldbelt common oil shows and two non-commercial discoveries. Three new play concepts proposed: young structures in foreland, Ekmai sst in thrust contact with Miocene marls, inverted Paleozoic rifts in western foldbelt. Central Range foldbelt cooling ages 10-12 Ma))

Kendrick, R.D., K.C. Hill, S.W. McFall, Meizarwin, A. Duncan, E. Syafron & B.H. Harahap (2003)- The East Arguni Block: hydrocarbon prospectivity in the Northern Lengguru foldbelt, West Papua. Proc. 29th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 467-483.

Kendrick, R.D., K.C. Hill, P.B. O'Sullivan, K. Lumbanbatu & I. Saefudin (1997)- Mesozoic to Recent thermal history and basement tectonics of the Irian Jaya fold belt and Arafura platform, Irian Jaya, Indonesia. In: J.V.C. Howes & R.A. Noble (eds.) Proc. Petroleum Systems of SE Asia and Australia Conf., Jakarta, Indon. Petroleum Assoc. (IPA), p. 301-306.
(Lengguru foldbelt wells Suga 1 and Kamakawala 1 poor quality Cretaceous- Paleocene reservoir sands. Zircons? suggest 2 source terranes for U Cretaceous Ekmai sands: from N (Silurian- Devonian Kemum Terrane) in N Lengguru (E Arguni Block outcrops), from S in S Oeta 1 well, with mainly M Cretaceous and Triassic ZFT grain ages. Irian Jaya foldbelt deformation- cooling started in M Miocene, earlier than PNG)

Kendrick, R.D., K.C. Hill, K. Parris, I. Saeffudin & P.B. OöSullivan (1995)- Timing and style of regional deformation in the Irian Jaya foldbelt. Proc. 24th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 249-261.
(Apatite fission track analyses from W Irian foldbelt indicate two cooling events related to tectonic uplift: ~20-25 Ma and 2-5 Ma. NE-SW trending lineaments, at high angle to trend of thrust belt may be deep-seated basement structures. From PNG border in E to Weyland overthrust in W, lateral changes in Late Permian- M Jurassic sequence indicate transition from granites and high-grade metamorphics to widespread clastic graben-fill deposits and corresponds to change in trend in thrust belt from WNW to E-W at ~139° E. Pre-existing extensional faults influenced initiation of basement inversion, and may have acted as lateral ramps to compartmentalize inverted blocks and separate them from areas of thin-skinned thrusting)

Kitazaki, U. (1948)- Tertiary limestones from Japen Island, New Guinea. Miscell. Rept. Res. Inst. Nat. Resources Tokyo 11, p. 25-26 *(in Japanese)*.

Kobayashi, T. & C.K. Burton (1971)- Discovery of ellesmereoceroid cephalopods in Irian, New Guinea. Proc. Japanese Academy 47, 7, p. 625-630.
(online at: https://www.jstage.jst.go.jp/article/pjab1945/47/7/47_7_625/_pdf)
(Orthoconic cephalopods from dark shales that look like Jurassic Kembelangan Fm in Star Mountains near PNG border, collected by Kennecott. Look like E-M Ordovician nautiloids and may be from Kariem Fm. If correct, these are oldest fossils known from Indonesia. Propose new genus-species name Irianoceras antiquum (re-assigned to Bactroceras latisiphonatum Glenister by Crick and Quarles van Ufford (1995))

Kochem, E.J. (1976)- Diagenesis of the subsurface Miocene pinnacle reefs of Irian Jaya, Indonesia; a petrographic study. Masters Thesis, Rensselaer Polytechnic Inst., Troy, p. 1-106. *(Unpublished)*

Koesoemadinata, R.P. (1976)- Tertiary carbonate sedimentation in Irian Jaya with special reference to the northern part of the Bintuni Basin. Proc. Carbonate Seminar Jakarta 1976, Indon. Petroleum Assoc., p. 79-92.
(Summary of well and outcrop work in Birds Head. Two main Miocene carbonate platforms in New Guinea: Arafura and Ayumara in Birds Head)

Koopmans, B.N. (1986)- Satellite radar interpretation of the Bintuni Basin area, Eastern Vogelkop Peninsula, West Irian, Indonesia. Geologie en Mijnbouw 65, 3, p. 197-204.
(Interpretation of 1981 Shuttle Imaging Radar strip of E Birds Head (NE edge of Bintuni Basin, Lina Mts.). Abutment of E-W central Vogelkop monocline against NNW-SSE running Lengguru fold belt appears to be fault-controlled. Also Bintuni Basin controlled by faults that parallel C Birds Head monocline in N and S. Anomalous fold direction of Imskin anticline is surface expression of block movements along these faults)

Koswara, A. (1995)- Geological map of the Taritatu (Kerom) Quadrangle, Irian Jaya (Quad 3412). Geol. Res. Dev. Centre (GRDC), Bandung.
(Geologic map of NE part of West Papua (N-most part of Central Range and Pacific Ocean Plate to N. In SW corner typical N Central Range folded Jurassic- Cretaceous Kembalangan Fm overthrust by ultramfic rocks and Derewo Metamorphics. In East relatively widespread Permo-Triassic? Cycloops Metamorphic Group with minor ultramafic rocks, apparently overlain by Eocene Ubrug Limestone. With numerous young diorite intrusives)

Koswara, A. (1996)- Lithostratigrafi daerah Taritau, Pegunungan Tengah, Irian Jaya berdasarakan penafsiran citra radar. J. Geologi Sumberdaya Mineral 6, 56, p. 2-9.
('Lithostratigraphy of the Taritau area, Irian Jaya Central Range, based on radar imagery'. Remote sensing interpretation of Taritau area in N part of Central Range in W Papua- PNG border area)

Krause, D.C. (1965)- Submarine geology North of New Guinea. Geol. Soc. America (GSA) Bull. 76, p. 27-42.
(Interpretation of offshore structural features from new bathymetric maps N of West Papua and PNG)

Kruizinga, P. (1957)- Palaeozoische lei aan de Wesan Rivier op Nieuw Guinea? Nova Guinea, E.J. Brill, Leiden, new ser. 8, 1-2, p. 1-4.
('Paleozoic slate at the Wesan River on New Guinea?'. Highly folded phyllitic rock collected by Bemelmans in 1955 just N of Wesan River mouth, NW Birds Head. Contains molds of Orthoceras-like fossils, suggesting Paleozoic age. East of this locality different, Late Jurassic (Oxfordian) folded shale with Inoceramus and Belemnopsis. Rocks look different from Silurian low- metamorphic graptolite shale from Kamundan in C Birds Head)

Kurniawan, A.P., B.N. Suwardi, F. Bahesti, S.M. Hadi, Hendarsyah & A.Prasetyo (2018)- Defining Kofiau sub-basin as the deepest part of Salawati Basin using satellite gravity interpretation approach. Proc. 42nd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA18-30-G, 19p.
(Deep, offshore Kofiau sub-basin W of Salawati basin is deepest part of Salawati Basin)

Kusnama (2008)- Stratigrafi daerah Timika dan sekitarnya, Papua. J. Sumber Daya Geologi 18, 4, p. 205-222.
(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/244/224)
('Stratigraphy of the Timika area, Papua'. Description of Timika- Tembagapura road section, W Central Range foothills. Precambrian Nerewip Fm pillow lavas and basalts with foliated meta-sediments unconformably overlain by Precambrian-Cambrian Otomona Fm slate and sandstone. Overlain unconformably by Ordovician? Tuaba Fm sst and red mudstone. Siluro-Devonian Modio Fm dolomite and clastics unconformably overlain by Permian Aiduna Fm shallow marine- deltaic sst, carbonaceous mudstone, with calcarenite and coal beds. Triassic- E Jurassic Tipuma Fm red beds unconformably overlain by M Jurassic- Cretaceous Kembelangan Gp quartz sst and mudstone with ammonites. Paleocene- E Miocene New Guinea Lst overlain by Late Miocene-Pliocene Buru Fm conglomeratic clastics. Late Tertiary Diorite intrusions with Au/Cu mineralization N Timika)

Kusnama & H. Panggabean (1998)- Stratigraphy and tectonic evolution of the Beoga area, Central Range, Irian Jaya. J. Geologi Sumberdaya Mineral 8, 83, p. 2-10.
(Beoga area in W part of Central Range in W Papua. Oldest sedimentary rocks Cretaceous Kembelangan Gp with 600m thick E Cretaceous mudstone-dominated Pinya Fm with ammonites, belemnites, overlain by 200m thick U Cretaceous Ekmai Sst. glauconitic quartz sandstones. Overlain by thick Paleogene- E Miocene New Guinea Limestone Group with ~600m m thick Paleocene Waripi Fm and ~1000m Eocene- Oligocene Yawee Fm limestones with quartz sst member in mid-Oligocene. Etc. In N of area Derewo Metamorphics, which represent Kembelangan Gp sediments metamorphosed during ophiolite obduction)

Kusnida, D., T. Naibaho & R. Rahardiawan (2014)- Late Neogene seismic structures of the South Batanta Basin, West Papua. Bull. Marine Geol. 29, 1, p. 11-19.
(online at: http://ejournal.mgi.esdm.go.id/index.php/bomg/article/view/61/62)
(Seismic lines across offshore S Batanta Basin W of Salawati/ Birds Head reflect young transtensional and transpressional structuring along Sula-Sorong Fault Zone. M-L Pliocene extensional event and Late Pleistocene-Recent inversion sediments. Water depths 200-1500m)

Kusnida, D., Subarsyah, E. Saputro & A. Ali (2016)- Initial studies of the marine geophysical survey in the offshore Waigeo, West Papua. J. Geologi Sumberdaya Mineral 17, 3, p. 171-177.
(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/16)
(Offshore N Waigeo in zone of oblique convergence of Australian and Pacific plates, and bound by left-lateral transform Sorong Fault Zone (SFZ) in S. Total magnetic intensities +200 nT to -150 nT indicate area with rocks of oceanic origin with highs (terranes) and lows (basins). Deep SE-NW trending Waigeo Trough with up to 1000m of (Pliocene- Quaternary?) sediment is tectonic contact between island-terranes of Waigeo and Ayu islands and Pacific Oceanic crust)

Kyle, J.R., L. Gandler, H. Mertig, J. Rubin & M. Ledvina (2014)- Stratigraphic inheritance controls of skarn-hosted metal concentrations: ore controls for Ertsberg-Grasberg District Cu-Au skarns, Papua, Indonesia. Acta Geologica Sinica (English Ed.), 88, Suppl. 2, p. 529-531.
(Ertsberg-Grasberg district in W Papua hosts two giant porphyry and skarn-hosted Cu-Au systems that formed between 3.3 and 2.5 Ma in Central Range. Cu-Au systems are associated with two dioritic intrusive centers,

Grasberg and Ertsberg. High grade Cu-Au ore concentrations locally controlled by host lithology (carbonates). Paleocene Waripi Fm limestone principal host of Big Gossan and Kucing Liar Cu-Au skarn ore zones. Ertsberg and Dom Cu-Au skarns developed in lower part of Late Oligocene- Lower Miocene Kais Fm)

Kyle, J.R., A.S. Mote & R.A. Ketcham (2008)- High-resolution X-ray computed tomography studies of Grasberg porphyry Cu-Au ores, Papua, Indonesia. Mineralium Deposita 43, 5, p. 519-532.
(X-ray method for scanning ore core samples)

Lacey, W.S. (1975)- Some problems of ómixedô floras in the Permian of Gondwanaland. In: K.S.W. Campbell (ed.) Gondwana Geology, Australian Nat. University (ANU), Canberra, p. 125-134.

Lambert, A.L. (2008)- Petrology of the southwest margin of the Grasberg igneous complex, Papua, Indonesia. M Sc. Thesis, University of Texas at Austin, p. 1-398. *(Unpublished)*
(3 Ma Grasberg Igneous Complex super-giant porphyry copper-gold deposit shallowly emplaced into folded and faulted limestones as young as Late Miocene. The Heavy Sulfide Zone is pyrite-rich shell surrounding complex, and grades into Marginal Breccia. Initial Dalam intrusion phase generated ~5 m of skarn)

Lambert, C.A. (2000)- Subsurface meso-scale structural geology of the Kucing Liar and Amole Drifts and petrology of the heavy sulfide zone, South Grasberg Igneous Complex, Irian Jaya, Indonesia. M.Sc. Thesis University of Texas at Austin, p. 1-. *(Unpublished)*

Lasarimba, D.S Djohor & B Bensaman (2008)- Penentuan batuan batupasir Formasi Sirga pada tambabg terbuka Grasberg, Kec. Tembagapura, Kab. Mimika, Provinsi Papua. Proc. 37th Ann. Conv. Indon. Assoc. Geol. (IAGI), Bandung, 2, p. 654-677.
('Sirga Fm sandstone provenance analysis on Grasberg open pit, Tembagapura, Mimika District, Papua province'. Measured sections of mid-Oligocene Sirga Fm from Grasberg mine area and in cores. Thickness ~10-31m?. Samples are lithic arenite, feldspathic wacke and lithic wacke. Provenance interpreted as 'recycled orogen'. Transport directions from S to N suggested by intercalated claystone in N of study area)

Ledvina, M.D. & J.R. Kyle (2014)- Investigating the pathways and P-T-X conditions of hydrothermal fluid flow responsible for Cu-Au mineralization in the Ertsberg East skarn system, Papua, Indonesia. Acta Geologica Sinica (English Ed.), 88, Suppl. 2, p. 578-579. *(Abstract)*
(online at: http://onlinelibrary.wiley.com/doi/10.1111/1755-6724.12374_38/epdf)

Lelono, E.B. (2008)- Pleistocene palynology of the Waipona Basin, Papua. Lemigas Scientific Contr. 31, 2, p. 7-18.
(Well in W Papua drilled >3000m of mainly Pleistocene sediments, with minor section of Late Pliocene at base. Good pollen recovery, with mixture of Australian and Asian elements. Existence of Asian palynomorphs indicates dispersal of Asian flora into New Guinea following arrival of Australian plates at around end-Oligocene. Palynological assemblages from upper interval indicate climate changes, from dry to wet. Low pollen recovery in lower interval, possibly due to deposition in deep marine environment, far from continent)

Lelono, E.B., M. Firdaus & T. Bambang S.R. (2010)- Palaeoenvironments of the Permian- Cretaceous sediments of the Bintuni Bay, Papua. Lemigas Scientific Contr. 33, 1, p. 71-83.
(online at: www.lemigas.esdm.go.id/en/semua-scientific.html)
(Paleoenvironments of Late Permian-Cretaceous of Bintuni Bay: Permian-Triassic Ainim Fm non-marine (shale primary gas source rock for area). E Jurassic non-deposition. M Jurassic Lower Kembelangan Fm fluvial sandstone (main reservoir). Overlain by Late Jurassic deeper marine shale. E Cretaceous absent, suggesting erosion. Late Cretaceous Jass Fm deep marine shale. With paleogeographic maps)

Le Roux, C.C.F.M. (1926)- Expeditie naar het Nassau-gebergte in Centraal Noord Nieuw Guinee. Tijdschrift Bataviaasch Genootschap voor Kunst en Wetenschappen 66, p. 447-513.
('Expedition to the Nassau Mts in central North New Guinea'. On the1926 Dutch-American 'Stirling' N New Guinea ethnographic expedition up Mamberamo- Rouffaer rivers and into Central Range. Not much geology)

Leys, C.A., M. Cloos, B.T.E. New & G.D. MacDonald (2012)- Copper- gold ± molybdenum deposits of the Ertsberg- Grasberg District, Papua, Indonesia. In: J.W. Hedenquist et al. (eds.) Geology and genesis of major copper deposits and districts of the world: a tribute to Richard H. Sillitoe, Soc. Economic Geol. (SEG), Spec. Publ. 16, p. 215-235.
(Review of Ertsberg-Grasberg district in Central Range of W Papua that hosts two giant Cu-Au (± Mo)-rich porphyry and skarn-hosted Cu systems, formed between 3.3- 2.5 Ma, associated with two separate K-rich dioritic intrusions. Economic mineralization in each system vertically continuous over >1500 m. Grasberg system two deposits: Grasberg porphyry and Kucing Liar skarn. Ertsberg system four deposits: Ertsberg skarn, Ertsberg East skarn, Dom skarn and Big Gossan)

Lie, H.S., S.D. Puspita, R. Krisnandar & K. Ferari (2018)- Unlocking Mesozoic petroleum system potential of underexplored southern Bintuni Basin. Proc. 42nd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA18-575-G, 15p.
(Chevron discussion of petroleum potential of undrilled Mesozoic section in S Bintuni West Papua I and III blocks. Not much new)

Ling, H.Y. & R. Hall (1995)- Note on an age of the basal sedimentary sequence of Waigeo Island, eastern Indonesia. J. Southeast Asian Earth Sci. 11, p. 53-57.
(Basal sedimentary unit on Waigeo is Tanjung Bomas Fm and contains late M Eocene radiolarian assemblage. Overlies ?Late Jurassic-Early Cretaceous ophiolite complex and thin volcaniclastic Kapadiri Fm with Early Cretaceous calpionnelids)

Ling, H.Y., R. Hall & G.J. Nichols (1991)- Early Eocene radiolaria from Waigeo Island. Eastern Indonesia. J. Southeast Asian Earth Sci. 6, p. 299-305.
(Well-preserved Early Eocene radiolarian assemblages confirm presence of Eocene marine sediments on Waigeo Island, NW of Birds Head)

Livingstone, H.J. (1992)- Hydrocarbon source and migration, Salawati Basin, Irian Jaya. In: Eastern Indonesia Exploration Symposium, Simon Petroleum Technology/Pertamina, p.

Livingstone, H.J., B.W. Sincock, A.M. Syarief, Sriwidadi & J.N. Wilson (1992)- Comparison of Walio and Kasim Reefs, Salawati Basin, Western Irian Jaya, Indonesia. In: C.T. Siemers et al. (eds.) Carbonate rocks and reservoirs of Indonesia: a core workshop, Indon. Petroleum Assoc. Core Workshop Notes 1, p. 4/1- 4/40.
(Kasim and Walio fields reservoirs Miocene Kais Fm reefal carbonates. Walio field producing 98.5% water, Kasim 99.4% water. Walio on N rim of extensive carbonate bank or shelf, Kasim part of elongate pinnacle reef complex. Reservoir rocks mainly of skeletal/coral wackestones and packstones Dolomite commonly replaced original argillaceous mud matrix; on reef flanks much of original texture destroyed. Porosity mainly from leaching of aragonitic fragments. Reservoirs highly stratified and divided into five units)

Lloyd, A.R. (1994)- A review of the geology, biostratigraphy and hydrocarbon potential of Irian Jaya. Alan R. Lloyd and Associates, Duncraig, 630p. *(Unpublished)*

Lootens, D.J. (ed.) (1972)- P.T. Kennecott Indonesia final report on Irian Barat reconnaissance (Blocks 8, 9, 10). Kennecott Report, 41p. *(Unpublished)*

Loth, J.E. (1925)- Verslag over de geologische-mijnbouwkundige verkenning van West Nieuw Guinea. Jaarboek Mijnwezen Nederlandsch-Indie 53 (1924), p. 114-147.
('Geological-mining reconnaissance of W New Guinea' Geologic survey of Birds Head/ Bintuni Basin area, with investigation of oil seeps and coal occurrence, etc.)

Luck, R.B. (1999)- Structural geology of the Grasberg Lime quarry and Amole Drift: implications for emplacement of the Grasberg Igneous Complex, Irian Jaya, Indonesia. M.A. Thesis University of Texas at Austin, p. 1-552. *(Unpublished)*

(Pliocene Grasberg Igneous Complex in C Range of W Papua one of world's largest copper-gold porphyry-type systems. Diameter of 1.7 km at 4000m level. Two structural regimes (1) Miocene contractional episode that resulted in km-scale folding, concurrent with arc-continent collision inN-dipping subduction zone; (2) more subtle regime of NE-SW left-lateral strike-slip faulting, with 5 strike-slip faults with 10's-100's m of displacement, lasting from ~4 Ma to ~2 Ma)

Luck, R.B., B. Sapiie & M. Cloos (1999)- Pull-apart history for emplacement of the Grasberg igneous complex, Irian Jaya, Indonesia. Geol. Soc. America 1999 Ann. Mtg., Abstracts with Programs 31, 7, p. 92-93. *(Abstract only. Granodioritic Grasberg Igneous Complex three-phase intrusion with major copper and gold reserves. Early Dalam intrusive phase can not be dated. Main Grasberg Intrusive and Late Kali Intrusive phases Ar isotopic ages of ~3 Ma. Ten-step cross-sectional model for GIC emplacement. Tens of km of regional shortening followed by few km of left-lateral displacement contemporaneous with GIC intrusion in pull-apart between two strike-slip faults. Model does not require stratovolcano for copper-porphyry formation)*

Lumbanbatu, K. (1998)- Zircon fission track dating of the Arafura platform and Central Range up-thrust zone, Irian Jaya, Indonesia. J. Geologi Sumberdaya Mineral 8, 87, p. 14-36.
(Zircon fission track and Apatite fission track analyses of Permian- Miocene rocks in SW part of W Papua Central Range (Omba, Waghete, Timika map sheets) suggest folding-uplift in latest Miocene- Pliocene. Tipuma Fm found to be younger than generally accepted: wide range of ages, mean 148 Ma, latest Jurassic- E Cretacous instead of Triassic (see also Kendrick et al. 1995))

Lunt, P. & R. Djaafar (1991)- Aspects of the stratigraphy of Western Irian Jaya and implications for the development of sandy facies. Proc. 20th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 107-124.
(Stratigraphic observations on W New Guinea. Permian fusulinid distribution and Gondwanan- Cathaysian plants, etc.. Late Cretaceous (Late Turonian- E Santonian) oceanographic event towards more calcareous deep marine deposits, Late Cretaceous volcanism of Birds Head, etc.)

MacDonald, G.D. & L.C. Arnold (1994)- Geological and geochemical zoning of the Grasberg Igneous Complex, Irian Jaya, Indonesia. J. Geochemical Exploration 50, 1-3, p. 143-178.
(Grasberg Igneous Complex is high grade porphyry Cu-Au deposit in central highlands of New Guinea. Mineralization confined to intrusive rocks emplaced in tightly folded Tertiary carbonates. Mineralization extends from surface at 4200m elevation to deepest drill penetrations at 2700m elevation. Two-three distinct intrusion stages produced two porphyry orebodies with different mineralization as well as sulfide-rich skarn at margin of igneous complex. Intrusives and mineralization radiometrically dated at 2.7- 3.3 Ma)

MacDonald, G.D. & L.C. Arnold (1995)- Factors responsible for extreme concentration of Cu and Au in the Grasberg deposit. A comparative look at the porphyry copper systems of the Ertsberg District, Indonesia. In: A.H. Clark (ed.) Giant ore deposits II, Queens University, Kingston, Ontario, p. 314-333.

Malensek, G.A. (1997)- Economic evaluation of the Wanagon gold deposit, Irian Jaya, Indonesia. Masters Thesis, Colorado School of Mines, p. 1-142. *(Unpublished)*
(Low grade pyrite-gold mineralization at Wanagon near Ertsberg, Irian Jaya, in hornfelsed, altered Cretaceous Kembelangan Gp siliciclastic rocks, near contact with Tertiary New Guinea Limestone. Deposit ~300m long, up to 200m wide and 300m deep. Origin of deposit is unclear but characteristics of calcic gold skarn)

Mamengko, D.V., I.B. Sosrowidjojo, B. Toha & D.H. Amijaya (2012)- Geokimia batuan induk Formasi Mamberamo dan Makats di Cekungan Papua Utara. Proc. 41st Ann. Conv. Indon. Assoc. Geol. (IAGI), Yogyakarta, 2012-E-34, 5p.
('Geochemistry of source rocks of the Mamberamo and Makats Formations, North Papua Basin'. Makats and Mamberamo 'B' Fms near N coast of W Papua with abundant Type III kerogen (TOC up to 4.8%) and are potential hydrocarbon source rocks. 2D basin modeling indicates Makats Fm generated oil since 3.35 Ma, Mamberamo since 2.25 Ma. Hydrocarbon resources formed from Makats source rocks estimated at about 24,487.38 BCF Gas and 635,889.54 MMB Oil (wow!!; JTvG))

Mamengko, D.V., H. Susanto, J.T. Musu & A. Yusriani (2014)- Potensi hidrokarbon cekungan Papua Utara berdasarkan karakteristik rembesan minyak Sungai Teer. Proc. 43rd Ann. Conv. Indon. Assoc. Geol. (IAGI), Jakarta, PIT IAGI 2014-139, 6p.
('Hydrocarbon potential of the North Papua basin based on the characteristics of Teer River oil seepage'. N Papua frontier basin with oil seeps on Teer River. Two samples from oil seepage show biodegradation based on n-alkane distribution. Pristane/phytane ratio indicates source rocks shaly coal with low reducing conditions. Oleanane and bicadinane peaks suggest Cenozoic-age source rocks with Type III kerogen)

Marcou, J.A., D. Samsu, A. Kasim et al. (2004)- Tangguh LNGôs gas resource: discovery, appraisal and certification. In: R.A. Noble et al. (eds.) Proc. Deepwater and frontier exploration in Asia & Australia Symposium, Jakarta, Indon. Petroleum Assoc. (IPA), p. 159-176.
(Tangguh complex 6 gas fields: Vorwata, Wiriagar deep, Roabiba, Ofaweri, Ubadari and WOS. Proven 1998 reserves 14.4 TCF, may grow to 24 TCF. 77% of gas in high-quality M Jurassic sst (av. porosity 12.3%, perm 250 mD), rest in in lesser-quality Paleocene turbidite sst (porosity 11-14.5%, perm 2-30 mD). Well data from Wiriagar Deep 1, 2, 5, 7 and Vorwata 2 wells)

Mardani, R. & P. Butterworth (2016)- Palaeocene reservoir depositional systems of the WD Field, Papua Barat Province: a play fairway opening discovery. Proc. IPA 2016 Technical Symposium, Indonesia exploration: where from- where to, Indon. Petroleum Assoc. (IPA), Jakarta, 43-TS-16, p. 1-19.
(Wiriagar Deep (WD) gas field in Birds Head/ Bintuni Bay first discovered by ARCO in 1994, with gas in stacked Waripi Fm Paleocene shallow marine and deep marine turbidite sandstone reservoirs (and M Jurassic sandstones). Three main reservoir depositional systems in 'classic' passive margin overall progradational (SE-directed?) Paleocene series, from basin floor lobes at base, through slope channel complexes to shelf edge deltas, and overlain by Eocene evaporites and Faumai Lst).)

Martin, B.A. & S.J. Cawley (1991)- Onshore and offshore petroleum seepage: contrasting a conventional study in Papua New Guinea and airborne laser fluorosensing over the Arafura Sea. Australian Petrol. Expl. Assoc. (APEA) J. 31, p. 333-353.
(Onshore seeps in PNG Aure Thrust Belt mapped with use of local people. Analyses suggest oil-prone source rock of probable Jurassic age. Seeping petroleum liquids are gas condensates in subsurface, and in this uplifted region likely from accumulations only. Offshore Airborne Laser Fluorosensor (ALF) data over W Arafura Sea indicate active oil seepage. Distribution compatible with understanding of subsurface Paleozoic- Mesozoic source kitchens. Goulburn Graben seepage likely from Paleozoic-(?)Triassic (with possible contribution from other Mesozoic sources), and migrating through largely unfaulted Mesozoic seal. Evidence for liquid petroleum seepage from Mesozoic in Calder Graben via faults through regional seal along Lynedoch Bank Fault System)

Martin, K. (1881)- Eine Tertiaerformation von Neu-Guinea und benachbarten Inseln nach Sammlungen von Macklot und v. Rosenbergôs. Sammlungen Geol. Reichsmuseum Leiden, ser. 1, 1, p. 65-83. *(also in Jaarboek Mijnwezen 11 (1882), Wetenschappelijk Gedeelte, p. 137-156)*
(online at: www.repository.naturalis.nl/document/552374)
('A Tertiary formation from New Guinea and adjacent islands, from collections of Macklot and Von Rosenberg'. Descriptions of Tertiary fossils from W Papua (incl. Eocene Alveolina limestone), Kur, Kai Besar and Aru islands (post-Tertiary mollusc breccia))

Martin, K. (1911)- Palaeozoische, Mesozoische und Kaenozoische Sedimente aus dem sud-westlichen Neu-Guinea. Sammlungen Geol. Reichs-Museums Leiden, ser. 1, 9, 1, E.J. Brill, p. 84-107.
(online at: www.repository.naturalis.nl/document/552433)
('Paleozoic, Mesozoic and Cenozoic sediments from SW New Guinea'. Brief review of fossils collected in foothills South of Central Range by Heldring in 1907-1909 expeditions. Flanks of Wilhelmina (=Trikora) peak composed of Eocene Nummulites and Alveolina limestones. Float in Setakwa (Otakwa) river with Mesozoic limestone with ammonite (Coeloceras?) and Eocene Lacazina limestone. In Noordwest River hard quartz sandstone with brachiopods Rhynconella and Spiriferina (Permian?). In Noord/ Lorentz River Paleozoic grey limestone with trilobite fragments, also blue gray rock with orthoceratid, probably Actinoceras. In B-River

(upper tributary of Eilanden R.) Jurassic ammonites (Macrocephalites?), belemnites, also Eocene Nummulites and Alveolina limestones, E Miocene Lepidocylina limestone, etc. No plates)

Martodjojo, S., D. Sudradjat, E. Subandrio & A. Lukman (1975)- The geology and stratigraphy along the roadcut Tembagapura, Irian Jaya (Indonesia). Inst. Teknologi Bandung, Rept., 51p. *(Unpublished)*
(First description of thick Paleozoic- Mesozoic section along newly built road from Tembagapura town to Freeport Ertsberg mine. Stratigraphic interpretation revised by Oliver et al. 1995)

Maryono, A. & D. Power (2013)- Gold endowment and metallogeny of the island of Papua. Proc. Indonesian Soc. Econ. Geol. (MGEI) Annual Convention 2013, Papua and Maluku Resources, Bali, p. 143-150.

Masduki, D. & H. Sugiharto (1993)- The geology and hydrocarbon aspects of the frontier Central Range of Irian Jaya. Proc. 22^{nd} Ann. Conv. Indon. Assoc. Geol. (IAGI), Bandung, 2, p. 627-637.
(Review of W Papua Central Range geology. Primarily summary of Esso 1991 field survey in Central Range of West Papua. Thrusting to S/SW of ~6000m thick Paleozoic- E Jurassic continental series and M Jurassic-Tertiary Australian continental margin sequence. Large WNW-ESE trending surface anticlines, mainly formed in Late Miocene- E Pliocene. Oil seeps and stains at Tiom (Yereka), Wamena, Magi and Oro)

Masria, M., N. Ratman & K. Suwitodirdjo (1981)- Geologic map of the Biak Quadrangle, Irian Jaya, 1:250,000, Quadrangle 3115. Geol. Res. Dev. Center, Bandung.
(Geologic map of Biak and Supiori Islands. Oldest rocks Korido meta-sediments, Unconformably overlain by Late Eocene- E Oligocene Auwewe island-arc volcanics, unconformably overlain by Late Oligocene? Wainukendi Fm limestone, overlain by earliest Miocene Wafordori Fm marine marls and Miocene Napisendi Fm limestones and marls)

Mathur, R., J. Ruiz, S. Titley, S. Gibbins & W. Margotomo (2000)- Different crustal sources for Au-rich and Au-poor ores of the Grasberg Cu-Au porphyry deposit. Earth Planetary Sci. Letters 183, 1-2, p. 7-14.
(Grasberg is porphyry copper deposit, cut by second stage mineralization enriched in gold. Porphyry-type event 2.9 Ma age and crustal component for source of base metals. Secondary event different crustal sources for ore-forming elements and suggest gold may be derived from sedimentary protoliths)

Mathur, R., S. Titley, J. Ruiz, S. Gibbins & K. Friehauf (2005)- A Re-Os isotope study of sedimentary rocks and copper-gold ores from the Ertsberg District, West Papua, Indonesia. Ore Geology Reviews 26, p. 207-226.
(Ertsberg orebody is copper-gold, roof-pendant of sedimentary strata in diorite. Grasberg and Kucing Liar molybdenites mineralization ages of 2.88 and 3.01 Ma, Ertsberg Molybdenite younger age of 2.54 Ma, similar to Ar chronologies of Pollard and Taylor (2000))

Matsuda, F., Y. Indra, D. DesAutels & B.Y. Chua (2002)- Integration of geological and geophysical data to reconstruct depositional models of Miocene carbonate reservoirs from Southeast Asia. AAPG Ann. Conv. Abstracts. *(Abstract only)*
(Reservoir section in Miocene Upper Kais Fm in E Walio field, Irian Jaya, subdivided into seven shallowing upward cycles. In lower four cycles, reef cores developed in N and E to SE margins, and back reef environment developed in central and W part. In upper three cycles, reef cores present in S area and Walio Reef backstepped in N part. Reservoir section of F6 field was subdivided into lower, middle and upper units)

Matsuda, F., Y. Matsuda, M. Saito & R. Iwahashi (1999)- A computer simulation model facies-3D for the reconstruction of the carbonate sedimentary process. In: G.H. Teh (ed.) Proc. 9th Reg. Congress Geology, Mineral Energy Resources of SE Asia (GEOSEA ô98), Kuala Lumpur 1998, Bull. Geol. Soc. Malaysia 43, p. 407-415.
(online at: https://gsmpubl.files.wordpress.com/2014/09/bgsm1999041.pdf)
(Simulation study of deposition of Upper Kais Fm reefal carbonates in, Walio Field, Salawati Basin. Upper Kais deposited during third-order cycle (5.5-4.2 Ma). Eight carbonate facies. Simulation describes backstepping and facies change at major flooding events)

Matsuda, F., Y. Matsuda, M. Saito, R. Iwahashi, Y. Indra & D. DesAutels (1997)- A computer simulation for the reconstruction of the carbonate sedimentary process in the Miocene Kais Formation, eastern Indonesia. Proc. ASCOPE ô97 Conf., 1, p. 79-98.

Matsuda, F., M. Saito, R. Iwahashi, H. Oda, Y. Indra & D. DesAutels (2000)- Facies 3D- a computer simulation model for reconstruction of sedimentary processes: a case study for Miocene carbonate reservoirs. Proc. 27th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 1, p. 653-661.
(Simulation model of U Miocene reefal carbonate reservoirs of Kais Fm in Walio Field, Salawati Basin)

Matsuda, F., M. Saito, R. Iwahashi, H. Oda & Y. Tsuji (2004)- Computer simulation of carbonate sedimentary and shallow diagenetic processes. In: Integration of outcrop and modern analogs in reservoir modeling, American Assoc. Petrol. Geol. (AAPG), Mem. 80, p. 365-382.
(Simulation models Pleistocene Ryukyu Group, SW Jaopan, and U Miocene reefal carbonate reservoirs of Kais Fm in Walio Field, Salawati Basin, W Papua)

McAdoo, R.L. & J.C. Haebig (1999)- Tectonic elements of the North Irian Basin. Proc. 27th Ann. Conv. Indon. Petroleum Assoc., p. 545-562.
(Waropen Basin between C Ranges and New Guinea Trench forearc basin and one or two subduction-related accretionary prisms. Subduction stopped and relative plate motion now oblique. Plate boundary is sinistral Yapen Fault Zone, on mainland a line of mud volcanoes, extending W along N coast of Yapen Island and may connect to Sorong Fault system. N Irian Basin >25,000' Tertiary sediments in Waropen, Teer River, Waipoga and Meervlakte intermontane sub-basin depocenters. Rapid subsidence created asymmetric basin fills dominated by turbidites. Potential reservoir distribution problematical with good quality turbidite reservoirs near margins. Large reef complexes evident. Terrigenous-derived kerogens serve as potential petroleum source. Low thermal gradient of 1.67° F/100'. Since 1950's, 12 wells drilled, resulting in two gas and one gas/oil discoveries. Four wells abandoned before reaching target due to overpressure)

McCaffrey, R. & G.A. Abers (1991)- Orogeny in arc-continent collision; the Banda Arc and western New Guinea. Geology 19, 6, p. 563-566.

McConachie, B., H. King & M. Keyang (2000)- Old fault controlled foldbelt structures and the petroleum systems of Warim in West Papua. AAPG Int. Conf. Bali 2000 *(Extended abstract)*
(Series of NW-SE trending "3KB trend" faults cross-cutting foldbelt, variously active in Triassic-Jurassic, Oligocene and Plio-Pleistocene; summary of Conoco Warim Block exploration)

McConachie, B., E. Lanzilli, D. Kendrick & C Burge (2000)- Extensions of the Papuan Basin foreland geology into eastern Irian Jaya (West Papua) and the New Guinea fold belt in Papua New Guinea. In: P.G. Buchanan et al. (eds.) Papua New Guineaôs petroleum industry in the 21st century, Proc. 4th PNG Petroleum Convention, Port Moresby, p. 219-237.
(Comparison of PNG Papuan foreland basin and adjacent Akimeugah Basin/Warim area of West Papua. W Papua part sparsely explored; several wells with oil shows. Quartz cementation important in deeper foreland basin in W)

McCue, K.F. (1987)- The plate boundary North of Australia. In: E. Brennan (ed.) Proc. Pacific Rim Congress 1987, Gold Coast, Australasian Inst. of Mining and Metallurgy (AusIMM), Parkville, p. 827-830.
(Epicenters of shallow earthquakes used to identify active seismic zones, signifying present-day plate boundaries, particularly across New Guinea)

McDowell, F.W., T.P. McMahon, P.Q. Warren & M. Cloos (1996)- Pliocene Cu-Au-bearing igneous intrusions of the Gunung Bijih (Ertsberg) district, Irian Jaya, Indonesia: K-Ar geochronology. J. Geology 104, p. 327-340.
(Nine potassic intermediate intrusives in Ertsberg area, aged 2.6-4.4 Ma. Do not appear related to subduction. A more northerly Miocene belt (10-20 Ma; PNG Maramuni Arc and extension to W) does represent a subduction-related arc above a SW dipping Benioff zone)

McMahon, T.P. (1994)- Pliocene intrusions in the Ertsberg (Gunung Bijih) Mining District, Irian Jaya, Indonesia: petrography, geochemstry, and tectonic setting. Ph.D. Thesis, University of Texas at Austin, p. 1-298. *(Unpublished)*
(16 Pliocene (3-4 Ma) intrusions crop out in Ertsberg Mining District, mainly small (<4 km3), hypabyssal dikes and plugs, but Ertsberg 10-20 km3. Intrusions high-K (latites, trachytes, trachydacites) and low-K (andesites, dacites) and equigranular (Ertsberg) to porphyritic (others). Plagioclase dominant mineral, most also with amphibole and biotite. Differences in type of ore deposits of Ertsberg (large body of crystal-poor magma cooling slowly, forming peripheral calc-silicate skarns) and Grasberg (periodic tapping of magmas and fluids from cupola of deeper magma chamber led to porphyry Cu mineralization) related to magmatic evolution. Younger magmatism in W Papua result of lithospheric delamination)

McMahon, T.P. (1994)- Pliocene intrusions in the Gunung Bijih (Ertsberg) mining district, Irian Jaya, Indonesia; petrography and mineral chemistry. Int. Geology Review 36, 9, p. 820-849.
(Part 1 of 2 papers. At least 16 Pliocene hypabyssal intrusions crop out within Gunung Bijih (Ertsberg) Mining District, W Papua, with several associated Cu-Au ore deposits. Most skarns associated with quartz monzonite Ertsberg Intrusion. Intrusions emplaced at < 2 km depth into deformed sedimentary rocks that originally were deposited on N margin of Australian continent. Emplacement of at least one intrusion controlled by cross-cutting NW- and NE-trending fault sets. Intrusions can be divided into high-K group of latites, trachydacites, and trachytes (volumetrically more important), and low-K andesites and dacites)

McMahon, T.P. (1994)- Pliocene intrusions in the Gunung Bijih (Ertsberg) mining district, Irian Jaya, Indonesia; major- and trace-element chemistry. Int. Geology Review 36, 10, p. 925-946.
(Gunung Bijih (Ertsberg) Mining District is group of small, hypabyssal Pliocene intrusions with Cu-Au ore deposits, near highest parts of Central Range of W Papua. Several skarn orebodies around margins of Ertsberg Intrusion. All but Big Gossan deposit related genetically to Ertsberg Intrusion. Nearby supergiant Grasberg porphyry copper deposit related to first two stages of intrusions in Grasberg Complex. Intrusions intermediate in composition, with high-K latite- trachydacite-trachyte, and low-K andesite and dacite. Chemical variation product of combined fractionation, assimilation, and recharge prior to emplacement in shallow crust, derived from same lower crustal magma chamber)

McMahon, T.P. (1999)- The Ertsberg intrusion and the Grasberg Complex: contrasting styles of magmatic evolution and Cu-Au mineralization in the Gunung Bijih (Ertsberg) Mining District, Irian Jaya, Indonesia. Buletin Geologi (ITB) 31, 3, p. 123-132.

McMahon, T.P. (2000)- Magmatism in an arc-continent collision zone: an example from Irian Jaya (western New Guinea), Indonesia. Buletin Geologi (ITB) 32, 1, p. 1-22.

McMahon, T.P. (2000)- Origin of syn- to post-collisional magmatism in New Guinea. Buletin Geologi (ITB) 32, 2, p. 89-104.

McMahon T.P. (2001)- Origin of a collision-related ultrapotassic to calc-alkaline magmatic suite: the latest Miocene Minjauh volcanic field, Irian Jaya, Indonesia. Buletin Geologi (ITB) 33, p. 47-77.

Mealey, G.A. (1996)- Grasberg. Mining the richest and most remote deposit of copper and gold in the world, in the mountains of Irian Jaya, Indonesia. Freeport-McMoRan Inc., New Orleans, 370p.
(History of discovery and development of one of worlds largest Cu-Ag mines in high mountains of W Papua, wriitten by executive of Freeport McMoRan mining company)

Meinert, L.D., K.H. Hefton, D. Mayes & I. Tasiran (1997)- Geology, zonation, and fluid evolution of the Big Gossan Cu-Au skarn deposit, Ertsberg District, Irian Jaya. Economic Geology 92, 5, p. 509-534.
(Big Gossan Cu-Au skarn deposit highest grade copper deposit Ertsberg district. Mineralization associated with 3-4 Ma granodioritic dikes, intruded close to steep fault contact between shale of Cretaceous Ekmai Fm and overlying Paleo- Eocene Faumai Fm. Most mineralization in purer carbonate rocks of Waripi Fms)

Meizarwin (2002)- Discovery and future exploration potential Tangguh gas fields, Bintuni Basin, Papua-Indonesia. In: Giant Field and New exploration concept seminar, IAGI, Jakarta 2002, p. 19-21. *(Abstract only)*

Memmo, V., C. Bertoni, M. Masini, J. Alvarez, V. Memmo, Z. Imran, A. Echanove & D. Orange (2013)- Deposition and deformation in the Recent Biak Basin (Papua Province, Eastern Indonesia). Proc. 37th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA13-G-122, p. 1-12.
(Plio- Pleistocene Biak Basin, between Biak- Yapen islands and N of Sorong- Yapen strike-slip system, probably transtensional pull-apart basin in oblique collision zone of Australian and Pacific Plates. Oceanic or transitional basement of basin postulated. Basin fill appears to be dominated by slope and deep water clastics.)

Mertig, H.J. (1995)- Geology and ore formation of the Dom copper skarn deposit, Ertsberg (Gunung Bijih) District, Irian Jaya, Indonesia. M.A. Thesis, University of Texas, Austin, p.

Mertig, H.J., J.N. Rubin & J.R. Kyle (1994)- Skarn Cu-Au orebodies of the Gunung Bijih (Ertsberg) District, Irian Jaya, Indonesia: J. Geochemical Exploration 50, p. 179-202.
(Ertsberg major Cu-Au skarn deposits products of hydrothermal systems associated with Pliocene magma emplacement. Orebodies in Cretaceous- Tertiary sedimentary sequence, deformed as Australian continental margin entered N-dipping subduction zone at 12 Ma. Intrusions K-Ar ages 2.7-4.4 Ma. Skarn orebodies in Tertiary New Guinea Limestone. Differences among skarn orebodies related to protolith composition. Oligo-Miocene Ainod Fm likely protolith for GB and Dom orebodies. GBT and upper IOZ orebodies probably hosted by Eocene Faumai Fm. DOZ and lower IOZ orebodies in dolomitic unit, probably Paleocene Waripi Fm)

Miedema, J., C. Ode & R.A.C. Dam (eds.) (1998)- Perspectives on the Birdõs Head of Irian Jaya, Indonesia. Proc. Conference, Leiden 1997, Rodopi, Amsterdam, p. 1-982.
(Conference proceedings. Includes invited papers on geology by Ratman and Dam)

Milsom, J. (1991)- Gravity measurements and terrane tectonics in the New Guinea region. J. Southeast Asian Earth Sci. 6, p. 319-328.
(Interpretation of gravity data in 7 areas of W Papua and PNG. In some areas gravity conforms to geological models like in Papuan Ultramafic belt. Others, like Weyland Terrane in W Papua more complicated, where Dow et al. (1986) is not compatible with gravity data. Main gravity high located over large M Miocene diorite batholith, possibly emplaced after overthrusting)

Milsom, J., D. Masson, G. Nichols, N. Sikumbang, B. Dwiyanto, L. Parson & H. Kallagher (1992)- The Manokwari Trough and the western end of the New Guinea Trench. Tectonics 11, p. 145-153.
(New Guinea Trench seafloor depression parallel to N coast of New Guinea for 700 km. W end lies 600 km E of Philippine Trench; intervening region series of N- trending ridges and troughs. Ayu Trough and Tobi and Mapia ridges most prominent. Trench marks site of subduction, but present-day activity disputed. W termination at ridge system culminating in Mapia Island. Trench with 1 km undisturbed sediments and S slopes extensively channeled, suggesting lack of recent deformation. 400 km W of W end of trench, N coast of New Guinea is flanked, at distance of only few tens of km, by deep trough. Sonar imagery of 'Manokwari Trough' suggests recent convergence and transcurrent movement. Trough and abrupt termination of New Guinea Trench are consequences of seafloor spreading in Ayu Trough after subduction ceased at trench)

Moerman, C. (1908)- Verslag over een geologische verkenningstocht door het terrein beoosten der Etna Baai (19 Nov. 1904- 16 Febr. 1905). In: De Zuidwest Nieuw Guinea Expeditie van het Kon. Nederlands Aardrijkskundig Genootschap 1904/5, Brill, Leiden, p. 401-416.
('Report of a geological reconnaissance trip through the area East of Etna Bay 1904-1905'. SW New Guinea Expedition 1904-1905'. Etna Bay (Lahakia Bight), SE of Lengguru foldbelt, is surrounded by massive Eocene Discocyclina-Nummulites-alveolinid limestone, locally with andesite intrusions. Also quartz sandstones, probably underlying limestones, and float of diorite and andesite. Area E of Etna Bay mainly dark slates, locally steeply dipping, with one deformed ammonite, possibly of Late Jurassic age according to G. Boehm (first record of Mesozoic in SW New Guinea))

Moffat, D.T., L.F. Henage, R.A. Brash et al. (1991)- Lengguru, Irian Jaya: prospect selection using field mapping, balanced cross-sections and gravity modeling. Proc. 20th Ann. Conv. Indon. Petroleum Assoc., p. 85-106.
(Balanced cross-sections through Lengguru foldbelt. Plio-Pleistocene thrust-fold belt with inversion and non-inversion imbricate thrust structures. External zone detached, ramp anticlines, dominantly thin-skinned and no basement-involvement. Sub-thrust extensional systems which offset basement suggested by regional gravity at boundary with internal zone. Platform carbonates of New Guinea Lst form competent unit. Internal zone closely spaced imbricates, many of which breached to Kembelangan Gp. Close thrust spacing reflects lithological change from platform to distal facies carbonates; boundary with external zone represents paleo-shelf margin)

Moig, N.A.W. (1994)- High resolution aeromagnetics as an aid to structural interpretation over the Muturi PSC, Irian Jaya. Proc. 23rd Ann. Conv. Indon. Petroleum Assoc., p. 417-438.
(1993 'High Resolution' aeromagnetic survey allowed resolution of lineaments and domains in basement and sedimentary section. NE-SW and NW-SE trends fundamental structural elements controlling distribution of features in Mesozoic and younger sections)

Molengraaff, G.J.H. (1960)- Over het voorkomen van ertsen in economische hoeveelheid op Nederlands-Nieuw-Guinea. De Ingenieur 72, 52, p. 677-682.
('On the occurrence of ores in commercial quantities in Netherlands New Guinea')

Molengraaff, G.J.H., G.A. Hermans & J.A.J. Kaptein (1959)- Rapport over het geologisch-mijnbouwkundig onderzoek van het eiland Salawati (Nieuw Guinea) in 1958. Report Technical University Delft, p. *(Unpublished)*
(Report of geological-mining investigations of Salawati island. Part of series of late 1950's survey reports of parts of Birds Head and nearby Salawati, Batanta and other islands by G. Molengraaff and TH Delft students)

Monnier, C., J. Girardeau, M. Pubellier & H. Permana (2000)- Lôophiolite de la chaine centrale dôIrian Jaya (Indonesie): evidences petrologiques et geochimiques pour une origine dans un bassin arriere-arc. Comptes Rendus Academie Sciences, Paris, Series IIA, Earth Planetary Sci. 331, 11, p. 691-699.
('The ophiolite of the Irian Jaya Central Range (Indonesia): petrological and geochemical evidence for a back-arc origin'. Central Range ophiolite belt with peridotites, gabbros, dolerites and basalts outcrops over 450 x 50 km area. Chemistry suggests it formed in backarc environment rather than oceanic domain. Probable age Jurassic. Obduction age Tertiary, but exact age still to be determined)

Monnier C., J. Girardeau, M. Pubellier, M. Polve, H. Permana & H. Bellon (1999)- Petrology and geochemistry of the Cyclops ophiolites (Irian Jaya- East Indonesia): consequences for the evolution of the North Australian margin during Cenozoic. Mineralogy and Petrology 65, p. 1-28.
(Cyclops Massif ophiolitic sequence with peridotites, gabbros, dolerites, mid-oceanic ridge basalts and minor boninitic lavas. Tectonically overlies high T-high P mafic rock, metamorphosed in E Miocene. Basalts and cumulate rocks typical of back-arc magmas. K/Ar ages from basalts (29 Ma) and boninites (43 Ma) combined with geochemical signatures indicate Cyclops Mts formed in single suprasubduction environment. This implies S-ward subduction of Australian oceanic lithosphere beneath N Australian margin. Ultramafic rocks and related lavas (boninites) likely formed in Eocene in forearc, before S-ward obduction onto island arc in E Miocene. Pliocene back-thrusting event led to slicing of backarc basin series onto arc and fore-arc sequences.)

Montgomery, S.L. & J. Wold (2001)- E. Indonesian gas- 1: Irian Jaya's Waropen basin could hold more giant gas reserves. Oil and Gas J. 99, 25, p. 34-42.
(NW New Guinea Waropen Basin up to 10 km mainly Plio-Pleistocene turbidite clastics. Proven gas potential in 1958 Niengo 1 gas test. Potential plays deep water sands and Miocene-Pliocene carbonates)

Mujito (1994)- Hydrocarbon resource assessment of the Miocene carbonate play, Kepala Burung, Irian Jaya, Indonesia. In: J.L. Rau (ed.) Proc. 29th Ann. Sess. Comm. Co-ord. Joint Prospecting Mineral Resources in Asian Offshore Areas (CCOP), Hanoi 1992, 2, p. 61-66.

(Assessment of Miocene Kais carbonate buildups and platform play in Salawati and Bintuni basins. Remaining hydrocarbons in Salawati Basin 1.02 M Tons oil, 1.48 Gm3 gas, Bintuni 0.78 M Tons oil, 0.54 Gm3gas)

Musper, K.A.F.R. (1938)- Over het voorkomen van *Halysites wallichi* Reed op Nieuw Guinea. De Ingenieur in Nederlandsch-Indie, IV. Mijnbouw en Geologie, 5, 10, p. 156-158.
('On the occurrence of Halysites wallichi Reed on Nieuw Guinea'. Second record of tabulate coral Halysites since Teichert (1928), from limestone, collected by Terpstra in pebbles of Penanggi River, a tributary of the Oesak R. in headwaters of Noord or Lorentz River of Central Range foothills). Probably of Silurian age, although E Devonian can not be excluded)

Musu, J.T., H. Sutanto, D.V. Mamengko, A. Yusriani, A Mannappiang & A.H. Satyana (2015)- Opportunities in frontier North Papua Basin, Indonesia: constraints from oil seep of the Teer River and its expected petroleum system. Poster presentation AAPG/ SEG Int. Conf. Exhib. (ICE), Melbourne.
(Underexplored North Papua Basin with famous oil seep of Teer River. Biomarker study of oil shows minor biodegradation. Pristane/ phytane ratio >3 indicates oil generatio from shaly to coaly source rocks, deposited in oxidizing environment. High oleanane and appearance of bicadinanes suggest Miocene or younger age. Oil generated from maturity equivalent with Ro of 0.9 (top oil window) in area at ~4000m. Main candidates for active source rocks in M-L Miocene Makats Fm or E Pliocene Memberamo B Fm)

Nash, C., G. Artmont, M.L. Gillan, D. Lennie, G. O'Connor & K.R. Parris (1993)- Structure of the Irian Jaya mobile belt, Irian Jaya, Indonesia. Tectonics 12, p. 519-535.
(Freeport paper on Irian Jaya Mobile belt/ Central Range. Seven structural domains, from N to S: (1) N Coast region: Tertiary volcanics and sediments overlain by Pliocene-Pleistocene successor basin (2) allochthonous terrane of ophiolites and high-grade metamorphics; (3) Derewo metamorphic assemblage, displaying polyphase deformation; (4) marginal zone within Mesozoic-Paleogene miogeoclinal sediments with steep duplex structures and remnant klippen; (5) 40-50 km-wide partly inverted synclinorium composed of miogeoclinal sediments; (6) regional S- vergent overturned anticlinorium formed by incompetent Paleozoic sediments; (7) foreland thrust domain involving both Mesozoic-Cenozoic miogeoclinal cover and deformed Neogene foreland molasse basin sequence. Late Oligocene-Miocene docking of metamorphics, island arc assemblages and ophiolites produced tectonically stacked E-W trending structures thrust onto N margin of Australian continent. Late Miocene-Pliocene collision with Melanesian Arc brought accreted Australian margin into contact with W-moving Pacific Plate and instituted regime of oblique transpression. Resulting structures E-W sinistral wrenching and NW thrusts along lateral E-W ramps)

Nauw, M., M. F. Riza, R. Mardani & P. Butterworth (2017)- Compartmentalization of Paleocene-aged deep water reservoirs at Wiriagar Deep, Papua Barat Province. Proc. 41st Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA17-392-G, 15p.
(Paleocene basin floor fan and slope channel sandstones of Wiriagar Deep field with gas trapped in large NW-SE closure, created during Oligocene compression and reactivated during Plio-Pleistocene. Reservoir compartmentalisation by combination of depositional facies and strike slip faults)

New, B.T.E. (2005)- Controls of copper and gold distribution in the Kucing Liar deposit, Ertsberg mining district, West Papua, Indonesia. Ph.D. Thesis James Cook University, Townsville, p. 1-235.
(online at: http://eprints.jcu.edu.au/2083)
(Kucing Liar large sediment-hosted Cu-Au deposit in Ertsberg District in Central Ranges of W Papua. High sulphidation ore continuous with porphyry-skarn chalcopyrite, both formed from mixing of magmatic with meteoric waters in fault zone in calcareous shale and limestone adjacent to Grasberg Igneous Complex)

Newton, R. Bullen (1916)- Notes on some organic limestones, etc., collected by the Wollaston expedition in Dutch New Guinea. In: Reports on the collections made by the British Ornithologists Union Expedition and the Wollaston Expedition in Dutch New Guinea 1910-1913, 2, 20, p. 1-20.
(Mainly on larger foraminifera from limestones collected by Wollaston Expedition in 1912-1913 along Utakwa River, on way to Carstensz Peaks. Dominated by Lepidocyclina spp (Nephrolepidina and Eulepidina types) and Spiroclypeus (not Cycloclypeus; latest Oligocene- Early Miocene age; JTvG). Also occurrence of Jurassic

mollusc Ctenostreon cf. terquemi in pebbles of Utakwa River. With review of older paleontological literature of New Guinea)

Nicoll, R.S. (1981)- Irian Jaya conodont age determinations. Bureau Mineral Res., Canberra, Prof. Opinion 1981/20, p.
(Modio Dolomite of Irian Jaya contains conodonts of Siluro-Devonian age)

Nicoll, R.S. (2002)- Conodonts from Noordwest 1 and Cross Catalina 1, West Papua, Indonesia. Unpublished report for Santos Pty, p.
(Nicoll (2006) and Zhen et al. (2011): Early Ordovician conodonts in these 2 wells; presumably in carbonates)

Nicoll, R.S. & G.M. Bladon (1991)- Silurian and Late Carboniferous conodonts from the Charles Louis Range and central Birds Head, Irian Jaya, Indonesia. BMR J. Australian Geol. Geophysics 12, 4, p. 279-286.
(online at: https://d28rz98at9flks.cloudfront.net/49553/Jou1991_v12_n4.pdf)
(Conodonts from Modio Dolomite in Charles Louis Range, SW West Papua, with Panderodus cf. P. simplex, probably Silurian age. Float samples of Birds Head Aimau Fm with Neognathodus cf. bassleri and Hindeodus minutus suggest Late Carboniferous age)

Noble, R., J. Decker, T. McCullagh, D. Sebayang & D. Orange (2016)- Kofiau and Cendrawasih Bay frontier basin exploration: from joint studies to post-drill assessment. Proc. IPA 2016 Technical Symposium, Indonesia exploration: where from- where to, Indon. Petroleum Assoc. (IPA), Jakarta, 6-TS-16, p. 1-18.
(Review of exploration activities in Kofiau Basin (NW of Birds Head) and Cendrawasih Bay (Waipoga) Basin (E of Birds Head. Kofiau basin NE-SW trending depocenter with transtensional evolution controlled by Sorong Fault Zone. Two episodes of basin formation (E Pliocene, M Pliocene- Recent), separated by deformation-erosion event. Cendrawasih Bay (Waipoga) Basin part of N New Guinea Plio-Pleistocene post-collisional clastic basin. Oil and gas seeps in both basins oil and gas seepage with biomarkers/isotopes showing Tertiary source rock(s). No details on three recent unsuccessful exploration wells)

Norvick, M.S. (2002)- The tectono-stratigraphic history of the northern margins of the Australian Plate from the Carnarvon Basin to Papua New Guinea. Western Australia basins Symposium 3, p. 963-964.
(Set of stratigraphic diagrams used to describe tectonostratigraphy of N margins of Australian Plate. Selected chronostratigraphic transects for Barrow Sub-basin, Dampier Sub-basin, N Bonaparte-Timor island area, Birds Head-Seram region, Papuan Fold Belt and stratigraphic comparison for these basins)

Nugraha, H.D. (2018)- Characterisation of Palaeocene remobilised deposits utilising cores and image logs in the HN Field, Bintuni Basin: distribution and implications to reservoir geometry prediction. Proc. 42nd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA18-510-G, 21p.
(Slumps and remobilised debrites in Paleocene Waripi/ Daram Fm deepwater deposits of 'HN Field', Bintuni Basin, W Papua (= WD Field of Mardani and Butterworth, 2016 = Wiriagar Deep)

Nugrahanto, K., S.W. McFall & F. Estella (2001)- Submarine-fan deposition in the lower Steenkool formation, Bintuni Basin, Irian Jaya, Eastern Indonesia: 'deep-water reservoir potential?'. In: A. Setiawan et al. (eds.) Deep-water sedimentation of Southeast Asia, Proc. 2nd Regional Seminar Indonesian Sedimentologists Forum (FOSI), Jakarta 2001, p. 66-84.
(Late Miocene- Pliocene post-Kais Limestone clastics in Bintuni Basin overall coarsening upward strata, characterizing change from Klasafet to Steenkool Fms. Depositional environment changes from deep-marine Klasafet to deltaic to deep-water Lower Steenkool. Basin floor and slope fans and (N to S?) progradational complexes with clinoformal and shingled geometries interpreted within Lower Steenkool interval)

Nuraeni, A., G.J. Schurter, Y. Supriyatna, Supriyono, B. Hornby & C. Erdemir (2008)- 3D VSP finite-difference modeling to address advance seismic imaging challenges in Bintuni Bay, Irian Jaya Barat. Proc. 32nd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA 08-G-061, 10p.

(3D seismic modeling method to better image gas-bearing Paleocene turbiditic channel sands over Wiriagar Deep field, previously hard to see below thick karstified Oligo-Miocene carbonates. Channel complexes trend NW-SE, ~1km wide))

Nurwani, C., Z. Imran, C.I. Abdullah, S. Nurmala Mulyati & D.R. Aprillian (2017)- Hydrocarbon prospectivity of Cendrawasih Bay area. Int. Proc. Chemical Biological Environmental Engineering 101, 15, p. 106-112.
(online at: http://www.ipcbee.com/vol101/rp017_ICGES2017-E0010.pdf)
(Cendrawasih Bay covers Cendrawasih Basin and North Waipoga/Memberamo Basin in E. Underlain by Pacific oceanic and volcanic arc crust. Several wells drilled since 1973, with oil and gas shows. Reservoir rocks in Pliocene-Pleistocene Memberamo Fm turbidites. Source rocks include shale of Miocene Makats Fm. Area high potential of hydrocarbons, thermogenic or biogenic)

Nurzaman, Z.Z. & A. Pujianto (1994)- Geology and reservoir characterisation of Wiriagar Field as a diagenetic facies for reservoir stimulation. Proc. 23rd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 2, p. 29-45.
(Reservoir characterization of U Miocene reefal Kais Lst in Wiriagar Field, Bintuni Basin. Producing up to 8470 BOD from 3 wells since 1990. Recoverable reserves ~3.5 MBO, with additional potential of 7.4 MBO. OWC at -1686' subsea. Wiriagar oil with low dissolved gas, sweet and low wax content, probably sourced from Jurassic Lower Kembelangan shales and Permian Aifam Fm. After 18 months of production water cut increased to 93%. Complex diagenetic history, including fracturing)

Nyoman Suta, I. & L. Silahi (1994)- The structurally trapped Matoa field and porosity distribution, Salawati Basin, Irian Jaya. Proc. 23rd Ann. Conv. Indon. Assoc. Geol. (IAGI), 2, Jakarta, p. 1128-1141.
(Matoa field 1991 Santa Fe- Pertamina discovery and only structural trap field in Salawati Basin. Production from non-reefal M-L Miocene Kais Fm platform carbonates. Three productive zones, with av. porosities 11.6-21%, both primary and secondary. Upper 100' of Kais Fm thick pelagic marine planktonic foram mudstone. NE-SW trending fault-bounded antinlinal structure. 14 wells producing 10,000 BOD)

O'Connor, G.V., L. Soebari & S. Widodo (1994)- Upper Miocene-Pliocene magmatism of the Central Range mobile belt, Irian Jaya, Indonesia. Proc. 23rd Ann. Conv. Indon. Assoc. Geol. (IAGI), Jakarta, 1, p. 316-333.
(Major magmatic event in Central Range from 7.1- 2.6 Ma (mainly 7-5 Ma), possibly related to S-dipping subduction after Late Miocene arc reversal. Belt of quartz-poor 'shoshonitic-affinity' calc-alkaline intrusions and volcanics (andesite, trachytes) extends from Etna Bay in W (134.5°) to Ilaga in E (138.0°) and includes Grasberg and porphyry copper and Ertsberg gold-copper skarn. Apparent younging of magmatism in SW direction. After ~4 Ma plate convergence taken up in large transform system; no currently active Benioff zone)

OóConnor, G.V., L. Soebari & S. Widodo (1994)- Upper Miocene- Pliocene magmatism of the Central Range Mobile Belt, Irian Jaya, Indonesia. Proc. 4th Asian Pacific Mining Conference, p. 1-27.
(Same paper as O'Connor et al. 1994, above)

OóConnor, G.V., W. Sunyoto, & L. Soebari (1999)- The discovery of the Wabu Ridge gold skarn, Irian Jaya, Indonesia. In: G. Weber (ed.) Proc. PACRIM ó99 Congress, Australasian Inst. of Mining and Metallurgy (AusIMM) Publ. 4/99, Melbourne p. 549-557.
(Wabu Ridge Gold Skarn deposit identified in 1990 at elevations up to 3100m in Central Range, W Papua, 35 km NNW of Grasberg porphyry deposit. Mineralisation in skarn along S boundaries of Late Miocene Pagane intrusive monzonite-diorite. Intrusive complex in footwall of E-W Derewo fault with sinistral strike-slip and reverse fault movement. Derewo fault separates Derewo metamorphics to N from Australian craton platform sediments to S. Skarn area 6 x 1.5 km, in Tertiary New Guinea limestone group, dominated by prograde garnet. Same paper re-published as Sunyoto & Soebari 2005?)

Oehlers, M. (2005)- Defining structural style using satellite imagery and DEM's: examples from the Bird's Head, Western Papua and the Masilah Basin, Yemen. Proc. 2005 SE Asia Petrol. Expl. Society (SEAPEX) Exploration Conf., Singapore, 51p. *(Abstract + Presentation)*.
(Promoting interpretation of satellite imagery and digital elevation models. Lengguru foldbelt compared to similar setting in Zagros Mts in Iran. Pretty displays of topography and structural elements of Birds Head)

Okal, E.A. (1999)- Historical seismicity and seismotectonic context of the great 1979 Yapen and 1996 Biak, Irian Jaya earthquakes. Pure Applied Geophysics 154, 3-4, p. 633-675.
(Relocations of >220 historical and recent earthquakes in NW Irian Jaya documents continuous activity on 420-km segment of Sorong Fault, with possible 330 km extension to W. Some activity on New Guinea Trench)

Oktariano, O., S. Saputra, D. Dharmayanti, A. Wibisono & M.A.S. Baskoro (2016)- Exploration vague of offshore Semai area in Indonesia? Changing exploration paradigm into Pretertiary play based on drilling results, depositional environment, and geophysical data. In: Proc. 2016 SEG Int. Exp. Ann. Mtg., Dallas, Expanded Abstracts, p. 2030-2034.
(Offshore Semai area S of Bird's Head, Irian Jaya, with interaction of Australian, Pacific and Eurasian Plates. Some compressional events in Oligocene-Miocene, ending with Misool-Onin-Kumawa Ridge uplift in M Pliocene. New seismic generated three regional exploration plays, but 7 dry exploration wells in 2010-2012)

Oliver, W.A., A.E.H. Peddler, R.E. Weiland & A. Quarles van Ufford (1995)- Middle Palaeozoic corals from the southern slope of the Central Ranges of Irian Jaya, Indonesia. Alcheringa 19, p. 1-15.
(First description of in-situ Late Devonian (Frasnian) rugose and tabulate colonial corals in uppermost part of ~1000m thick Silurian-Devonian Modio Fm, mainly along Timika- Ertsberg road. Genera include Scruttonia, Disphyllum and Haplothecia. Associated with brachiopods and stromatoporoids. Pre-Frasnian corals (Favosites, Lithophyllum, etc.) from stream cobbles at two localities. They indicate presence or former presence of more complete M Paleozoic sequence than previously known in Irian Jaya)

OőSullivan, P.B., K.C. Hill, I. Saefudin & R.D. Kendrick (1995)- Mesozoic and Cenozoic thermal history of sedimentary rocks in the Bintuni Basin, Irian Jaya, Indonesia. Proc. 24th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 235-248.
(Apatite fission track analyses of Permian-Pliocene from Rawarra-1X and Sebyar-1X wells in S Birds Head suggest rocks reached maximum paleotemperatures today)

Pajot, E. & D. Dhont (2006)- Extension vs. compression in the Lengguru fold-and-thrust Belt (Papua New Guinea): from JERS SAR imagery mapping to 3D geologic modeling. 7th Middle East Geosc. Conf. Exh., American Assoc. Petrol. Geol. (AAPG) Bull. 90 *(Abstract only)*
(Lengguru fold-thrust belt radar images of SW part Birds neck show compressional and extensional features. Compression during Plio-Quaternary. Broad (100 km wide) area of extension with normal faults forming horsts and grabens that mimic a fan-shaped feature extending from N10°E in NW to N85°E in SE. Extension may be associated with gravitational collapse in context of tectonic escape, with Banda Sea acting as free boundary.)

Pamumpuni A., B. Sapiie & I. Deighton (2014)- Zona sesar Sorong- Yapen dari batimetri resolusi tinggi. Proc. 43rd Ann. Conv. Indon. Assoc. Geol. (IAGI), Jakarta, PIT IAGI 2014-171, 5p.
('The Sorong- Yapen fault zone from high-resolution bathymetry'. Sorong-Yapen FZ extends E-W alongN coast of New Guinea one of most active faults in Indonesia. High-resolution bathymetry data interpretation and seismic reflection in Cendrawasih Bay area W of Yapen Island shows escarpment zone >5km wide)

Pamurty, P.G., Rochmad, A. Wibisono, S. Husein, K. Iqbal, M.D. Wasugi & A. Hafeez (2016)- Identification of fractured basement reservoir in SWO Field, Salawati Basin, West Papua, based on seismic data: a new challenge and ppportunity for hydrocarbon exploration in Pre-Tertiary Basement. Proc. 40th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA16-240-SG, 19p.
(On seismic identification of fractures in Late Cretaceous(?) granites in Salawati Basin basement)

Pandolfi, J.M. (1992)- A review of the tectonic history of New Guinea and its significance for marine biogeography. Proc. 7th Int. Coral Reef Symposium, Guam 1992, 2, p. 718-728.
(Review of New Guinea tectonic history, mainly based on Pigram et al. papers. New Guinea on five lithospheric plates. Biogeography of Indo-Pacific reef corals tied to this history)

Panggabean, H. (1981)- Rembesan aspal di selatan Danau Tage, Irian Jaya. Geosurvey Newsl. 13, 24, p. 221-223.
('Asphalt seepage S of Lake Tage, Irian Jaya'. Report of oil seep S of Paniai Lake (but could not be confirmed by Esso 1991 re-visit; JTvG))

Panggabean, H. (1989)- Tridanau di Pegunungan Nassau, Irian Jaya. Bull. Geol. Res. Dev. Centre 13, p. 61-71.
(also in 10th Ann. Conv. Indon. Assoc. Geol. (IAGI), Bandung 1981)
(The three lakes of the Nassau Mountains of Irian Jaya (Paniai, Tage, Tigi). Formed with tectonic movements of Central Range in M Miocene)

Panggabean, H., Amiruddin, Kusnama, K. Sutisna, R.L. Situmorang et al. (1995)- Geologic map of the Beoga Quadrangle, Irian Jaya, scale 1:250,000. Geol. Res. Dev. Center, Bandung.
(Map of northern part of Central Range of W Papua. Large areas of Cretaceous Kembelangan Group, overlain by Derewo metamorphics (Early Oligocene?) and ultramafic (Late Cretaceous?) complex)

Panggabean, H. & A.S. Hakim (1986)- Reservoir rock potential of the Palaeozoic- Mesozoic sandstone of the southern flank of the Central Range, Irian Jaya. Proc. 15th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 461-476.
(S flank of W Central Range stratigraphy and sandstones petrography. Up to 10km of Paleozoic-Tertiary sediment. Late Cretaceous Ekmai Fm rel.good reservoir, Woniwogi and Triassic Tipuma Fm marginal, and Permian Aiduna Fm marginal to poor reservoirs)

Panggabean, H., S. Purnamaniningsih & E. Rusmana (1995)- Stratigraphy and palaeogeography of Irian Jaya during the Neogene. In: S. Nishimura et al. (eds.) Proc. 6th Int. Congress Pacific Neogene stratigraphy and IGCP 355, Serpong, W. Java, 1995, p. 115-131.

Panggabean, H. & N. Ratman (1991)- Tectonics of collision complex of Irian Jaya. In: Proc. Silver Jubilee Symposium on the Dynamics of Subduction and its Products, Yogyakarta 1991. Indonesian Inst. Sciences (LIPI), p. 271-273.

Panuju (2008)- The new approach for subdivision of Pleistocene nannoplankton zonation in Waipoga-Waropen Basin, Papua: case study of ñTò well section. Proc. 37th Ann. Conv. Indon. Assoc. Geol. (IAGI), Bandung, 1, p. 186-196.
(Waipoga-Waropen Basin at N coast of W Papua with gas discoveries since 1958, but non-commercial. Up to 7500m of Plio-Pleistocene Mamberamo Fm turbiditic sediments. Quantitative nannoplankton investigation of onshore 'T' well interval 200-3160m showed good latest Pliocene-Pleistocene (NN18-NN19) assemblages. Pleistocene Zone NN19 subdivided into 9 subzones. Common reworked Cretaceous- Pliocene nannos)

Panuju, M. Firdaus, Imam P., Ginanjar R., Iskandar F. & Buskamal (2010)- Zonasi biostratigrafi nanoplangton berumur Coniacian-Maastrichtian (Kapur Akhir), Cekungan Bintuni. Proc. 39th Conv. Indon. Assoc. Geol. (IAGI), Lombok, PIT-IAGI-2010-178, 16p.
('Biostratigraphic zonation of Coniacian- Maastrichtian nannoplankton, Bintuni Basin'. 14 nannofossil zones CC12 (U Turonian)- CC26 (U Maastrichtian) recognized, based on samples from Bintuni Bay wells RBB-1, WD-4 and Birds Head Ainin River outcrop samples. U Cretaceous section presumably unconformable on M-L Jurassic)

Panuju, M. Firdaus, Imam P., Ginanjar R., Iskandar F. & Buskamal (2012)- Zonasi biostratigrafi nanoplankton berumur Coniacian-Maastrichtian (Kapur Akhir), Cekungan Bintuni, Kepala Burung, Papua. Majalah Geologi Indonesia 27, 3, p. 171-186.
(online at: www.bgl.esdm.go.id/publication/index.php/dir/article_detail/733)
(Same as Panuju et al 2010. 'Biostratigraphic zonation of Coniacian- E Maastrichtian nannoplankton (Late Cretaceous), Bintuni Basin, Birds Head, Papua')

Parris, K. (1994)- Preliminary geological data record of Timika (3211), 1:250,000 sheet area, Irian Jaya. PT Freeport Indonesia Co., p. 1-38. *(Unpublished)*
(Part of series of PT Freeport regional geological reports on West Papua Cenrral Range that are unpublished, but appear to be rel. widely available to researchers)

Parris, K. (1994)- Basement structures and implications for control of igneous activity, Central Ranges, Irian Jaya, Indonesia. PT Freeport Indonesia, p. 1-40. *(Unpublished)*

Parris, K. (1996)- Preliminary geological data record of Rotanburg (3312), 1:250,000 sheet area, Irian Jaya. PT Freeport Indonesia Co., p.. *(Unpublished)*

Parris, K. (1996)- Preliminary geological data record of the Wamena (3311), 1:250,000 sheet area, Irian Jaya. PT Freeport Indonesia Co., p.. *(Unpublished)*
(Amiruddin (1998): includes otherwise unpublished record of Ordovician graptolites in Kora Fm dark shales: Dicellograptus exilis, Dilogratus euglyphus and Nemagraptus gracilis of probable N gracilis zone, also Pseudoclimacograptus and Isograptus cf. forcipormis)

Parris, K. (1996)- Preliminary geological data record of the Jayawijaya (3411), 1:250,000 sheet area, Irian Jaya. PT Freeport Indonesia Co., p.. *(Unpublished)*

Parris, K. (1996)- Central Range, Irian Jaya, geology compilation, 1:500,000 map. PT Freeport Indonesia Co., p.. *(Unpublished)*

Paterson, J.T. (2004)- Magmatic and pervasive hydrothermal mineralogy of the Grasberg Cu-Au porphyry copper deposit (west New Guinea). M.Sc. Thesis, University of Texas, Austin, p. *(Unpublished)*

Paterson, J.T. & M. Cloos (2005)- Grasberg porphyry Cu-Au deposit, Papua, Indonesia: 1. Magmatic history. In: T.M. Porter (ed.) Super porphyry copper and gold deposits: a global perspective, PGC Publishing, Adelaide, p. 313-329.
(Grasberg Igneous Complex formed at ~3 Ma, host to one of world's largest copper-gold porphyry-type ore deposits. Three main phases of intrusion at level of open pit mine: Dalam, Main Grasberg Intrusion and Kali)

Paterson, J.T. & M. Cloos (2005)- Grasberg porphyry Cu-Au deposit, Papua, Indonesia: 2. Pervasive hydrothermal alteration. In: T.M. Porter (ed.) Super porphyry copper and gold deposits: a global perspective, PGC Publishing, Adelaide, p. 331-355.
(Much of rock volume in the Grasberg IC pervasively altered by infiltration of hot, magmatic fluids, partly destroying igneous phases. Intense episode of pervasive fluid flow post-dated Main Grasberg Intrusion and predated Late Kali Intrusion)

Pennington, J.B. (1995)- Geology of the access road to the Ertsberg (Gunung Bijih) Mining District, Irian Jaya. In: D. Mayes & P.J. Pollard (eds.) Geology and copper-gold deposits of the Ertsberg (Gunung Bijih) Mining District, Irian Jaya, Indonesia, 17^{th} Int. Geochemical Exploration Symposium, James Cook University EGRU Contr. 53, p. 44-63.
(Brief overview of stratigraphy along Timika- Tembagapura road: Precambrian sediments and basic pillow lavas, Cambrian- Ordovician clastics, Devonian Modio Fm carbonates (~1800m dolomites capped by coral limestone), Permian Aiduna Fm (~1200m; deltaic clastics, coal, thin limestone), Triassic or E-M Jurassic Tipuma Fm fluvial redbeds, M Jurassic- Upper Cretaceous Kembelangan Fm (~1900m), Tertiary New Guinea Limestone Group)

Pennington J. & I. Kavalieris (1997)- New advances in the understanding of the Grasberg copper-gold porphyry system, Iran Jaya, Indonesia. In: Pacific treasure trove- copper-gold deposits of the Pacific Rim, Prospectors and Developers Association of Canada, Toronto, p. 79-97.

Penniston-Dorland, S. (2001)- Illumination of vein quartz textures in a porphyry copper ore deposit using scanned cathodoluminescence: Grasberg Igneous Complex, Irian Jaya, Indonesia. American Mineralogist 86, 5-6, p. 652-666.
(Textures in vein quartz from Grasberg Igneous Complex allow interpretation of history of fracture opening and infilling)

Perdana, A. (2015)- Exploration and mineral inventory at PT Freeport Indonesia. In: N.I. Basuki (ed.) Proc. Indonesian Soc. Econ. Geol. (MGEI) 7th Ann. Conv., Balikpapan, p. 57-66.

Perkins, T.W. & A.R. Livsey (1993)- Geology of the Jurassic gas discoveries in Bintuni Bay, western Irian Jaya. Proc. 22nd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 793-830.
(Roabiba-1 1990 tested 23.6 MCFD from M Jurassic sandstone. Two more Jurassic gas discoveries in 1992. Gas in NW-trending anticlines formed by Late Miocene and younger compression and wrench faulting. Reservoirs Jurassic fluvio-deltaic sandstones, deposited in E-W belt through Bintuni Bay. Low porosity due to quartz overgrowth cement. Gas-condensate in Jurassic reservoirs most likely from Permian- Jurassic source dominated by nonmarine kerogen. Tertiary source rocks dominated by marine algal sapropel and oil prone. Oils in New Guinea Lst from Tertiary source, with possible exception of Wiriagar. Present day kitchen areas for pre-Tertiary source in Bintuni and Berau Basins. Gas migrated NW along regional anticlines from deep SE Bintuni Basin in last five million years)

Permana, H. (1998)- Dynamique de la mise en place des ophiolites dǒIrian Jaya (Indonesie), cas des Cyclops, de la Haute Chaine Centrale et des Weylands. Doct. Thesis Universite de Nantes, p. 1-314. *(Unpublished)*
('Dynamics of ophiolite emplacement in Irian Jaya: Cyclops, Central Range and Weyland'. Thery et al. 1999: 40 Ma age of amphibolite sole of ophiolite N of Cyclops?)

Permana, H. & S. Djoehanah (1991)- Geologi tinjau daerah lemah Baliem, Wamena, Irian Jaya. J. Riset Geologi Pertambangan (LIPI) 10, 1, p. 9-21.
(Review of the geology of the Baliem Valley area, Wamena, Irian Jaya'. Baliem Valley with outcrops of Cretaceous Kembelangan Fm, Paleocene- M Miocene Irian Limestone Group and M-L Miocene clastics of Iwoer Fm. Normal faults and strike-slip fault influence Baliem valley)

Permana, H., J. Girardeau, M. Pubellier, R. Soeria-Atmadja & C. Monnier (2005)- Emplacement mechanism of the Cyclop Ophiolite, Western Papua (Indonesia). Majalah Geologi Indonesia 20, 2, Spec. Ed., p. 103-115.
(Cyclop Mts mainly metamorphic rocks, overlain by peridotites and volcanics. Metamorphism of arc volcanic and MORB oceanic protoliths during S-SW obduction of forearc peridotite, probably at 25-20 Ma. Lithospheric thickening linked to overthrusting and closing of backarc system to N-NW on obducted peridotite and metamorphic rocks, probably at 14 Ma. Followed by thinning and uplift of metamorphic rocks)

Permana, H., E. Soebowo & Kamtono (1992)- Preliminary study on the proposed road trace Wamena-Habbema Lake- Kuyawage, Irian Jaya. Proc. 21st Ann. Conv. Indon. Assoc. Geol. (IAGI), Yogyakarta, 2, p. 803-814.
(Not much geology)

Permana, H., R. Soeria Atmadja, J. Girardeau, M. Pubellier, C. Monnier & H. Bellon (2000)- Metamorphism and deformation in plate convergence: case studies from West Papua (Irian Jaya), Indonesia. Proc. 29th Ann. Conv. Indon. Assoc. Geol. (IAGI), Bandung 2000, p.
(Pubellier & Ego (2002): metamorphic rocks along W coast Cenderawasih Bay between 7 and 4.4 Ma)

Permana, H., R. Soeria-Atmadja, J. Girardeau, M. Pubellier, C. Monnier & H. Bellon (2005)- Weyland Ophiolite of Nabire District, Western Papua, Eastern Indonesia: origin and tectonic consequences. Majalah Geologi Indonesia 20, 2, Spec. Ed., Aug. 2005, p. 90-102.
(Dismembered Weyland Ophiolite Complex chemistry suggestive of subduction arc magmatism. Oldest K-Ar age of altered gabbro 57-51 Ma. Cut by M Eocene- Oligocene dikes with K-Ar ages 42.5- 32.9 Ma, giving minimum age of ophiolite. One 30 Ma K-Ar age may be age of metamorphism. Younger K-Ar ages (16.3-12.4

Ma) reflect metamorphism from Utawa diorite intrusions. WOC can not be linked to Jurassic ophiolite of Central Range and may correlate with Auwewa volcanics/ Sepik arc or with Cyclops Mts ophiolite)

Permana, H., Suharyanto, A. Soebandrio & R. Soeria Atmadja (1999)- Evidence of Cenozoic tectonics: implication to basement evolution and configuration of the northern part of Irian Jaya. In: I. Busono & H. Alam (eds.) Developments in Indonesian tectonics and structural geology, Proc. 28th Ann. Conv. Indon. Assoc. Geol. (IAGI), Jakarta, 1, p. 33-42.
(Three major Cenozoic events in N West Papua after formation of Eocene-Oligocene Cyclops volcanic arc and back-arc basin above S-dipping intra-oceanic subduction zone: (1) Late Oligocene- E Miocene obduction of Cyclops ophiolite over N side of arc, with high-P-T metamorphism (MacArthur metamorphics, ~20-25 Ma)); (2) Miocene- Pliocene thrusting of back-arc volcanics and (3) W-ward emplacement of microplates, accommodated by strike slip faults and thrusting in N West Papua. Meervlakte sub-basin possibly related to Sepik-Ramu basin in PNG)

Peterson, J.A. (1982)- Limestone pedestals and denudation estimates from Mt. Jaya, Irian Jaya. Australian Geographer 15, 3, p. 170-173.

Peterson, J. A. & J.F. Moresby (1979)- Subglacial travertine and associated deposits in the Carstensz area, Irian Jaya, Republic of Indonesia. Zeitschrift Gletscherkunde Glazialgeologie 15, 1, p. 23-29.

Petocz, R.G. (1989)- Conservation and development in Irian Jaya, a strategy for rational resource utilization. E.J. Brill, Leiden, p. 1-218.

Petroconsultants (1990)- Bintuni- Salawati basins. Southeast Asia Basin Opportunities XII, 68p. *(Unpublished)*

Phoa, R.S.K. & L. Samuel (1986)- Problems of source rock identification in the Salawati Basin, Irian Jaya. Proc. 15th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 1, p. 405-421.
(Salawati basin oils similar and sourced from kerogen rich in fresh-brackish water algae and higher plants with significant marine type II, sulphur-rich kerogen. Miocene marine Klasafet and Klamogun shales and arbonates were regarded as source rocks for Miocene Kais Fm reefs oils, but possibly more than one source)

Pieters, P.E. (1982)- Geology of New Guinea. In: J.L. Gressitt (ed.) Biogeography and ecology of New Guinea. Dr. W. Junk Publishers, The Hague, 1, 1, p. 15-38.

Pieters, P.E., C.J. Pigram, D.S. Trail, D.B. Dow, N. Ratman & R. Sukamto (1983)- The stratigraphy of western Irian Jaya. Proc. 12th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 229-261.
(Stratigraphic columns across W New Guinea from Birds Head- Misool East to 136° E. Grouped into three provinces: Continental (Paleozoic- Miocene Australian continent series in S New Guinea, Birds Head, Misool), Oceanic (ophiolite-island arc basement of N New Guinea, Cenderawasih Bay, Waigeo, Yapen, etc.) and Transition (Central Range metamorphics, Tamrau Mts, Wandamen Peninsula, Weyland Mts))

Pieters, P.E., C.J. Pigram, D.S. Trail, D.B. Dow et al. (1983)- The stratigraphy of western Irian Jaya. Bull. Geol. Res. Dev. Centre 8, p. 14-48.
(same paper as above)

Pieters, P.E., R.J. Ryburn & D.S. Trail (1979)- Geological reconnaissance in Irian Jaya, 1976-1977. Bureau Mineral Res. Geol. Geoph., Australia, Record 1979/19, p. 1-74.
(online at: www.ga.gov.au/corporate_data/13721/Rec1979_019.pdf)
(Results of 1976-1977 geological reconnaissance trips to various parts of W Papua, mainly Birds Head, also Wandamen Peninsula, Schouten Islands, Gag Island, Cycloops Mountains)

Pigott, J.D. & P.K. Bettis (1996)- Heat flow and geothermal gradients of Irian Jaya- Papua new Guinea: implications for regional hydrocarbon exploration. In: G.P. & A.C. Salisbury (eds.) Trans. 5th Circum-Pacific Energy and Mineral Resources Conference, Honolulu 1990, Gulf Publishing, Houston, p. 445-458.

(Compilation of wells temperature and basins heatflow data for all of New Guinea island. With calculations to depth of Top oil window for Salawati- Bintuni and Gulf of Papua basins)

Pigram, C.J. (1986)- Western Irian Jaya: the end-product of oblique plate convergence in the late Tertiary- discussion. Tectonophysics 121, 2-4, p. 345-348.
(Critique of Dow & Sukamto 1994 paper. In Pigram's opinion differences in basement geology and Late Paleozoic and Mesozoic history between Birds Head, Birds Neck and Misool regions and Australian Craton cannot be explained in terms of simple lateral facies changes, but suggest W Irian Jaya is complex amalgamation of continental fragments, not simply an extension of Australian Craton. E Paleozoic rocks of Australia- New Guinea craton not undergone M Paleozoic regional metamorphism that affected Birds Head)

Pigram, C.J. & H.L. Davies (1987)- Terranes and the accretion history of the New Guinea orogen. Bureau Mineral Res. J. Australian Geol. Geoph. 10, 3, p. 193-212.
(online at: www.ga.gov.au/corporate_data/81217/Jou1987_v10_n3_p193.pdf)
(Classic paper, with interpretation of New Guinea- E Indonesia complex tectonic history in terms of numerous plates, many which derived from E margin of New Guinea, rifted off and transported West. Prior to 40 Ma N edge of Australia- New Guinea continent faced ocean basin that had developed in Mesozoic By ~25 Ma (latest Oligocene) first composite terranes docked (Sepik and probably also Rouffaer terranes). By ~14 Ma (latest M Miocene) N part of E Papua composite terrane had docked. By 10 Ma (Late Miocene) W lrian Jaya composite terrane and northern island-arc terranes of C New Guinea docked. By 2 Ma Late (Pliocene) northern terranes of W lrian Jaya (Tamrau, Arfak, Waigeo terranes) docked, also Seram composite terrane. Opening of Woodlark Basin currently dismembering E end of E Papua composite terrane)

Pigram, C.J. & H. Panggabean (1981)- Pre-Tertiary geology of western Irian Jaya and Misool Island: implications for the tectonic development of Eastern Indonesia. Proc. 10th Ann. Conv. Indon. Petroleum Assoc., Jakarta (IPA), Jakarta, p. 385-399.
(Dated, broad interpretation of W Irian Jaya stratigraphy, tectonics)

Pigram, C.J. & H. Panggabean (1984)- Rifting of the northern margin of the Australian continent and the origin of some microcontinents in Eastern Indonesia. Tectonophysics 107, 3-4, p. 331-353.
(Classic paper linking New Guinea Jurassic-Cretaceous rift-drift stratigraphy to E Indonesian microcontinents like Buton, Buru-Seram and Banggai-Sula. New Guinea N margin rifting began at ~230 Ma. Onset of seafloor spreading (marked by post-breakup unconformity) ranges in age from 185 Ma in PNG to 170 Ma in Irian Jaya and continues to young in SW direction along W margin of Australian continent, reflecting opening of Indian Ocean off W Australia. By end Jurassic N margin of Australian continent faced seaway which linked proto-Indian and proto-Pacific oceans, which was separated from pre-existing Neo-Tethys and Panthalassa oceans by microcontinents, now preserved in E Indonesia. Banggai-Sula and Buton rifted off PNG side of margin, Birds Head closer ties to N Queensland, NE Australia)

Pigram, C.J. & H. Panggabean (1989)- Geology of the Waghete Sheet area. Geol. Res. Dev. Centre (GRDC), Bandung, 46p., 1: 250,000 scale map.

Pigram, C.J., G.P. Robinson & S.L. Tobing (1982)- Late Cainozoic origin for the Bintuni Basin and adjacent Lengguru fold belt, Irian Jaya. Proc. 11th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 109-126.
(Bintuni Basin and Lengguru foldbelt are very young features, possibly result of collision between W Irian Jaya microcontinent and NW margin of Australian continent. Deposition of New Guinea Limestone in Irian Jaya ceased in M Miocene and this limestone forms basement to Late Cenozoic clastic sediments of asymmetrical Bintuni Basin. Intensity of deformation in Lengguru foldbelt increases E-wards; along E margin folded sediments are low-grade metamorphics faulted against Late Miocene- Pliocene gneisses of Wandamen Peninsula (K-Ar ages two clusters: ~5 Ma= age of metamorphism, and 1.5 Ma= age of uplift))

Pigram, C.J., G.P. Robinson & S.L. Tobing (1982)- Late Cainozoic origin for the Bintuni Basin and adjacent Lengguru foldbelt. Geol. Res. Dev. Centre Bull. 7, p. 24-36.
(Same paper as above)

Pigram, C.J. & U. Sukanta (1982)- Geological data record of the Taminabuan 1:250,000 sheet area, Irian Jaya. Geol. Res. Dev. Centre (GRDC), Bandung, Open file Report, p.. *(Unpublished)*

Pigram, C.J. & U. Sukanta (1989)- Geology of the Taminabuan sheet area, Irian Jaya, scale 1:250,000. Geol. Res. Dev. Centre (GRDC), Bandung, p. 1-51. *(Unpublished)*

Pigram, C.J. & P.A. Symonds (1991)- A review of the timing of the major tectonic events in the New Guinea orogen. J. Southeast Asian Earth Sci. 6, p. 307-318.
(Three major events shaped New Guinea orogen: (1) Mesozoic extension with Triassic and E Jurassic rifting, leading to passive margin along N edge of Australian craton; (2) Second phase of rifting in Late Cretaceous, dismembering E part of margin and opening Coral Sea basin and contemporaneous ocean basin to N in Latest Cretaceous-Eocene; (3) Initiation of mountain building. First foreland load-induced basin flexing in Mid-Oligocene, coinciding with switch in main clastic source from S to N. Darai carbonate platform backstepping from Late Oligocene- M Miocene)

Pireno, G.E. (2008)- Potensi Formasi Sirga sebagai batuan induk di Cekungan Salawati, Papua. M.Sc. (S2) Thesis, Inst. Teknologi Bandung (ITB), p. 1- . *(Unpublished)*
('The potential of the Sirga Formation as a source rock in the Salawati Basin, Papua'. SF-1X well (2007) in Salawati Basin with oil and gas shows in Late Oligocene Sirga Fm sandstones, in SAR-1X well (2008) oil in pre-Kais sandstones, making M-Miocene Klasafet source rock unlikely. Oils from both wells waxy (3.6 wt%) with very low sulphur, heavy carbon isotopes (-22 to -23), pristane/phytane ratio 1.33- 2.61, with oleanane as biomarker of Tertiary land plants and diahopane/ neohopane as biomarker of shallow lacustrine source. Most likely source E Tertiary lacustrine rocks, possibly Sirga Fm deposited in extensional-graben system)

Pitaloka, R., A. Vanessa & O. Verdiansyah (2013)- Mineralogy of sulfide ore from skarn type deposits, Oksibil, Papua, Indonesia. Proc. Joint Conv. Indon. Assoc. Geoph. (HAGI) - Indon. Assoc. Geol. (IAGI), Medan, JCM2013-0222, 4p.
(Ok Sibil area in E part of W Papuan fold-thrust belt known for five types of calcic-skarn deposits: iron-skarn, tungsten, copper, zinc-lead and tin-tungsten. Mineralization due to Pliocene intrusion into Tertiary Yawee Fm limestone. Sulphide ore of Oksibil skarn mainly sphalerite, also chalcopyrite, pyrite, galena, covellite, chalcosite, anglesite, etc.. Temperature of ore fluid 234-266 °C to 258-320 °C)

Playford, G. & J.F. Rigby (2008)- Permian palynoflora of the Ainim and Aiduna formations, West Papua. Revista Espanola Micropal. 40, 1-2, p. 1-57.
(online at: http://revistas.igme.es/index.php/revista_micro/article/view/359/357)
(Palynology of Permian samples from Birds Head (Ainim Fm) and W part of Central Range (Aiduna Fm) of W Papua. Similar palynoflora in both places, with 26 species of spores, 18 species of pollen, incl. Laevigatosporites vulgaris, Protohaploxypinus limpidus, etc., and 5 species of microphytoplankton. Dated as late Early- early M Permian (Kungurian-Roadian). Mainly Gondwanan affinity spore-pollen suite (but key Gondwanan trilete genus Dulhuntyispora spp. absent) and megaflora, but also minor Cathaysian elements)

PND- Patra Nusa Data (2009)- Opportunities (II), Salawati Basin. Inameta J. 8, Sept. 2009, p. 28-33.
(online at: www.patranusa.com)
(Overview of Salawati Basin, W end of Birds Head, in conjunction with tender round offering)

Polhemus, D.A. & J.T. Polhemus (1998)- Assembling New Guinea- 40 million years of island arc accretion as indicated by the distribution of aquatic Heteroptera (Insecta). In R. Hall & J. Holloway (eds.) Biogeographical and geological evolution of SE Asia. Backhuys Publ., Leiden, p. 327-340.
(Relates aquatic insects distribution to terrane accretion history)

Pollard, P.J. & R.G. Taylor (2002)- Paragenesis of the Grasberg Cu-Au deposit, Irian Jaya, Indonesia: results from logging section 13. Mineralium Deposita 37, p. 117-136.

(Grasberg Cu-Au deposit within Grasberg Pliocene Igneous Complex (GIC). Multiple intrusive phases; 35 separate stages of hydrothermal alteration and infill recognized)

Pollard, P. J., R.G. Taylor & L. Peters (2005)- Ages of intrusion, alteration, and mineralization at the Grasberg Cu-Au deposit, Papua, Indonesia. Economic Geology 100, 5, p. 1005-1020.
(40Ar/39Ar ages of 10 micas from Grasberg Igneous Complex range from 3.33- 3.01 Ma. Grasberg Igneous Complex formed during several cycles of intrusion/ hydrothermal alteration, each lasting ~0.1 m.y. or less. Phlogopite predating magnetite from Kucing Liar Cu-Au deposit adjacent to Grasberg has age of 3.41 Ma, within error of age of Dalam intrusive rock and suggests formation of calc-silicate skarn at early stage in development of complex. Intrusion and mineralization at Ertsberg (2.67, 2.71 Ma) younger than Grasberg)

Posthumus-Meyes, R., E.J. de Rochemont, J.W.R. Koch, et.al. (1908)- De Zuidwest Nieuw-Guinea Expeditie 1904/5 van het Koninklijk Nederlands Aardrijkskundig Genootschap. E.J. Brill, Leiden, 676p.
('The SW New Guinea expedition 1904-1905 of the Royal Dutch Geographical Society'. Report of geography, geology, climate, anthropology, etc., of SW Papua)

Potter, D.R. (1996)- What makes Grasberg anomalous, implications for future exploration. In: Proc. Conf. Porphyry related copper and gold deposits of the Asia Pacific Region, Cairns 1996, Australian Min. Found. (AMF), Adelaide, p. 10.1-10.13.

Potter, D., K. Parris, J. MacPherson, D. Wadsworth, G. OĉConnor, W. Sunyoto, S. Widodo, C. Jones, D. MacKenzie & A. Edwards (1999)- Gold and silver exploration in Irian Jaya. Mining Engineering 51, 11, p. 33-36.
(On Freeport regional exploration programs in W Papua since 1990, to locate additional Ertsberg/ Grasberg-type deposits. Other types of deposits may be present in largely unexplored W Papua)

Prabowo, A., H. Samodra, S. Permanadewi & A. Ratdomopurbo (2017)- Determine Holocene rate of uplift of Waigeo Island area based on the counting of exposed *Ostrea* age using 14C Radiocarbon dating to site elevation. Proc. Joint Conv. HAGI-IAGI-IAFMI-IATMI (JCM 2017), Malang, 7p.
(Waigeo island NW of Birds Head. 14C dating of marginal marine Ostrea mollusc fossils from uplifted Miocene(??) Waigeo Fm limestone along S part of island gave ages of ~8200 and 11000 years at 110 and 70m above sea level, suggesting recent uplift rates of ~6.3- 13.4 mm/year)

Prasad, M.N.V. (1981)- New species of fossil wood *Planoxylon* from the Late Paleozoic of Irian Jaya, Indonesia. Geol. Res. Dev. Centre, Bull. 5, p. 37-40.
(Planoxylon stopesii from Permian Aimau Fm of Birds Head shows characters of araucarian and abietinian wood types, common in Late Paleozoic of Gondwanaland (Rigby 1998))

Prendergast, K. (2003)- Porphyry-related hydrothermal systems in the Ertsberg District, Papua, Indonesia. Ph.D. Thesis, James Cook University, Australia, p. 1-188.
(online at: http://researchonline.jcu.edu.au/27155/1/27155-prendergast-2003-thesis.pdf)
Ertsberg district hosts multiple skarn and porphyry-related deposits, and is one of largest Cu-Au resources in world. Grasberg (~3.33-3 Ma) and Ertsberg (~3-2.67 Ma) igneous complexes post-dated by early porphyry-style mineralisation and spatially related skarn Cu-Au mineralisation. Deep-intermediate high sulphidation style mineralisation late development at both locations)

Prendergast, K., G.W. Clarke, N.J. Pearson & K. Harris (2005)- Genesis of pyrite-Au-As-Zn-Bi-Te zones associated with Cu-Au skarns; evidence from the Big Gossan and Wanagon gold deposits, Ertsberg District, Papua, Indonesia. Economic Geology and Bull. Soc. Economic Geology 100, 5, p. 1021-1050.
(online at: https://pdfs.semanticscholar.org/a381/12d358829aae4ef2ef833e6e4914f63f96ba.pdf)
(Ertsberg district multiple skarn and porphyry-related deposits, together comprising one of largest Cu-Au resources in world. Skarn Cu-Au deposits at Big Gossan and Wanagon Gold overprinted by distinctive late-stage pyrite, sphalerite, arsenopyrite and native gold. Big Gossan younger than 2.82 ± 0.04 Ma; Wanagon Gold 40Ar/39Ar age of 3.62 ± 0.05 Ma. Etc.)

Prentice, M.L., G.S. Hope, K. Maryunani & J.A. Peterson (2005)- An evaluation of snowline data across New Guinea during the last major glaciation, and area-based glacier snowlines in the Mt. Jaya region of Papua, Indonesia, during the last glacial maximum. In: S.P. Harrison (ed.) Snowlines at the last glacial maximum and tropical cooling, Quaternary Int. 138-139, p. 93-117.
(Data from Puncak Jaya show Last Glacial Maximum glaciation less extensive than previously thought)

Prihanasto, A.S., H. Nugroho & P. Rachwibowo (2011)- Porosity study of Paleocene sandstone reservoir using core and petrography and influence to porosity calculation from density log at Wiriagar Deep field, Bintuni Basin, Papua. Proc. Joint 36th HAGI and 40th IAGI Ann. Conv., Makassar, JCM2011-120, 29p.
(In Indonesian. Paleocene deep water gas sands in Wiriagar Deep field, Bintuni Basin, variable but generally poor reservoir quality due to calcite cementation and heterogeneous turbidite sandstones reservoirs)

Priyanto, B., R. Mjos, K. Hokstad, E.T. Hartadi, C. Zwach, Z.A. Tasarova, M. Van Schaack & K. Duffaut (2015)- Heat flow estimation from BSR: an example from the Aru region, offshore West Papua, Eastern Indonesia. Proc. 39th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA15-G-267, 11p.
(Bottom Simulating Reflector (BSR) widespread on deep-water seismic lines in Aru Trough. Heat flow estimates from depth of BSR below seafloor suggest significant lateral changes: lower heat flow to NW, in fore-arc N of Tarera- Aiduna strike slip fault zone; higher heat flow to SE, close to Aru Trough Spreading Zone)

Pubellier, M. & P.R. Cobbold (1996)- Analogue models for the transpressional docking of volcanic arcs in the western Pacific. Tectonophysics 253, p. 33-52.
(Sand box modeling used for analogues of S Philippines and N New Guinea margins)

Pubellier, M., B. Deffontaines, J. Chorowitz, J.P. Rudant & H. Permana (1999)- Active denudation morphostructures from SAR ERS-1 images (SW Irian Jaya). Int. J. Remote Sensing 20, p. 789-800.
(SAR ERS-1 images are sensitive to minute textural or topographic contrasts in areas of dense vegetation. S flank of western fold-thrust Belt of W Papua is site of active tectonic denudation on S leading edge of very recent (Pliocene-Pleistocene) orogen. Neotectonics three stages:Pliocene collision (compression S of Weyland Range) followed by strike slip environment that isolated front of belt, and by currently active gravitational denudation. Tarera basin is pull-apart along left-lateral Tarera fault)

Pubellier, M., B. Deffontaines, J. Chorowicz, J.P. Rudant & H. Permana (2005)- Expression of morpho-structures on SAR ERS imagery- escape tectonics at a front belt; a case study: SW Irian Jaya (West Papua). In: K. Fletcher (ed.) Spaceborne radar applications in geology, ESA TM-17, p. 16/1-16/9.

Pubellier, M. & F. Ego (2002)- Anatomy of an escape tectonic zone, Western Irian Jaya (Indonesia). Tectonics 21, 4, 1019, 16p.
(Birds Head block escape rate from GPS geodetic measurements is 7 cm/yr. Movement accommodated by broad shear zone. Evolution of escape zone depends on geometry of former margin of Australia, which controls style of deformation)

Puntodewo, S.S.O., R. McCaffrey, E. Calais, Y. Bock, J. Rais, C. Subarya, R. Poewariardi, C. Stevens, J. Genrich, Fauzi, P. Zwick & S. Wdowinskic (1994)- GPS measurements of crustal deformation within the Pacific-Australia plate boundary zone in Irian Jaya, Indonesia. Tectonophysics 237, p. 141-153.
(online at: http://www.web.pdx.edu/~mccaf/pubs/puntodewo_irian_tecton_1994.pdf)
(GPS sites in SE Irian Jaya close to moving with Australia. Most convergence between Pacific and Australian plates probably at New Guinea Trough. Biak (136°E), and Sorong (W tip of Birds Head at 131°E) both move ~95 mm/yr to WSW relative to Irian Jaya, but <15 mm/yr relative to each other, showing Sorong fault not presently major boundary between Australian and Pacific plates. Plate boundary now S of Sorong- Biak sites)

Purbohadiwidjojo, M.M. (1964)- Geology and mineral wealth of West Irian. Contrib. Dept. Geology Inst. Teknologi Bandung (ITB) 53, p. 33-47.

Quarles van Ufford, A.I. (1996)- Stratigraphy, structural geology and tectonics of a young forearc-continent collision, western Central Range (western New Guinea), Indonesia. Ph.D. Thesis University of Texas, Austin, p. 1-420.
(online at: https://repositories.lib.utexas.edu/handle/2152/30179)
(Study of geology and stratigraphy along Ertsberg mine road and mining district. Mine access road N-dipping homocline exposing ~18-km thick Precambrian or Early Paleozoic to Cenozoic sequence. Incl. detail study of 1600-1800m thick New Guinea Limestone, with Waripi Fm dolomitic and anhydritic limestone and quartz sandstones (~290-400m; Paleocene/ Ta1), Faumai Fm M-L Eocene/ Ta3-Tb, with Lacazinella at top), Sirga Fm marl, mature quartz sst and thin coal (40m, E Oligocene/ Tc) and Kais Fm (up to ~1200m Oligocene/Tc- M Miocene/Tf2). After rifting in Early Mesozoic and until M Miocene, N Australian continent was passive margin. Central Range of Irian Jaya formed when Australian passive margin subducted beneath and collided with N-dipping subduction zone in M Miocene (initiation ~12 Ma). At ~4 Ma start of left-lateral transform faulting along Australian- Pacific Plate)

Quarles van Ufford, A. & M. Cloos (2005)- Cenozoic tectonics of New Guinea. American Assoc. Petrol. Geol. (AAPG) Bull. 89, 1, p. 119-140.
(New Guinea foldbelt formed in two distinct collisional events: Peninsular Orogeny in Oligocene in E Papua-New Guinea, and Central Range orogeny starting in latest M Miocene (12 Ma), with crystalline basement becoming involved in deformation at ~8 Ma)

Raden Idris (2000)- An overview: geological and economic prospects in Timoforo Block, Irian Jaya. AAPG Int. Conference & Exhibition, p. *(Abstract only)*
(Timoforo Block in Bird's Head N of Wiriagar and Muturi. Ainim Fm sst in Mogoi Deep 1 and Kais limestone Fm in Mogoi and Wasian oil fields are proven reservoir rocks. Permian Ainim excellent source potential. Modeling of Bintuni Basin shows hydrocarbon generation in E Jurassic, expulsion in M Eocene. S Timoforo Block at least three structures with reserves around 1.7 TCF)

Rao, Y. (2012)- Petroleum geology and exploration potential of oil and gas in Block A of Waipogah Basin, Indonesia. Zhongguo Shiyou Kantan = China Petroleum Expl., Beijing, 17, 5, p. 55-58.
(In Chinese. Block A in middle of Waipogah backarc sag basin, northern W Papua. Major source rocks limestone and mudstone of Mamberamo, Darante and Makat Fms, with intra-formational sandstone and limestone reservoir rocks. N zone in block has good hydrocarbon potential)

Ratman, N. (1986)- Metaliferous mineralization related to the geological environment in Western Irian Jaya. Bull. Geol. Res. Dev. Centre (GRDC), Bandung 12, p. 1-14.
(Most promising metal prospects in New Guinea: (1) laterite nickel-chromium ores derived from ultramafic rocks in North; (2) base metal mineralization in Central Range associated with Pliocene intrusions and M Miocene volcanics; (3) rare earth elements associated with Permo-Triassic granitoids in Birds Head)

Ratman, N. (1998)- Geology of the Birdõs Head, Irian Jaya, Indonesia. In: J. Miedema et al. (eds.) Perspectives on the Birdõs Head of Irian Jaya, Indonesia. Proc. Conf., Leiden October 1997, Editions Rodopi, Amsterdam, p. 719-755.
(High-level review of Birds Head geology. As on mainland Irian Jaya three tectonic zones: Continental (most of area), Oceanic (N coast ophiolites and Paleogene-E Miocene arc volcanics) and Mobile Belt (N and SE))

Ratman, N., G.P. Robinson & P.E. Pieters (1989)- Geological map of Manokwari Quadrangle, Irian Jaya, 1:250,000. 2nd Ed.. Geol. Res. Dev. Centre (GRDC), Bandung.
(Geologic map of NE corner of Birds Head. Geology similar to Ransiki Sheet, with Paleozoic Kemum Block in SW, Arfak Block Oligocene- E Miocene volcanic arc to NE (Arfak Volcanics, Lembai Diorite, overlain by E-M Miocene Maruni Limestone), separated by Ransiki and Sorong (strike-slip?) fault zones)

Redmond, J.L. & R.P. Koesoemadinata (1976)- Walio oilfield and the Miocene carbonates of Salawati Basin. Proc. 5th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 41-57.

(Walio Miocene carbonate buildup, 21km long, rising 1200' above platform. Steep flanks to N and E, S flank less well defined. N-S trending normal faults. Low salinity formation waters suggest fresh water flushing)

Reijnders, J.J. (1964)- A pedo-ecological study of soil genesis in the tropics from sea level to eternal snow, Star Mountains, Central New Guinea. Doct. Thesis University of Utrecht. p. 1-159. *(Unpublished)*
(also in Nova Guinea, Geology, 6 1994. Soil studies as part of 1959 Royal Netherlands Geographical Society Expedition to Star Mountains. With 1: 250,000 scale soil map)

Reynolds, C.D., I. Havryluk, S. Bastaman & S. Atmowidjojo (1973)- The exploration of nickel laterite deposits in Irian Barat. In: B.K. Tan (ed.) Proc. Reg. Conf. Geology of SE Asia, Bull. Geol. Soc. Malaysia 6, p. 309-323.
(online at: https://gsmpubl.files.wordpress.com/2014/09/bgsm1973021.pdf)
(*Nickel-bearing laterites developed in-situ on nickel-bearing peridotites in two areas of W Papua, surveyed in 1969-1971: (1) 40x5 km belt along toe of S and W slopes of Cyclops Mts, W Papua, and (2) Waigeo island. 80x 5km belt and on smaller islands off N coast. Similar to other nickel laterites in tropical areas*)

Reynolds, C.D., I. Havryluk, Soepomo & S. Bastaman (1972)- The exploration of the nickel laterite deposits in Irian Barat, Indonesia. Bull. Nat. Inst. Geology and Mining (NIGM), Bandung, 4, 1, p. 59-75.
(Same as Reynolds et al. 1973, above)

Riadini, P., A.C. Adyagharini, A.M. Surya Nugraha, B. Sapiie & P.A. Teas (2009)- Palinspastic reconstruction of the Bird Head pop-up structure as a new mechanism of the Sorong Fault. Proc. 33rd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 1, IPA09-SG-067, p. 349-361.
(Seismic interpretation along offshore NW Bird Head area show development of pop-up structures at NW Birds Head area as evidence of Sorong Fault activity. Cuts Paleozoic- Tertiary rocks. Graben development at Eocene- Oligocene sequence was related with passive margin NW shelf Australia rifting since Mesozoic)

Riadini, P. & B. Sapiie (2011)- The Sorong Fault zone kinematics: implication for structural evolution on Salawati Basin, Seram and Misool, West Papua, Indonesia. AAPG Ann. Conv. Exh., Houston 2011, Poster.
(online at: www.searchanddiscovery.com/documents/2011/50489riadini/ndx_riadini.pdf)
(New model for Sorong left-lateral fault zone, active since Late Miocene)

Riadini, P. & B. Sapiie (2012)- The Sorong Fault Zone kinematics: the evidence of divergence and horsetail structure at NW Bird's Head and Salawati Basin, West Papua, Indonesia. AAPG Int. Conf. Exhib., Singapore 2012, Search and Discovery Art. 30264 (2013), 37p. *(Presentation package)*
(online at: www.searchanddiscovery.com/documents/2013/30264riadini/ndx_riadini.pdf)
(Sorong Fault Zone strike-slip system in NW-SW Bird's Head area formed during deposition of M-L Miocene sequence as growth fault and remained active until today. SW Birds Head area part of divergent strike-slip system leading to development of pull-apart basin around Salawati basin area. NW Bird's Head area reverse and normal faults as part of horsetail structure and restraining and releasing fault system)

Riadini, P., B. Sapiie & A.M. Surya-Nugraha (2012)- The Sorong fault zone kinematics: implication for structural evolution on Salawati Basin, Seram and Misool, West Papua, Indonesia. Berita Sedimentologi 24, p. 61-72.
(online at: www.iagi.or.id/fosi/berita-sedimentologi-no-24-timor-and-arafura-sea.html)

Riadini, P., B. Sapiie, A.M. Surya-Nugraha, F. Nurmaya, R. Regandara & R.P. Sidik (2010)- Tectonic evolution of the Seram fold-thrust belt and Misool-Onin-Kumawa anticline as an implication for the Birdôs Head evolution. Proc. 34th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA10-G-154, 21p.
(Seismic interpretation with 2D palinspatic reconstructions suggest Seram Fold-Thrust Belt and Misool-Onin-Kumawa Anticline not only related to rotation and translation phase from Sorong Fault Zone activities but also combined with additional W-movement of Tarera-Aiduna strike-slip system. Deformation active since Late Miocene as result of collision between Pacific island arc complexes and margin of NW Australia plate)

Rigby, J.F. (1996)- The significance of a Permian flora from Irian Jaya (West New Guinea) containing elements related to coeval floras of Gondwanaland and Cathaysialand. Palaeobotanist 45, p. 295-302.
(online at: http://14.139.63.228:8080/pbrep/bitstream/123456789/1724/1/PbV45_295.pdf)
(Re-determination of Permian floras from W Papua described by Jongmans (1940) and study of new material from Aiduna Fm in SW part of main New Guinea island. Mainly of Gondwanan affinity (Glossopteris, Vertebraria), but also Cathaysian elements (Gigantonoclea, Fascipteris) and genera that could be from either region (Pecopteris, Trizygia). Several new species of Glossopteris. Not viewed as 'mixed flora', but as overlap of temperate Gondwanan and (sub-)tropical Cathaysian floras)

Rigby, J.F. (1998)- *Glossopteris* occurrences in the Permian of Irian Jaya (West New Guinea). In: G.R. Shi, N.W. Archbold & M. Grover (eds.) Strzelecki Int. Symposium on Permian of Eastern Tethys: biostratigraphy, palaeogeography and resources. Proc. Royal Soc. Victoria 110, 1-2, p. 309-315.
(Permian flora in Aiduna Fm outcrop in SW part of New Guinea 'body' and in Birds Head Poeragi 1 well. Glossopteris species dominate, but mainly new, endemic species. Assemblages transitional between temperate Gondwana Glossopteris flora and tropical Cathaysia flora. These are seed plants, suggesting land connection between two regions)

Rigby, J.F. (2001)- A review of the Early Permian flora from Papua (West New Guinea). In: I. Metcalfe, J.M.B. Smith et al. (eds.) Faunal and floral migrations and evolution in SE Asia- Australasia, A.A. Balkema, Lisse, p. 85-95.
(Permian Aiduna Fm. S of main suture in W New Guinea, with 20 plant fossil species. Flora dominated by Gondwanaland Glossopteris, but also includes Cathaysian-related species Fascipteris aidunae and Gigantonuclea iriani, perhaps reflecting narrower Paleo-Tethys seaway than commonly suggested)

Robertson, J.D. (2004)- Tangguh- the first major Pre-Tertiary discovery in Indonesia. Houston Geol. Soc. Bull., February 2004, p. 21-23.

Robertson, J.D. (2006)- Tangguh: the first major Pre-Tertiary discovery in Indonesia. In: C. Sternbach et al. (eds.) Discoverers of the 20th century: perfecting the search, American Assoc. Petrol. Geol. (AAPG), Special Publ. 1, p. 171-180.

Robinson, G.P., B.H. Harahap & M. Suparman & G.M. Bladon (1985)- Geology of the Fak Fak sheet area, Irian Jaya. Geol. Res. Dev. Centre (GRDC), Bandung, Indonesia, 40p.

Robinson, G.P., B.H. Harahap & M. Suparman (1988)- Fak Fak 1:250,000 map sheet, Irian Jaya. Geol. Res. Dev. Centre, Indonesia, Geologic Data Record.

Robinson, G.P. & N. Ratman (1977)- Explanatory notes on the Manokwari 1:250 000 geological map, Irian Jaya. Bureau Mineral Res., Geol. Geoph., Canberra, Record 1977/32, p. 1-25.
(online at: https://d28rz98at9flks.cloudfront.net/13561/Rec1977_032.pdf)
(Manokwari map sheet with Silurian- Holocene rocks. Kemum Fm Silurian- Devonian metasediments, with grade of metamorphism increasing to E. K-Ar ages of Wariki granodiorite M-L Triassic (~222-246 Ma, biotite, muscovite); M Miocene Lembai diorite 15.4 Ma. Oligocene-Miocene Arfak Volcanics may conformably overlie subsurface Imskin Fm open marine limestone. Collision Birds Head and 'Banda Arc' at end-Miocene. In NE part of map Late Miocene- Pleistocene soft mudstones-sst of Befoor Fm (with deep marine E Pleistocene/N22 forams near top), unconformably overlain by Pleistocene raised reefs of Manokwari Limestone, suggesting very recent uplift)

Robinson, G.P. & N. Ratman (1978)- The stratigraphic and tectonic development of the Manokwari area, Irian Jaya. Bureau Mineral Res. J. Australian Geol. Geophysics 3, p. 19-24.
(online at: www.ga.gov.au/corporate_data/80941/Jou1978_v3_n1_p019.pdf)
(Manokwari area in NE corner of Birds Head, W Papua, with Silurian-Devonian Kemum Fm metamorphics to S, mainly fine, low-grade meta-sediments. Intruded by Late Permian- M Triassic Wariki granodiorites and M Miocene Lembai diorite. Oligocene-Miocene Arfak Fm basaltic and andesitic volcanics to SE. Massive E-M

Miocene Kais Fm limestone elongate ridges NE of, and unconformably over, volcanics. In NE Befoor Fm Late Miocene -Pleistocene clastics, overlain by Pleistocene raised reefs. Sorong and Ransiki Fault Zones are continent-island arc collision sutures which have subsequently undergone sinistral transcurrent faulting)

Robinson, G.P., R.J. Ryburn, B.H. Harahap, S.L. Tobing, G.M. Bladon & P.E. Pieters (1990)- Geology of the Kaimana sheet area, Irian Jaya (Quad. 3012). Geol. Res. Dev. Centre (GRDC), Bandung, scale 1: 250,000, p. 1-50.
(Surface geology of part of Lengguru foldbelt)

Robinson, G.P., R.J. Ryburn, B.H. Harahap, S.L. Tobing, G.M. Bladon & P.E. Pieters (1990)- Geology of the Steenkool sheet area, Irian Jaya (Quad. 3013). Geol. Res. Dev. Centre (GRDC), Bandung, scale 1: 250,000, p. 1-45.
(Surface geology of part of North Lengguru foldbelt- Birds Neck area)

Robinson, G.P., R.J. Ryburn, S.L. Tobing & A. Achdan (1988)- Geologic data record Steenkool (Wasior) - Kaimana 1: 250,000 sheet area, Irian Jaya. Geol. Res. Dev. Centre (GRDC), Bandung, Open File report, p. 1-153.

Rossetter, R.J. (1976)- New Guinea Limestone Group Bomberai Peninsula, Irian Jaya. Proc. Carbonate Seminar Jakarta 1976, Indon. Petroleum Assoc. (IPA), Spec. Vol., p. 93-98.

Rouffaer, G.P. et al. (1908)- De Zuidwest Nieuw-Guinea-expeditie 1904/5 van het Koninklijk Nederlands Aardrijkskundig Genootschap. Brill, Leiden, p. 1-677.
(online at: www.google.com/...)
('The SW New Guinea expedition 1904/5 of the Royal Netherlands Geographical Society'. Mainly geographic-ethnographic reconnaissance expedition, with chapter on geology by C. Moerman (1908, p. 399-416))

Rubin, J. (1996)- Skarn formation and ore deposition at the Gunung Bijih Timur (Ertsberg East) complex, Irian Jaya, Indonesia. Ph.D. Thesis University of Texas at Austin, p. 1-310.

Rubin, J.N. & J.R. Kyle (1997)- Precious metal mineralogy in porphyry-, skarn-, and replacement-type ore deposits of the Ertsberg (Gunung Bijih) District, Irian Jaya, Indonesia. Economic Geology 92, 5, p. 535-550.
(Details of gold- copper mineralogy in Pliocene Grasberg- Ertsberg complexes, W Papua. Generally high but variable native Au fineness, Cu-Fe sulfide host for most Ag in Gunung Bijih Timur Cu-Au skarn, etc.)

Rubin, J.N. & J.R. Kyle (1998)- The Gunung Bijih Timur (Ertsberg East) skarn complex, Irian Jaya, Indonesia: geology and genesis of a large, magnesian Cu-Au skarn. In: D.R. Lentz (ed.) Mineralized intrusion-related skarn systems, Mineralogical. Assoc. Canada, Short Course Notes 26, Chapter 8, p. 245-288.
(Comprehensive review of Gunung Bijih Timur (= Ertsberg East) skarn Cu-Au mineralization in Paleo- Eocene limestones, associated with Pliocene (2.6- 3.1 Ma) intermediate-composition plutons intruded into thick Mesozoic- Cenozoic sedimentary sequence. Vertical extent of skarn ~1200m (elevation 2800-4000m))

Ruslan, M. & Y. Kumoro (1993)- Aspek geologi dalam penentuan trase Jalan Waghete- Enarotali- Kumopa, Kabupaten Paniai, Irian Jaya. Proc. 22nd Ann. Conv. Indon. Assoc. Geol. (IAGI), Bandung, p. 581-589.
(Geological aspects for the determination of the route of the Waghete- Enarotali- Kumopa road, Paniai, Irian Jaya')

Rusmana, E., K. Parris, U. Sukanta & H. Samodra (1995)- Geologic map of the Timika Quadrangle, Irian Jaya, scale 1: 250,000. Geol. Res. Dev. Centre (GRDC), Bandung.

Rutten, L.M.R. (1914)- Foraminiferen-fuhrende Gesteine von Niederlandisch Neu-Guinea. Nova Guinea-Resultats des expeditions scientifiques a la Nouvelle Guinee en 1903, 6, Geologie, 2, Brill, Leiden, p. 21-51.
(online at: https://ia800301.us.archive.org/10/items/novaguinearsulta61913nede/novaguinearsulta61913nede.pdf)

('Foraminifera-bearing rocks from Netherlands New Guinea'. Description of foraminifera collected by Wichmann during 1903 Netherlands New Guinea Expedition. Includes reports of Lacazina, Alveolina, Nummulites and Discocyclina larger forams in Eocene of Dramai Island SE of Triton Bay, Miocene Lepidocyclina associated with arc volcanics on Arimoa Islands off N New Guinea, M Miocene with Cycloclypeus annulatus, etc.)

Rutten, L. (1920)- On Foraminifera-bearing rocks from the basin of the Lorentz River (Southwest Dutch New Guinea). Proc. Kon. Akademie Wetenschappen, Amsterdam, 22, 2, p. 606-614.
(*online at: www.dwc.knaw.nl/DL/publications/PU00012007.pdf)*
(Eocene Alveolina-Lacazina and Nummulites and Miocene Lepidocyclina foraminiferal limestone pebbles from Lorentz River (S foreland of Central Range). Eocene Alveolina-Lacazina limestone from top of Wilhelmina (Trikora) peak. Unlike N New Guinea, no fragments of volcanic rocks observed in limestones and sandstones)

Rutten, L. (1921)- Quaternary and Tertiary limestones of North New Guinea between the Tami- and the Biri-River basins. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam 28, 8, p. 1137-1141.
(online at: www.dwc.knaw.nl/DL/publications/PU00014766.pdf)
(Tertiary limestones collected by BPM from N New Guinea between Tami and Biri rivers. No detailed locality information. Majority of limestones of Oligo-Miocene age with Lepidocyclina. Also two samples of black-grey Eocene reefal limestone with Alveolina, Nummulites, Orthophragmina (=Discocyclina) in Nanggoi River, S Nimboran Mts)

Rutten, L. (1923)- Geologische gegevens uit het gebied van den Vogelkop van Nieuw-Guinea. Verslagen Kon. Akademie Wetenschappen (afd. Wis- en Natuurkunde), Amsterdam, 32, 3, p. 221-224.
('Geological data from the region of the Birds Head of New Guinea'. Early notes on Birds Head geology, based on rock collections collected between 1917-1921 by East Indies Mines Department. Widespread Oligo-Miocene limestones with Lepidocyclina, Miogypsina, etc., but relatively rare Eocene (Lacazina limestones in Rumberpon- Horna area at Cenderawasih Bay coast and NW Birds Head))

Rutten, L. (1923)- Geological data derived from the region of the 'Birds Head' of New Guinea. Proc. Kon. Akademie Wetenschappen, Amsterdam, 26, 3-4, p. 274-277.
(online at: www.dwc.knaw.nl/DL/publications/PU00014942.pdf)
(English version of paper above)

Rutten, L.M.R. (1925)- Foraminiferen-houdende gesteenten uit het gebied van de ôVogelkopô op Nieuw Guinea. Jaarboek Mijnwezen Nederlandsch-Indie 53 (1924), 1, p. 147-167.
('Foraminifera-bearing rocks from the area of the 'Birds Head' on New Guinea'. Brief descriptions of foram-bearing samples, including globigerinid limestone near SE coast (= Imskin Fm of subsequent authors), Eocene Nummulites-Alveolina-Lacazina in Horna region and many E-M Miocene limestone localities)

Rutten, L.M.R. (1927)- Geologie van Nieuw Guinea en de Aroe-eilanden. In: L.M.R. Rutten (1927) Voordrachten over de geologie van Nederlandsch Indie, Wolters, Groningen, p. 782-803.
(Review of geology of New Guinea and the Aru Islands)

Rutten, L.M.R. (1936)- Roches et fossiles de lôIle Pisang et de la Nouvelle Guinee. Bull. Musee Royal Histoire Nat. Belgique 12, 10, p. 1-13.
('Rocks and fossils from Pisang Island and from New Guinea'. Pisang Island, E of Misool, samples, include Eocene limestone with Lacazinella, Nummulites, Discocyclina, etc.; no Pellatispira)

Sadjati, O., N.A. Ascaria & A.H. Satyana (2002)- Generation and migration of hydrocarbons from pre-Tertiary source rocks of the Kamundan area, West Papua, Eastern Indonesia. AAPG Int. Conf., Cairo, 2002.
(Abstract only) (Kamundan area N of Wiriagar Deep giant gas field in Jurassic sandstones. Thermal modeling at Ayot-2, Tarof-2 and Wiriagar-1 wells suggest sources mature since 240-260 Ma (Permo-Triassic). In 210 Ma (Late Triassic) hydrocarbons charged Jurassic reservoirs(?). Migration continued and charged Cretaceous reservoirs until mid-Cretaceous tectonic activity uplifted area and changed migration routes. Afterwards,

hydrocarbons re-migrated along Cretaceous unconformity and charged Late Cretaceous and Paleocene reservoirs, causing significant hydrocarbon accumulation in Paleocene reservoirs)

Sahidu, M.R.H., S.A. Putri, C.S. Birt & R. Apriani (2018)- Integration of 2D analog and 3D high resolution seismic data for regional shallow overburden description in the Tangguh Field, Indonesia. Proc. 42nd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA18-G-85, 17p.
(Late Miocene-Pliocene Steenkool Fm thickens to E (by progressive onlap to W onto Top Late Miocene Top Kais Lst and thickening to E). Kais Lst drowned by influx of clastic material into rapidly evolving E-dipping foreland basin in-front of Lengguru foldbelt. Shallow marine Lower Steenkool Fm with shallow gas in W part of area. Fluvial-deltaic Upper Steenkool Fm with stacked coal beds in E of area. Shortening in Lengguru fold-thrust belt stopped in Pleistocene. Faulting in Steenkool formation by Plio-Pleistocene strike-slip tectonics, creating E-W faults. Upper Steenkool Fm eroded by Pleistocene unconformity E of Tangguh field)

Sakagami, S. (2000)- Middle Permian Bryozoa from Irian Jaya, Indonesia. Bull. Nat. Science Museum, Tokyo, Ser. C 26, 3-4, p. 139-168.
(online at: http://ci.nii.ac.jp/naid/110004313633/en)
(24 species/ 18 genera of Permian bryozoa from Aiduna Fm at 4 localities in Waghete map sheet. Fauna very similar to Timor described by Bassler (1929), also Peninsular Thailand and W Australia. Incl. Fistulipora spp, Eridopora, Tabulipora, etc. Part of typical S Tethys realm. Age most likely early Guadalupian, M Permian)

Salo, J.P. (2005)- Evaluating sites for subsurface CO2 injection/ sequestration: Tangguh, Bintuni Basin, Papua, Indonesia. Ph.D. Thesis, University of Adelaide, p. 1-368.
(Text online at: http://digital.library.adelaide.edu.au/dspace/bitstream/2440/49746/2/02whole_v.1.pdf)
(Downdip aquifer leg of M Jurassic (Bathonian- Bajocian) Roabiba Fm quartzose marine sandstone is most viable option for disposal of excess CO2 from Tangguh gas production. Second best is 'Aalenian sandstone'. M Jurassic (Aalenian-Callovian) overall transgressive series over Permian (Triassic- E Jurassic absent over Tangguh study area; E Jurassic only in nearby East Onin 1 well), with deeper marine facies to SW and S, with sediment supply mainly from NE. Major unconformity between Late Jurassic- Late Cretaceous, with Early Cretaceous missing, followed by Late Cretaceous (Turonian- Maastrichtian) rifting in Birds Head region, probably separating Birds Head microcontinent from Australia- New Guinea Plate. Erosion of folded Eocene-Oligocene at Basal Miocene unconformity reflects collision of Birds Head and Australia-New Guinea)

Samuel, L., K. Lukman & Suharno (1990)- Dominant geological factors which controlled petroleum potential of Salawati and Bintuni basins, Irian Jaya. Proc. 19th Ann. Conv. Indon. Assoc. Geol. (IAGI), Bandung, 1, p. 41-51.
(Birds Head Salawati basin more productive for Tertiary hydrocarbon discoveries than Bintuni basins. Possibly related to presence of Cretaceous shale seal in Bintuni, absence in Salawati)

Samuel, L. & L. Kartanegara (1991)- The role of Cretaceous seal to the hydrocarbon potential of the Salawati and Bintuni Basins, Irian Jaya, Indonesia. AAPG Ann. Mtg., Dallas, Abstracts, American Assoc. Petrol. Geol. (AAPG) Bull. 75, 3, p. 666.
(In Bintuni basin rel. little success in Miocene carbonates. Presence of Cretaceous shales seal important: where this regional seal is noneffective, oil may migrate vertically from pre-Tertiary sources to Tertiary reservoirs)

Samuel, L. & R.S.K.Phoa (1986)- Problems. of source rock identification in the Salawati basin, Irian Jaya. Proc. 15th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 2, p. 404-422.

Sapiie, B. (1998)- Strike-slip faulting, breccia formation and porphyry Cu-Au mineralization in the Gunung Bijih (Ertsberg) Mining District, Irian Jaya, Indonesia. Ph.D. Thesis, University of Texas at Austin, p. 1-304. *(Unpublished)*
(Most of Cenozoic tectonic evolution in New Guinea result of obliquely convergence and collision between Australian and Pacific Plates. In area of Gunung Bijih (Ertsberg) Mining District two deformation stages: (1) 12- 4 Ma 10's of km of contractional deformation, generating NW-trending folds and reverse/ thrust faults, (2) few km of strike-slip offset between 4- 2 Ma. Five major left-lateral strike-slip fault zones identified)

Sapiie, B. (2000)- Structural geology and ore deposit: case study of the Grasberg super porphyry Cu-Au mineralization, Irian Jaya, Indonesia. Proc. 29th Ann. Conv. Indon. Assoc. Geol. (IAGI), Bandung, 2, p. 1-21.
(Strike-slip faulting in Central Range Irian Jaya started at ~4 Ma, after 10's of km of contractional deformation. Grasberg igneous complex emplaced at major left step in left-lateral strike slip system)

Sapiie, B. (2002)- Structural pattern and deformation style in the Central Range of Irian Jaya (West Papua), Indonesia. Proc. 28th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 369-376.
(Central Range two stages of deformation: NW-trending folding between ~12- 4 Ma, followed by strike-slip faulting after 4 Ma. Change of deformation style related to change in relative plate motions between Australia and Pacific Plates)

Sapiie, B. (2007)-Strike-slip faulting and collisional delamination in the Central Range of West papua, Indonesia. Proc. Joint Conv. 32nd HAGI, 36th IAGI and 29th IATMI, Bali 2007, p. 1001-1002. *(Extended Abstract)*
(Change in deformation style in Central Range from regional folding to localized strike-slip between ~4-2 Ma interpreted to be manifestation of short-lived change in relative plate motion between Australian and Pacific plates at 4 Ma (transform movement between Australian plate and short-lived Caroline plate).

Sapiie, B. (2016)- Kinematic analysis of fault-slip data in the Central Range of Papua, Indonesia. Indonesian J. Geoscience 3, 1, p. 1-16.
(online at: http://ijog.bgl.esdm.go.id/index.php/IJOG/article/view/225/202)
(Most of Cenozoic tectonic evolution in New Guinea result of oblique convergence that led to arc-continent collision between Australian- Pacific Plates. Structural analysis in Gunung Bijih (Ertsberg) District indicates two deformation stages since ~12 Ma: (1) en-echelon NW-trending folds and reverse faults; (2) left-lateral strike-slip faulting sub-parallel to regional strike. Change from contractional to left-lateral strike-slip offset due to change in relative plate motion between Pacific-Australian Plates from 246° to 253° at ~4 Ma. From ~4- 2 Ma, transform motion along ~270° trend caused left-lateral strike-slip. Strike-slip faulting with 100s of m to at most a few km of offset significant for magma intrusion and mineralization)

Sapiie, B., A.C. Adyagharini & P. Teas (2010)- New insight of tectonic evolution of Cendrawasih Bay and its implications for hydrocarbon prospect, Papua, Indonesia. Proc. 34th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA10-G-158, 11p.
(Deformation of Cendrawasih Bay related to coupling movement of Yapen-Sorong Fault Zone and Tarera-Aiduna left-lateral strike-slip faults. Cenderawasih Basin formed by NW-SE directed shortening and is most likely overlain by Australian continental crust)

Sapiie, B. & M. Cloos (2000)- Strike slip faulting in the core of the Central Range of New Guinea: aftermath of collisional delamination. Geol. Soc. America 2002 Denver Annual Meeting, 1p. *(Abstract only)*
(Strike-slip faulting in Gunung Bijih (Ertsberg) District during latest stage of collisional orogenesis, localizing igneous intrusion and copper-gold mineralization at 3 Ma. C Range tectonically inactive; current movements along N edge of island and Tarera-Aiduna fault zone. Between 3 Ma and Pleistocene glaciation, strike-slip motion ceased in W highlands. Rupture of N end of Australian plate (collisional delamination) started at ~8 Ma and propagated >1000 km E by 3 Ma, causing short-lived melting event. Batholithic-scale magma chambers in lower crust from ~7 to 3 Ma. Core of collisional belt was zone of weakness, localizing tectonic motions. Since then upper ~20 km of upwelled asthenosphere cooled, forming new lithospheric mantle. Healing of lithosphere beneath W Central Range caused plate motions to become concentrated at weaknesses along N coast of island)

Sapiie, B. & M. Cloos (2004)- Strike-slip faulting in the core of the Central Range of west New Guinea: Ertsberg Mining District, Indonesia. Geol. Soc. America (GSA) Bull. 116, 3-4, p. 277-293.
(Most of New Guinea Cenozoic tectonic evolution result of obliquely convergent motion. Two stages of deformation: (1) ~12- 4 Ma: km-scale folds and thrusts recording many tens of km of shortening; (2) starting at ~4 Ma five NW-trending (~300°) strike-slip fault zones in core of W Highlands, aiding ascent of magmas.

Intrusives of 4.4- 2.6 Ma ages formed in pull-aparts along left-lateral strike slip faults. NE trending normal faults and veins suggest NW-SE extension)

Sapiie, B. & M. Cloos (2013)- Strike-slip faulting and veining in the Grasberg giant porphyry Cu-Au deposit, Ertsberg (Gunung Bijih) mining district, Papua, Indonesia. Int. Geology Review 55, 1, p. 1-42.
(Ertsberg mining district in core of Central Range of W New Guinea best known for Grasberg igneous complex, the host of giant Cu-Au deposit that was emplaced at 3 Ma. Three domains of strike-slip faulting in deposit, E-NE, NW and N-trending faults, formed in left-lateral Riedel shear system trending N60W)

Sapiie, B., W. Naryanto, A.C. Adyagharini & A. Pamumpuni (2012)- Geology and tectonic evolution of Bird head region Papua, Indonesia: implications for hydrocarbon exploration in the Eastern Indonesia. AAPG Int. Conf. Exh., Singapore 2012, Search and Discovery Art. 30260, p. 1-39.
(online at: www.searchanddiscovery.com/documents/2012/30260sapiie/ndx_sapiie.pdf)
(Birds Head region of W Papua in region with deformation varying from area to area, indicating several translations and rotations during history)

Sapiie, B., D.H. Natawidjaja & M. Cloos (1999)- Strike slip tectonics of New Guinea: transform motion between the Caroline and Australian plates. In: I. Busono & H. Alam (eds.) Developments in Indonesian tectonics and structural geology, Proc. 28th Ann. Conv. Indon. Assoc.Geol. (IAGI), Jakarta 1999, 1, p. 1-15.
(Most of Cenozoic tectonic evolution of New Guinea result of oblique convergence that led to collisision between Australian continent and oceanic arc at leading edge of Pacific Plate. Ertsberg mining district of W Papua two stages of deformation: (1) ~12- 4 Ma WNW-trending en-echellon folds (10's of km of shortening) and (2) ~4-2 Ma mainly left-lateral strike slip faulting, with offsets up to 1-2 km. Change in style related to minor change in plate motion at ~4 Ma, also forming Caroline Plate)

Sapin, F., M. Pubellier, J.C. Ringenbach &, V. Bailly (2009)- Alternating thin versus thick-skinned decollements, example in a fast tectonic setting: the Misool-Onin-Kumawa Ridge (West Papua). J. Structural Geol. 31, p. 444-459.
(Misool-Onin-Kumawa Ridge between Seram accretionary wedge and Lengguru fold belt (<8 My). Three deformation stages: (1) Messinian thin-skinned fold-and-thrust belt over shaly-silty Permian-Paleocene; (2) Pliocene thick-skinned event responsible for uplift of ridge, possibly induced by onset of continental subduction; (3) Pleistocene deformation when thin-skinned tectonics resumed in Seram Trough. Currently, Seram wedge abuts ridge, transferring compression N into Salawati Basin. Jumps of active detachment levels may be response to changes in subduction parameters (velocity, rugosity, etc.) during transition between oceanic and continental subduction, or from thinned crust to thicker continental crust)

Saputra, A., R. Hall & L.T. White (2014)- Development of the Sorong Fault Zone north of Misool, Eastern Indonesia. Proc. 38th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA14-G-086, 14p.
(Sorong Fault Zone W of Birds Head with several small basins along 3 major fault strands. Evidence of both transpression and transtension along sinistral strike-slip system. Kofiau Basin may be N part of Salawati Basin, displaced to W on Molucca-Sorong Fault during Pliocene)

Saragih, R.Y., A.K. Gibran, D.A.R. Prawiranegara, G. G. Arvillyn & A. Kusworo (2017)- Mesozoic source rock potential in Lengguru Basin, West Papua. Proc. 41st Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA17-273-G, 16p.
(Jurassic-Cretaceous Kopai Fm in NE part of Lengguru foldbelt rel. high organic richness (TOC up to 1.2-17.7%). Most samples Type III kerogen. High thermal maturity in samples from NE area (overmature). Hydrocarbon seeps)

Saragih, R.Y., G.M.L. Junursyah, F. Badaruddin & Alviyanda (2018)- Structural trap modelling of the Biak-Yapen basin as a Neogen frontier basin in North Papua. Proc. 42nd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA18-408-G, 25p.
(Biak Island and Supiori Islands interpreted as series of extensional fault blocks with >2000m of Neogene sediments, overlying Eocene arc volcanics)

Sardjono (1998)- Gravity field and structure of the Sorong Fault Zone, Eastern Indonesia. Ph.D. Thesis University of London, p. 1-269. *(Unpublished)*
(Gravity surveys along coastlines of Banggai-Sula islands, E Sulawesi, Halmahera, Bacan and Obi, integrated with earlier gravity data. Values <-250 mGal in S part of Molucca Sea to >+320 mGal near sea level in coastal areas S of Mangole and N of Sulabesi (Sula Group). Steep free-air gravity gradients S of Mangole and W of Obi. Gravity along Sorong FZ near Banggal-Sula Islands suggest mainly attenuated continental fragments, juxtaposed to thick tectonic melange and anomalous oceanic crust. Continental fragments of Banggai-Sula dip N-ward, interpreted as response to sinking of Molucca Sea lithosphere. Obi region gravity suggests most of island peridotitic and basaltic rocks, with continental crust in S and S offshore. Ultramafic and basic rocks emplaced on Obi by reverse fault. Exposed basaltic rocks may be remnant of oceanic Philippine Sea Plate)

Sarmili, L., F.K. Jevie & M.F. Rosiana (2009)- Keterdapatan mineral zirkon dan hubungannya dengan batuan metamorfik di Teluk Wondama, Papua. J. Geologi Kelautan 7, 1, p. 37-45.
(online at: http://ejournal.mgi.esdm.go.id/index.php/jgk/article/view/169/159)
('Occurrence of zircon minerals and their relationship to metamorphic rocks in Wondama Bay, Papua' (= Wandamen Bay).Zircon-bearing metamorhic schist and amphibolite of Roon Island along Wandamen Bay point to granitoid, continental crust composition of precursor rock)

Sastratenaya, A.S., P. Sampurno & D. Soetarno (1988)- Favourable formations for uranium occurrences in Irian Jaya. In: Proc. Conf. Uranium deposits in Asia and the Pacific; geology and exploration, Jakarta 1985, Int. Atomic Energy Agency (IAEA), Vienna, IAEA-TC-543/19, p. 259-274.
(Probability of Uranium occurrences in basement complexes of W Papua good, owing to younger (Jurassic, Tertiary) intrusions of intermediate acidic magmatic rocks. Most important province is C Irian Jaya with formations favorable for U occurrences, i.e. Aifam, Iwur, Buru, Klasaman and Steenkool Fms. Some indications of mineralized granitic outcrops found by ground surveys in Ransiki area)

Satyana, A.H. (2001)- Dynamic response of the Salawati Basin, Eastern Indonesia, to the Sorong Fault tectonism: example of inter-plate deformation. Proc. 30th Ann. Conv. Indon. Assoc. Geol. (IAGI) and GEOSEA 10th Reg. Congress, Yogyakarta 2001, p. 288-291.
(Sorong Fault major left-lateral fault responsible for reversal of Salawati basin polarity. Late Paleozoic-Miocene beds thicken to S-SE, revealing presence of long-lived southern depocenter. At Miocene-Pliocene boundary basin tilted to W-SW, marking inception of Sorong Fault in N Irian Jaya. By mid-Pliocene Sorong Fault splayed into Salawati Basin and basin subsided rapidly to N-NW with uplift of S and E parts of basin. Coeval with rapid deposition of Late Pliocene Klasaman Fm sediments, which triggered shale diapirism)

Satyana, A.H. (2003)- Sorong Fault and the reversal of the Salawati Basin. Indon. Petroleum Assoc. (IPA) Newsl., March 2003, p. 15-21.
(Major E-W trending left-lateral Sorong strike-slip fault system along N Birds Head, W Papua and Papua New Guinea separates W-moving Pacific oceanic (Caroline and Philippine Sea) plate from relatively stable Australian continental plate. In Salawati Basin polarity reversal in Pliocene)

Satyana, A.H. (2003)- Re-evaluation of the sedimentology and evolution of the Kais carbonate platform, Salawati Basin, Eastern Indonesia: exploration significance. Proc. 29th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 185-206.
(New paleogeographic model of Miocene Kais carbonates, making previous basinal zone lagoonal)

Satyana, A.H. (2008)- Aromatic methylphenanthrene biomarker and maturity of oils keys to identifying new active source rocks in the Salawati Basin, Indonesia. American Assoc. Petrol. Geol. (AAPG), Int. Conf. Exhib., Cape Town, 1p. . *(Abstract only)*
(Salawati Basin with foredeep kitchen bordered by Sorong Fault zone. Early-migrated and moderate-heavy oils in updip area, late-migrated and light oils and gas in downdip area approaching kitchen. Hydrocarbon sources Miocene Kais and Klasafet mudstones and shales. Maturity of oils derived from aromatic biomarker

methylphenanthrene (MP) index increases towards downdip area. Low maturity oil seeps at Sorong deformed zone do not follow pattern, suggesting source from E Pliocene Lower Klasaman shale)

Satyana, A.H. (2009)- Emergence of new petroleum system in the mature Salawati Basin: keys from geochemical markers. Proc. 33rd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 775-795.
(Salawati Basin proven petroleum system is Miocene Kais/Klasafet. Over Sorong foredeep kitchen, oils generated from lower maturity rocks than overmature Kais/Klasafet marly carbonaceous shales, must be sourced by Early Pliocene Lower Klasaman shales)

Satyana, A.H. & N. Herawati (2011)- Sorong fault tectonism and detachment of Salawati Island: implications for petroleum generation and migration in Salawati Basin, Bird's Head of Papua. Proc. 35th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA11-G-183, 21p.
(Sorong Fault at N and W margin of Salawati Basin reversed basin polarity from basin with S depocenter before Pliocene to the basin with N depocenter today. Subsidence of basin to N resulted in petroleum generation from Miocene Kais-Klasafet carbonates and shales main source rocks. Salawati Island, once attached to main Bird's Head, detached and rotated CCW, opening Sele Strait. After rotation Salawati Island translated SW-ward to present position)

Satyana, A.H., M.E.M. Purwaningsih & E.C.P. Ngantung (2002)- Evolution of the Salawati structures, eastern Indonesia: a frontal Sorong fault deformation. Proc. 31st Ann. Conv. Indon. Assoc. Geol. (IAGI), Surabaya, p. 277-293.
(Neogene structures in Salawati Basin tied to Sorong Fault tectonism. Four stages of development, reflecting 25° CCW rotation of strain ellipsoid between M Pliocene- Pleistocene. Sorong Fault started at ~3.5 Ma, dissecting N margin of Salawati Basin. Present-day structuring mainly SSW-NNE normal faulting)

Satyana, A.H., Y. Salim & J.M. Demarest (2000)- Significance of focused hydrocarbon migration in the Salawati Basin: controls of faults and structural noses. Proc. 27th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 513-530.

Satyana, A.H. & I. Setiawan (2001)- Origin of Pliocene deep-water sedimentation in Salawati Basin, Eastern Indonesia: deposition in inverted basin and exploration implications. In: A. Setiawan et al. (eds.) Deep-water sedimentation of Southeast Asia, Proc. 2nd Regional Seminar Indonesian Sedimentologists Forum (FOSI), Jakarta, p. 53-65.
(New Mid-Late Pliocene NW Salawati Basin depocenter created by tectonic loading of contemporaneous Upper Klasaman Fm thrust sheets along regional Sorong left-lateral strike-slip fault. Accommodation filled with bathyal debris flow deposits. Thick Klasaman deposits buried Miocene source rocks once deposited in lagoonal environment to reach oil window and triggered overpressuring and shale diapirism of E Pliocene Lower Klasaman Fm shales)

Satyana, A.H. & M. Wahyudin (2000)- Meteoric water flushing and microbial alteration of Klamono and Linda oils, Salawati Basin, Eastern Indonesia: geochemical constraints, origin and regional implications. Proc. 29th Ann. Conv. Indon. Assoc. Geol. (IAGI), 1, p. 71-84.
(Klamono and Linda fields oils evidence of biodegradation. Water from Kais Limestone outcrop flowed W to Klamono field. Linda field probably affected by meteoric water moving along fault)

Schappert, A. (1990)- The seismicity of the Tembagapura region, Irian Jaya. Proc. 19th Ann. Conv. Indon. Assoc. Geol. (IAGI), Bandung, 2, p. 50-56.
(Tembagapura at S slopes of West Papua Central Range in seismically active Southen Highland seismic zone. Two groups of events: (1) deep events (>100km deep epicenters), associated with S-ward subduction of Solomon/ Pacific plate; (2) shallow earthquakes (<30km), related to mountain building in upper crust)

Schellart, W.P. & W. Spakman (2015)- Australian plate motion and topography linked to fossil New Guinea slab below Lake Eyre. Earth Planetary Sci. Letters 421, p. 107-116.

(On relation between latest Cretaceous- E Eocene (~71-50 Ma) N-dipping subduction at N edge of New Guinea-Australian plate and Cenozoic Australian plate motion changes and topography evolution of Australian continent. Evidence for ~4000 km wide subduction zone, which culminated in ophiolite obduction and arc-continent collision in New Guinea- Pocklington Trough region during subduction termination, coinciding with cessation of spreading in Coral Sea. Renewed N-ward motion caused Australian plate to override sinking subduction remnant, detected with seismic tomography at 800-1200 km depth in mantle under C-SE Australia. Slab sinking and mantle flow cause S-migrating negative dynamic topography of several 100m to present-day ~200m deep depression of Lake Eyre Basin and Murray-Darling Basin)

Schlumberger, C. (1894)- Note sur *Lacazina wichmanni* Schlumb.n.sp.. Bull. Soc. Geologique France (3), 22, p. 295-298.
(Lacazina wichmanni n. sp. described from (Eocene) limestone from Triton Bay area, Lengguru foldbelt, collected by Wichmann. Species also known from New Caledonia?; Koolhoven 1929.)

Schroo, H. (1961)- Some pedological data concerning soils in the Baliem Valley, Netherlands New Guinea. Boor en Spade 11, p. 84-103.
(Early paper on geomorphology and relatively poor soil quality in Baliem Valley, Central Range)

Schurter, G.J., Y. Supriatna, A. Nuraeni & Supriyono (2009)- A 3D finite-difference modeling study of seismic imaging challenges in Bintuni Bay, Irian Jaya Barat. The Leading Edge 28, p. 1008-1021.
(also in Proc. 31st Ann. Conv. Indon. Petroleum Assoc., 2007, p. 369-376 and p. 377-390)

Seno, T. & D.E. Kaplan (1988)- Seismotectonics of Western New Guinea. J. Physics of the Earth 36, p. 107-124.
(online at: www.journalarchive.jst.go.jp/...)
(No seismological evidence of subduction along New Guinea Trench W of 140°E (believed to be relic of ancient subduction). Region between N New Guinea Trench and Central Range characterized by strike-slip faulting and reverse faulting. Yapen Island earthquake suggests active strike-slip motion along this part of Sorong fault zone. Thrust mechanisms common in Meervlakte Basin. Additional strike-slip faulting and thrust faulting in Tarera and Wandamen Fault Zones. Oblique convergence between Caroline and Australian plates in W New Guinea divided into strike-slip and dip-slip components. East of 140°E along New Guinea Trench, Bismarck plates are subducting, producing intermediate- depth seismicity beneath central New Guinea)

Setiawan, Y., E. Syafron, N. Arbi, M. Hardenberg, M. Jones, H. Banjarnahor, Nakamoto, I. Argakosesoemah et al. (2016)- Chasing the Jurassic sand in Semai Basin, Papua. Proc. IPA 2016 Technical Symposium, Indonesia exploration: where from- where to, Indon. Petroleum Assoc. (IPA), Jakarta, 40-TS-16, p. 1-23.
(Since 2006 oil companies invested $600MM in unsuccessful exploration of Semai basin between Onin Peninsula/ Birds Head of NW West Papua and Seram Trough (Trench). Tight Lower Jurassic sandstone penetrated in Lengkuas-1 well at 6500m TVDSS (63m gross, but not fully penetrated; porosity <1-2%), i.e. older than M Jurassic main reservoirs in Tangguh fields. Probably part of W-E (or SW to NE?) back-stepping pattern in E-M Jurassic deltaic sandstones. Same-age reservoir much shallower in Bawang Putih-1 and Serai-1 wells to E; also poor reservoir quality. Reduced porosity in E Jurassic sandstones due to deep burial (quartz overgrowth) and >3km of late structural uplift and inversion. With paleogeographic maps for E Jurassic, Paleocene, Miocene)

Setyadi , H., N. Wiwoho, B. Kusnanto, S. Widodo & N. Sugita (1999)- The lithogeochemistry and magnetic susceptibility properties of the Kucing Liar copper-gold skarn deposit, Ertzberg, Irian Jaya, and its implications for the mineral exploration. Proc. 28th Ann. Conv. Indon. Assoc. Geol. (IAGI), Jakarta, 2, p. 217-225.
(Kucing Liar 1992 discovery of multistage Cu-Au skarn/ replacement deposit from fluids emanating from W-SW side of Grasberg porphyry intrusive. Mainly in U Cretaceous Ekmai Fm and Paleogene Waripi Fm, along WNW-ESE reverse fault, at depth of 500-1500m below surface elevation of 3700m asl))

Setyaningsih, C.A. (2014)- Pollen Pra-tersier daerah Kepala Burung, Papua. Lembaran Publikasi Minyak dan Gas Bumi (Lemigas) 48, 1, p. 13-22.

(online at: www.lemigas.esdm.go.id/public/publikasi/lembar/14554130711989243592.pdf)
('Pre-Tertiary pollen of the Birds Head area, Papua'. Palynology of samples from Ainim River shows Late Permian Ainim Fm (Protohaploxypinus microcorpus zone, with Falcisporites australis, Lunatisporites noviaulensis, etc.), overlain by Late Cretaceous Jass Fm (Tricolporites apoxyexinus zone, also with Coniacian-Campanian planktonic foraminifera and nannofossils in samples G3-G7), overlain by Eocene (Florschuetzia trilobata zone). Permo-Triassic sediments deposited in terrestrial environment with some marine influence, Cretaceous mainly marine)

Setyanta, B. & B.S. Widijono (2009)- Medan gaya berat pada batuan ofiolit (ultramafik) di Beoga, Papua dan implikasi terhadap genesis alih tempatnya. J. Sumber Daya Geologi 19, 3, p. 177-189.
(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/download/204/195)
('Gravity-magnetic field over the ophiolite (ultramafic) of Beoga, Papau and implications for its emplacement'. Large 50x100 km outcrop of ultramafics has elliptical gravity anomaly pattern, suggesting possible fragmentation of ophiolite during obduction. Also gravity model over Meratus Mts and Banda Sea-Seram)

Siagian, H.P., I. Sobari, J. Nasution, B.S. Widijono, B. Setyanta, Nurmaliah, K. McKenna & A. Noetzli (2013)- Airborne magnetic and radiometric geophysical mapping in South and Central Range Mountains, Papua Indonesia. In: Proc. ASEG-PESA 23rd Int. Geophysical Conf. Exhib., Melbourne 2013, p. 1-4.
(online at: http://www.publish.csiro.au/ex/pdf/ASEG2013ab371)
(Geological Survey of Indonesia commissioned airborne magnetic and radiometric survey covering W Papua Central Highlands and S side of highlands in 2010-2011)

Sidarto & U. Hartono (1995)- Geologic map of the Jayawijaya Quadrangle, Irian Jaya, scale 1: 250,000. Geol. Res. Dev. Centre (GRDC), Bandung.

Sidarto & N. Ratman (1996)- Geologi lembar Jayawijaya, Irian Jaya, ditafsir dari citra radar. J. Geologi Sumberdaya Mineral 6, 61, p. 2-10.
('Geology of the Jayawijaya sheet, Irian Jaya, interpreted from radar imagery')

Silalahi, P., M. Ahmad, F.G. Aiwoy, L. Soebari, G. de Jong, E.C. Aloysius & A.F. Budirumantyo (2013)- Molybdenite and bornite distributions in the Ertsberg Stockwork Zone (Esz), Papua, Indonesia. Proc. Papua and Maluku Resources, Indonesian Soc. Econ. Geol. (MGEI) Ann. Conv., Kuta, p. 197-203.
(Ertsberg Stockwork Zone deposit is hosted within Ertsberg Diorite (Late Pliocene; 2.66 Ma), SW of E Ertsberg Skarn System. Copper- gold mineralization controlled by biotite-bornite and quartz-chalcopyrite stockwork veins, mainly between 3100-3700m elevation. Lateral and downward decrease in copper-gold mineralization and increase of quartz- bornite and molybdenite veins)

Simandjuntak, T.O., B. Mubrata, D. Sukarna, K. Astadireja, Marino, I. Zulkarnain, N. Buyungg, D. Sutarno & A. Mahfi (1994)- Evolusi tektonik daerah Lengguru, Irian Jaya, dan hubunggannya dengan jebaka sumberdaya hidrokarbon. Proc. 23rd Ann. Conv. Indon. Assoc. Geol. (IAGI), Jakarta, 1, p. 370-388.
('Tectonic evolution of the Lengguru area, Irian Jaya, and relation to hydrocarbon deposits'. Incl. 90° CW rotation of Lengguru Block along Aru-Waipona fracture after Late Miocene- E Pliocene thrusting of Melanesian orogeny)

Simbolon, B. (1984)- Heat flow study in the Salawati and Bintuni basins Irian Jaya. In: Heat flow, Proc. Joint ASCOPE/ CCOP Workshops I and II, CCOP Techn. Publ. 15, p. 105-122.

Skwarko, S.K., J. Sornay & T. Matsumoto (1983)- Upper Cretaceous molluscs from western Irian Jaya. Publ.Geol. Res. Dev. Centre (GRDC), Bandung, Seri Paleontologi 4, p. 61-73.
(Small Middle Campanian mollusc fauna and one ammonite (Pachydiscus) from Mios River, Ransiki Sheet, Birds Head. Five species of Inoceramus, some similar to species decribed from Misool by Boehm)

Skwarko, S.K. & J.P. Thieuloy (1989)- Early Barremian (Early Cretaceous) mollusca from western Irian Jaya, Indonesia. Geol. Res. Dev. Centre (GRDC), Bandung, Seri Paleontologi 6, p. 26-34.

(Barremian ammonites (large Crioceratites (Menuthicrioceras) irianensis n.sp., Pseudothurmannia, Hemihoplites taminabuanensis n.sp.) and pectinid bivalve molluscs from basal Jass Fm (= Kembelangan Fm) marine clastics in tributary of Ainim River, Taminabuan sheet, SW Birds Head. Beds are transgressive, disconformable over Tipuma Fm)

Smith, E.M. (1966)- Nouvelle Guinee. Lexique stratigraphique international 6, Oceania, Fasc. 3a, p. 1-136.
(New Guinea chapter of International Stratigraphic Lexicon. Alphabetical listing with brief descriptions descriptions of geological formations in both W Papua and Papua New Guinea. Somewhat dated (latest reference dated 1957))

Soebagio, S. & Budijono. (1989)- Cu-skarn deposits in Erstberg mine area Irian Jaya, Indonesia. Geologi Indonesia 12, 1, p. 359-374.

Soebari, L., I. Sriyanto, G. de Jong & A. Muntadhim (2012)- The Ertsberg stockwork zone: a unique porphyry copper style mineralization in Papua, Indonesia. In: N.I. Basuki (ed.) Proc. Banda and Eastern Sunda arcs, Indonesian Soc. Econ. Geol. (MGEI) Ann. Conv. 2012, Malang, p. 243-256.

Soebari, L., I. Sriyanto, G. de Jong & A. Muntadhim (2013)- The Ertsberg stockwork zone: a unique porphyry copper style mineralization in Papua, Indonesia. Majalah Geologi Indonesia 28, 1, p. 1-14.
(online at: www.bgl.esdm.go.id/publication/kcfinder/files/MGI%2020130101.pdf)
(Ertsberg Stockwork Zone is unique Cu-Au deposit type in Ertsberg Mining District, with characteristics of both porphyry and skarn-type deposits)

Soebowo, E., Kantono & Y. Kumoro (1991)- Penyelidikan geologi dengan hubungannya dengan pemilihan trase jalan antara Wosiala Hingga Dombomi, Jaya Wijaya, Irian Jaya. Proc. 20th Ann. Conv. Indon. Assoc. Geol. (IAGI), Jakarta, p. 541-552.
('Geological investigations related to the selection of road alignment between Wosiala to Dombomi, Jaya Wijaya, Irian Jaya'. Traverses New Guinea Limestone, ?Miocene clastics and U Cretaceous Kembelangan Fm clastics. Part of projected Wamena- Jayapura road (still not completed in 2018))

Soehaimi, A., M.T. Zen, H. Moechtar & U. Lumbanbatu (2001)- The tsunamigenic earthquake of 17 February 1996 and the seismicity of Papua. In: Proc. CCOP 37th Ann. Sess. Bangkok 2000, 2, Techn. Repts., p. 72-76.
(Magnitude 8 earthquake NE of Biak island related to thrusting of submarine reverse fault. Aftershocks indicating normal fault movements associated with fault along N shore of Biak island and left-lateral horizontal motions associated with Yapen Fault)

Soemarto K., B. (1986)- Geologi daerah Wamena- Irian Jaya. Pusat Penelitian Geoteknologi LIPI, 18p. *(Unpublished)*

Soeparman, S. & Budijono (1989)- Cu-skarn deposits at Ertsberg mine area, Irian Jaya. Proc. 17th Ann. Conv. Indon. Geol. Assoc. (IAGI), Jakarta, p. 359-374.

Soepriadi, S. (2012)- Morfotektonik daerah Enarotali, Kabupaten Paniai, Provinsi Papua. Proc. 41st Ann. Conv. Indon. Assoc. Geol. (IAGI), Yogyakarta, 2012-GD-05, p.
('Morphotectonics of the Enarotali area, Paniai District, Papua Province')

Stehn, C.E. (1927)- Devonische Fossilien von Hollandisch-Neu-Guinea. Wetenschappelijke Mededeelingen Dienst Mijnbouw Nederlandsch-Indie 5, p. 25-27.
('Devonian fossils from Netherlands New Guinea'. Brachiopods Atrypa reticularis var. desquamata and Orthotethes (Schuchertella) cf. umbraculum in sandstone pebbles from upper Setakwa River, collected by Heldring around 1910. Species known from Devonian of China, Queensland, etc.)

Stevens, C.W. (1999)- GPS studies of crustal deformation in eastern Indonesia and Papua New Guinea. Ph.D. Thesis, Rensselaer Polytechnic Institute, Troy, New York, p. 1-117. *(Unpublished)*

Stevens, C.W., R. McCaffrey, Y. Bock, J.F. Genrich, M. Pubellier & C. Subarya (2002)- Evidence for block rotations and basal shear in the worldôs fastest slipping continental shear zone in NW New Guinea. In: S.A. Stein & J.T. Freymueller (eds.) Plate Boundary Zones, American Geophys. Union (AGU) Geodyn. Ser. 30, p. 87-99.
(Birds Head moves 75-80 mm/year relative to N Australia, twice as fast as any other continental block. Left-lateral shear zone possibly as wide as 300 km. Despite high rate, rel. little seismic activity. Movement may be driven by basal drag of Pacific plate sliding beneath it)

Struckmeyer, H.I.M., M. Yeung & M.T. Bradshaw (1990)- Mesozoic palaeogeography of the northern margin of the Australian Plate and its implications for hydrocarbon exploration. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, First PNG Petroleum Convention, Port Moresby, p. 137-152.

Struckmeyer, H.I.M., M. Yeung & C.J. Pigram (1993)- Mesozoic to Cainozoic plate tectonic evolution and palaeogeography of the New Guinea region. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby, p. 261-290.
(Triassic- Cenozoic tectonic evolution of New Guinea area. Key proponent of restoration of 'Tasmanide' microcontinental blocks, like Birds Head and 'Australian' terranes in E Indonesia, to areas East of PNG in Paleozoic-Mesozoic time)

Subroto, E.A., H.L. Ong, H. Bagiyo & B. Priadi (1996)- Korelasi antara batuan induk dan minyak bumi di cekungan Salawati, Irian Jaya. Buletin Geologi (ITB) 26, 1, p. 65-72.
(Salawati Basin Kais Fm oils derived from Tertiary shallow marine (deltaic?) to non-marine source rocks. No evidence for Pre-Tertiary source)

Subroto, E.A. & B. Sapiie (2014)- Source rocks assessment in Bintuni Basin, Papua, Indonesia. Proc. 3rd Ann. Int. Conf. on Geological & Earth Sciences (GEOS 2014), GEOS14.42, p. 99.
(Bintuni Basin geochem analyses of sediments and crude oils show absence of oleanane biomarker, eliminating Tertiary sediments as source rock. Most sediments rich in organic matter and main constraint is maturity)

Sudaryanto, S. Indarto & E.T. Sumarnadi (1991)- Kajian bahan konstruksi jalan antara km 35 dan km 75 pada rencana pembuatan jalan tembus Wamena- Senggi- Jayapura, Irian Jaya. J. Riset Geologi Pertambangan (LIPI) 10, 1, p. 37-41.
('Study of road construction materials between km 35 and km 75 on planned Wamena- Senggi- Jayapura road, Irian Jaya'.)

Sudijono (2000)- Biostratigraphy and depositional environment of the limestone sequence in the drill hole LS-12, Ertsberg mining district, Irian Jaya. Geol. Res. Dev. Centre (GRDC), Bandung, Seri Paleontologi 10, p. 1-25.
(M Eocene (Ta3)- earliest Miocene (basal Te5) LBF assemblages in Faumai-Sirga-Kais succession in well LS-12 well. Faumai Fm contains Lacazinella and Fasciolites, no Pellatispira. Sirga Fm quartz sandstone is barren, but is at base Oligocene, overlain by Rupelian (Tc) with Nummulites fichteli)

Sugiharto, S., B. Antoro & B. Bensaman (1998)- Mineralisasi skarn Cu-Au daerah Wawa, Teluk Etna, Irian Jaya, Indonesia. Proc. 27th Ann. Conv. Indon. Assoc. Geol. (IAGI), Yogyakarta, 1, p. 169-178.
('Cu-Au skarn mineralization in the Wawa area, Etna Bay, Irian Jaya')

Sukanta, U., S. Atmawinata & B.H. Harahap (1987)- Kendali tektonika dalam pengendapan di cekungan Bintuni, Irian Jaya. Proc. 16th Ann. Conv. Indon. Assoc. Geol. (IAGI), Bandung, 12p.
('Tectonics- controlled sedimentation in the Bintuni Basin, Irian Jaya')

Sukanta, U. & B.H. Harahap (1993)- The western Irian Jaya microcontinent- a review. J. Geologi Sumberdaya Mineral, 3, 19, p. 13-20.

(Review of concept of West Irian Jaya microcontinent (Birds Head- Misool- Birds Neck) of Pigram et al. (1983), as separate microcontinent that rifted off in Jurassic and was reattached to W Papua in Neogene. Here questioned due to too many similarities between stratigraphy of it and New Guinea mainland)

Sukanta, U. & B.H. Harahap (1996)- Tectonostratigraphy of the Mesozoic-Cenozoic Pacific Province succession in Northeastern Irian Jaya, Eastern Indonesia. Proc. Seminar Nasional Geoteknologi III: Dampak regionalisasi dan globalisasi industri dan perdagangan terhadap Lembaga Litbang, LIPI, Bandung, p. 518-538.

Sukanta, U. H. Panggabean, A.S. Hakim, S. Wiryosujono & Amiruddin (1995)- Paleozoic- Mesozoic stratigraphy and sedimentology of a siliciclastic-dominated unit, southern Central Range, Irian Jaya. In: D. Sukarna (ed.) Proc. Seminar The Irian Jaya geological potentials in the light of the Eastern Indonesia regional development program, Geol. Res. Dev. Centre, Bandung, Spec. Publ. 19, p. 1-24.

Sukanta, U., E. Rusmana, S. Wiryosujono, H. Samodra & Tasiran (1995)- Wave, tide and storm influenced muddy shelf: a special emphasis on the Cretaceous Piniya mudstone in the Timika sheet area, Irian Jaya. J. Geologi Sumberdaya Mineral 5, 49, p. 10-24.
(Outcrops of Late Cretaceous mudstones near Mile 74 along new Freeport roadcut N of Tembagapura. 800m thick section measured section with ~100m or more of E Cretaceous Woniwogi f-m sandstones at base, overlain by 600m of thin-bedded mudstones with virtually no sandstones (unlike Wamena and Kaimana-Steenkool sheets, where 10m thick sandstones are present. Interpreted as low energy shelf deposits, below storm wave base, on passive margin. Gradually coarsens upward into ~100m thick latest Cretaceous Ekmai Sst)

Sukanta, U., S. Wiryosujono & A.S. Hakim (1995)- Geologic map of the Wamena Quadrangle, Irian Jaya, scale 1: 250,000 (Quad 3311). Geol. Res. Dev. Centre (GRDC), Bandung.

Sulaeman, A., A. Sjapawi & S. Sosromihardjo (1990)- Frontier exploration in the Lengguru foldbelt, Irian Jaya, Indonesia. Proc. 19th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 85-105.
(Pre- Mobil fieldwork overview of Lengguru foldbelt play potential)

Sumarko K.B. (1996)- Karakteristik geologi batubara di daerah aliran Sungai Titaka dan Sungai Tuko, cekungan Bintuni, Irian Jaya. Proc. 25th Ann. Conv. Indon. Assoc. Geol. (IAGI), 2, p. 294-312.
('Characteristics of the coal geology in the drainage area of Titaka and Tuko Rivers, Bintuni Basin, W Papua')

Sunyoto, W. (1999)- The nature and distribution of gold mineralisation in hole BO52-4 of the Wabu Skarn system, Irian Jaya. M.Sc. Thesis, James Cook University, Townsville, p. *(Unpublished)*

Sunyoto, W., G. de Jong & L. Soebari (2012)- Porphyry and skarn Cu-Au deposits and its associated Cu-Au bearing intrusions of the Ertsberg District, Papua, Indonesia. In: Proc. Banda and Eastern Sunda Arcs, MGEI Annual Convention, Malang 2012, p. 279-281. *(Extended Abstract; no figures)*
(Ertsberg district thee giant copper-gold deposits: Grasberg Porphyry, Ertsberg East Skarn System and Kucing Liar Skarn. Grasberg open pit mine peak production in 2000 was 1,200,000 t/day)

Sunyoto, W. & L Soebari (2005)- The discovery of the Wabu Ridge gold skarn, Papua. In: S. Prihatmoko et al. (eds.) Indonesian mineral and coal discoveries, Indon. Assoc. Geol. (IAGI), Jakarta, Spec. Issue, p. 74-84.
(Same title published by O'Connor, Sunyoto & Soebari, 1999. Wabu Ridge gold skarn deposit identified in 1990 in Central Range, W Papua, 35km NNW of Grasberg porphyry deposit. Mineralisation in skarn along S boundaries of Late Miocene Pagane intrusive monzonite-diorite)

Supriatna, Y., J. Keggin, J.J. Chameau & Supriyono (2010)- High fold wide azimuth 3D OBC data to overcome noise and image through karst limestone: Bintuni Bay, Irian Jaya Barat. Proc. HAGI-SEG Int. Geosci. Conf., Bali 2010, IGCE10-OP-029, 6p.
(Seismic processing to improve imaging of Pre-Tertiary clastics below surface limestone. No geology)

Surono, S. Bachri, S. Bawono & D. Sukarna (1995)- Geological Map of the Sawai Sheet, Irian Jaya, 3214, 1:250,000 Scale. Geol. Res. Dev. Center, Bandung.
(Map sheet at E side of northernmost part of West Papua, around Mamberamo River/ delta. Mainly alluvial deposits. With major E-W trending anticline with mud volcanoes along Mamberamo Fault Zone, exposing (Late?) Miocene Wurui Fm limestone and Pliocene Kurudu Fm clastics)

Suseno, W.A., S. Zahnuarianto, Y.P. Wulandari & D. Miraza (2018)- The deeper potential in the Kepala Burung PSC, Salawati Basin: a review from current 3D seismic data. Proc. 42nd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA18-150-G, 15p.
(3D seismic surveys in Walio and Arar areas of Birds Head. Closures identified in deeper horizons below Kais carbonates, possibly Paleogene Waripi Fm or Jurassic Kembelangan Gp))

Sutadiwiria, Y., Y. Surtiati & A.H. Satyana (2006)- Reefal build ups within Miocene Kais Platform: roles of 3D seismic data in defining a subtle trap. Proc. Jakarta 2006 Int. Geosc. Conf. Exhib., Indon. Petroleum Assoc. (IPA), Jakarta, 06-INT-09, 3p.
(3D seismic significant in recognition of 'Intra-Kais reefal build ups', like Matoa-20 well. Argo 1 well (2005) successful test)

Sutarto, W. Sunyoto, S. Widodo, L. Soebari, Sutanto, H. Setyadi & P. Wiguna (2008)- Sekuen paragenesa dan zonasi skarn pada endapan bijih Big Gossan Distrik Ertsberg, Timika, Papua. Proc. 37th Ann. Conv. Indon. Assoc. Geol. (IAGI), Bandung, 1, p. 798-812.
('Paragenetic sequence and zonation of the Big Gossan skarn ore deposit of the Ertsberg District, Timika, Papua'. Big Gossan high-grade high copper deposit with reserves of 52.7 MM ton with average Cu content of 2.31%, Au 1.1 gr /ton and Ag 14.75 gr/ ton. Tabular ore body >1 km long, >500m high and up to 200m wide)

Sutriyono, E. (1999)- Structure and thermochronology of the Bird's Head of Irian Jaya, Indonesia. Ph.D. Thesis La Trobe University, Melbourne, p. 1-321. *(Unpublished)*
(Multiple scenarios for structure and evolution of Lengguru Fold Belt. Early Paleozoic detrital zircons in Paleocene Waripi section of Bintuni Bay suggest attachment to Australian continent (but could also be from Birds Head Kemum terrane?; JTvG)

Sutriyono, E. (2003)- Provenance study and tectonic implications for rock sequences in the Lengguru fold belt of Western Papua: constraints from zircon fission track thermochronology. Forum Teknik 27, p. 121-131.
(online at: http://i-lib.ugm.ac.id/jurnal/detail.php?dataId=5789)
(Zircon fission track thermochronology study shows Triassic-Pliocene source terrains for W Papua clastics. Pliocene Buru Fm in Lengguru Fold Belt abundant Paleogene (~55 Ma) volcanic zircons, possibly derived from erosion of Weyland Terrane, which may be part of Paleogene 'Caroline Arc', eroding after Late Miocene collision with W Papua microcontinent. Main compression 12- 4 Ma, followed by transpression in Central Range, but continued compression in frontal Lengguru FB (Buru anticline, etc.). U Cretaceous Ekmai sst in E Lengguru FB has Triassic age zircons, suggesting erosion of Triassic igneous rocks at that time)

Sutriyono, E. (2005)- Thermochronological constraints on cooling and uplift episodes in the Lengguru fold belt of Western Papua. Jurnal Teknologi Mineral (ITB) 12, 2, p. 65-75.
(Apatite fission track data from Triassic- Lower Jurassic in Lengguru foldbelt suggest maximum T of ~130°C, and ~7 km pre-deformation burial due to deposition of thick Tertiary carbonates. Sequence underwent ~50°-60°C cooling at 5 Ma, consistent with ~4 km unroofing in response to uplift, due to collision with Paleogene volcanic arc in Late Miocene-Pliocene. Upper Miocene-Pleistocene provenance terrain cooled through partial annealing isotherm to ~60°C in E Miocene. Protolith then buried below 3 km and exposed to paleotemperature of ~110°C in M-L Miocene prior to uplift in last 4 My)

Sutriyono, E. (2006)- Hydrocarbons and thermal evolution of the Bintuni basin of Western Papua, assessed by apatite fission track study. Media Teknik (UGM) 28, 1, p. 13-19.
(AFT data from Bintuni basin with ~9 km Permian- Recent sediments, gently folded by Lengguru foldbelt deformation. U Miocene-Pleistocene Steenkool Fm 4-5 km thick, with paleotemperatures below 85°C, Triassic-

Lower Jurassic Tipuma Fm max. paleo-T ~110°C. Rocks at maximum temperature today. Exposure of Mesozoic rocks to high paleotemperatures due to Late Cretaceous-Pleistocene burial. Deeper sequences in basin not buried as deeply, allowing preservation of reservoir porosity. Gas generation/ migration for 30 TCF Tangguh field in last 5 My, with kitchen area ~50 km to E)

Sutriyono, E. (2008)- Accretion history of Paleogene arc terranes in Western Papua: evidence from Apatite Fission Track data. J. Ilmiah Magister Teknik Geologi (UPN) 1, 2, 13p.
(online at: http://jurnal.upnyk.ac.id/index.php/mtg/article/view/172)
(Apatite Fission Track (AFT) data from Tosem and Tamrau blocks in N part of Birds Head. Tosem Block (collided with Birds Head microcontinent at ~5 Ma) with Oligocene Mandi island arc Volcanics(K-Ar ages mainly Oligocene, 32-11 Ma; probably part of Auwewa Paleogene arc. Lembai Diorite K/Ar age ~16 Ma), showing effects of Late Miocene collision of Tosem Paleogene arc and Tamrau continental block. Tosem Block: (1) cooling in E Miocene at ~18 Ma; (2) Late Miocene (~8 Ma) cooling, due to uplift and denudation after collision with Tamrau terrane. M Miocene Tamrau Block Moon volcanics rapid cooling caused by uplift and denudation in Late Miocene at ~5 Ma, also resulting from collision with Tosem island arc)

Sutriyono, E. & K.C. Hill (2002)- Structure and hydrocarbon prospectivity of the Lengguru Fold Belt, Irian Jaya. Proc. 28th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 319-334.
(Restored cross-sections Lengguru foldbelt. Major uplift and cooling of LFB at ~5 Ma; tight Woniwogi sst at Kamakawala 1 may have been as deep as 6.3 km in Late Miocene, followed by ~4km of E Pliocene uplift, downgrading hydrocarbon potential of LFB)

Sutriyono, E., P.B. O' Sullivan & K.C. Hill (1997)- Thermochronology and tectonics of the Bird's Head Region, Irian Jaya: apatite fission track constraints. In: J.V.C. Howes & R.A. Noble (eds.) Proc. Petroleum Systems of SE Asia and Australia Conf., Jakarta 1997, Indon. Petroleum Assoc. (IPA), p. 285-299.
(AFT analyses in N Birds Head Tosem Block shows rapid cooling of dacite/diorite in E Miocene and Late Miocene cooling of granite-syenite intrusions, the latter probable response to uplift/obduction of Tosem Block onto N Birds Head. Also AFTT results from Tarof 2 and E Lengguru)

Suwarna, N. & Y. Noya (1995)- Geological map of the Jayapura (Peg. Cyclops) Quadrangle, Irian Jaya, scale 1:250,000. Geol. Res. Dev. Centre (GRDC), Bandung.
(Common mafic-ultramafic rocks, all in tectonic contact with other units. Cycloops metamorphic Gp includes schist, gneiss, amphibolite, marble, some with glaucophane, E Miocene radiometric ages of schists associated with ophiolites in Cyclops Mts: 20.6±4 Ma and 21.4±4 Ma. Middle Oligocene age of emplacement of ultramafic rocks(?). Ultramafics probably overlain by Late Oligocene- E Miocene Nubai Fm limestone (with Spiroclypeus) in E part Cycloops Mts, lower part interfingering with ?Oligocene Auwewa Fm basaltic-andesitic arc volcanics, upper part interfingers with M-L Miocene turbiditic and volcanoclastic marine Makats Fm (with Miogypsina). Pleistocene Jayapura Fm limestones uplifted over 700m)

Syaeful, H., I.G. Sukadana & A. Sumaryanto (2013)- Geological setting and geochemical approach for Uranium exploration in Papua. In: Papua & Maluku Resources, Proc. Indonesian Soc. Econ. Geol. (MGEI) Ann. Conv., Bali, p. 159-170.
(online at: http://repo-nkm.batan.go.id/963/1/PROSIDING_SYAEFUL_MGEI_2013.pdf)
(West Papua relatively unexplored for uranium. Some uranium anomalies in Tipuma Fm sandstones, Quaternary Mokmer Fm carbonates and Oligocene Wainukendi Fm)

Syafron, E., R. Mardani, S.W. Susilo & R. Anshori (2008)- Hydrocarbon prospectivity of the Pre-Tertiary interval in the offshore Berau Area, Birdôs Head, Papua. Proc. 32nd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA08-G-015, 10p.
(In Berau basin W of Tangguh, all petroleum system elements are working. Biggest risk maturity level of source rock. Primary reservoir target Jurassic transgressive sandstones, equivalent to reservoir in Tangguh fields, but thinner and more distal marine sands penetrated in wells offshore)

Syam, B., A.H. Hamdani, Y. Yuniardi & N. Djumhana (2008)- Oil to source correlation for detect hydrocarbon origin and migration on offshore Southwest Salawati Basin. Proc. 32nd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA08-SG-009, 11p.
(Oils from low oxygen marine source rocks in offshore Salawati basin well OT4 tied to Lower Klasafet Fm source rocks in onshore Salawati wells Iw-1 and Im33. OK1 well oil appears to be different. Offshore oils originated from Klasafet Fm source to N)

Talent, J.A., W.N. Berry & A.J. Boucot (1975)- Correlation of the Silurian rocks of Australia, New Zealand, and New Guinea. Geol. Soc. America (GSA), Spec. Paper 150, p. 1-108.

Talent, J., R. Mawson & A. Simpson (2003)- Silurian of Australia and New Guinea: biostratigraphic correlations and paleogeography. In: E. Landing & M.E. Johnson (eds.) Silurian lands and seas-paleogeography outside of Laurentia, Bull. New York State Museum 493, p. 181-220.

Teas, P.A., J. Decker, D. Orange & P. Baillie (2009)- New insight into structure and tectonics of the Seram Trough from SeaSeepTM high resolution bathymetry. Proc. 33rd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA-G-091, p. 515-532.
(High resolution bathymetry and seismic over active convergent deformation system in Seram Trough. Described as zone of young thrusting within Australian continental crustal block between Birds Head and Seram Island. Offshore extension of New Guinea Tarera-Aiduna fault zone is readily apparent)

Teichert, C. (1928)- Nachweis Palaeozoischer Schichten von Sudwest Neu-Guinea. Nova Guinea 6, 3, p. 71-92.
('Report of Paleozoic beds from SW New Guinea'. First record of dark Silurian limestone with tabulate coral Halysites from float in Upper Lorentz/ Noordwest Rivers, S of Wilhelmina Peak in Central Range, West Papua. Also Devonian sandstones with Spirifer, Chonetes and other brachiopods, dark Permo-Carboniferous limestones with Martinia, Murchisonia, Orthoceras, etc. Material collected by Van Nouhuys during Lorentz 1909-1910 South New Guinea expedition)

Terpstra, H. (1939)- Resultaten van een goud exploratie in het stroomgebied van de Lorentz en Eilanden Rivier in Nederlands Nieuw Guinea. De Ingenieur in Nederlandsch-Indie (IV), 6, 1, p. 1-6.
('Results of gold exploration in the drainage areas of the Lorentz and Eilanden Rivers, W New Guinea'. Brief report on 1937 reconnaissance survey for gold in Lorentz and Eilanden Rivers, S of Central Range of W Papua. No significant gold anomalies detected. Rock types encountered include blocks of crystalline schist, Silurian limestone with Halysites, Devonian sandstone with Spirifer and outcrops of Jurassic shale with Macrocephalites, Paleogene limestone with reticulate Nummulites, Neogene limestone with Lepidocyclina. South directed folding-thrusting. Also one oil-gas seep along Noordoost River. With small map)

Terpstra, H. (1941)- Opmerkingen naar aanleiding van ir. P.F. de Groot's "Kort Verslag over de werkzaamheden van de IIIde Expeditie der N.V. Mijnbouw Maatschappij Nederlandsch Nieuw-Guinea in 1938 en 1939". De Ingenieur in Nederlandsch-Indie (IV) 8, 1, p. 1-4.
(Critical review of De Groot (1940) report on result of mineral exploration expedition by Terpstra who led first part of this campaign)

Thery, J.M., M. Pubellier, B. Thery, J. Butterlin, A. Blondeau & C.G. Adams (1999)- Importance of active tectonics during karst formation. A Middle Eocene to Pleistocene example of the Lina Mountains (Irian Jaya, Indonesia). Geodinamica Acta 12, 3-4, p. 213-221.
(Lina Mts at E side of Birds Head Ayumara Plateau, with Pleistocene karsting in Eocene Faumai Fm platform carbonate. ~250m of Lacazinella-bearing M-L Eocene on Late Maastrichtian, overlain by>50m of Oligocene Sirga sst.)

Thirnbeck, M.R. (2001)- The Sentani and Siduarsi nickel-cobalt laterite deposits, Northeast Irian Jaya, Indonesia. In: G. Hancock (ed.) Proc. PNG Geology, exploration and mining Conference, Port Moresby 2001, Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, p. 245-254.

(Results of mineral exploration in nickel-cobalt laterite deposits by PT Pacific Nikkel Indonesia in 1970. Developed on serpentinized harzburgites exposed along S and W flanks of Cyclops Range, NE West Papua. Seven nickel-cobalt laterite deposits in Sentani COW. Cretaceous? Basement complex of ultramafic, basic and metamorphic rocks, overlain by Pleistocene? Hollandia/ Jayapura Fm massive, commonly chalky, coralline limestone (now at ~700m above sea level))

Thirnbeck, M.R. (2004)- A search for gold in Indonesian New Guinea. In: Proc. PACRIM 2004 Conf., Hi tech and world competitive mineral success stories around the Pacific Rim, Adelaide 2004, Australasian Inst. of Mining and Metallurgy (AusIMM), Parkville, p. 391-399.
(Overview of twelve 1994-1999 gold exploration programs North of Central Range, W Papua)

Tikku, A.A., C. Subarya, Masturyono, R. McCaffrey & J. Genrich (2006)- Motion of the Bird's Head Block and co-seismic deformation from GPS data. American Geophys. Union (AGU) Meeting, Baltimore 2006 *(Abstract only)*
(Previous analysis of GPS data collected between 1991 and 1997 revealed rotation of Bird's Head Block of W New Guinea and high shear rates between Pacific and Australian plates accommodated within block. Additional GPS data collected between 1992-2005 suggest Birds Head moving ~100 mm/yr WSW relative to Australia. Cenderawasih Bay area more SW movement, suggesting separate 'East Birds Head Plate' that accommodates shear between Birds Head block and Australian plate)

Tjia, H.D. (1973)- Irian fault zone and Sorong melange, Indonesia. Sains Malaysiana 2, 1, p. 13-30.

Tjia, H.D., R. Hadian, A.R. Sumailani & A. Martono (1980)- The nature of Umsini volcano, Irian Jaya, Indonesia. Bull. Volcanology 43, 3, p. 595-600.
(Mount Umsini at N end of Arfak Range in NE Birds Head of W Papua listed as active volcano. Consists of folded turbidites, mainly dipping 32° to ENE, with greywacke sands composed mainly of mafic volcanic debris, and volcano-clastic rocks. Intruded by E Oligocene gabbroic, occasionally dioritic, rocks (K-Ar age 33 Ma). Absence of volcanic activity, crater relicts and general morphology and lithology suggest Mount Umsini not an active volcano (part of Auwewa Oligocene intra-oceanic arc?; JTvG))

Tonggiroh, A. (2014)- Indikasi tipe endapan emas porfiri daerah Mamberamo, Provinsi Papua. Pros. 2014 Seminar Penelitian Teknologi Terapan 2014 (8), Hasanuddin University, Makassar, TG1, p. 1-6.
('Indications of a porphyry-type gold deposit in the Mamberamo area, Papua Province')

Tonny, S.A. & H. Bagiyo (1993)- New insight on tectonic setting and hydrocarbon potential of Cenderawasih Bay and its adjacent areas. Proc. 22nd Ann. Conv. Indon. Assoc. Geol. (IAGI), Bandung, 2, p. 664-677.
(Cenderawasih Bay underlain by deformed oceanic and volcanic rock basement. Pull-apart basin between Sorong and Tarera- Aiduna fault zones. Sediment-fill similar to Mamberamo Basin, where there are hydrocarbon indications)

Trautman, M.C. (2013)- Hidden intrusions and molybdenite mineralization beneath the Kucing Liar skarn, Ertsberg-Grasberg mining district, Papua, Indonesia. M.Sc. Thesis University of Texas, Austin, p. 1-335.
(online at: http://repositories.lib.utexas.edu/handle/2152/21903)
(Ertsberg-Grasberg Cu-Au Mining District of W Papua hosts Ertsberg Skarn, Grasberg porphyry and several other orebodies. Two 1700m cores beneath Kucing Liar ore skarn and Grasberg Complex contain high concentrations of vein and disseminated molybdenite. Core KL98-10-22 intersects two previously unencountered intrusions: (1) "Tertiary intrusion Kucing Liar" (Tikl; 3.28 Ma) and (2) "Tertiary Pliocene intrusion" (Tpi; 3.18 Ma). Magmatic zircons ages ~3.4 Ma (Dalam Andesite) and 2.8 Ma (Ertsberg intrusion). Inherited zircon cores indicate Precambrian basement (mostly Proterozoic;mainly ~1650-2400 Ma; some grains at ~2500 Ma). Deep Molybdenite veining postdates stockwork veining (~3 Ma Re-Os ages))

Tregoning, P. & A. Gorbatov (2004)- Evidence for active subduction at the New Guinea Trench. Geophysical Research Letters 31, L13608, doi:10.1029/2004GL020190, 4p.

(Seismic tomography shows SW-ward subduction along New Guinea Trench in PNG and Indonesia. High-velocity zone down to ~300km, with dip angle gradually increasing from ~10° at ~143°E to 30° at ~136°E. Length of ~650 km of subducted slab under New Guinea suggests subduction started at ~9 Ma)

Turner, S., J.M.J. Vergoossen & G.C. Young (1995)- Fish microfossils from Irian Jaya. Mem. Assoc. Australasian Palaeont. 18, p. 165-178.
(Late Silurian (M Ludlow) thelodonts and acanthodians micro-remains from Lorenz River in eastern W Papua and Kemum Fm of N part of Birds Head are first Paleozoic fish fossils from W Papua. Most forms comparable to Late Silurian- earliest Devonian N Hemisphere forms (Burrow et al. 2010: Silurian thelodont scales originally referred by Turner et al. (1995) to Thelodus trilobatus might be better placed in Praetrilogania))

Ubaghs, J.G.H. (1946)- Preliminary report on a geological reconnaissance in the area of the Cycloops Mountains, New Guinea. Geological Survey Report, p. *(Unpublished)*

Ubaghs, J.G.H. (1955)- Mineral deposits in the Cyclops Mountains (Netherlands New Guinea). Nova Guinea, new ser. 6, 1, p. 167-175.
(Indications of nickel-cobalt, chromium, talc, asbestos, etc., all associated with peridote-serpentinite in Cyclops Mountains of NE part of West Papua. Area surveyed in 1949)

Umbach, K.E. & D. Klepacki (1994)- A triangle zone along the active thrust front in southern Irian Jaya. Proc. 23rd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 305-321.
(Seismic data and surface geology data from central segment of New Guinea Fold and Thrust belt show complex, Alberta-style thrust front. S-propagating thrust belt results from active oblique convergence of ~120mm/yr between Australian and Pacific plates. Stratigraphy in thrust front Mesozoic clastics overlain by Miocene carbonate and marl, overlain by thick Upper Miocene- Recent clastic foredeep fill. Three detachment horizons in U Cretaceous, M Miocene and uppermost Miocene create triangle zone duplex structure)

Untung, M. (1982)- Gravity and magnetic study of the Kepala Burung region, Irian Jaya. Ph.D. Thesis University of New England, NSW, Australia, p. *(Unpublished)*

Untung, M. (1989)- The isostatic state of the crust in the western portion of Irian Jaya. In: B. Situmorang (ed.) Proc. 6th Regional Conf. Geology mineral hydrocarbon resources of Southeast Asia (GEOSEA VI), Jakarta 1987, Indon. Assoc. Geol. (IAGI), p. 43-59.
(Strong gravity gradients along main transform zones like Sorong fault. High negative anomaly over Bintuni basin probably reflects flexural loading of lithosphere. Central Range also negative anomalies)

Untung, M., Sardjono, I. Budiman, J. Nasution, E. Mirnanda, E.G. Sirodj & L.F. Henage (1995)- Hydrocarbon prospect mapping using balanced cross-sections and gravity modelling, Onin and Kumawa Peninsulas, Irian Jaya, Indonesia. In: G.H. Teh (ed.) Southeast Asian basins; oil and gas for the 21st century. Proc. AAPG-GSM Int. Conf. 1994, Bull. Geol. Soc. Malaysia 37, p. 445-470.
(online at: https://gsmpubl.files.wordpress.com/2014/09/bgsm1995a31.pdf)
(Geology mapping and acquisition of gravity data along 26 traverses (650 km) across Onin and Kumawa peninsulas. Predominant outcrop is karstified New Guinea Limestone, up to 2150m thick. Onin and Kumawa peninsulas lie at margin of Jurassic rift faulting, inverted during Pliocene-Pleistocene collision of Australian Plate and Banda arc. Gravity data indicate basement at depth of ~3 km in Onin area, ~6 km in Bomberai area)

Untung, M., Sardjono, I. Budiman, J. Nasution, E. Mirnanda, L.F. Henage & E.G. Sirodj (1996)- Balanced cross-section and gravity modelling for hydrocarbon prospect mapping in the Onin and Kumawa Peninsulas, Irian Jaya, Indonesia. Bull. Geol. Res. Dev. Centre 19, p. 1-32.
(Same paper as above)

Urban, L. & M.L. Allen (1977)- Vitrinite reflectance as an indicator of thermal alteration within Paleozoic and Mesozoic sediments from the Phillips Petroleum Company ASM-1X well, Arafura Sea. Palynology 1, p. 19-26.
(Also in GEOSEA 1975 conference volume, p. 103-108. Palynology of Late Permian- Early Cretaceous section.

Marine Early Cretaceous unconformable on Early Triassic non-marine sediments. Lack of liquid hydrocarbon source. Max. maturity in early oil window (Rv ~0.60-0.70%))

Utomo, W., M. Bagus K., D. Witjaksono, I. Prasetyo, Y. Wijaya et al. (2015)- The geology of the Mogoi Wasian fields, Bintuni Basin, West Papua. Proc. Joint Conv. HAGI-IAGI-IAFMI-IATMI, Balikpapan, JCB2015-174, 5p.
(Study of small, shallow Mogoi-Wasian field in Bintuni Basin, discovered by NNGPM in 1941, with cum. production of 7.9 MMBO. M Miocene Kais Limestone reservoir generally tight, with fractures. Seal Pliocene Steenkool shale. Oil sourced from marine Jurassic- Cretaceous sediments of Jass/ Kembelangan Group. Four reservoir facies. Porosity generally secondary. 1992 British Gas Mogoi Deep 1 well discovered significant gas in Pre-Tertiary)

Valenta, W.T. (1979)- Seismic modelling of porosity distribution in a Miocene reef, Salawati Island, Indonesia. Proc. 8th Ann. Conv. Indon. Petroleum Conv. (IPA), Jakarta, p. 159-176.

Valk, W. (1960)- Notes on coal in Netherlands New Guinea. Nova Guinea, Geology, 1-3, p. 1-4.
(Reported coal seams near Horna not Eocene, but extensively faulted Pliocene lignite seams, unsuitable for exploitation. Similar unfavorable results for other reported occurrences)

Valk, W. (1962)- Geology of West Amberbaken (New Guinea). Geologie en Mijnbouw 41, 9, p. 384-390.
(online at: https://drive.google.com/file/d/0B7j8bPm9Cse0OVpzS0VvNXlqZWc/view)
(N coast mountain range of Birds Head dominated by andesites, part of E-W trending, 120x30 km andesite province, probably >1000m thick and dipping ~20° N. Associated brackish-fresh water shales probably earliest Miocene (Te) age. Further W similar shales overlain by Tf1- E-M Miocene limestones. Mio-Pliocene or Pliocene folding event)

Valk, W. (1962)- Geologische verkenning omgeving Ilaga. Bureau Mines Netherlands New Guinea, Report 25, 6p.
(Brief report on geological reconnaissance of the Ilaga region, Central Range, W Papua)

Valk, W., B. Broos, A. Doeve et al. (1961)- Geologische verkenning Bokondini-Kelila-Pyramide, Wamena-Koerima. Bureau Mines Netherlands New Guinea, Report 23, p.
(Geological reconnaissance of area around Wamena Grand Valley, Central Range, West Papua)

Van Bemmelen, R.W. (1939)- The geotectonic structure of New Guinea. De Ingenieur in Nederlandsch-Indie (IV), 6, 2, p. 17-27.
(Review of tectonics of New Guinea island. Not much new)

Van Bemmelen, R.W. (1940)- Verslag van een petrographisch onderzoek der gesteente collectie van het Boven Digoel gebied, verzameld tijdens de derde expeditie der N.V. Mijnbouw Maatschappij Nederlandsch Nieuw Guinea (1938-1939). De Ingenieur in Nederlandsch-Indie (IV) 7, 10, p. 137-145.
('Report of petrographic analysis of a rock collection from the Upper Digul area, collected by Third Netherlands New Guinea Mining Company expedition in 1938-1939, W Papua'. Mainly pebbles from rivers. Sediments include E Miocene and Pliocene limestones. Also andesites, granodiorites, etc.)

Van Bemmelen, R.W. (1953)- Geologie. In: W.C. Klein (ed.) Nieuw Guinea, de ontwikkeling op economisch, sociaal en cultureel gebied in Nederlands en Australisch Nieuw Guinea, I, Staatsdrukkerij (Dutch Govt. Printing Office, The Hague, p. 259-284.
(Rel. brief review of West Papua geology, as still poorly known around 1951. New Guinea still subjected to active orogenic processes, but active volcanoes absent in West Papua)

Van Bemmelen, R.W. (1953)- Mijnbouw. In: W.C. Klein (ed.) Nieuw Guinea, de ontwikkeling op economisch, sociaal en cultureel gebied in Nederlands en Australisch Nieuw Guinea, I, Staatsdrukkerij (Dutch Govt. Printing Office, The Hague, p. 285-310.

(Review of 1953 status of exploration for gold, coal, nickel/ cobalt, etc. in West Papua. Unlike PNG, no commercialy viable deposits identified yet. Horna coal field of Birds Head only potentially commercial coal field of New Guinea (For review of petroleum in W Papua see Gheyselinck, 1953))

Van den Bold, W.A. (1942)- Some rocks from the course of the Digoel, the Oewi-Merah and the Eilanden River (South New Guinea). Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam 45, 8, p. 850-854.
(online at: www.dwc.knaw.nl/DL/publications/PU00017831.pdf)
(Pebbles of igneous rocks collected in Digul, Oewi-Merah (tributary of Digoel) and Eilanden rivers in S New Guinea by Heldring in 1909 include augite granite, augite monzonite, diorite, gabbro. Probably all of Neogene age. No illustrations)

Van den Boogaard, M. (1990)- A Ludlow conodont fauna from Irian Jaya (Indonesia). Scripta Geologica 92, p. 1-27.
(Online at: www.repository.naturalis.nl/document/148767)
(Silurian conodont faunas from calcareous quartz sandstone boulder from Lorentz (or Noord) River, West Papua, collected by Heldring in 1906 S of Camp Alkmaar. Dominated by forms also known from SE Australia and Yunnan (Coryssognathus dentatus, Ozarkodina crispa, Ozarkodina confluens). Age probably Late Ludlowian. Rock initially described by Martin (1911), who noticed small trilobite fragments)

Van der Fliert, J.G., H. Graven & J.J. Hermes (1980)- On stratigraphic anomalies associated with major transcurrent faulting. Eclogae Geol. Helvetiae 73, 1, p. 223-237.
(online at: http://dx.doi.org/10.5169/seals-164951)
(Comparison of two major transcurrent fault systems (Betic Fault System of S Spain, Sorong Fault zone of Birds Head, W Papua). Both accompanied by tectonic mega-breccia with blocks of exotic material, up to 10's of km2 in size. Fault zones subparallel to main orogen and horizontal displacements in late stage of orogenic history)

Van der Wegen, G. (1962)- Geologische verkenning van de Baliem kloof. Bureau Mines Netherlands New Guinea, Report 31, p. *(Unpublished)*
(First geological reconnaissance of Baliem Gorge, Central Range)

Van der Wegen, G. (1963)- De geologie van het eiland Waigeo (Nieuw Guinea). Geologie en Mijnbouw 42, p. 3-12.
('The geology of Waigeo island (W Papua)'. Ultrabasic rocks present in narrow belt along N and W coasts, overlain by spilites and keratophyres, pelagic limestones, pelites, radiolarites and chert, all strongly folded. Unconformably overlain by Late Oligocene- E Miocene Batanta Fm, dominated by andesitic and basaltic volcanics in lower part, and greywackes in upper part. Possible uncomformity within Batanta Fm: Lower Te (Latest Oligocene) overlain (unconformably?; with pebbles of andesite and Batanta Fm at base) by >1450m of Upper Tf-Tg (M Miocene-Pliocene) carbonates of Waigeo Fm)

Van der Wegen, G. (1966)- Contribution of the Bureau of Mines to the geology of the Central mountains of W. New Guinea. Geologie en Mijnbouw 45, 8, p. 249-261.
(online at: https://drive.google.com/file/d/0B7j8bPm9Cse0eEFCSU4yM0ExaDQ/view)
(Summary of geological activities of the short-lived Bureau of Mines in Hollandia (Jayapura) from 1959 until transfer of Dutch administration of West Papua to United Nations in 1962. Reconnaissance surveys in Central Range, upper reaches of Eilanden River in C Range foreland and Upper Kau-Birim area of Star Mountains. No figures/maps)

Van der Wegen, G. (1971)- Metamorphic rocks in West Irian. Scripta Geologica 1, p. 1-13.
(Online at: www.repository.naturalis.nl/document/148792)
(Metamorphics along N edge of Central range of W Irian associated with ophiolitic suite basic- ultrabasic rocks, and indicating high Pressure- low Temperature regional metamorphism. Metamorphic rocks at Australian-side of Papuan Geosyncline associated with medium- acidic intrusives)

Van der Wegen, G., J.H.A. Doeve et al. (1962)- Geologische verkenning Katoepa- Kangeh Rivier. Bureau

Mines Netherlands New Guinea, Report 27, p. *(Unpublished)*

Van de Waard, R. (1962)- Geologische verkenning Ilaga-Mulia-Sinak. Bureau Mines Netherlands New Guinea, Report 28, p. *(Unpublished)*
('Geological reconnaissance of Ilaga-Mulia- Sinak', W part of Central Range)

Van Dun, F.W.P. (1962)- A survey of the Efar-Sidoas Mountain ridge in northern Netherlands New Guinea. Geologie en Mijnbouw 41, 9, p. 391-395.
(online at: https://drive.google.com/file/d/0B7j8bPm9Cse0b1R5QWVwRUtCaUU/view)
(Geologic reconnaissance in Efar-Sidoas ridge, 50 km SE of Sarmi on N coast of W Papua, shows ridge composed of folded Neogene sediments with core of basic igneous rocks and pre-Tertiary schists (but much less than suggested on Zwierzycki (1921) map)

Van Es, E. (1959)- Korte toelichting bij de fotogeologische kaart van het Westelijk Centrale Bergland van Nederlands Nieuw Guinea. Report Stichting Geologisch Onderzoek Nederlands Nieuw Guinea, 18, p. 1-13.
('Brief explanation of the photo-geologic map of the Western Central Range of Netherlands New Guinea'. Unpublished?)

Van Gelder, J.K. (1912)- Verslag omtrent eene geologische verkenning van de Mamberamo-Rivier op Nieuw-Guinea. Jaarboek Mijnwezen Nederlandsch Oost-Indie 39 (1910), Verhandelingen, p. 87-112.
(Geological reconnaissance Mamberano and Lower Idenburg Rivers during 1909 'military expedition'. Mostly alluvial deposits, with folded Young Tertiary clastics with andesite intrusions in Van Rees mountains. Possibly 5 km thick Young Tertiary stratigraphic section along Van Gelder River, from which also ?Old Tertiary limestone and float of Cretaceous fossils were reported. Van Rees Mts- Meervlakte transition structurally complex fault zone. Toradja River (tributary of Mamberamo River), at foot of Central Range, with only metamorphic and ultrabasic rocks)

Van Gorsel, J.T. (2012)- Middle Jurassic ammonites from the Cendrawasih Bay coast and North Lengguru fold-belt, West Papua: implications of a óforgottenô 1913 paper. Berita Sedimentologi 23, p. 35-41.
(online at: www.iagi.or.id/fosi/..)
(Occurrences of Middle Jurassic (Bathonian-Callovian) bathyal shales with 'Macrocephalites' ammonite faunas as reported from 'Birds Neck' by Boehm (1913) and Gerth (1927) represent deep marine Middle Jurassic facies. This suggests an eastern limit for gas-productive Middle Jurassic sandstone reservoirs of Bintuni Bay and thus have significant negative implications for the potential of Mesozoic hydrocarbon plays in Cenderawasih Bay)

Van Nes, E. (1954)- Exploration of the nickel, cobalt and chrome deposits in the Cyclops area. The First Delft Nieuw Guinea Expedition 1952, Delft Technical University, Report, p. *(Unpublished?)*

Van Nort, S.D., G.W. Atwood, T.B. Collinson, D.C. Flint & D.R. Potter (1991)- Geology and mineralization of the Grasberg copper-gold deposit, Irian Jaya, Indonesia. Mining Engineering 43, p. 300-303.

Van Rossum, B. (1958)- Geological survey of the Central Digoel hinterland. Nederlands Nieuw Guinea Petroleum Maatschappij (NNGPM), Geol. Rept. 460, p. *(Unpublished)*

Vera, R. (2009)- Characterization of Roabiba Sandstone reservoir in Bintuni Field, Papua. M.Sc. Thesis, Texas A&M University, College Station, p. 1-114.
(online at: www.repository.tamu.edu/bitstream/handle/...1/.../VERA-THESIS.pdf?).

Verhofstad, J. (1967)- Glaucophanitic stone implements from West New Guinea (West Irian). Geologie en Mijnbouw 45, 9, p. 291-300.
(online at: https://drive.google.com/file/d/0B7j8bPm9Cse0cXk1WDdFNjltdnc/view)
(Stone tools used by Dani tribes from C Highlands of W Papua all hard, dense, fine-grained, metamorphic glaucophanites with epidote, glaucophane and lawsonite. Two main mineral assemblages: (1) epidote-glaucophane (crossite)- lawsonite- sphene and (2) quartz- glaucophane. Metamorphics appear to be derived

from mafic rocks; quartz-rich assemblages may have originated from impure siliceous sediment. Rocks believed to come from outcrops in belt of low-grade metamorphic and basic to ultrabasic igneous rocks along N edge of Central Ranges, and belong to lawsonite-pumpellyite-epidote-glaucophane metamorphic subfacies)

Verhofstad, J., H. de Herdt et al. (1961)- Geologische verkenning Swart Vallei. Bureau Mines Netherlands New Guinea, Report 26, 7p. *(Unpublished)*
('Geological reconnaissance of the Swart valley', Central Range)

Verhofstad, J., D. Kerrebijn et al. (1961)- Geologische verkenning Swart Vallei- Bokondini- Archbold Meer. Bureau Mines Netherlands New Guinea, Report 24, 14p. *(Unpublished)*
('Geological reconnaissance Swart Valley- Bokondini- Archbold Lake')

Verstappen, H.Th. (1952)- Luchtfotostudies over het centrale bergland van Nederlands Nieuw Guinea- part 1. Tijdschrift Kon. Nederlands Aardrijkskundig Genootschap 74, p. 336-362.
(Air-photo studies of W New Guinea Central Range- part 1)

Verstappen, H.Th. (1952)- Luchtfotostudies over het centrale bergland van Nederlands Nieuw Guinea- part 2. Tijdschrift Kon. Nederlands Aardrijkskundig Genootschap 74, p. 425-431.
(Air-photo studies of W New Guinea Central Range- part 2)

Verstappen, H.Th. (1960)- Geomorphological observations on the North Moluccan- Northern Vogelkop island arcs. Nova Guinea, Geol. 1-3, p. 13-37.
(Following peneplanation of pre-upper Miocene volcanic rocks, on whose surfaces Miocene conglomerates and limestones were deposited, crustal movements formed volcanic and non-volcanic island arc with intervening deep. Volcanic arc extends from Morotai through Halmahera to N Vogelkop and non- volcanic arc from NE and SE Halmahera through Gebe toward Waigeo. Present-day coastal features product of postglacial eustatic and younger tectonic activity)

Verstappen, H.Th. (1964)- Geomorphology of the Star Mountains. Nova Guinea (Geology) 5, p. 101-158.
(Star mountains (Sterrengebergte) of W Papua major boxfolds, steep escarpments and karsted limestone terrains. Relief in youthful stage. Local remnants of older erosion surface occur, separated by areas of lower elevation with complete rejuvenation)

Verstappen, H.Th. & J.P. Doets (1950)- Enige geomorphologische aantekeningen over de Wisselmeren, Centraal Nederlands Nieuw Guinea. Tijdschrift Kon. Nederlands Aardrijkskundig Genootschap LXVII, p. 489-496.
('Geomorphologic notes on the Wissel (=Paniai) Lakes, Central New Guinea'. Three lakes at 1640- 1749m altitude, draining to S, but Paniani Lake may have drained N before main uplift of Central Range)

Vincelette, R.R. (1973)- Reef exploration in Irian Jaya. Proc. 2nd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 243-277.

Vincelette, R.R. & R.A. Soeparjadi (1976)- Oil-bearing reefs in Salawati Basin of Irian Jaya, Indonesia. American Assoc. Petrol. Geol. (AAPG) Bull. 60, p. 1448-1462.
(Salawati basin >4600m marine Tertiary sedimentary deposits. Basin initiated in Miocene, with deposition of basinal limestone and shale. E and S basin margins shallow-water carbonate rocks with well-defined shelf and shelf margin. Productive reef belt basinward of shelf margin. Reefs heights >490m, areal extent 5- 124 km2. Porosities in reefal carbonate up to 43%, average 20- 30%. Late Pliocene-Pleistocene normal faults cut many reefs, which combined with postreef structural tilt modified original reefs configuration and oil accumulations)

Vink, W. (1960)- The mining potentials of Netherlands New Guinea. Nova Guinea, N.S., 10, Geology 1, 3, p. 5-12.

Visser, W.A. (1968)- A geological reconnaissance in the Nassau Range: discussion. Geologie en Mijnbouw 47, 1, p. 47-49.
(online at: https://drive.google.com/file/d/0B7j8bPm9Cse0VGxXWjdfSUl4UFE/view)
(Comments on Dow (1968) paper on Central Range reconnaissance)

Visser, W.A. & J.J. Hermes (1962)- Geological results of the exploration for oil in Netherlands New Guinea. Verhandelingen Kon. Nederl. Geologisch Mijnbouwkundig Genootschap, Geol. Series 20, p. 1-265.
(Extensive compilation of NNGPM (Netherlands New Guinea Petroleum Maatschappij= Shell-Caltex-Stanvac consortium) oil exploration and survey work in W New Guinea from 1935-1960)

Visser, W.A. & K.E. Kleiber (1959)- Geology of the Vogelkop, Netherlands New Guinea. Proc. 5th World Petroleum Congress, New York 1959, 1, 52, p. 943-956.
(Birds Head oldest sediments of Silurian age, intensely folded, possibly in Devonian. Unconformably overlain by Permo-Carboniferous clastics and minor limestones up to 2450m in N Birds head. Thin Triassic redbeds overlain by M Jurassic- Cretaceous marine Kembelangan Fm. Paleocene- Miocene section mostly carbonates, except for Oligocene Sirga-Ainod clastics, which were derived from N. N rim of Tertiary basin steeply dipping)

Wachsmuth, W. & F. Kunst (1986)- Wrench fault tectonics in Northern Irian Jaya. Proc. 15th Ann Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 1, p. 371-376.

Wafforn, S. (2017)- Geo- and thermochronology of the Ertsberg-Grasberg Cu-Au mining district, west New Guinea, Indonesia. Ph.D.Thesis University of Texas at Austin, p. 1-356.
(online at: https://repositories.lib.utexas.edu/handle/2152/61523)
(Novel U/Pb depth profiling technique shows Grasberg Igneous Complex intrusive magmatism active from 3.6-3.1 Ma. Cu-Au mineralization started after intrusion of MGI (3.22 Ma) and predates EKI (3.20 Ma) and LKI (3.09 Ma). High grade core of the Grasberg deposit formed in <100 to 220 kyr. Ertsberg pluton (3.1-2.8 Ma) and other minor intrusions shows magmatism in district took less than 1 Myr. Rapid cooling of surface samples precludes presence of 2 km volcanic edifice overlying orebody. Garnets from Big Gossan skarn show skarn formed between 2.9–2.7 Ma)

*Wafforn, S., S. Seman, J.R. Kyle, D. Stockli, C. Leys, D. Sonbait & M. Cloos (2018)- Andradite garnet U-Pb geochronology of the Big Gossan skarn, Ertsberg- Grasberg mining district, Indonesia. Economic Geology 113, 3, p. 769-778.
(Big Gossan Cu-Au skarn formed near contact between Cretaceous Ekmai limestone and Paleocene Waripi dolomitic limestone, adjacent to 3.1-2.8 Ma Ertsberg diorite. Andradite garnets dated as 2.9-2.7 Ma, compatible with district-wide zircon U-Pb geochronology and single 2.82 Ma phlogopite 40Ar/39Ar age for skarn. Confirm that Big Gossan was one of last ore-forming events in Ertsberg-Grasberg district)

Wahyono & Sidarto (2001)- Aspek geologi endapan batubara di daerah Sorong, Irian Jaya. Geol. Res. Dev. Centre (GRDC), Bandung, Spec. Publ. 26, p. 1-13.
('Geologic aspects of coal deposits in the Sorong area' On thin Plio- Pleistocene coal deposits near Sorong, W Birds Head, E Salawati Basin, in regressive Klasaman Fm. Sediments from Sorong Fault Zone High in N)

Ward, M.A. (1974)- Report on geological reconnaissance Block 5, Irian Jaya, Indonesia. PT Paniai Lakes Minerals, Report, p. *(Unpublished)*

Warren, P.Q. (1995)- Petrology, structure and tectonics of the Ruffaer metamorphic belt, west central Irian Jaya, Indonesia. M.A. Thesis University of Texas, Austin, 2 vols., p. 1-338. *(Unpublished)*

Warren, P.Q. & M. Cloos (2007)- Petrology and tectonics of the Derewo metamorphic belt, West New Guinea. Int. Geology Review 49, 6, p. 520-553.
(Derewo-Rouffaer Metamorphic Belt (DM) >500 km long, ~10-30 km wide terrane of slate and phyllite on N flank of Central Range. S edge is Derewo fault in W, but gradational with unmetamorphosed passive margin strata in E. N boundary is fault contact with Irian Ophiolite Belt. Metamorphic protoliths are Jurassic-

Cretaceous Australian passive-margin strata. Most of rock pelitic, with minor siltstones, sandstones protoliths. Peak metamorphic conditions in Hitalipa area 250-350°C at 5-8 kbar (burial depths 15- 25 km). DM formed as Australian continental rise and slope sediments entered N-dipping subduction zone since 30 Ma. Widespread emergence by 12 Ma, followed by major uplift from collisional orogenesis at ~8 Ma. Present-day high topography of C Range established by ~4 Ma when delamination of subducting plate was complete and collisional movements changed into left-lateral transform fault system. Tens of km of strike-slip displacement in core of C Range, offsetting parts of metamorphic belt along Derewo and related faults)

Wass, R.E. (1989)- Early Permian bryzoa from Irian Jaya, Indonesia. Geol. Res. Dev. Centre (GRDC), Bandung, Seri Paleontologie 6, p. 11-25.
(Common late E Permian (Baigendzhinian) bryozoa in outcrops of Aifat Fm (= M Aifam) of upper Aifar River, SW part of Birds Head. Assemblages affinities with Ko Muk region of Peninsular Thailand (with Sulcoretepora, Streblascopora, Rhabdomeson; interpreted Late Artinskian age by Sakagami 1976) and NW Australia Canning Basin (with Stenodiscus variablis))

Webb, M. & L.T. White (2016)- Age and nature of Triassic magmatism in the Netoni Intrusive Complex, West Papua, Indonesia. J. Asian Earth Sci. 132, p. 58-74.
(Zircon U-Pb dating of in Netoni Intrusive Complex in Tamrau Mountains along Sorong Fault Zone in N Birds Head suggests series of pulses of Triassic magmatism between 248- 213 Ma (earlier K-Ar ages of 241-208 Ma in Pieters et al. 1983, 1989). Extensive incorporation of country rock xenoliths into Netoni Intrusive Complex. Granitoids likely emplaced in Andean-style subduction belt along E Gondwana (New Guinea - E Australia) through much of Paleozoic. Volcanic ejecta produced along this arc potential source of detritus for Triassic and younger sedimentary rocks in New Guinea and E Indonesia)

Weiland, R.J. (1993)- Plio-Pleistocene unroofing of the Irian fold-and-thrust belt South of the Gunung Bijih (Ertsberg) Mining district, Irian Jaya, Indonesia: apatite fission-track thermochronology. M.A. Thesis, University of Texas, Austin, p. 1-84. *(Unpublished)*

Weiland, R.J. (1999)- Emplacement of the Irian ophiolite and unroofing of the Ruffaer metamorphic belt of Irian Jaya, Indonesia. Ph.D. Thesis, University of Texas, Austin, p. 1-526. *(Unpublished)*
(Irian Ophiolite metabasites near Gauttier Offset exhumed from NE dipping subduction zone. Amphibolites metamorphosed at ~700°C, blueschists at ~400°C, eclogites at ~450°C. Metamorphism ages between 65/70 Ma- 50/ 45 Ma. N Rouffaer Metamorphic Belt metapelites K-Ar ages ~35-20 Ma, recording metamorphism of passive margin strata. Intrusives near Irian Ophiolite characteristic of volcanic arcs; isotopic ages ~35-24 Ma (allochthonous Oligocene- E Miocene oceanic arc) and ~12-10 Ma (autochthonous M Miocene Maramuni Arc). Subduction of Australian passive margin strata and continental lithosphere led to uplift of Irian Ophiolite. Exhumation of metamorphic rocks by normal faulting near ophiolite-metamorphic belt contact (amphibolites from <15 km, slate from 15-20 km, phyllites from 25-30 km). Blueschists and eclogite exhumed from 25-35 km depth along Gauttier Offset. Unroofing in E metamorphic belt increased from 23 to 2 Ma. W metamorphic belt unroofed at ~0.3 km/My from 21-3 Ma and ~6.9 km/My. Age of ophiolite uncertain, probably around Late Cretaceous- Paleocene)

Weiland, R.J. & M. Cloos (1996)- Pliocene-Pleistocene asymmetric unroofing of the Irian fold belt, Irian Jaya, Indonesia: apatite fission-track thermochronology. Geol. Soc. America (GSA) Bull. 108, 11, p. 1438-1449.
(Fission-track ages of apatite from Pliocene intrusions at Ertsberg district at crest of C Range 3.7 ± 0.9 to 2.0 ± 0.3 Ma. Grasberg pluton emplaced into its own volcanic cover and <2 km of material eroded since Pliocene. Apatites from Triassic-Jurassic Tipuma, Carboniferous-Permian Aiduna Fms and igneous dikes exposed halfway S slope of range fission-track ages between 2.7 ± 0.7 and 2.0 ± 0.5 Ma and indication of slower cooling than Pliocene intrusions. Resetting of provenance fission-track ages in detrital apatite requires burial deeper >4 km. Uplift of Mapenduma Anticline S of Central Range started at ~7 Ma, with ~9km of erosion of sediment since then (unroofing here 2.5-5 x faster than at crest of C Range, probably due to higher rainfall on S slope)

Westermann, G.E.G. (1995)- Mid-Jurassic Ammonitina from the Central Ranges of Irian Jaya and the origin of stephanoceratids. In: Barnabas Geczy Jubilee Volume, Hantkeniana 1, Budapest, p. 105-118.

(Descriptions of mainly Bajocian ammonites from C Ranges of W Papua. Riccardiceras n. gen. (type species Coeloceras longalvum) and Riccardiceras suzukinense sp. nov.)

Westermann, G.E.G. & J.H. Callomon (1988)- The Macrocephalitinae and associated Bathonian and early Callovian (Jurassic) ammonoids of the Sula islands and New Guinea. Palaeontographica A, 203, p. 1-90.
(Five Bathonian- Early Callovian ammonite assemblages on S Taliabu. Also from Bathonian at Strickland River, PNG. East Indian faunas dominated by Macrocephalitidae, many of which are species unknown outside Indonesia- New Guinea (one other SW Pacific occurrence in New Zealand). Because of high endemicity at species level in Macrocephalitinae and at genus level in Satoceras and Irianites, E Indonesia and PNG may be considered as separate ammonite faunal province or subprovince, perhaps part of Maorian/SW Pacific Province during Late Bajocian- E Callovian. Diversity and compositions of ammonite faunas suggest Sula was in warmer waters than Birds Head Peninsula)

Westermann, G.E.G. & T.A. Getty (1970)- New Middle Jurassic Ammonitina from New Guinea. Bull. American Paleontology 57, 256, p. 231-308.
(Bajocian- Callovian ammonites from loose stream bed material in Kemabu valley, NE of Paniai Lakes, Central Range, presumably from Kembelangan Fm 'A-member' phyllites and re-examination of Bajocian- Callovian ammonites from other parts Indonesian archipelago. Most ammonite species endemic to E Indonesia)

White, L.T., R. Hall & I. Gunawan (2017)- Multiple tectonic mode switches indicate short-duration heat pulses in a Mio-Pliocene metamorphic core complex, West Papua, Indonesia. American Geophys. Union (AGU) Fall Meeting, New Orleans, V31D-02, 1p. *(Abstract only)*
(online at: https://agu.confex.com/agu/fm17/meetingapp.cgi/Paper/222305)
(Wandaman Peninsula at W side of Cenderawasih Bay almost entirely composed of metamorphic rocks, associated with Late Mio-Pliocene metamorphic core complex. Multiple phases of deformation, all within last few Myrs: (1) crustal extension and partial melting at 5-7 Ma according to new U-Pb data from metamorphic zircons; (2) extensional phase followed by two phases of folding; (3) overprinted by brittle extensional faults and uplift, continuing today)

White, L.T., M.P. Morse & G.S. Lister (2014)- Lithospheric scale structures in New Guinea and their control on the location of gold and copper deposits. Solid Earth 5, p. 163-179.
(online at: www.solid-earth.net/5/163/2014/se-5-163-2014.pdf)
(Comparison of lineaments with location of major gold and copper deposits in New Guinea indicate link between arc-normal structures and mineralization, but only for deposits younger than 4.5 Ma)

Wibisono, A.D., Y.S. Dewi, O. Oktariano, B. Sapiie & I. Gunawan (2018)- Unlocking hydrocarbon potential in Bird's Head Papua Indonesia using integrated geophysical and geological evaluation. In: 8th EAGE Int. Geol. Geophysical Conf. Exhib., Saint Petersburg , p. *(Extended Abstract)*
(Distribution of Pre-Tertiary reservoir and source rock facies in E Indonesia influenced by old tectonic grains such as Paleozoic-Mesozoic grabens. New plays identified in Birds Head of W Papua (Triassic and Early Jurassic reservoir and Paleocene Daram Sandstone)

Wibisono, A., A. Hafeez, Rochmad, D. Lestiyardi, K. Iqbal & C.S. Pulukadang (2016)- Unlocking a carbonates reservoir riddle: a post mortem of the K-2 appraisal well dry hole in the Salawati Basin, West Papua, Indonesia. Proc. 40th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA16-282-G, 8p.
(Low oil saturation in 2013 K-2 appraisal well in flank of unspecified Kais Lst buildup in Salawati Basin)

Wichmann, A. (1901)- Uber einige Gesteine von der Humboldt-Bai (Neu-Guinea). Centralblatt Mineralogie Geologie Palaont., 1901, p. 647-652.
(online at: www.biodiversitylibrary.org/item/196149#page/749/mode/1up)
('On some rocks from Humboldt Bay, New Guinea'. Rock descriptions from E of Cyclops Mts near Jayapura in NE corner of West Papua. Including dunite, serpentine, diabase and Neogene Globigerina marls. Not much detail (see also Rutten 1914))

Wichmann, A. (1909)- Entdeckungsgeschichte von Neu-Guinea (bis 1828). In: A. Wichmann (ed.) Nova Guinea, Resultats de lôexpedition scientifique neerlandaise a la Nouvelle Guinee en 1903, E.J. Brill, Leiden, vol. 1, p. 1-387.
('Discovery history of New Guinea (until 1828)'. Review of voyages to and observations made on New Guinea before 1828. No geology)

Wichmann, A. (1910)- Entdeckungsgeschichte von Neu-Guinea (1828 bis 1885). In: A. Wichmann (ed.) Nova Guinea, Resultats de lôexpedition scientifique neerlandaise a la Nouvelle Guinee en 1903, E.J. Brill, Leiden, 2, 1, p. 1-369.
('Discovery history of New Guinea (1828- 1885)')

Wichmann, A. (1912)- Entdeckungsgeschichte von Neu-Guinea (1885-1902). In: A. Wichmann (ed.) Nova Guinea, Resultats de lôexpedition scientifique neerlandaise a la Nouvelle Guinee en 1903, E.J. Brill, Leiden, vol. II, 2, p. 371-1026.
('Discovery history of New Guinea (1885-1902)')

Wichmann, A. (1917)- Bericht uber eine im Jahre 1903 ausgefuhrte Reise nach Neu-Guinea. In: A. Wichmann (ed.) Nova Guinea, Resultats de lôexpedition scientifique neerlandaise a la Nouvelle Guinee en 1903, E.J. Brill, Leiden, vol. IV, p. 1-492.
(Detailed geographic- geological travel account of 1903 expedition to Northern Netherlands New Guinea. Zwierzycki 1932: Records of Late Jurassic ammonites in area of low metamorphic phyllites- quartzites near Jamoer Lake, Middle Jurassic ammonites near Wendesi along Cenderawasih Bay, etc. Occ. Eocene limestone with Lacazinella on Dramia Island off Lengguru foldbelt, etc)

Widdowson, G. (2001)- E. Indonesian Gas-2- Potential giant gas reserves await development in Irian Jaya. Oil & Gas J. 99, 26, June 25, 2001, p.

Widi, B.N. (2017)- Potensi endapan laterit kromit di daerah Dosay, Kabupaten Jayapura, Papua. Bul. Sumber Daya Geologi 12, 1, p. 1-12.
(online at: http://buletinsdg.geologi.esdm.go.id/index.php/bsdg/issue/archive)
('Potential of lateritic chromite deposits in the Dosay area, Jayapura Regency, Papua'. Presence of chromite in weathered ultramafic rocks of Cycloop Mountain Range. Chromite content in saprolite 1.3- 4.7%)

Widodo, S., N. Belluz, N. Wiwoho, B. Kusnanto, P. Manning, A. Edwards & G. Macdonald (1998)- Geology of the Kucing Liar Ore Body, Irian Jaya, Indonesia. In: T.M. Porter (Ed.) Porphyry and hydrothermal copper and gold deposits- a global perspective, Proc. Australian Min. Found. (AMF) Conf., Perth, PGC Publishing, Adelaide, p. 49-60.
(Kucing Liar newly discovered ore zone at Freeport Grasberg mine. Contains >2.16 Gt @ 1.2% Cu, 1.2 g/t Au, 3.95 g/t Ag with over 2500 t (80 Moz) of contained gold. Mineralisation both skarn and replacement ore in sediments surrounding Grasberg porphyry. Deposit strike length 2 km, averaging thickness 200-250m)

Widodo, S., P. Manning, N. Wiwoho, L. Johnson, N. Belluz, B. Kusnanto, G. MacDonald & A.C. Edwards (1999)- Progress in understanding and developing the Kucing Liar orebody, Irian Jaya, Indonesia. In: Proc. Int. Congress Earth science, exploration and mining around the Pacific Rim (PACRIM '99), Bali, Australasian Inst. of Mining and Metallurgy (AusIMM), Parkville, Publ. Ser. 4/99, p. 499-507.
(Kucing Liar skarn deposit in Ertsberg mining district first intersected in 1994 drill holes and consists of magnetite-copper-gold replacement and skarn mineralisation in Tertiary and Cretaceous units)

Widyanita, A., A. Purwati, J. Naar & W. Hidayat (2011)- Geocellular modelling of Vorwata, Wiriagar Deep, Roabiba and Ofaweri Fields, Tangguh JV. Proc. 35th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA09-G-096, 14p.
(Reservoir model of M Jurassic Roabiba Fm in five-field Tangguh gas field complex. Vorwata field ~80% of total resources. Model divided into 3 members, 15 zones. Some zones partially eroded or pinching-out. Roabiba Fm sandstones- mudstones deposited in tide-influenced braided rivers and deltas (Lw Roabiba; Toarcian-

Bajocian), tide-dominated delta and tidal-shoreface (U Roabiba; Late Bajocian- Bathonian) and delta front-offshore settings (M Roabiba; Bajocian)).

Williams, P.R. & Amiruddin (1983)- Diapirism and deformation East of the Mamberamo River, Northern Irian Jaya. Proc. 12th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 68-79.
(Hilly terrain E of Mamberamo River underlain by Mamberamo Fm Late Miocene-Pleistocene predominantly deep marine clastics. Shale diapirism caused much of deformation. Parts of succession overturned, probably prior to current diapiric intrusion. Blocks in diapirs probable Eocene to M Miocene ages. Diapirism probably initiated because of overpressuring due to rapid deposition and tectonic compression. Scaly clay formation not related to collision or subduction, but to diapirism in transcurrent fault system)

Williams, P.R. & Amiruddin (1984)- Diapirism and deformation East of the Mamberamo River, Northern Irian Jaya. Bull. Geol. Res. Dev. Centre 10, p. 10-20.
(Same paper as above)

Williams, P.R., C.J. Pigram & C.B. Dow (1984)- Melange production and the importance of shale diapirism in accretionary terranes. Nature 309, p. 145-146.
(N Irian Jaya discontinuous belt of melange between Cenderawasih Bay and PNG border product of shale diapirism. Deformation of up to 7000m of Mamberamo Fm M Miocene- Pliocene turbidites from M Pleistocene until today. Matrix of diapyric mudstones rich in M Miocene foraminifera. Exotic blocks include Eocene- E Miocene limestone, volcanic rocks, serpentinites)

Williams, P.W. (1971)- Illustrating morphometric analysis of karst with examples from New Guinea. Zeitschrift Geomorphologie, N.F, 15, p. 40-61.

Wilson, J.N. (1995)- Geologic summary of the Salawati Basin, Irian Jaya. In: C. Caughey et al. (eds.) Seismic atlas of Indonesian oil and gas fields II: Java, Kalimantan, Natuna, Irian Jaya, Pertamina/ Indon. Petroleum Assoc. (IPA), Jakarta, p. IRJ1-IRJ5.
(Salawati Basin Tertiary feature over tectonic terranes accreted in Paleocene. N and W portion over Kemum Fm metamorphosed Silurian and Devonian clastics. S and E part over Paleozoic- Lower Tertiary shallow water sandstones, coals and shales. Well data indicate Salawati Basin initiated in Upper Oligocene. Sirga Fm sst-shales overlie igneous/metamorphic basement and are transgressed by Kais Fm limestones. Late Miocene increase in subsidence caused development of pinnacle reefs on basin margin and drowning of many older reefs. Sorong fault more active at end-Miocene, creating landmass to N with massive influx of Pliocene Klasafet Fm clastics, locally 6 km thick. Pleistocene tectonic episode created complex fault system)

Winkelmolen, A.W., J.W.C.M. van der Sijp & F.H. van Oyen (1955)- Geological reconnaissance of the Wissel Lakes area (Central Dutch New Guinea). Nederlands Nieuw Guinea Petroleum Maatschappij (NNGPM) Rept. 26497, p.
(Unpublished NNGPM report, showing outcrops of Triassic (Tipuma Fm) sandstones at W side Paniai Lake (not captured on more recent GRDC map))

Wiryosujono, S. (1997)- Beberapa aspek diagenesis batugamping Formasi Waripi bagian bawah di daerah Wamena, Irian Jaya diamati melalui sayatan tipis. J. Geologi Sumberdaya Mineral 7, 70, p. 11-18.
('Some aspects of the carbonate diagenesis of the lower Waripi Fm in the Wamena area, Irian Jaya. Paleocene Waripi Fm sandy limestone at base of New Guinea Limestone Gp is ~100m thick transition between U Cretaceous glauconitic Ekmai Sst and Eocene Yawee Limestone. Limestone has undergone dolomitization, recrystallization, silicification and fracturing, probably in meteoric phreatic environment)

Wisesa, K.D., A. Mangala, H. Arbi, Qi Adlan & R.M.G. Gani (2017)- Distribution of Permian source rocks maturation related to Lengguru fold-thrust belt position in Bintuni Basin. Proc. 41st Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA17-405-SG, 10p.

(Maturity of Ainim Fm Permian source rocks in wells of Bintuni Basin varies from Ro 0,63% - 1.59%, and increases to NE, towards Lengguru fold-thrust belt (Ro 1.5% onshore Bintuni Bay). Gas in Bintuni fields likely came from NE (no details on wells, samples, uncontrolled maps))

Yabe, H. & T. Sugiyama (1942)- Younger Cenozoic reef corals from the Nabire beds of Nabire, Dutch New Guinea. Proc. Imperial Academy (Tokyo) 18, 1, p. 16-23.
(online at: https://www.jstage.jst.go.jp/article/pjab1912/18/1/18_1_16/_pdf)
(Fossil corals from beds considered to be of Plio-Pleistocene age in Nabire district, W Papua. Descriptions of 20 species from 10 localities near Cenderawasih Bay, collected by Tayama S of Nabire. 90% Recent species, one new (Cyathoseris? tayamai)))

Yabe, H. & T. Sugiyama (1942)- Notes on *Anisocoenia* Reuss and *Favoidea* Reuss. Proc. Imperial Academy (Tokyo) 18, 4, p. 194-199.
(online at: https://www.jstage.jst.go.jp/article/pjab1912/18/4/18_4_194/_pdf)
(Reviews of related coral genera Anisocoenia and Favoidea. Description of specimen of Anisocoenia junghuhni from Plio-Pleistocene limestone of Nabire district, W Papua, which is very similar to typical Favoidea)

Yoshino, H., T. Tanaka & H. Yamaguchi (2003)- Petroleum geology in Bintuni Basin in East Indonesia- a case study of exploration and evaluation of giant gas fields. J. Japanese Assoc. Petroleum Technology 68, 2-3, p. 200-210.
(online at: https://www.jstage.jst.go.jp/article/japt1933/68/2-3/68_200/_pdf)
(In Japanese with English summary. Bintuni fore-deep basin has certified 14.4 TCF gas for Wiriagar, Berau and Muturi PSCs in Jurassic and Paleocene reservoirs)

Yudhanto, E.V. & D. Pasaribu (2012)- Structural evolution of Ubadari Field, Birdĝs Head, Papua. Proc. 36th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA12-G-187, p. 1-10.
(Also in AAPG Search and Discovery Art. 30248 (2012). Ubadari field in Berau PSC, about 50 km SW of Tangguh is 1997 gas discovery in M Jurassic Roabiba sst and Paleocene sst reservoirs. Birds Head region three main erosion events: Permo-Triassic, Oligocene (NW-SE structural trends of Ubadari, Kalitami, Wiriagar and Vorwata; believed to be result of initial collision between Australian and Pacific plates) in Pliocene. Ubadari low relief structure before Pliocene and continued to grow to present day structure. Roabiba sst sandstone transgressive succession, back stepping from SW to NE)

Yzerman, R. (1939)- Korte verslagen van den geoloog der expeditie van het Kon. Nederl. Aardr. Gen. naar het Wisselmeergebied en het Nassau-gebergte op Nederlandsch Nieuw Guinea in 1938. Tijdschrift Kon. Nederlands Aardrijkskundig Genootschap 56, p. 677-679 and p. 791-792.
(Short reports by geologist of 1938 Dutch Geographical Society Expedition to Wissel (Paniai) Lakes and Central Range)

Yzerman, R. (1947)- De aanstaande expeditie van het Nederlandsch Nieuw Guinea Exploratie Committee. Bull. Bur. Mines Geol. Survey Indonesia 1, 1, p. 17-19.
('The upcoming expedition of the Netherlands New Guinea Exploration Committee')

Zakaria, F., I. Syafri & P. Wiguna (2017)- Hubungan antara phyllic alteration dengan nilai kekuatan batuan di Undercut Level Tambang Grasberg Block cave, PT Freeport Indonesia. Bull. Scientific Contr. (UNPAD) 15, 3, p. 233-242.
(online at: http://jurnal.unpad.ac.id/bsc/article/view/15101/pdf)
('The relationship between phyllic alteration and rock strength value in the Grasberg mine Block Cave Undercut Level'. Grasberg Block Cave underground mine with three intrusion stages: Dalam (3.51 Ma), Main Grasberg (3.21 Ma) and Kali (3.1 Ma). Mineral alterations affect rock strength)

Zarmansyah, T.A. & G.J. Edelbrock (1992)- Drilling in karst terrain of Irian Jaya. Proc. 21st Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 2, p. 98-108.

Zwierzycki, J. (1924)- Verslag over geologisch-mijnbouwkundige onderzoekingen in een gedeelte van Noord-Nieuw-Guinea. Jaarboek Mijnwezen Nederlandsch Oost-Indie 50 (1921), Verhandelingen, 1, p. 95-161.
(‘Report on a geological-mining survey in a part of North New Guinea’. Numerous gas and salt water seeps, also 2 oil seeps (Teer River and tributary of Verkam River) in NE part of West Papua. Tectonic complexity of region suggests no commercial petroleum potential to Zwierzycki. Includes petrographic descriptions by W.F. Gisolf, p. 133-161)

Zwierzycki, J. (1926)- Notes on the morphology and tectonics of the North Coast of New Guinea. Philippines J. Sci. 29, 4, p. 505-515.
(Abbreviated, English version of Zwierzycki 1924 geology of North New Guinea)

Zwierzycki, J. (1928)- Geologische overzichtskaart van Nederlandsch Indie. Toelichting bij de bladen XIV en XXI (Noord en Zuid Nieuw Guinea). Jaarboek Mijnwezen Nederlandsch-Indie 56 (1927), Verhandelingen 1, p. 248-308.
('Geological overview map of the Netherlands Indie. Explanatory notes of sheets XIV and XXI (North and South New Guinea)'. Two 1:1M scale overview maps of northern and southern halfs of 'main body' of West Papua (most of area unmapped at this time))

Zwierzycki, J. (1932)- Geologische overzichtskaart van den Nederlandsch-Indischen Archipel, schaal 1: 1,000,000. Toelichting bij blad XIII (Vogelkop, West Nieuw Guinee). Jaarboek Mijnwezen Nederlandsch-Indie 59 (1930), Verhandelingen 3, p. 1-55.
('Geological overview map of the Netherlands Indies Archipelago, scale 1:1 Million. Explanatory notes of sheet XIII (Birds Head, New Guinea'. Early map and overview of Birds Head geology)

VIII.2. Misool

Baggelaar, H. (1937)- Tertiary rocks from the Misool Archipelago (Dutch East Indies). Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, 40, 3, p. 285-292.
(online at: www.dwc.knaw.nl/DL/publications/PU00017038.pdf)
(Larger forams from limestones from Weber collection from small islands S of Misool identified as Eocene (Alveolina on Jef Lili) and Miocene (Spiroclypeus, Lepidocyclina from 7 islands) genera. However, all 'Miocene' identifications erroneous and should also be Eocene (Baggelaar 1938). Also critiqued by Musper in Neues Jahrbuch Geol. Palaont., 1937, p. 926-927)

Baggelaar H. (1938)- Some correcting notes on 'Tertiary rocks from the Misool-Archipelago (Dutch East Indies)'. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, 41, 3, p. 301.
(online at: www.dwc.knaw.nl/DL/publications/PU00017168.pdf)
(Lepidocyclina and Spiroclypeus identified from seven islands S of Misool are Discocyclina and Asterocyclina, and probably also Pellatispira (fig. 10 from Sabenibnoe island W). All limestones therefore appear to be of Eocene age, not Miocene)

Belford, D.J. (1991)- A record of the genus *Lockhartia* (foraminiferida) from Misool archipelago, Irian Jaya. BMR J. Australian Geol. Geophysics 12, 4, p. 297-299.
(online at: www.ga.gov.au/corporate_data/81297/Jou1991_v12_n4_p297.pdf)
(Late Paleocene- M Eocene Lockhartia, Discocyclina and Distichoplax biserialis in 'Daram Sandstone' of Sabennibnu Island, SE of Misool)

Boehm, G. (1910)- Zur Geologie des Indo-Australischen Archipels. 5: Zur Kenntniss der Sudkuste von Misol. Centralblatt Mineralogie Geologie Palaont. 1910, 7, p. 197-209.
(online at: www.biodiversitylibrary.org/item/192869#page/219/mode/1up)
(On the geology of the Indo-Australian Archipelago 5: On the knowledge of the South coast of Misool'. Brief descriptions of Triassic- Eocene stratigraphy of Lilinta area at S coast of Misool and offshore islands, based on trip in 1900. Youngest rocks Eocene white Alveolina Limestone, oldest rocks U Triassic Daonella and Athyriden-limestone. Also Jurassic Harpoceras and Hammatoceras beds. With map)

Boehm, G. (1924)- Uber eine senone Fauna von Misol. Palaeontologie von Timor, Schweizerbart, Stuttgart, 14, 26, p. 83-103.
('On a Senonian fauna from Misool'. Upper Cretaceous of Misool mainly marly rocks with large Inoceramus (I. misoliensis n.sp., I. haasti n.sp and others), ammonite Pachydiscus papuanus and rudists (Durania wanneri, D. deningeri, D. crispa n.spp.))

Challinor, A.B. (1989)- The succession of *Belemnopsis* in the Late Jurassic of Eastern Indonesia. Palaeontology 32, 3, p. 571-596.
(Belemnopsis from Misool and Sula all part of B. moluccana lineage. Misool Jurassic stratigraphy condensed rel. to Sula. Misool: 85m of Oxfordian Demu Fm carbonate/ shale overlain by ~100m of Kimmeridgean-Tithonian Lelinta shale with minor sandstone)

Challinor, A.B. (1989)- Jurassic and Cretaceous belemnitida of Misool Archipelago, Irian Jaya, Indonesia. Geol. Res. Dev. Centre (GRDC), Bandung, Spec. Publ. 9, p. 1-153.
(Callovian- Hauterivian belemnites from S Misool and islands off S coast. Good correlation with thicker and more complete (down to Toarcian) Jurassic section of the Sula Islands. No clear Kimmeridgean fossils found. Similarities between Misool and Madagascar assemblages, but, unlike earlier studies, no close relationships between Indonesian and New Zealand assemblages)

Challinor, A.B. (1991)- Revision of the belemnites of Misool and a review of the belemnites of Indonesia. Palaeontographica Abt. A, 218, p. 87-164.
(Mid-Bajocian- Hauterivian belemnites from Sula Islands, Misool and W Papua six genera and 40 species: Dicoelites (M Bajocian- E Oxfordian), Conodicoelites (M Bathonian- E Oxfordian), Belemnopsis (late

Bathonian-Valanginian), Hibolithes (important only in Callovian-Oxfordian and Hauterivian)and Cretaceous Duvalia and Chalalabelus. Postulated relationships between Indonesian and New Zealand Belemnitidia non-existent. Gondwana Belemnopsis strongly endemic. Tethyan province extended from W Europe to PNG and possibly New Caledonia inM Jurassic and E Cretaceous. Indo-Tethyan province extending E from N India to PNG existed in Late Jurassic)

De Lange, G.J., J.J. Middelburg, R.P. Poorter & S. Shofiyah (1989)- Ferromanganese encrustations on the seabed west of Misool, Eastern Indonesia. In: J.E. van Hinte et al. (eds.) Proc. Snellius II Symposium, Jakarta 1987, Netherlands J. Sea Research 24, 4, p. 541-553.
(Black coating on carbonate rocks from seafloor at ~1000m is iron and manganese-rich dolomite)

Froidevaux, C.M. (1974)- Geology of Misool Island (Irian Jaya). Proc. 3rd Ann. Conv. Indon. Petroleum Assoc., p. 189-196.
(Misool almost complete Triassic- Present stratigraphic record. Misool Island is N flank of ESE plunging anticlinorium. Oldest rocks exposed folded Triassic flysch along S shore. In Jurassic Misool located near N edge of sea that deepened to S. Thick Eocene carbonates.'Oligocene' unconformity: Miocene carbonates thin W-ward from >1300m to 100m and overlap successively older rocks. Island presently being tilted to SE)

Gerth, H. (1932)- *Thecocyathus misolensis* sp. nov.. Eine Koralle aus dem Oxford von Misol. Beitr. Palaontologie des Ost Indischen Archipels, Neues Jahrbuch Mineral. Geol. Palaont., Abhandl., Beilage Band B69, p. 169-171.
('Thecocyathus misolensis sp. nov.. A coral from the Oxfordian of Misool')

Hasibuan, F. (1987)- The Triassic worm-tube *Terebellina mackayi* (Bather) from Indonesia. Geol. Soc. New Zealand, Misc. Publ. 37 A, p.
(Triassic calcareous tube worm in Ladinian or Carnian Keskain Fm 'flysch' deposits of Misool)

Hasibuan, F. (1990)- Mesozoic stratigraphy and paleontology of Misool Archipelago, Indonesia. Ph.D. Thesis, University of Auckland, p. 1-384. *(Unpublished)*
(Mesozoic on S half of Misool and adjacent islets includes Triassic (Anisian- Norian), Jurassic (Toarcian-Tithonian) and Cretaceous, unconformably over low metamorphic Siluro-Devonian Ligu Fm. Triassic Keskain Fm 1000m of Anisian-Ladinian sst/shale unconformably overlain by ~100m Late Triassic (Carnian-Rhaetian) Bogal Fm limestone. Major unconformity in E Jurassic. Most Jurassic formations rift-drift on N margin of Australian Gondwanana continent. In Triassic Misool related to Buru, Seram and Sumatra Islands, although few common species. Triassic and Lias also similar faunas to Alps and Mediterranean. Jurassic of Misool similar to Sula in bivalve content, but diverse ammonites of Sula replaced by assemblages of belemnites. In Triassic- Jurassic Misool was on SE margin of Tethys Sea. E Triassic block faulting affected Misool, but since then relatively stable and on N margin of Australian-Gondwana continent)

Hasibuan, F. (1992)- Mesozoic biostratigraphy of Misool Archipelago, Indonesia. Second Int. Symp. Geology and evolution of Eastern Tethys, IGCP 321, Abstracts, p. 50-59.

Hasibuan, F. (1998)- Asosiasi fauna paleoekologi dan lingkungan pengendapan formasi-formasi batuan Jura-Kapur Awal di Kepulauan Misool, Irian Jaya. Proc. 27th Ann. Conv. Indon. Assoc. Geol. (IAGI), 2 (Sed. Pal. Strat.), Yogyakarta, p. 27-36.
('Paleoecological faunal associations and depositional environments of Jurassic- Upper Cretaceous rock formations of the Misool Islands, Irian Jaya'. Four paleoecological faunal associations in shelfal marine Jurassic of SE Misool: (1) Bivalve- Ammonite (Toarcian- Bathonian; locally with Aalenian low oxygen? Bositra ornata), (2) Belemnite-Bivalve (Callovian- Oxfordian), (3) Ammonite-Bivalve-Belemnite, with Belemnopsis moluccana, Retroceramus haasti, Malayomaorica (Kimmeridgean- E Tithonian), (4) Bivalvia-Ammonite-Belmenite with Buchia spp, Belemnopsis galoi, B. stolleyi, etc. (Tithonian))

Hasibuan, F. (2004)- Buchiidae (Bivalvia) Jura Akhir sampai Kapur Awal dari kepulauan Misool dan korelasi regionalnya. J. Sumber Daya Geologi (GRDC, Bandung), 14, 2 (146), p. 51-60.

('Late Jurassic- Early Cretaceous Buchiidae from Misool'. Bivalves of Buchia family in Demu Fm (Late Callovian- Oxfordian; Praebuchia), Lelinta Fm (Late Oxfordian- E Berriasian; B. subspitiensis, B. blanfordiana; also with Malayomaorica) and Gamta Fm (Late Callovian-Cenomanian). Stratigraphic ranges of Buchia from Misool correlated with overseas Buchia, showing good marker for regional correlation)

Hasibuan, F. (2007)- Annelid *Terebellina mackayi* (Bather) from Middle Triassic Keskain Formation, Misool Archipelago. J. Sumber Daya Geologi 17, 2, p. 116-123.
(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/284/255)
(Infaunal tube worm with agglutinated body in in M Triassic Keskain Fm 'flysch' deposits at S side of Misool, associated with Daonella and ammonite Beyrichites. Also known from Sumatra, Thailand, Timor, New Zealand)

Hasibuan, F. (2008)- Pre-Tertiary biostratigraphy of Indonesia. In: Proc. Int. Symp. Geoscience Resources and Environments of Asian Terranes (GREAT 2008), 4th IGCP 516 and 5th APSEG, Bangkok, p. 323-325.
(Paleozoic in Indonesia scattered amongst archipelago and generally thin. Biostratigraphy scarce and most publications not in English. Sumatra and Timor only localities with exposed ?Carboniferous-Permian. Siluro-Devonian faunas only on Irian Jaya. Mesozoic biostratigraphy based mainly on Misool Archipelago, with most complete Mesozoic section ranging from Triassic (Anisian?)- Upper Cretaceous)

Hasibuan, F. (2009)- Biostratigrafi dan biota Jura kepulauan Misool, Indonesia, dan korelasi interregional dan globalnya. J. Sumber Daya Geologi 19, 3, p. 191-207.
(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/205/196)
('Jurassic biostratigraphy and biota of the Misool islands and its interregional and global correlations'. Jurassic on Misool ~260m thick, spanning Toarcian- Tithonian stages. Can be correlated with New Guinea fauna with ammonites like Fontannesia killiani. Similar bivalve faunas as Sula islands, but Sula faunas also rich in ammonites, while Misool has more belemnites)

Hasibuan, F. (2010)- Cretaceous Inoceramidae (Bivalvia) from Fafanlap Formation, Misool Archipelago, Indonesia. Proc. IGCP 507 Project Symp. Paleoclimates in Asia during the Cretaceous, Yogyakarta 2010, 1p. *(Abstract only)*
(online at: http://igcp507.grdc.esdm.go.id/downloads/cat_view/34-documents)
(Description of small collection of M Campanian inoceramid bivalves from Fafanlap Fm, Misool. Similar to Campanian assemblage from U Kembelangan Fm from W Papua 'Birds Head')

Hasibuan, F. (2010)- Analisis lingkungan pengendapan batuan berumur Jura di Kepulauan Misool, Papua berdasarkan fosil makro. J. Sumber Daya Geologi 20, 5, p. 235-250.
(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/176/172)
('Facies analysis of rocks of Jurassic age of the Misool islands, Papua, based on macrofossils'. Bivalve molluscs throughout section, belemnites first appear in Callovian. Four Toarcian-Berriasian fossil assemblages on Misool: (1) bivalve-ammonite with Bositra ornati (= anoxic, Aalenian); (2) belemnite-bivalve (Callovian-Oxfordian; with Retroceramus galoi, Malayomaorica, etc.); (3, 4) ammonite-bivalve-belemnite and bivalve-ammonite-belemnite assemblages (Kimmeridgean- Tithonian). Paleoenvironment continental shelf and slope, at N margin of Gondwana land or at S coast of Tethyan Sea)

Hasibuan, F. (2012)- Mesozoic geology and paleontology of Misool Archipelago, Eastern Indonesia. Geological Agency, Bandung, p. 1-210.
(Thorough review of geology, paleontology (diverse marine faunas of brachiopods, molluscs, ammonoids), biostratigraphy of ~1800m thick M Triassic- Cretaceous section of Misool Islands, and correlations with other regions. Oldest rocks thick, locally steeply dipping Ligu Fm low-grade turbiditic meta-sediments (possibly equivalent of Kemum Fm of Birds Head). Overlain by >1000m thick M Triassic Keskain Fm flysch-type clastics (with endemic Daonella lilintana) and locally steeply dipping, ~100m thick shallow marine Carnian- U Norian 'Athyrid Limestone' (Bogal and Lios Fms; with Misolia misolica brachiopod and Palaeocardita globiformis). Unconformably overlain by gently-dipping neritic marine late E Jurassic ~260m thick ('break-up unconformity'), starting with Late Toarcian Yefbie Fm shales, with basal conglomerate of milky quartz pebbles. 'Aucella (Buchia, Malayomaorica) Sandstone and Demu Limestone of Callovian-Oxfordian age with

belemnites, etc.. Tithonian Lelinta Fm with inoceramid pelagic molluscs and Belemnopsis galoi. Main faunal affinities with New Guinea and Buru island. E Cretaceous rel. deep marine pelagic 'Facet Fm' limestone)

Hasibuan, F. & J.A. Grant-Mackie (2007)- Triassic and Jurassic gastropods from the Misool Archipelago. J. Sumber Daya Geologi 17, 4 (160), p. 257-272.
(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/294/265)
(Gastropod fauna of Triassic and Jurassic ages from SE Misool Archipelago reviewed, based on 1981 collection. Five described species and five in open nomenclature. Most taxa unique to this area, but Eucyclus orbignyanus known also from Europe)

Hasibuan, F. & P. Janvier (1985)- *Lepidotes* sp. (Actinopterygii, Halecostomi), a fish from the Lower Jurassic of Misool Island. Geol. Res. Dev. Centre (GRDC), Bandung, Seri Paleontologi 7, p. 10-17.
(Lepidotes-like scales of Jurassic marine fish)

Hasibuan, F. & E. Rusmana (2007)- Cretaceous rocks of Misool Archipelago, Indonesia. J. Sumber Daya Geologi 17, 6 (162), p. 420-435.
(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/322/288)
(Overview of stratigraphy and macrofaunas of Cretaceous at S side Misool and adjacent islands. Section dominated by relatively thin deep marine calcilutites (~100m thick Berriasian- Cenomanian Gamta Fm limestone with chert and with Hibolithes, Belemnopsis, and ~80m of M Cenomanian- Santonian Waaf Fm red-brown and while bedded limestonewith reddish chert, rich in planktonic forams). Thicker (~200m) and probably shallower Campanian- Late Maastrichtian Fafanlap Fm shaly limestone with silts and sands and oolitic limestone at top. Macrofossils include Inoceramus and rudist Durania wanneri)

Heinz, R. (1928)- Uber die Oberkreide-Inoceramen der Inseln Fafanlap, Jabatano und Jillo II im Misol Archipel und ihre Beziehungen zu denen Europas und anderer Gebiete. Min. Geol. Staats-Inst., Hamburg 10, p. 99-110.
('On the Upper Cretaceous Inoceramus molluscs from the islands Fafanlap, Jabatano and Jillo II in the Misool Archipelago and their relations to those of Europe and other areas'. Revision of Boehm (1924) inoceramids from Fafanlap Fm and considered to be of Senonian age, not Maastrichtian as assumed by Boehm)

Helby, R. & F. Hasibuan (1988)- A Jurassic dinoflagellate sequence from Misool, Indonesia. In: Proc. 7th Int. Palynological Conf., Brisbane, p. 69. *(Abstract only)*
(Diverse Jurassic dinoflagellate assemblages from Misool. Yefbie shale Toarcian-Bathonian Caddasphaera halosa zone. Demu Fm late Callovian suite to Oxfordian Wanaea spectabilis zone. Lelinta shale upper Oxfordian- early Kimmeridgean Wanaea clathrata zone, possibly extending into early Berriasian Kalyptea wisemaniae zone. Mid-Bathonian- Late Callovian unconformity between Yefbie Fm and Demu Fm. Apparent absence of Kimmeridgean Dingodinium swanense zone in middle Lelinta shale)

Jaworski, E. (1915)- Die Fauna der obertriadischen Nuculamergel von Misol. In: J. Wanner (ed.) Palaontologie von Timor II, 5, p. 73-174.
('Fauna from Upper Triassic Nucula marls of Misool'. Nucula marls in SE part of Lios island SE of Misool underlies the 'Athyridenkalk' (Misolia limestone). Mainly bivalves (Pecten misolensis and other spp., Nucula misolensis n.sp., Anadontophora, Myophoria, Paleocardita), gastropods, solitary corals (Molukkia triasica n.gen., n.sp., Leptophyllia praecursor n.sp.)

Kristan-Tollmann, E. & F. Hasibuan (1990)- Ostracoden aus der Obertrias von Misol (Indonesien). Mitteilungen Osterreichischen Geol. Gesellschaft 82, p. 173-181.
(online at: www.zobodat.at/pdf/MittGeolGes_82_0173-0181.pdf)
('Ostracods from the Upper Triassic of Misool'. Small ostracod fauna from marine Early Carnian?. Nearly all genera known from W Tethys, but found here for first time in E-most Tethys. One new form (Hasibuana asiatica))

Krumbeck, L. (1911)- Uber die Fauna des Norischen Athyridenkalkes von Misol. Dissert. Friedrich-Alexanders-Universitat zu Erlangen, Schweizerbart, p. 1-38.

('On the fauna of the Norian athyrid limestone of Misool'. Brief description of macrofauna of ~50m thick limestone rich in Misolia brachiopods from S coast and ilands Jillu, etc., off S Misool. Includes some corals (Thecosmilia), stromatoporoids, hydrozoans (Heterastridium), pectenids, etc. No illustrations)

Krumbeck, L. (1913)- Obere Trias von Buru und Misol. C. Der Athyridenkalk des Misol-Archipels. Palaeontographica Suppl. IV, 2, Beitr. Geologie Niederlandisch-Indien II, 1, p. 128-161.
('Upper Triassic of Buru and Misool. C. The Athyrid limestone of the Misool Archipelago'. Macrofaunas collected by Boehm and Wanner from the ~50m thick Athyrid Limestone of the Misool islands. Rel. shallow marine dark grey limestone with grey and yellowish marls with corals (Thecosmilia cf. clathrata), hydrozoa (Heterastridium), crinoids (Pentacrinus), brachiopods (Spirigera, Aulacothyris), bivalves (Pecten, Anadontophora, Cardita,

Krumbeck, L. (1934)- Die Aucellen des Malms von Misol. N. Jahrbuch Mineral. Geol. Palaont. Beilage Band 71, p. 422-467.
('The Aucellas from the Malm of Misool'. West Misool Upper Jurassic (Oxfordian) siliceous marls with muscovite and fine quartz grains and Aucella sandstone with common Aucella (now called Buchia) molluscs, commonly compressed and dissolved. Also Aucellas from clay-marls from Facet island ('Fatjet Schiefer'), with rich open marine foram assemblages. Facet shales with Aucella (Buchia) malayomaorica, also known from Timor, Roti, Buru, Seram and New Zealand North Island, underlying Demu Limestone with A. cf. subspitiensis)

MacFarlan, D.A.B., F. Hasibuan & J.A. Grant-Mackie (2011)- Mesozoic brachiopods of Misool Archipelago, eastern Indonesia. In: G.R. Shi (ed.) Brachiopods: extant and extinct, Proc. 6th Int. Brachiopod Congress, Melbourne 2010, Mem. Assoc. Australasian Palaeont. 41, p. 149-177.
(Mesozoic brachiopod fauna of Misool ten species, only one previously described (Rhaetian Misolia misolica; three varieties of Von Seidlitz (1913) are synonyms). Four new Late Triassic species, incl. Zugmayerella bogalica, two Jurassic (incl. Aucklandirhynchia yefbiensis) and three Cretaceous. Biogeographically fauna is Perigondwanan (or S Tethyan). Aucklandirhynchia yefbiensis and Prochlidonophora spinulifera of Austral affinity and Ptilorhynchia pugnaciformis belongs to Circum-Pacific or bipolar genus)

Mulyadi, D. (2010)- Mikrofasias dan diagenesa batugamping Formasi Zaag de Pulau Misool dan sekitarnya. J. Teknologi Technoscientia 3, 1, p.
('Microfacies and limestone diagenesis of the Zaag Fm of Misool island and surroundings'. Paleocene-Eocene Zaag Fm carbonates on Misool two facies: (1) packstones with Fasciolites (Alveolina) and Lacazinella and (2) grainstones with Fasciolites (Alveolina), miliolids and algae)

Pigram, C.J., A.B. Challinor, F. Hasibuan, E. Rusmana & U. Hartono (1982)- Geological results of the 1981 expedition to the Misool Archipelago, Irian Jaya. Bull. Geol. Res. Dev. Centre 6, p. 18-29.
(Misool islands with rel. complete and fossiliferous Mesozoic sequences. Low-grade Paleozoic metamorphic basement (folded 'flysch') similar to Seram Sea area islands. ?Triassic flysch-type Keskain Fm unconformably overlain by Late Triassic reefal Bogal Lst with brachiopod Misolia. Marine Jurassic section above E Jurassic breakup unconformity starts with Toarcian-Callovian quartz sandstone but mostly shale with belemnites and ammonites. Latest Jurassic- E Cretaceous section is deep marine Facet Gp calcilutites, overlain by Fafanlap tuffaceous clastics. Eocene Zaag Lst platform carbonates with Alveolina. Late Oligocene unconformity overlain by E Miocene Kasim marls (equivalent of Sirga sst of New Guinea?) and E-M Miocene Openta lst)

Pigram, C.J., A.B. Challinor, F. Hasibuan, E. Rusmana & U. Hartono (1982)- Lithostratigraphy of the Misool Archipelago, Irian Jaya, Indonesia. Geologie en Mijnbouw 61, 3, p. 265-279.
(online at: https://drive.google.com/file/d/0B7j8bPm9Cse0V29FOHAxRDlzM3c/view)
(On surface geology of islands S of Misool and Paleozoic- Pliocene stratigraphy of Misool. Metamorphics form basement overlain by ?Triassic flysch which was block-faulted and uplifted during Carnian, after which platform carbonates were deposited followed by a period of non-deposition. Marine sedimentation resumed in E Jurassic with fine clastics and bathyal carbonates, incl. radiolarian cherts. E Cretaceous volcanism accompanied by change to fluvio-deltaic environment. E Tertiary carbonate platform, with marl deposited after

Late Oligocene folding. Quaternary uplift formed Misool Archipelago. Misool stratigraphy is continuation of NW Australian/ New Guinea rift-drift sequence formed during breakup of N Gondwana)

Roggeveen, P.M. (1939)- Geologisch onderzoek van Noord Misool. Nederlands Nieuw Guinea Petroleum Maatschappij (NNGPM) Report 19288, 40p. *(Unpublished)*
('Geologic investigations of North Misool'. Frequently quoted NNGPM report, a.o. in Van Bemmelen 1949)

Rusmana, E., U. Hartono & C.J. Pigram (1989)- Geological map of the Misool quadrangle, Irian Jaya, 1:250,000. Geol. Res. Dev. Centre (GRDC), Bandung.

Simbolon, B., S. Martodjojo & R. Gunawan (1984)- Geology and hydrocarbon prospects of the Pre-Tertiary system of Misool area. Proc. 13^{th} Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 1, p. 317-340.
(Review of M Triassic- Cretaceous stratigraphy and paleogeography of Misool Island area)

Siregar, M.S. (1985)- Karbonat Formasi Waaf berumur Kapur di Pulau Misool. J. Riset Geologi Pertambangan (LIPI) 6, 2, p. 36-45.
(Cretaceous Waaf Formation carbonate on Misool Island'. Waaf Fm U Cretaceous carbonate well exposed in S area of Misool. Composed of limestone, marl and chert, generally dark (red-brown), thin-bedded (2-20 cm) with abundant planktonic forams (Globotruncana) in fine matrix. Interpreted as deep-sea pelagic sediment)

Siregar, M.S. (1986)- Endapat karbonat laut dalam di Pulau Misool. Proc. 15^{th} Ann. Conv. Indon. Assoc. Geol. (IAGI), Yogyakarta, p.
('Shallow marine carbonate deposits of Misool island')

Skwarko, S.K. (1981)- History of geological investigations of the Misool Archipelago, Moluccas, Indonesia. Geol. Res. Dev. Centre (GRDC), Bandung, Seri Paleontologi 2, p. 53-66.
(Overview of 50 papers on Misool geology since 1899. Mesozoic probably >4000m thick, overlying pre-Late Triassic metamorphics and subdivided into 22 time-rock units. ?Ladinian-Carnian Keskain flysch overlain by Norian marls and Misolia limestones. Jurassic unconformable on Triassic, with thin M Liassic quartz sst, followed by shelfal marine marls, shales, thin limestones, calcareous sandstones, with locally common macrofossils. Cretaceous mainly pelagic limestone)

Soergel, W. (1913)- Geologische Mitteilungen aus dem Indo-Australischen Archipel. 9: Lias und Dogger von Jefbie und Filialpopo (Misol Archipel). Neues. Jahrbuch Min. Geol. Palaontology, Beilage Band B 36, p. 586-612.
('Liassic and Dogger of Jefbie and Filialpopo, Misool Archipelago'. Descriptions of Middle Jurassic macrofossils collected by Boehm in 1901, Van Nouhuys and Wanner in 1909. Mainly bivalves (Astarte spp., Nucula, Cucullaea, etc.), also gastropods, brachiopods, ammonites (Harpoceras spp.) and belemnites)

Soergel, W. (1915)- Unterer Dogger von Jefbie (Misol Archipel). Ein Nachtrag zur Stratigraphie und Biologie. Zeitschrift Deutschen Geol. Gesellschaft, Berlin, 67, B, Monatsberichte 3, p. 99-109.
(online at: https://ia800308.us.archive.org/3/items/zeitschriftderd671915deut/zeitschriftderd671915deut.pdf)
(More on Dogger (M Jurassic) of Jefbie, Misool Archipelago. After completion of Soergel (1913) paper additional fossils from Jefbie obtained from Wanner. Incl. Harpoceras cf. toarcense, H. comense, Harpoceras toarcense, Hildoceras, Nucula hammeri, etc. No figures)

Stolley, E. (1934)- Zur Kenntnis des Jura und der Unterkreide von Misol. 1. Stratigraphischer Teil. Beitrage zur Palaontologie des Ostindischen Archipels 11, Neues Jahrbuch Mineral. Geol. Palaont., Abhandl. B, 71, p. 470-486.
('On the knowledge of the Jurassic and Lower Cretaceous of Misool- Part 1 Stratigraphy')

Stolley, E. (1935)- Zur Kenntnis des Jura und der Unterkreide von Misol. 2. Palaeontogischer Teil. Neues Jahrbuch Mineral. Geol. Palaont., Abhandl. B, 73, p. 42-69.

('On the knowledge of the Jurassic and Lower Cretaceous of Misool- Part 2- paleontology'. Study of belemnites from new collections from Misool by Weber. New species Belemnopsis indica-moluccana and B. incisa)

Syafron, E. (2011)- Evaluation of the Mesozoic stratigraphy of Misool island and implications for petroleum exploration in the Birdôs Head region, West Papua, Indonesia. Proc. 35th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA11-G-158, 13p.
(Review of Triassic- Jurassic stratigraphy of Misool. Bajocian (M Jurassic) Yefbie Fm marine black shale with terrestrial influence; probably distal facies of Roabiba Sst reservoirs in Tangguh area, Bintuni Bay. Shale underlain by Toarcian sandy limestone and basal conglomerate, equivalent to E Jurassic sandstones penetrated in East Onin-1ST and TBJ-1X wells. Best potential source rock Yefbie Fm shale (TOC up to 1.9%, HI 120-180 mgS2/gTOC, gas prone kerogen type III). No potential reservoir in outcrop)

Thrupp, G.A., E.A. Silver & H. Prasetyo (1986)- Preliminary results of a palaeomagnetic study of Misool, Irian Jaya. In: IOC Symposium on marine science in the Western Pacific: the Indo-Pacific convergence, Townsville 1986, p. 29. *(Abstract only)*
(Results of paleomagnetic analysis of 614 samples from 107 sites on Misool. Tertiary carbonates very weak magnetizaton, but Late Cretaceous Fafanlap and Waaf formations retain well-defined, pre-folding magnetic directions that suggest substantial CCW rotation of Misool relative to Australia (presumably since Late Cretaceous?; JTvG))

Thrupp, G.A., W.V. Sliter, E.A. Silver, C.J. Pigram, H. Prasetyo & R.S. Coe (1988)- Palaeomagnetism of Late Cretaceous calcareous sediments from the Misool Archipelago, Irian Jaya. 9th Australian Geol. Conv., Brisbane 1988, Abstracts 21, p. 401-402.

Thrupp, G.A., W.V. Sliter, E.A. Silver, H. Prasetyo & R.S. Coe (1987)- Paleomagnetic evidence from Late Cretaceous rocks of Misool for rotation relative to Australia. EOS Transactions 68, 44, p. 1260. *(Abstract only)*
(Report of 33° CCW rotation of Misool Cretaceous deposits (see also Wensink et al. 1989))

Vogler, J. (1941)- Ober-Jura und Kreide von Misol (Niederlandisch-Ostindien). In: Beitrage zur Geologie von Niederlandisch-Indien, Palaeontographica Suppl. IV, IV, 4, p. 243-293.
('Upper Jurassic and Cretaceous of Misool'. Reports of acid tuffs in Jurassic and Upper Cretaceous limestones. Late Jurassic Facet Limestone with calcispheres Stomosphaera and Cadosina spp.. Illustrations of vertical sections of Upper Cretaceous keeled Globotruncana planktonic forams)

Von Seidlitz, W. (1913)- *Misolia*, eine neue Brachiopoden-Gattung aus den Athyridenkalken von Buru und Misol. Beitr. Geologie Niederlandisch-Indien II, 2, Palaeontographica Suppl. IV, p. 163-194.
(New genus Misolia for Upper Triassic (Norian) shallow marine costate athyrid brachiopod from Athyrides limestone in Misool and Fogi Beds of Buru. Genus characteristic of 'Gondwanan Tethys'; also known from NW Australian margin)

Wandel, G. (1936)- Beitrage zur Kenntnis der Jurassischen Molluskenfauna von Misol, Ost Celebes, Buton, Seran und Jamdena. In: J. Wanner (ed.) Beitrage zur Palaeontologie des Ostindischen Archipels 13, Neues Jahrbuch Mineral. Geol. Palaont., Beilage Band 75B, p. 447-526.
('Contributions to the knowledge of Jurassic molluscs from Misool, East Sulawesi, Buton, Seram and Yamdena'. Description of Mollusca, mainly collected by F. Weber. Misool faunas include upper Liassic Harpoceraten beds, lower Dogger Hammoceraten beds, Oxfordian Aucella malayomaorica marls (also in E Sulawesi), etc.)

Wanner, J. (1910)- Beitrage zur geologischen Kenntnis der Insel Misol (Niederlandisch Ost-Indien). Tijdschrift Kon. Nederlands Aardrijkskundig Genootschap (2) 27, p. 469-500.
(online at: https://babel.hathitrust.org/cgi/pt?id=mdp.39015078113373;view=1up;seq=705;size=150)
('Contributions to the geological knowledge of Misool island'. Early description of geology and Mesozoic stratigraphy of S Misool and adjacent islands, based on 3-week visit in 1909. Misool island structure rel. simple: 10-20° N-dip. U Triassic- Cretaceous open marine succession, overlain by Eocene alveolinid limestone:

(1) Triassic Keskain Beds with Daonella, (2) Nucula Marls, with Triassic Nucula, Myophoria, Cardita (3) U Triassic Athyrid Limestone, (4) Harpoceratid shales with E Jurassic ammonites-belemnites, (5) Lilinta Beds with U Jurassic ammonites- belemnites, (6) Facet Shales, (7) Facet Limestones with Cretaceous planktonic foraminifera, incl. Discorbina (=Globotruncana), (8) Inoceramus-Radiolites marl with U Cretaceous bivalves and rudists, (9) Eocene Alveolina Limestone, (10) Late Tertiary limestone with Lepidocyclina, etc.. With 1:187,500 scale map)

Weber, F. (1930)- Verslag over het geologisch onderzoek op de eilandengroep van Misool. Nederlands Nieuw Guinea Petroleum Maatschappij (NNGPM), Report 12103, p.
('Report of geological investigations of the Misool islands group'. Frequently quoted unpublished BPM/ NNGPM report on Misool islands geology)

Wensink, H., S. Hartosukohardjo & Y. Suryana (1989)- Palaeomagnetism of Cretaceous sediments from Misool, northeastern Indonesia. In: J.E. van Hinte et al. (eds.) Proc. Snellius II Symposium, Jakarta 1987, Netherlands J. Sea Research 24, p. 287-301.
(Misool paleo pole positions do not correspond to Australia; probably split off in Late Triassic-Jurassic. In Late Cretaceous Misool was at ~20° S, much farther N relative to Australia than today. 20° CCW rotation since Late K. Main folding phase on Misool Late Oligocene; older folding event in Late Triassic)

VIII.3. Arafura Shelf

Adhyaksawan, R., P.T. Allo, M. Raharja, M. Isjmiradi & M. Boyd (2010)- Arafura seismic processing: importance of iterating velocity analysis and integrating regional geology to counter signal masking by major unconformities: Proc. 34th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 5p.

Aldha, T. & Kim Jae Ho (2008)- Tertiary hydrocarbon play in NW Arafura Shelf, Offshore South Papua: frontier area in Eastern Indonesia. Proc. 32nd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA08-G-144, 9p.
(On proven Tertiary petroleum system on NW margin of Arafura Shelf between N Aru Islands and Lengguru foldbelt)

Balke, B., C. Page, R. Harrison & G. Roussopou (1973)- Exploration in the Arafura Sea. Australian Petrol. Explor. Assoc. (APEA) J. 13, p. 9-12.

Bradshaw, J. (1990)- Geological cross-section of the Arafura Basin. Bureau Mineral Res. Geol. Geoph., Record 1990/14, p. 1-18. + Plates
(online at: www.ga.gov.au/metadata-gateway/metadata/record/14306/)
(Offshore Arafura Basin contains >9 km of Paleozoic rocks in Arafura Graben in S part of basin. Basin underlain by M- Late Proterozoic sequence which thickens to E and is probably equivalent to onshore McArthur Basin. Overlain by Mesozoic Money Shoal Basin, ~1 km thick over central parts of graben, thickening rapidly to W and thinning to E and N)

Bradshaw, J., R.S. Nicoll & M. Bradshaw (1990)- The Cambrian to Permo-Triassic Arafura Basin, Northern Australia. Australian Petrol. Explor. Assoc. (APEA) J. 30, 1, p. 107-127.
(Arafura Basin N Australia shelf thick Cambrian- Permo-Triassic sequence, unconformably overlying Proterozoic McArthur basin, and unconformably overlain by M Jurassic and younger Money Shoal basin. Broad northern platform (3-5 km Paleozoic) and NW trending Goulburn graben (Carboniferous-Lower Permian; >10km Paleozoic; 6 exploration wells). Cambrian-Ordovician mainly carbonates. Late Devonian and Late Carboniferous mainly clastics.)

Brown, C.M. (1979)- Arafura and Money Shoal Basins explanatory notes and stratigraphic correlations. Bureau Mineral Res. Geol. Geoph., Record 1979/51, p. 1-14.
(online at: www.ga.gov.au/...)
(Arafura Basin is poorly known intracratonic basin of thick Paleozoic and Proterozoic sedimentary rocks which crop out along N coast of Arnhem Land and extend offshore beneath Arafura Sea. Correlation panel through Paleozoic- Mesozoic of wells Heron 1- Lynedoch 1- Money Shoal 1 and shallow onshore wells. (Manuscript for Brown, 1980))

Brown, C.M. (1980)- Arafura and Money Shoal basins. In: Stratigraphic correlation between sedimentary basins of the ESCAP Region, ESCAP Atlas of Stratigraphy II, 7, p. 52-57.

Carter, P.A. (2013)- Under-explored Palaeozoic and Mesozoic petroleum systems. In: 75th EAGE Conf. Exhib., London, 4p. *(Extended Abstract)*
(Barakan Graben on Arafura Shelf SE of Tanimbar Trough may be underlain by Paleozoic oil source rocks, analoguous to NW Australia shelf Goulburn Graben and Petrel Sub-basin)

Dinkelman, M., J. Granath, J. Christ & P. Emmet (2010)- Arafura Sea: a deep look at an underexplored region. SEAPEX Press 62, 13, 1, p. 76-95.
(New deep regional seismic shows locally very thick (up to 30km) sedimentary section on Arafura Platform. Almost all Precambrian Wessel Group and MacArthur Basin sequence)

Dumont, C. & P. Dattilo (2015)- Money Shoal Basin, North Australia: a sequence stratigraphy study of the Plover and Flamingo Formations. Proc. SE Asia Petroleum Expl. Soc. (SEAPEX) Conf. 2015, Singapore, 5, 7.2, 3p.
(Extended Abstract + Presentation)
(Mesozoic Money Shoal Basin overlies Neoproterozoic-Paleozoic intra-cratonic Arafura Basin. Paleozoic-Mesozoic separated by Late Triassic 'Fitzroy' angular unconformity (N-S compression). E-M Jurassic Plover Fm overall transgressive unit above unconformity, onlapping to SE. Deposition of Late Jurassic- E Cretaceous Flamingo clastic reservoirs partly controlled by paleo-trough and Tithonian tectonic inversion phase)

Earl, K.L. (2006)- An audit of wells in the Arafura Basin. Geoscience Australia Record 2006/02, p. 1-86.
(Online at: www.ga.gov.au/image_cache/GA15192.pdf)
(Summary of geology and wells in Australian sector of S Arafura Sea. Most wells in Goulburn Graben, penetrated Paleozoic of inverted Goulburn graben and Jurassic- Cretaceous of Money Shoal successor basin)

Edgar, N.T., C.B. Cecil, R.E. Mattick, A.R. Chivas, P. de Deckker & Y.S. Djajadihardja (2003)- A modern analog for tectonic, eustatic and climatic processes in cratonic basins: Gulf of Carpenteria, Northern Australia. In: C.B. Cecil, & N.T. Edgar (eds.) Climate controls on stratigraphy, Soc. Sedimentary Geology (SEPM) Spec. Publ. 77, p. 193-205.
(Gulf of Carpentaria, SE of Arafura Shelf, is tropical, silled epicontinental sea. Reconnaissance seismic and well data show Cenozoic sedimentation clastics-dominated in temperate climate. In Miocene carbonate deposition expanded S-ward into gulf region. In Late Miocene carbonate sedimentation replaced by terrigenous clastics from developing New Guinea Central Range, in wetter climate. At least 14 basin-wide transgressive–regressive cycles identified by channels eroded under subaerial conditions since about Miocene)

Fairbridge, R.W. (1951)- The Aroe Islands and the continental shelf North of Australia. Scope, University West Australia, 1, 6, p. 24-28.
(Geomorphology study of Aru Islands from air photos. Arafura shelf is vast peneplained platform of Pre-Cambrian rocks. Aru Islands Pre-Cambrian basement with thin veneer of Late Tertiary and Quaternary sediments. Marine channels subdividing Aru islands group may be drowned Pleistocene river valleys)

Granath, J., J. Christ, M. Dinkelman & P. Emmet (2011)- Arafura and Banda Seas: a plate-scale look at exploring a convergent margin. SEAPEX Press 63, 14, 1, p. 68-91.
(New deep (>40 km) regional seismic along convergent margin between Aru Trough from Seram to Tanimbar. Seram viewed as fragment of Birds Head thrust North over itself Aru Trough is young extensional basin with complicated Plio-Pleistocene stratigraphy)

Granath, J.W., M. Dinkelman, J.C. Christ-Stringer & P.A. Emmet (2012)- Highlights and implication of a deep-crustal seismic reflection survey in the Arafura Sea region. Berita Sedimentologi 24, p. 48-60.
(online at: www.iagi.or.id/fosi/berita-sedimentologi-no-24-timor-and-arafura-sea.html)
(New deep seismic shows thick two-part Proterozoic section of ~15+ km thick Arafura Basin and underlying additional 15+ km of McArthur Basin equivalents, making up virtually entire crust under Arafura platform. Weber Deep initiated as forearc extensional event, which severed accretionary prism from its volcanic core, then evolved into basin within Banda Basin. Seram thrust belt lies above strike-slip system that separates Banda microplate from Birds Head, and forms plate boundary in that area)

Grosjean, E., G.A. Logan, N. Rollet, G.J. Ryan & K. Glenn (2007)- Geochemistry of shallow tropical marine sediments from the Arafura Sea, Australia. Organic Geochem. 38, 11, p. 1953-1971.
(Organic matter in modern Arafura Sea tropical carbonate shelf sediments dominated by marine algal input. Closest to shore, high taraxerol abundance indicates strong input of mangrove material during transgression following Last Glacial Maximum. Sediments in paleo-channels with dissolved CH4 of microbial origin)

Gumilar, I.S. (2017)- Periode deformasi Kenozoikum Kepulauan Aru, Cekungan Wokam, Maluku. J. Geologi Sumberdaya Mineral 18, 2, p. 89-103.
(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/186/281)

('Cenozoic deformation period in the Aru Islands, Wokam Basin, Moluccas'. Three periods of Cenozoic deformation on Aru island, all with strike slip faulting: Late Miocene NW-SE stress (SW-NE folds), Late Pleistocene extension, and late N-S lineations)

Hardjawidjaksana, K. (1988)- The structure and tectonics of the Aru Trough and its surroundings, Banda Arc, Indonesia. M.Sc. Thesis, London University, p. *(Unpublished)*

Helby, R. (2006)- A palynological reconnaissance of new cuttings samples from the Arafura-1, Kulka-1 and Tasman-1 wells. In: H.I.M. Struckmeyer (comp.) New datasets for the Arafura Basin. Geoscience Australia Record 2006/06, Canberra, p. 1-17.
(Results of palynological analyses from Australian part of Arafura shelf. E Permian Pseudoreticulatispora confluens and Corisaccites alutas in all 3 wells, Carboniferous D. birkheadensis and Spelaeotriletes yberti zones in Kulka 1)

Jongsma, D. (1970)- Eustatic sea level changes in the Arafura Sea. Nature 228, p. 150-151.
(Arafura Sea shelf is submerged subaerialle eroded land surface with fluvial pattern of channels and drowned reefs near edge of shelf. Marine survey in Arafura Sea supports eustatic sea level lowering of >130m between 21,000- 14,000 yrs BP. Submarine teraces down to 200m (dated at probably 170,000 yr BP) reflect much lower sea levels during earlier Pleistocene glacials)

Jongsma, D. (1974)- Marine geology of the Arafura Sea. Bureau Mineral Res. Geol. Geoph., Canberra, Bull. 157, p. 1-56.
(online at: www-a.ga.gov.au/web_temp/1366411/Bull_157.pdf)
(Results of BMR marine geological survey in Australian sector of Arafura Sea in 1969. Seismic profiling revealed series of unconformities in the top few 100m of section. Regional unconformity at base Mesozoic, which overlies Precambrian. Paleozoic sediments may be present in graben in Money Shoal area and N of Melville Island. Another unconformity correlated with regional Mio-Pliocene surface encountered in Ashmore Reef 1 well, etc., corresponding to later Cenozoic orogenies. Near Aru Islands the post-Mesozoic section thin or absent as result of uplift and erosion associated with active orogenic belts to N)

Kaswandi, A.A., F. Ferdian & D. Setiawan (2017)- Tectonostratigraphy of NW Edge Arafura platform. Proc. Joint Conv. HAGI-IAGI-IAFMI-IATMI (JCM 2017), Malang, 5p.
(Tectonostratigraphy of NW edge of Arafura Platform divided into (1) Prekinematic 1 and 2 (Proterozoic-Devonian), Syn-kinematic 1 (Permian- E-Triassic rifting; thickening towards NNE-SSW trending normal faults; ASM 1), Base-Jurassic unconformity, Post-kinematic 1 (backstepping M-L Jurassic- Cretaceous, thickening to W), Post-kinematic 2 (Paleogene- Miocene New Guinea Lst), Syn-kinematic 2 (E Pliocene extension at W platform edge) and Syn-kinematic 3 (Late Pliocene and younger Akimeugah foreland basin, thickening to NE; Aru Trough opening)

Katili, J.A. (1986)- Geology and hydrocarbon potential of the Arafura Sea. In: M.T. Halbouty (ed.) Future petroleum provinces of the world, American Assoc. Petrol. Geol. (AAPG), Mem. 40, p. 487-501.
(Arafura Sea continental shelf dominated by Late Paleozoic-Cenozoic shelf sediments, underlain by granitic basement. Two tectonic styles: block faulting in shelf and slope sediments of Arafura sea and Overthrusting of chaoric sediments from Banda Arc towards Australian continent. In Malita- Calder graben gas shows in M Jurassic- E Cretaceous sediments)

Kusnida, D. & T. Naibaho (2018)- Sediment core from the seafloor of Aru Trough, West Papua- Indonesia. J. Geologi Sumberdaya Mineral 19, 1, p. 1-7.
(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/334/332)
(Core ARU-3 from seafloor of Aru Trough W of Aru Islands at water depth of 3543m, 2.26m long. Mainly greenish clay. One thin possible ash layer)

Labutis, V., A. Moore & J. Bradshaw (1992)- Petroleum prospectivity evaluation report Arafura Basin. Australian Geol. Survey Org. (AGSO), Canberra, Record 1992/84, p. 1-58.

(online at: www.ga.gov.au/corporate_data/14584/Rec1992_084.pdf)
(Petroleum prospectivity study of Australian part of Arafura Shelf, incl. Goulburn Graben, N Arafura sub-basin. Bitumen strandings in Arafura Basin have Cretaceous or younger origin)

Livsey, A. (2016)- Hydrocarbon exploration in the Arafura Sea- what works and what doesn't. In: 2016 Technical Symposium Where from, where to, Indon. Petroleum Assoc. (IPA), Jakarta, p. *(Abstract?)*

Martin, B.A. & S.J.Cawley (1991)- Onshore and offshore petroleum seepage; contrasting a conventional study in Papua New Guinea and airborne laser fluorosensing over the Arafura Sea. Australian Petrol. Explor. Assoc. (APEA) J. 31, 1, p. 333-353.

Miharwatiman, J.S., L. Andria, D.W. Kleibacker, J. Elliot & J.A. Baker (2013)- Exploration of the Arafura Basin Indonesia. Proc. SE Asia Petroleum Expl. Soc. (SEAPEX) Conf., Singapore 2013, 29p. *(Presentation)*
(online at: www.seapex.org/im_images/pdf/Simon/12%20Joko%20Suklis%20SEAPEX2013_Arafura.pdf)

Miharwatiman, J.S., L. Andria, D.W. Kleibacker, J. Elliot & J.A. Baker (2013)- Exploration of the Arafura Basin, Indonesia. Proc. 37th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA13-G-184, p. 1-14.
(same paper as above)
(Results of recent ConocoPhillips exploration of Arafura Basin. Thick N-S trending, 700km long Late Proterozoic rift basin on NW margin of Australian continent, overlain by E Paleozoic, inverted in Triassic? (with 8000'- 15,000' of uplift/ erosion) and overlain by thin Cretaceous- Tertiary section. Two unsuccessful wells drilled in 2010-2011, Aru-1 in Amborip VI PSC and Mutiara Putih-1 in Arafura Sea PSC, both TD in Ordovician clastics and limestones, with Silurian- Carboniferous section missing)

Miyazaki, S. & B. McNeil (1998)- Arafura Sea: petroleum prospectivity bulletin and database. Bureau Resource Science, Petroleum Prospectivity Bulletin and Database, 1998/1, p.

Miyazaki, S. & B. McNeil (1998)- Arafura Sea- Tertiary, Mesozoic, Palaeozoic and weathered basement plays. Australian Petrol. Explor. Assoc. (APEA) J. 38, p. 878.
(Petroleum potential in Arafura Sea: Tertiary, Mesozoic-Paleozoic sandstones or carbonates, weathered Pre-Cambrian basement. NW-trending Goulburn Graben emerged end-Paleozoic, leaving peneplain in E Jurassic. M Jurassic marine transgression over smoothed erosional surface, undeformed, with angular unconformity at base. Oil shows from Paleozoic-Mesozoic in four wells. Bitumen strandings on S shores of Arafura Sea. Oil slicks over Goulburn Graben during ALF survey. Paleozoic source rocks retain oil generative capability. Jurassic and E Cretaceous sandstones good porosity. Paleozoic reservoirs poor, but often fractured. Six play types: fault rollovers low-relief anticlines, 400 km long Tithonian- basal Cretaceous channel, etc.)

Moore, A. (1995)- Is oil being generated beneath the northern Arafura Sea? AGSO Res. Newsl. 23, p. 5-7.

Moore, A., J. Bradshaw & D. Edwards (1996)- Geohistory modelling of hydrocarbon migration and trap formation in the Arafura Sea. Petroleum Expl. Soc. Australia (PESA) Journal, 24, p. 35-52.
(online at: www.ga.gov.au/image_cache/GA7804.pdf)
(Lower Paleozoic in Goulburn Graben wells in Australian part of Arafura Sea reached peak maturity before Late Triassic formation of graben)

Moss, S. (2001)- Extending Australian geology into eastern Indonesia and potential source rocks of the Indonesian Arafura Sea. PESA News, Feb-Mar 2001, p. 54-56.
(Lower Paleozoic 'Larapintine' and U Paleozoic 'Gondwanan' petroleum systems, as identified in NW Australia, extend into parts of E Indonesia. Mesozoic 'Westralian' source rocks unlikely in Indonesian Arafura Sea)

Nicol, G.N. (1970)- Exploration and geology of the Arafura Sea. Australian Petrol. Explor. Assoc. (APEA) J. 1970, 10, p. 56-61.

Nicoll, R.S. (2006)- Cambrian and Ordovician sediments and biostratigraphy of the Arafura Basin, offshore Northern Territory, Australia. In: H.I.M. Struckmeyer (comp.) New datasets for the Arafura Basin. Geoscience Australia Record 2006/06, Canberra, p. 1-16.
(online at: https://www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=63994)
(Extensive M Cambrian- E Ordovician 'Goulburn Gp' carbonate shelf underlies most of Arafura Sea between Australia and New Guinea. Same sedimentary package hydrocarbon-bearing in Canning and Amadeus Basins. Conodonts from upper part of carbonate-dominated sequence Late Cambrian- Lower Ordovician (early Arenig) age (Cordylodus sp., Prioniodus adami, Jumudontus brevis, Bergstroemognathus extensus, Serratognathus bilobatus, Cooperignathus aranda, Oepikodus communis, O. cleftus))

Nicoll, R.S. (2006)- Devonian stratigraphy and biostratigraphy of the Arafura Basin, offshore Northern Territory, Australia. In: H.I.M. Struckmeyer (comp.) New datasets for the Arafura Basin. Geoscience Australia Record 2006/06, Canberra, p. 1-10.
(online at: https://www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=63994)
(Devonian sediments in Goulburn Graben are of Upper Devonian (Famennian) age, and unconformably overlie Cambrian- E Ordovician Goulburn Gp. Conodont faunas from Djabura and Yabooma Fms may represent, crepida and expansa conodont zones and suggests shallow water, inner shelf depositional environments)

Oktariano, O., R.D. Pradhana, S.E. Saputra, B. Sapiie & I. Gunawan (2018)- Exploration new play in frontier basin Aru, Eastern Indonesia using new insight of geophysical and geological evaluation. In: 8th EAGE Int. Geol. Geophysical Conf. Exhib., Saint Petersburg , p. *(Extended Abstract)*
(On Pre-Tertiary in Aru area)

Panuju (2012)- Well log sequence stratigraphy and chronostratigraphy of Barakan area, Arafura Sea. Proc. 41st Ann. Conv. Indon. Assoc. Geol. (IAGI), Yogyakarta, 2012-GD-26, p.
(Sequence stratigraphic interpretation of Barakan-1, Koba-1 and Abadi-1 wells. Cambrian- Recent succession subdivided into 14 sequence units. Several unconformities, and deepening of depositional setting from Koba-1 (N) to Abadi-1 (S))

Panuju, S. Sofyan & H.L. Setiawan (2009)- Sikuen stratigrafi wilayah barat Cekungan Arafura: studi kasus penampang sedimen sumur Barakan-1 dan Koba-1. Proc. 38th Ann. Conv. Indon. Assoc. Geol. (IAGI), Semarang, PITIAGI2009-055, 15p.
('Sequence stratigraphy of the W margin of the Arafura Basin: study of sediments of wells Barakan 1 and Koba 1'. Correlation and sequence stratigraphic interpretation of two key Arafuru Platform margin wells. Latest M Jurassic (Callovian)- basal Cretaceous (Berriasian-Valanginian) sand-rich interval unconformable over Cambrian and older rocks, overlain by deep water M-L Cretaceous clastics and Tertiary carbonate section)

Patmawidjaya, T. & Subagyo (2014)- Penelitian gayaberat dan geomagnit Kepulauan Aru, Cekungan Wokam. J. Geologi Kelautan 12, 1, p. 1-14.
(online at: http://ejournal.mgi.esdm.go.id/index.php/jgk/article/view/241/231)
('Gravity and geomagnetic studies of the Aru Islands, Wokam Basin')

Petroconsultants Australasia/ Northern Territory Geological Survey (1989)- Arafura Basin. p. 1-117.
(Unpublished multiclient study report)

Rollet, N., G.A. Logan, G. Ryan, A.G. Judd, J.M. Totterdell, K. Glenn et al. (2009)- Shallow gas and fluid migration in the northern Arafura Sea (offshore Northern Australia). Marine Petroleum Geol. 26, p. 129-147.
(Neoproterozoic-Paleozoic Arafura Basin extends from onshore N Australia across Arafura Sea into Indonesian waters, and is overlain by Mesozoic- Cenozoic Money Shoal Basin. Shallow gas indicators and fluid migration pathways in Holocene section identified from pockmarks and echo sounder profiles. Gas in shallow cores of microbial origin, but deeper fluid movement suggested by hydrocarbon slicks interpreted on synthetic aperture radar data)

Shor, G.G. (1974)- Seismic refraction results from the Arafura Sea. CCOP Newsletter 1, 3, p. 21-23.

Sloan, R.A. & J.A. Jackson (2012)- Upper-mantle earthquakes beneath the Arafura Sea and south Aru Trough: implications for continental rheology. J. Geophysical Research, Solid Earth, 117, B5, p. 1-13.
(Upper continental lithospheric mantle earthquakes generally rare. Two earthquakes under Arafura Sea, where upper mantle probably rel. cool (< 600°C), and one of these earthquakes lies ~25 km below Moho in region where there is no evidence of unusually high strain rates)

Smith, M.R. & J.G. Ross (1986)- Petroleum potential of northern Australian continental shelf. American Assoc. Petrol. Geol. (AAPG) Bull. 70, 11, p. 1700-1712.
(Australian part of Arafura Shelf. Thick Paleozoic basin with possible Devonian reefs, overlain in W by Mesozoic- Tertiary section. Three prospective sequences: Cenozoic with Miocene reefal carbonates, Mesozoic with thick sandstone intervals and thick Paleozoic basin, possibly containing Devonian reefs and younger Paleozoic sandstone intervals. Mesozoic basin prime target for exploration)

Struckmeyer, H.I.M. (comp.) (2006)- Petroleum geology of the Arafura and Money Shoal Basins. Geoscience Australia Record, Canberra, Report 2006/22, p. 1-37. *(Unpublished)*
(online at: https://d28rz98at9flks.cloudfront.net/63995/Rec2006_022.pdf)
(Arafura Basin is thick Neoproterozoic-Paleozoic intracratonic basin that extends from onshore N Australia across Arafura Sea into Indonesian waters. Four subsidence phases, and one uplift phase. Two major episodes of upper crustal extension: NW-SE in Neoproterozoic and NE-SW in Late Carboniferous-E Permian. Major phase of contractional deformation in Middle–Late Triassic, particularly in Goulburn Graben. M Jurassic-Recent subsidence at margin has been called Money Shoal Basin. Four potential source rock intervals)

Struckmeyer, H.I.M. (2006)- The northern Arafura Basin- exploration opportunities from Geoscience Australia's new petroleum program. Australian Petrol. Prod. Explor. Assoc. (APPEA) J., 2006, 2, p. 143-154.

Struckmeyer, H.I.M., G.J. Ryan & I. Deighton (2006)- Geohistory models for Arafura Basin wells and pseudo-wells. In: New datasets for the Arafura Basin, Geoscience Australia Record 2006/06, p. 1-9.
(online at: www.ga.gov.au/metadata-gateway/metadata/record/gcat_63994)
(Geohistory modeling of wells and pseudo-wells on Australian part of Arafura Platform. Area complex multi-phase subsidence history of initial extension in Neoproterozoic, followed by periods of non-deposition and subsidence in Paleozoic. Contractional event in Triassic resulted in uplift and erosion of up to 3200m of sediments. Modelling suggests high heatflow values for Early Paleozoic)

Subroto, E.A. & D. Noeradi (2008)- Petroleum system of the Paleozoic and Mesozoic formation intervals in the northern Arafura Sea, Papua, Indonesia. 8th Middle-East Geoscience Conf. Exh. (GEO 2008), Bahrein, 1p. *(Abstract only) (Geochemical analyses and modeling of outcrop and well samples (mainly W Papua; JTvG) suggest wo oil and gas source rocks: (1) Permian Aiduna Fm (TOC=1.3-6.6%, Ro 0.55%); (1) Jurassic-Cretaceous Kembelangan Gp. Basal Lower Kembelangan entered late maturity for hydrocarbon generation (Ro = 1.2%) at ~2 Ma and reached maturity at ~5-10 Ma. Paleozoic formations reached maturation during Mesozoic. Possible reservoirs porosity 5-15% and permeability 10-20 mD)*

Summons, R.E., J. Bradshaw, M. Brooks, A.K. Goody, A.P. Murray & C.B. Foster (1993)- Hydrocarbon composition and origins of coastal bitumens from the Northern Territory, Australia. Petroleum Expl. Soc. Australia (PESA) Journal 21, p. 31-42.
(online at: www.ga.gov.au/image_cache/GA7803.pdf)
(Analyses of coastal bitumens from Northern Territory beaches, facing Arafura Sea. Most samples are waxy bituments derived from lacustrine source rocks, similar to C Sumatra Minas oil and may originate from SE Asia. Associated pollen latest Cretaceous or younger. Second oil family from marine source)

Tayama, R. (1939)- Topography, geology and coral reefs in the Aru Islands in the Dutch East Indies. Japanese J. Geology Geography 16, p. 31-32.
(Summary by T. Kobayashi of paper in Contr. Inst. Geol. Pal. Tohuku Imperial University, Sendai, 20, 1936, p. 1-35. Aru Islands jointed and dismembered Miocene- Pliocene limestone plateau, possibly on granite)

Thomas, B.M., P. Hanson, J.G. Stainforth, P. Stamford & L. Taylor (1990)- Petroleum geology and exploration history of the Carpentaria Basin, Australia, and associated infrabasins. In: M.W. Leighton et al. (eds.) Interior cratonic basins, American Assoc. Petrol. Geol. (AAPG), Mem. 51, p. 709-724.

Verstappen, H.Th. (1959)- Geomorphology and crustal movements of the Aru Islands in relation to the Pleistocene drainage of the Sahul shelf. American J. Science 257, 7, p. 491-502.
(Aru islands geanticlinal upwarp of Sahul shelf WNW of Australia. Structural terraces common and wrongly attributed to Recent uplift by several authors. Sunken coast lines and drowned abrasion platforms indicate subsidence of outer zones in Recent times. Channels between islands are result of pattern of diagonal shear joints and have no connection with Pleistocene courses of New Guinea rivers, as often suggested)

Wagimin, N. & E.A. Sentani (2009)- Opportunities (I), Sahul Basin. Inameta J. 7, p. 20-23.
(online at: www.patranusa.com)
(Overview of Arafura Sea/ Sahul Basin, W Papua, in conjunction with tender round offering)

Zhen, Y.Y., J.R. Laurie & R.S. Nicoll (2012)- Cambrian and Ordovician stratigraphy and biostratigraphy of the Arafura Basin, offshore Northern Territory. Mem. Assoc. Australasian Palaeontol. 42, p. 437-457.
(Cambrian and Ordovician conodonts and other fossils from petroleum exploration wells (Tasman 1, Torres 1; Goulburn 1, Arafura 1) in Goulburn Graben of Arafura Basin off NW Australia. Also entions occurrence of Early Ordovician conodonts from wells Noordwest 1 and Cross Catalina 1 in W Papua frontal foldbelt)

IX 11-13. PAPUA NEW GUINEA

IX.11. Papua New Guinea (East New Guinea main island)

Abbott, L.D. (1995)- Neogene tectonic reconstruction of the Adelbert-Finisterre-New Britain collision, northern Papua New Guinea. J. Southeast Asian Earth Sci. 11, p. 33-51.
(Finisterre terrane colliding with Australian continent in N PNG today. Exposed in Adelbert and Finisterre blocks. Provenance shifts date collision at 3.0-3.7 Ma. Late Pliocene deep water basin between Adelbert block and continent. Deep marine sediments overthrust by older lithologies of Adelbert block. Collision of E part Adelbert block in M-Late Pliocene. W Adelbert block probably collided in latest Miocene. Collision of Adelbert block and most of Finisterre block above single, N-dipping subduction zone. Double subduction in Solomon Sea never extended >20 km W of present location)

Abbott, L.D. & E.A. Silver (1991)- Geology of the southern Finisterre Range: a case history of modern arc-continent collision. In: R. Rogerson (ed.) Proc. PNG Geology Exploration and Mining Conf., Rabaul 1991. Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, p. 1-7.
(Finisterre Range on N coast of PNG is uplifted forearc region of modern arc-continent collision. Range core composed of Finisterre Volcanics (Oligocene arc terrane), S flank is uplifted accretionary wedge and collision complex, with most thrusts dipping steeply N. Melange fabric near major thrusts. Abrupt change in S Finisterre sandstone provenance from external, orogenic source to Finisterre arc itself in Late Pliocene indicates collision of Finisterre Range younger than previously asusmed)

Abbott, L.D., E.A. Silver, R.S. Anderson, R. Smith, J.C. Ingle, S.A. Kling, D. Haig et al. (1997)- Measurement of tectonic surface uplift rate in a young collisional mountain belt. Nature 385, p. 501-507.
(Finisterre Range in NE PNG (=uplifted forearc region of collided W Bismarck Arc) current tectonic uplift rate 0.8- 2.1 mm/yr)

Abbott, L.D., E.A. Silver & J. Galewsky (1994)- Structural evolution of a modern arc-continent collision in Papua New Guinea. Tectonics 13, p. 1007-1034.
(N PNG Finisterre Mts- W Solomon Sea site of young, active, oblique collision of Finisterre arc terrane, progressing from NW to SE through time. Accretionary wedge complex of SW-ward younging imbricate thrust sheets alongW-ward extension of New Britain Trench and outcrops in Finisterre Mts as Erap Structural Complex. Collision doubled crustal thickness to 50-52 km)

Abbott, L.D., E.A. Silver, P.R. Thompson, M.V. Filewicz, C. Schneider & Abdoerrias (1994)- Stratigraphic constraints on the development and timing of the arc-continent collision in northern Papua New Guinea. J. Sedimentary Res. B64, p. 169-183.
(Two sandstone provenance shifts on S flank Finisterre Range. First shift at ~16-18 Ma, from volcanolithic sediments to mixed-provenance rich in quartz and metasedimentary lithics, probably derived from orogenic belt active along Australian continental margin at that time. At 3.0-3.7 Ma volcanic source rejuvenated, reflecting initial collision/ uplift of SE-propagating Finisterre terrane and Australian continental margin. Finisterre terrane composed of Paleogene- Early Miocene volcanic arc rocks, overlain by Miocene- Pleistocene limestones and probably part of larger Outer Melanesian Arc)

Abers, G.A. (1989)- Active tectonics and seismicity of New Guinea. Ph.D. Thesis, Massachusetts Inst. Technology (MIT), p. 1-255.

Abers, G.A. & H. Lyon-Caen (1990)- Regional gravity anomalies, depth of the foreland basin and isostatic compensation of the New Guinea highlands. Tectonics 9, 6, p. 1479-1493.
(New Guinea foreland basin thickens from <200m in E PNG to 1 km in C PNG to >5km in W New Guinea, reflecting thrust loading of increasingly stronger lithosphere to W. PNG also lower elevations and young volcanism)

Abers, G. & R. McCaffrey (1988)- Active deformation in the New Guinea fold-and-thrust belt: seismological evidence for strike-slip faulting and basement-involved thrusting. J. Geophysical Research 93, B11, p. 13332-13354.
(New Guinea fold-and-thrust belt trend oblique to predicted convergence direction. Large component of left-lateral shear expected, but little geological evidence for such motion. Earthquake mechanisms in New Guinea foldbelt since 1964 indicate thrust events, with steeply dipping fault planes, 11-25 km deep, showing thrust faulting penetrates crystalline basement at high angles. Most earthquakes in W half of thrust belt show E-W oriented, left lateral strike-slip faulting. Translation by strike-slip faulting may play greater role than previously recognized)

Abers, G. & R. McCaffrey (1994)- Active arc-continent collision: earthquakes, gravity anomalies and fault kinematics in the Huon-Finisterre collision zone, Papua New Guinea. Tectonics 13, 2, p. 227-245.
(Huon-Finisterre island arc terrane actively colliding with N edge of Australian continent. Thrust faulting along Ramu-Markham thrust fault zone accomodates most of H-F terrane overthrusting. Thrust earthquakes at depth of 35 km below Huon Peninsula. Thrust earthquake movement produces Pleistocene terrace upliftment on N Huon Peninsula. Much of terrane crust, but little of its mantle being added to Australian continent

Abers, G.A. & S.W. Roecker (1991)- Deep structure of an arc-continent collision: earthquake relocation and inversion for upper mantle P and S wave velocities beneath Papua New Guinea. J. Geophysical Research 96, B4, p. 6379-6401.
(E PNG earthquakes and seismic velocities used to define subduction zones. Hypocenters show seismic zone dipping vertically or steeply to N beneath N Finistere-Huon ranges from 125-250 km depth, continuous along strike with New Britain seismic zone to E. No evidence for arc polarity reversal from seismicity)

Adams, C.G. & D.J. Belford (1979)- A new foraminifer from the Middle Eocene of Papua New Guinea. Palaeontology 22, 1, p. 181-187.
(Reticulogyra mirata, a new complex miliolid species from Middle Eocene Lower Chimbu limestone. Associated larger forams include Fasciolites, Nummulites javanus, Dictyoconus chimbuensis)

Afenya, P.M. (1986)- Chromite deposits of Papua New Guinea- a future potential source of chrome. In: G.H. Teh & S. Paramananthan (eds.) Proc. 5th Reg. Congress Geology, Mineral and Energy Resources of SE Asia (GEOSEA V), Kuala Lumpur 1984, 1, Bull. Geol. Soc. Malaysia 19, p. 303-314.
(online at: https://gsmpubl.files.wordpress.com/2014/09/bgsm1986021.pdf)
(Chromite deposits associated with New Guinea ophiolite belt in SE PNG. Two main deposits, Ramu chromite and Hessen Bay chromite. Both with characteristics of podiform chromites. Uneconomic in primary form, but higher concentrations in weathered zones)

Aharon, P. & J. Chappell (1986)- Oxygen isotopes, sea level changes and the temperature history of a coral reef environment in New Guinea in the last 100,000 years. Palaeogeogr. Palaeoclim. Palaeoecology 56, p. 337-379.
(Seven reef terraces up to to 370m elevation along raising coast of Huon Peninsula, PNG. Spaced at 20 kyr intervals)

Ahmed, M., S.A. Barclay, S.C. George, B. McDonald et al. (2004)- The distribution and isotopic composition of sulfur in solid bitumens from Papua New Guinea. In: R.J. Hill et al. (eds.) Geochemical investigation in earth and space science, a tribute to I.R. Kaplan. Geochem. Soc. Spec. Publ. 9, Elsevier, p. 51-58.

Ahmed, M., H. Volk, T. Allan & D. Holland (2012)- Origin of oils in the Eastern Papuan Basin, Papua New Guinea. Organic Geochem.53, p. 137-152.
(Geochemical characteristics of 16 oils/condensates/seep oil/oil shows from E Papuan Basin and one seep oil from W Papuan Basin integrated with data from previous studies show two hydrocarbon families. Family A oils, mostly in WPB region generated from marine source rocks with higher plant derived organic matter, deposited in sub-oxic to oxic environment (likely M-U Jurassic). Family B oils mainly in EPB, generated from Cretaceous or younger marine carbonate source rocks deposited under anoxic- suboxic conditions, and

containing mainly prokaryotic OM. Exact source rock formation still unidentified. Both families generated at similar thermal maturities of 1.0-1.3% vitrinite reflectance equivalent)

Allan, T., M. Korsch & D. Whitford (2012)- Larger foraminiferal extinctions as indicators of eustatic sea level fall; new strontium isotope age evidence from the middle Miocene of the Papuan Basin, Papua New Guinea. In: Proc. 34th Int. Geological Congress, Abstracts, p. 2961. *(Abstract only)*
(Age range of three index taxa of Miocene larger foraminfera calibrated to geological timescale using Sr isotope stratigraphic studies of Darai Limestone. Extinction of Austrotrillina and Miogypsina coincident with M-L Miocene boundary (11.0-11.5 Ma) and large eustatic 3rd order sea level fall. Disappearance of Miogypsina at approximately same age on N Marion Plateau. Disappearance of Lepidocyclina at ~7.5 Ma in PNG and S Marion Plateau may also reflect eustatic event)

Allan, T.L., J.A. Trotter, D.W. Whitford & M.J.Korsch (2000)- Strontium isotope stratigraphy and the Oligocene-Miocene T-Letter 'Stages' in Papua New Guinea. In: P.G. Buchanan et al. (eds.) Papua New Guineaûs petroleum industry in the 21st century, Proc. 4th PNG Petroleum Convention, Port Moresby, p. 155-168.
(Strontium isotopes used to calibrate ages of Oligocene- early Late Miocene Darai Limestone. Age of larger foram zonal boundary Tf1/Tf2 (12.2 Ma) younger than generally accepted age of 15.0 Ma. Te/Tf1 boundary older (20.3 Ma) than generally accepted age of 18.5 Ma. Nummulites possibly ranges in Late Oligocene)

Allan, T., D.J. Whitford, G. Morgan, D.J. Holland & D.P. Leech (2006)- Tertiary stratigraphy of the Papuan Basin: insights from Strontium dating. AAPG Perth Int. Conf., p. *(Abstract only)*
(Three regressive cycles in Oligo-Miocene Darai Lst, each ending with shallow water limestones for which cycles are named: Mid Darai (28.5-17.5 Ma), Mala (17.5-14 Ma) and Warre (14.0-7.1 Ma). Warre Cycle marks top of Darai Lst. Early Oligocene widespread in basal Darai Lst, with significant Eocene reworking, and recycling of quartz sand from Cretaceous into Eocene and Oligocene units. Last appearances of index foraminifera marking T-Letter stage boundaries coincide with lower Mid Darai and lower- upper Warre Cycle boundaries. In Papuan Foreland, cycle boundaries are correlated with 3rd order seismic sequences, including major off-platform Miocene erosional events. Eustatic sea level falls possible factor in faunal 'turnovers')

Anfiloff, V. & A.J. Flavelle (1982)- Formal gravity interpretation over the 800-m Darai Escarpment in New Guinea. Geophysics 47, 7, p. 1091-1099.
(Gravity traverse over 800m Darai escarpment shows fault near base of escarpment. No vertical continuation bump directly over fault. Upthrown basement at depth of roughly 2500m. Fault position near base of escarpment suggests history of repetitive crustal movements)

APC- Australasian Petroleum Company (1961)- Geological results of petroleum exploration in western Papua 1937-1961 (compilers C.A.E. O'Brian, K.W. Gray & I. Gillipie). J. Geol. Soc. Australia 8, 1, p. 1-133.
(Compilation of previously unpublished PNG oil exploration and well data generated by APC. Principal reference for Papuan Basin stratigraphy.)

APC- Australasian Petroleum Company (1961)- Puri No. 1 well, Papua. Bureau Mineral Res. Geol. Geoph., p. 1-59.
(Final well report of APC Puri 1 well, drilled in 1958 on thrust-faulted anticline with repeated stratigraphy at E end of Kereri Range, PNG Highlands. TD 10,100' in Cretaceous. In hanging wall ~1600' of Eocene- Miocene limestone with Discocyclina, Eorupertia and Distichoplax biserialis near base (= Late Paleocene or E Eocene; JTvG), overlain by Late Oligocene with Heterostegina borneensis (Late Eocene-E Oligocene not documented; JTvG). Tested wet gas below 7425' in sub-thrust Oligo-Miocene limestone)

APOC- Anglo-Persian Oil Company (1930)- Oil exploration work in Papua and New Guinea, conducted by the Anglo-Persian Oil Company on behalf of the government of the Commonwealth of Australia, 1920-1929, vol. 1, Harrison and Sons Ltd., London, p.

(First of 4 volumes and 2 Atlases describing oil exploration work by Anglo-Persian (predecessor company of BP) between 1920-1929. Volume 1 contains Part. 1. Historical outline; Part 2. Reports of the first geological expedition, 1920-1923; Part 3. Drilling operations at Popo, 1922-1929)

APOC- Anglo-Persian Oil Company (1930)- Oil exploration work in Papua and New Guinea, conducted by the Anglo-Persian Oil Company on behalf of the government of the Commonwealth of Australia, 1920-1929, vol. 2, Harrison and Sons Ltd., London, p.
(Volume II contains Part 4. Reports of the second geological expedition, 1927-1929: Oriomo, Cape Vogel, Barnum river, Sepik, Hansemann coast)

APOC- Anglo-Persian Oil Company (1930)- Oil exploration work in Papua and New Guinea, conducted by the Anglo-Persian Oil Company on behalf of the government of the Commonwealth of Australia, 1920-1929. vol. 3, Harrison and Sons Ltd., London, p.
(Volume III contains Part 4 (cont.) Geology of the Finsche coast area, north-west New Guinea)

APOC- Anglo-Persian Oil Company (1930)- Oil exploration work in Papua and New Guinea, conducted by the Anglo-Persian Oil Company on behalf of the government of the Commonwealth of Australia, 1920-1929, vol. 4, Harrison and Sons Ltd., London, p.
(Volume IV contains Part 5. A contribution to the tertiary geology of Papua, 1929-1930; Part 6. A brief review of the oil prospecting work at Upoia, 1911-1920; Part 7. A critical study of the geology and oil prospects of Papua and New Guinea as revealed by the work of the Anglo-Persian Oil Company, 1920-1929)

Arculus R.J., R.W. Johnson, B.W. Chappell, C.O. McKee & H. Sakai (1983)- Ophiolite-contaminated andesites, trachybasalts, and cognate inclusions of Mt. Lamington, Papua New Guinea: anhydrite-amphibole-bearing lavas and the 1951 cumulodome. J. Volcanology Geothermal Res. 18, p. 215-247.

Arnold, G.O., T.J. Griffin & C.C. Hodge (1979)- Geology of the Ok Tedi and southern Atbalmin, 1:100 000 sheet. Geological Survey of Papua New Guinea, Report 79/3, p.

Arnold, G.O. & T.J. Griffin (1978)- Intrusions and porphyry copper prospects of the Star Mountains, Papua New Guinea. Economic Geology 73, 5, p. 785-795.
(Star Mountains of west PNG is copper province with Mount Fubilan (Ok Tedi) deposit and 10 other prospects. Wide range of calc-alkaline intrusions emplaced into Jurassic-Miocene shelf sediments at time of Plio-Pleistocene thrust faulting. Copper mineralization in skarns and disseminated in porphyry stocks)

Asami, N. & R.M. Britten (1980)- The porphyry copper deposits at the Frieda River Prospect, Papua New Guinea. In: S. Ishihara & S. Takenouchi (eds.) Granitic magmatism and related mineralization. Mining Geology, Tokyo, Spec. Issue, 8, p. 117-139.
(see also Whalen et al. 1982)

Australasian Institute of Mining and Metallurgy (1998)- Geology of Australian and Papua New Guinean mineral deposits, AusIMM, Parkville, Mon. 22, p.

Ayyasami, K. & D.W. Haig (1997)- New evidence for Jurassic age of the lower Wahgi Group, northern flank of Kubor Anticline, Papua New Guinea. Neues Jahrbuch Geol. Palaont., Monatshefte 10, p. 575-584.
(Lower Maril Shale, overlying Omung Metamorphics on N flank Kubor Anticline, is Mid or Late Jurassic age, not Triassic as suggested by Francis et al. 1990)

Azizi-Yarand, S.A. (1996)- Integrated geological and engineering evaluation of the Gobe Fields: Part II. Reservoir simulation and development plan. In: P.G. Buchanan (ed.) Petroleum exploration, development and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 531-544.

Azizi-Yarand, S.A. & J.E. Livingston (1996)- Iagifu 3X/8X Toro block reservoir performance evaluation- case study. In: P.G. Buchanan (ed.) Petroleum exploration, development and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 563-571.
(Oil production from Iagafu 3X/8X Toro Block started in mid-1992. Initial oil flow rates in 3 wells 6000-8000 B/D, but sharp decline in reservoir pressure in 3Q 1994))

Bachmann, H.G. (1988)- Exploration auf Platinmetalle in Papua Neuguinea. Die Geowissenschaften (Weinheim) 6, 5, p. 151-156.
('Exploration of platinum metals in PNG')

Bain, J.H.C. (1973)- A summary of the main structural elements of Papua New Guinea. In: P.J. Coleman (ed.) The Western Pacific: island arcs, marginal seas, geochemistry. Western Australia University Press, Perth, p. 147-161. *(also as BMR Geol. Geoph. Record 1973/30. Summary of PNG geology, to accompany 1972 1:1M scale geologic map of PNG))*

Bain, J.H.C. & J.G. Binnekamp (1973)- The foraminifera and stratigraphy of the Chimbu Limestone, New Guinea. Geological Papers 1970-71, Bull. Bureau Mineral Res. Australia 139, p. 1-12.
(online at: www.ga.gov.au/corporate_data/106/Bull_139.pdf)
(~300m of M Eocene/Ta3- E Oligocene/Tc limestone in Chimbu River Gorge (Kubor Anticline?), para-conformable on U Cretaceous. M Eocene (Ta3-Tb) with Lacazinella, Fasciolites/ Alveolina, Nummulites javanus, Discocyclina (no Pellatispira/ Biplanispira present, as reported by Crespin, 1938), overlain by E Oligocene with Nummulites intermedius. Overlain by E Miocene (incl. latest Oligocene Te4?; JTvG) limestones with Miogypsinoides, Miogypsina, Heterostegina borneensis and Eulepidina, sometimes separated by mudstones)

Bain, J.H.C., H.L. Davies, P.D. Hohnen, R.J. Ryburn, I.E. Smith, R. Grainger, R.J. Tingey & M.R.Moffat (1972)- Geologic map of Papua New Guinea (map 1:1,000,000). Bureau Mineral Res. Geol. Geoph., Canberra.
(Geologic map of PNG in 4 sheets)

Bain, J.H.C. & D.E. MacKenzie (1974)- Karimui, Papua New Guinea Sheet SB/55-9. Papua New Guinea 1:250,000 Geological series and Explanatory Notes. Bureau Mineral Res., Canberra, p. 1-39.
(Geologic map and explanatory notes of area North side of PNG Central Highlands, between 6-7° S and 144° - 145°30'E. In N of area Kubor Anticline with Late Paleozoic Omung metamorphics and Kubor granodiorite exposed in core. In S eastern end of Central Range foldbelt)

Bain, J.H.C. & D.E. MacKenzie (1975)- Ramu, Sheet SB/55-5. Papua New Guinea 1:250 000 Geological Series and Explanatory Notes, Bureau Mineral Res., Canberra.
(Geologic map and explanatory notes of area North side of PNG Central Highlands, between 5-6° S and 144° - 145°30'E. In SW of area Kubor Anticline with Late Paleozoic Omung metamorphics and Kubor granodiorite, Triassic Kana Volcanics, etc. exposed in core. Towards NE ultrabasics belt and Mio-Pliocene Ramu Basin)

Bain, J.H.C., D.E. MacKenzie & R.J. Ryburn (1970)- Geology of the Kubor anticline, Central Highlands of Papua New Guinea. Bureau Mineral Res., Geol. Geophys. Record 1970/79, p. 1-85 + 17 map sheets
(online at: www.ga.gov.au)
(Manuscript for Bain et al. 1975 Kubor Anticline publication)

Bain, J.H.C., D.E. MacKenzie & R.J. Ryburn (1975)- Geology of the Kubor anticline, Central Highlands of Papua New Guinea. Bureau Mineral Res., Geol. Geophys. Bull. 155, p. 1-106.
(online at: www.ga.gov.au/corporate_data/98/Bull_155.pdf)
(With Karimui, Ramu 1:250,000 PNG geology maps. Kubor Anticline N of main PNG detached foldbelt is basement-involved anticline with core of Omung Metamorphics, intruded by Late Permian? Kubor granodiorite. Both unconformably overlain by 30-250m Late Triassic Kuta Fm biohermal-reefal limestone with basal conglomerate containing igneous and metamorphic clasts and U Triassic dacites and basalts (Kana Volcanics. Overlain unconformably by ~7000m of U Jurassic- Upper Cretaceous clastic and volcanic rocks, U

Paleocene? clastics (Pima Sst) and Eocene-Oligocene limestone (Nebilyer Lst) respectively. At NE end Upper Cretaceous rocks overlain with slight unconformity by ~300m of Eocene-Oligocene foraminiferal Chimbu Lst, Eocene-Oligocene limestones everywhere overlain by Miocene limestone or clastics)

Bainbridge, A.L., G.J. Corbett & T.M. Leach (1994)- The Nena high sulfidation system, Frieda River Copper, Papua New Guinea. In: R. Rogerson (ed.) Proc. Geology, exploration and mining conference, June 1994, Lae, PNG 1994, Australasian Inst. of Mining and Metallurgy (AusIMM), Parkville, p. 131-137.

Bainbridge, A.L., S.P. Hitchman & G.J.DeRoss (1998)- Nena copper-gold deposit. In: D.A. Berkman and D.H. Mackenzie (eds.) Geology of Australian and Papua New Guinean mineral deposits, Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, Monogr. 22, p. 855-861.

Bamford, R.W. (1972)- The Mount Fubilan (Ok Tedi) porphyry copper deposit, Territory of Papua and New Guinea. Economic Geology 67, 8, p. 1019-1033.
(Mt. Fubilan deposit (= Ok Tedi) is very young porphyry copper system in NW PNG, within WNW trending fold belt with numerous small Plio-Pleistocene intrusions. Fold belt on continental side of narrow transition zone between continental crust in S and possibly oceanic crust in N, which became site of Miocene island arc collision. Central orthoclase-rich intrusion contains most of disseminated copper mineralization. Associated peripheral mineralized skarn bodies with high copper grades and massive sulfide body)

Barclay, S.A., K. Liu & D. Holland (2003)- Reservoir quality, diagenesis and sedimentology of the Pale and Subu sandstones: re-visiting the eastern Papuan basin, Papua New Guinea. Australian Petrol. Prod. Explor. Assoc. (APPEA) J. 43, p. 515-535.
(Campanian Pale sandstone in E Papuan foldbelt 160m thick shallow marine delta front-shoreface facies, porosity 5-16%, with biodegraded oil in outcrop)

Barndollar, P. (1993)- Hydrocarbon prospectivity of the Papuan Foreland. In: G.J. & Z. Carman (eds.) Petroleum exploration and development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby 1993, p. 517-525.
(Recent Papuan foldbelt discoveries with proven reserves of 14.5 TCF gas, 284 MMB Condensate and 395 MMB Oil)

Barrett, R.A. (1996)- A petroleum systems analysis of the Sepik and Ramu basins of Papua New Guinea. In: P.G. Buchanan (ed.) Petroleum exploration development and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 495-509.
(Basins on N margin PNG, formed by complex series of Tertiary tectonic events. Up to 10 km of Mio-Pliocene sediments. Formation of several deep Late Oligocene- E Miocene basins overprinted by Late Miocene and younger compression. Potential plays Miocene carbonate buildups and Mio-Pliocene sandstones)

Barrett, R.A. (1997)- Petroleum systems analysis of the Sepik and Ramu basins of Papua New Guinea: implications for Irian Jaya. In: J.V.C. Howes & R.A. Noble (eds.) Proc. Petroleum Systems of SE Asia and Australia Conf., Jakarta 1997, Indon. Petroleum Assoc. (IPA), p. 247-260.
(Possible hydrocarbon systems in largely untested Tertiary basins of N New Guinea. Main targets Miocene carbonate buildups. Ramu Basin hundreds of biogenic gas seeps. Meervlakte Basin may be similar to Salawati and PNG Sepik basins and have well developed Miocene buildups. N Coast basin similar to PNG Ramu Basin and may have gas play in structured Plio-Pleistocene turbidites)

Barrett, R.A. (1999)- Play concepts of the northern basins of New Guinea Island. AAPG Ann. Mtg. Abstract, American Assoc. Petrol. Geol. (AAPG) Bull. 83, p. *(Abstract only)*

Barrett, R.A. (1999)- Plio-Pleistocene sedimentation and biogenic gas generation Waropen and Ramu Basins, NeuGuinea (Irian) Island. In: H. Darman & F.H. Sidi (eds.) Tectonics and sedimentation of Indonesia, FOSI-IAGI-ITB Regional Seminar to commemorate 50th anniversary of Van Bemmelen's Geology of Indonesia, Bandung 1999, p. 87. *(Abstract only)*.

(Waropen and Ramu basins along N margin of New Guinea formed in Neogene. Characterized by extremely high Plio-Pleistocene sedimentation rates, of mainly marine turbiditic deposits: up to 12km in Waropen basin, up to 7km of Pleistocene in Ramu Basin. Common organic (plant) material. Waropen basin with biogenic methane flows in wells and seeps)

Barrows, T.T., G.S. Hope, M.L. Prentice, L.K. Ffield & S.G. Tims (2011)- Late Pleistocene glaciation of the Mt. Giluwe volcano, Papua New Guinea. Quaternary Science Reviews 30, 19, p. 2676-2689.
(Mt Giluwe shield volcano largest area glaciated in PNG in Pleistocene. During Last Glacial Maximum glaciers reached down to 3200m. Ice caps formed on flanks of mountain at 4 occasions: 293-306 ka (Gogon Glaciation), 136-158 ka (Mengane Glaciation), ~62 ka (Komia Glaciation; >20.3-11.5 ka (Tongo Glaciation))

Baylis, S.A., S.J. Cawley, C.J. Clayton & M.A. Savell (1997)- The origin of unusual gas seeps from onshore Papua New Guinea. Marine Geology 137, p. 109-120.
(Gas seeps with associated oils and waters from onshore Aure Thrust Belt. Oils biodegraded and from dominantly marine source, some with evidence of higher land plant input. Thermal maturity low to moderately high. Some gases biogenic, some thermogenic and some mixed. Two biogenic groups, one with high CO2 - light δD (acetate fermentation in low salinity), one with lower CO2- heavier δD (biogenic CO2 reduction associated with higher salinity, marine environments). Thermogenic gases associated with intermediate salinity and have exceptionally heavy d13C in CO2).

Bee, A.G. (1982)- A review of Mesozoic and Cenozoic stratigraphy of Southwest Papua New Guinea. Australasian Petrol. Co., PNG Geol. Survey, Port Moresby, p.

Belford, D.J. (1957)- Micropalaeontological examination of samples from the Tabu area, Permit 22, Papua. Bureau Mineral Res. Geol. Geoph., Records 1957/029, p. 1-4.
(https://www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=10228)
(Micropal analysis of 26 samples from Tubu area, Permit 22, 47 m NW of Port Moresby and 10m NE of Cape Suckling, collected by Papuan Apinaipi Petroleum Ltd. All material M Miocene- Pliocene age)

Belford, D.J. (1958)- Micropalaeontology of samples from Kaufana No. 1 well, Papua. Bureau Mineral Res. Geol. Geoph., Records 1958/9, p. 1-6.
(online at: www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=10317)
(Papuan Apinaipi Petroleum Co. Kaufana 1 well with diverse M Miocene and younger bathyal marine calcareous forams above 600' (incl. Miocene Lepidocyclina at 350'). From 640-3348' (TD) poor deep arenaceous water foram faunas only, probably all still of Miocene age)

Belford, D.J. (1958)- Micropalaeontology of samples from the Karema-Karova Creek and Malalaus-Saw Mountains areas, Papua. Bureau Mineral Res. Geol. Geoph., Records 1958/94, p. 1-3.
(https://www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=10402)
(All rel. deep marine sediments of M Miocene- Pliocene age)

Belford, D.J. (1959)- Lower Miocene foraminifera from the Milne Bay area, Papua. Bureau Mineral Res. Geol. Geoph., Records 1959/99, p. 1-2.
(online at: www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=10530)
(Tuffaceous limestones collected by J.E. Thompson at Milne Bay (SE tip of PNG mainland) probably all of E Miocene age (Upper Te with Spiroclypeus, Lepidocyclina (E.), Miogypsina))

Belford, D.J. (1959)- Foraminifera from the Middle Purari River area, Papua. Bureau Mineral Res. Geol. Geoph., Records 1959/157, p. 1-4.
(online at: www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=10586
(Miocene- Pliocene sediments)

Belford, D.J. (1959)- Miocene foraminifera from the Wira Anticline, Puri-Purari River area, Papua. Bureau Mineral Res. Geol. Geoph., Records 1959/105, p. 1-6.

(online at: www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=10588)
(Samples from Wira anticline all Late Miocene- Pliocene deep marine faunas)

Belford, D.J. (1962)- Miocene and Pliocene planktonic foraminifera from Papua New Guinea. Bull. Bureau Mineral Res. Australia 62, p. 1-35.
(online at: https://d28rz98at9flks.cloudfront.net/253/Bull_062.pdf)
(Thirty-four species of planktonic foraminifera described from Miocene-Pliocene beds of PNG. Little or no info on localities, stratigraphy, ages)

Belford, D.J. (1963)- Foraminifera from Mutare No. 1 bore, Papua. Bureau Mineral Res. Geol. Geoph., Record 1963/170, p. 1-4.
(online at: www.ga.gov.au/)
(Basal Miocene carbonates on unidentified Mesozoic section)

Belford, D.J. (1965)- Foraminifera from the Port Moresby area. Bureau Mineral Res. Geol. Geoph., Record 1965/102, p. 1-6.
(online at: https://d28rz98at9flks.cloudfront.net/11555/Rec1965_102.pdf)
(43 outcrop samples collected during Astrolabe Mineral Field survey, ranging in age from U Cretaceous (with Globotruncana) to E Miocene/ Te. Paleo-Eocene larger foram limestone with Halkyardia bikiniensis and Distichoplax biserialis. Reworked Eocene Pellatispira and Nummulites spp in 'E Miocene' Dokuna Tuff with Heterostegina borneensis (= Lower Te= Late Oligocene; JTvG))

Belford, D.J. (1965)- Foraminifera from the Wuroi No. 1 well, Papua. Bureau Mineral Res. Geol. Geoph., Record 1965/103, p. 1-3.
(online at: www.ga.gov.au/)
(Seven cores from Oil Search well Wuroi 1, ranging in age from M Miocene- Mesozoic)

Belford, D.J. (1965)- Foraminifera from outcrop samples, Star Mountains, Papua-New Guinea. Bureau Mineral Res. Geol. Geoph., Record 1965/233, p. 1-3.
(online at: www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=11686)
(Very brief report on outcrop samples from Star Mountains. Mainly E-M Miocene limestones, overlain(?) by zoneN8 planktonics from'Iwoer Fm')

Belford, D.J. (1966)- Miocene and Pliocene smaller foraminifera from Papua and New Guinea. Bull. Bureau Mineral Res. Australia 79, p. 1-223.
(online at: www.ga.gov.au/corporate_data/188/Bull_079.pdf)
(Comprehensive taxonomy/ descriptions of 156 Mio-Pliocene marine benthic foram species. Little or no stratigraphic info)

Belford, D.J. (1967)- Paleocene planktonic foraminifera from Papua and New Guinea. Austral. Bur. Min. Res. Bull. 92, p. 1-33.
(online at: https://d28rz98at9flks.cloudfront.net/168/Bull_092.pdf)
(Paleocene planktonic forams described from PNG areas Wabag in W Highlands and Cape Vogel in SE. Fourteen species assigned to Subbotina, Globigerina, Globorotalia and Chiloguembelina. Mainly from Globorotalia pseudomenardii Subzone; oldest beds may be Globigerina daubjergensis- G. trinidadensis Zone)

Belford, D.J. (1967)- Additional Miocene and Pliocene planktonic foraminifera from Papua and New Guinea. Austral. Bur. Min. Res. Bull. 92, p. 35-48.
(https://d28rz98at9flks.cloudfront.net/168/Bull_092.pdf)
(Three more species of Mio-Pliocene planktonic foraminifera recorded and figured from PNG: Globorotalia crassaformis, G. archaeomenardii and Sphaeroidinellopsis kochi (mainly from Ramu Atitau area))

Belford, D.J. (1976)- Foraminifera and age of samples from southeastern Papua. Bureau Mineral Res. Geol. Geoph. Bull. 165, p. 73-86.

(online at: www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=76)
(Appendix in Smith & Davies (1976). Listings and illustrations of Upper Cretaceous planktonic foraminifera, Eocene planktonic and larger foraminifera, Late Oligocene- Miocene larger foraminifera and Plio-Pleistocene planktonics and smaller benthics from SE PNG)

Belford, D.J. (1977)- *Quasicyclammina* gen. nov. and *Thalmannammina* (Foraminiferida) from the Paleocene of Papua New Guinea. BMR J. Australian Geol. Geophysics 2, 1, p. 35-42.
(online at: www.ga.gov.au/corporate_data/80906/Jou1977_v2_n1_p035.pdf
(New genus and species of cyclamminid agglutinated foraminifera from Upper Paleocene Lagaip Beds N of Central Range, NW of Mt. Hagen, PNG. Planktonic foraminifera from same area described by Belford (1967))

Belford, D.J. (1978)- The genus *Triplasia* (Foraminiferida) from the Miocene of Papua New Guinea. Bureau Mineral Res. Geol. Geophys. Bull. 192 (Crespin Volume), p. 1-7.
(online at: https://d28rz98at9flks.cloudfront.net/68/Bull_192.pdf)
(Three species of small benthic agglutinated foram Triplasia in Lower Miocene Yangi beds in Wabag area)

Belford, D.J. (1982)- *Planorbulinella solida* sp. nov. (Foraminiferida) from the Miocene of Papua New Guinea. BMR J. Australian Geol. Geophysics 7, 4, p. 321-325.
(online at: www.ga.gov.au/corporate_data/81128/Jou1982_v7_n4_p321.pdf)
(New species name for Linderina sp.indet. as recorded from Cape Vogel area, PNG. Rel. widespread in Early Miocene (Te5-Tf1) of PNG)

Belford, D.J. (1984)- Tertiary foraminifera and age of sediments, Ok-Tedi-Wabag, Papua New Guinea. Bureau Mineral Res. (BMR) Geol. Geophysics Bull. 216, p. 1-52.
(online at: www.ga.gov.au/corporate_data/16/Bull_216.pdf)
(Paleocene- Pliocene planktonic foraminifera distribution from outcrop samples in Ok Tedi and Wabag map sheets. Top larger foram zone Te correlated to planktonic foram zones N6-N7, with zone N8 planktonics overlying top Darai limestone Lower Tf assemblages. Occurrence of Lacazinella near Telefomin)

Belford, D.J. (1985)- Late Albian planktonic foraminifera, Strickland River, Papua New Guinea. Bureau Mineral Res. J. Australian Geol. Geoph. 9, 2, p. 183-189.
(online at: www.ga.gov.au/corporate_data/81181/Jou1984_v9_n2_p183.pdf)
(Late Albian planktonic foraminifera assemblage with Globigerinelloides, Hedbergella spp., Planomalina buxtorfi, Praeglobotruncana stephani, Rotalipora apenninica and R. ticinensis from Ieru Fm at S side of Mueller Anticline, Central Range, PNG. Tropical assemblage, unlike temperate Queensland fauna)

Bennett, D.J., R.P. Brand, C.R. Mills & B.D Morris (2000)- Exploration potential of the West Bosavi area, Papuan foreland basin, Papua New Guinea. In: P.G. Buchanan et al. (eds.) Papua New Guineaȏs petroleum industry in the 21st century, Proc. 4th PNG Petroleum Convention, Port Moresby, p. 139-154.
(Geology and exploration potential of Papuan foreland basin W of Bosavi lineament. Structure rel. simple. Main plays are compactional drapes over basement highs and tilted fault blocks. Reservoir targets mainly E Cretaceous Toro Sst, with deeper targets in Late Jurassic Digimu Fm sandstones)

Best, J.G. (1964)- Regional geology - Markham Valley, Territory of Papua and New Guinea (1:250,000 Sheet SB 55-10). Bureau Mineral Res. Geol. Geoph., Record 1964/80, p. 1-6.
(online at: www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=11337)
(Brief report in conjunction with groundwater drilling. Mountains at E end of Markham Valley mainly Kaindi Metamorphics, tightly folded and NNE striking, intruded by Morobe granodiorite. In SW ?Paleozoic metamorphics. Northern Finisterre- Saruwaged Range folded-faulted WNW trending Mio-Pliocene sediments)

Bickel, R.S. (1974)- Reconnaissance geology of the Cape Vogel Basin, Papua New Guinea. American Assoc. Petrol. Geol. (AAPG) Bull. 52, 12, p. 2477-2489.
(Cape Vogel basin extends for 400 km along NE side of E PNG, 80% offshore. Three subbasinal areas. Basins overlie obducted plate of oceanic mantle and crust that was thrust SW onto Mesozoic Owen Stanley

metamorphic rocks. Tertiary sediments: Late Oligocene Iauga Fm volcanics and deep-marine deposits, overlain unconformably by early M Miocene limestone, overlain by >4000m thick U Miocene-Pliocene clastics)

Bickel, R.S. (1976)- Cape Vogel Basin. In: R.B. Leslie et al. (eds.) Economic geology of Australia and Papua New Guinea, Vol. 3, Petroleum. Australasian Inst. of Mining and Metallurgy (AusIMM), Monogr. 7, p. 506-513.

Bidgood, M., M. Dlubak & M. Simmons (2015)- Making the most of biostratigraphic data; examples from Early Cretaceous to Late Jurassic shallow marine sand units in Papua New Guinea and Australasia. Berita Sedimentologi 33, p. 11 20.
(online at: www.iagi.or.id/fosi/files/2015/09/BS33-Marine-Geology-of-Indonesia-II-R1.pdf)
(Ages of Late Jurassic- E Cretaceous marine sandstones of PNG and Australian NW Shelf. PNG Late Jurassic: Koi-Lange, Iagafu and Hedinia Sst. E Cretaceous:Berriasian Digimu, Toro Sst, Valanginian- Hauterivian Alene Sst. Sandstones in Titanichthys-1 well on NW Shelf can be correlated to PNG sand cycles)

Bik, M.J.J. (1967)- Structural geomorphology and morphoclimatic zonation in the central highlands, Australian New Guinea. In: J.N. Jennings & J.A. Mabbutt (eds.) Landform studies from Australia and New Guinea, Australian National University Press, p. 26-47.

Binnekamp, J.G. (1970)- Foraminifera and age of samples from the Star Mountains, Territory of Papua New Guinea. Bureau Mineral Res. Geol. Geoph., Record 1970/14, p. 1-8.
(online at: www.ga.gov.au/products-services/legacy-publications.html)
(Foraminifera from 56 limestone outcrop samples from PNG Central Range, close to West Papua border. Mainly Late Oligocene- E-M Miocene (Te- lower Tf) ages, some Oligocene Tcd)

Binnekamp, J.G. & D.J. Belford (1970)- Foraminifera and age of outcrop samples collected during the Kubor survey 1968, Central Highlands, New Guinea. Bureau Mineral Res., Geol. Geoph., Record 1970/012, p. 1-32.
(online at: www.ga.gov.au/products-services/legacy-publications.html)
(Foraminifera from 158 Kubor Range outcrop samples. Oldest rocks Cretaceous Chim Fm with Cenomanian-Turonian planktonics. Most samples hard limestones with larger foraminifera. Eocene-E Oligocene Chimbu Lst with M-U Eocene Alveolina, Dictyoconus, Nummulites, Asterocyclina and Lacazinella wichmanni. Darai Lst in S of area with E Miocene with Miogypsina near top. Oligocene age rocks rel. rare. Reworking of Eocene larger forams into E Miocene in SE of area (in 'Movi Beds/ Omaura greywacke' which unconformably overlie Eocene--E Oligocene Chimbu Lst; Bain et al. (1974)?; incl. Biplanispira; p. 22, Pellatispira, p. 26). Aure Group deeper water facies of M Miocene age (zone N11-12; with Gr. fohsi group. For locality map see Bain et al. 1970))

Bird, K.J. & R. Seggie (1990)- Barikewa and Iehi gas fields revisited. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby, p. 551-565.
(Barikewa and Iehi gas fields discovered in 1958 and 1960 in foreland of Papuan foldbelt. Berriasian-Valanginian Toro Fm reservoir section shows 3 coarsening-upward cycles)

Blake, D.H. & E. Loffler (1971)- Volcanic and glacial landforms on Mount Giluwe, Territory of Papua and New Guinea. Geol. Soc. America (GSA) Bull. 82, p. 1605-1614.
(During maximum Pleistocene glaciation up to 400m thick glaciers extended down to 2750-3000m elevation on slopes of 4368m high Mount Giluwe volcano)

Blong, R.J. & C.F. Pain (1976)- The nature of highland valleys, Central Papua New Guinea. Erdkunde 30, 3, p. 212-217.

Bloom, A.L., W.S. Broecker, J.M.A. Chappell, R.K. Matthews & K.J. Mesolella (1974)- Quaternary sea level fluctuations on a tectonic coast: new 230Th/234U dates from the Huon Peninsula, New Guinea. Quaternary Research 4, p. 185-205.

Boult, P.J. (1993)- The reservoir potential of the Imburu, Toro and Ieru Formations in the Ok Menga area, PNG. In: G.J. & Z. Carman (eds.) Petroleum exploration and development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby, p. 191-200.
(Outcrop study of reservoir sandstones in Ok Menga area, SW of Hindenburg wall. Basal Cretaceous Toro Fm 141m thick (net sand 88m), underlying Imburu Fm 65m net sand)

Boult, P.J. (1997)- A review of the petroleum potential of Papua New Guinea with a focus on the eastern Papuan Basin and the Pale sandstones as a potential reservoir fairway. In: A.J. Fraser et al. (eds.) Petroleum geology of Southeast Asia, Geol. Soc., London, Spec. Publ. 126, p. 281-291.
(Overview of PNG plays, with schematic paleogeographic maps for Late Jurassic Imburu- Toro and Campanian Pale Sandstone)

Boult, P.J. & G.J. Carman (1993)- The sedimentology, reservoir potential and seal integrity of the Pale sandstone at the Aure Scarp, Papua New Guinea. In: G.J. & Z. Carman (eds.) Petroleum exploration and development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby, p. 125-137.
(Coral Sea syn-rift sediments exposed at Aure Scarp in E Papuan Basin include up to 200m thick marginal marine Campanian Pale Sst, Quartz-rich, clean, porosity ~20%, perm. 750 mD. Underlain by Albian marine shelfal deposits and basalts with K/Ar age of 88 Ma; overlain by M-L Paleocene Mendi Fm limestone. Source of sand probably from Omung Metamorphics along Kubor trend to N)

Boult, P.J., G.J. Carman & S.E. Phillips (1992)- Sedimentology, reservoir potential, and seal integrity of the Pale Sandstone, Eastern Papuan Basin, Papua New Guinea. AAPG Int. Conf., Sydney 1992, Search and Discovery Art. 91015 *(Abstract only)*
(Coral Sea syn-rift sediments exposed at Aure scarp in E Papuan basin include Campanian Pale Sst fluvial to barrier island facies, mature quartz arenite, probably derived from Paleozoic Omung Metamorphics along Kubor trend to N. Up to 190m thick, av. porosity 20%, 750 md. Overlain by Paleogene Mendi Group Lst)

Bowen, R. (1961)- Paleotemperature analyses of Mesozoic Belemnoidea from Australia and New Guinea. Geol. Soc. America (GSA) Bull. 72, 5, p. 769-773.
(Includes oxygen isotope analysis of U Jurassic Belemnopsis gerardi fron Kuabgen Gp, Upper Fly River, suggesting paleotemperature of 15.9 °C)

Boyd, G., V. Donagemma, J. McPherson, M. Dubsky, Y. Sun & S. Barclay (2015)- Innovative 3D reservoir characterization in the Papua New Guinea Fold belt. In: Proc. Eastern Australian Basins Symposium (EABS), Petroleum Expl. Soc. Australia (PESA), p. 289-296
(Reservoir models of latest Jurassic Imburu Fm (Iagifu, Hedinia, Digimu members) and earliest Cretaceous Toro Sst, using data from 156 wells in PNG foldbelt, from P'nyang in NW to Iehi Field in SE. Deposited in two depositional settings: (1) prograding, shallow marine or nearshore, and (2) outer estuarine mouth bar environment. Key reservoir sandbodies composed of stacked sequences of uniform sandstones, with lateral and vertical continuity of nearshore and incised valley fill deposits for 10's- 100's km along foldbelt. In Juha Field elevated temperatures (probably burial related) significantly reduced rock quality)

Boyd, G.A., V. Donagemma, J.G. McPherson, M.K. Dubsky, Y. Sun & S.A. Barclay (2016)-Innovative 3-D reservoir characterization in the Papua New Guinea fold belt. AAPG/SEG Int. Conf. Exhibition, Melbourne, Search and Discovery Article 30440, 9p.
(online at: http://www.searchanddiscovery.com/pdfz/documents/2016/30440boyd/ndx_boyd.pdf.html)
(Same paper as Boyd et al. (2015, above))

Bradey, K., K. Hill, D. Lund, N. Williams, T. Kivior & N. Wilson (2008)- Kutubu oil field, Papua New Guinea- a 350 MMbbl fold belt classic. In: J.E. Blevin et al. (eds.) Third Eastern Australasian Basins Symposium, Sydney, Petroleum Expl. Soc. Australia (PESA) Spec. Publ., p. 239-246.
(First discovered in 1986 in PNG foldbelt, Kutubu oil fields Iagifu and Hedinia produced >300 MMbbl since 1992. Production from Late Jurassic- E Cretaceous Toro, Digimu and Iagifu sand reservoirs, sourced from M

Jurassic black shales, and regionally sealed by E Cretaceous Ieru shales. Structures formed by oblique collision of island arcs with Australian Plate in Late Miocene- E Pliocene)

Britten, R.M. (1981)- The geology of the Frieda River Copper prospect, Papua New Guinea. Ph.D. Thesis, Australian National University (ANU), Canberra, p. 1-395.
(online at: https://digitalcollections.anu.edu.au/handle/1885/10714)
(Frieda River Prospect in structurally disrupted M Miocene eugeosynclinal sediments of New Guinea Mobile Belt in W Sepik District, PNG. Epithermal copper-gold and porphyry copper deposits associated with Frieda River Complex intrusives and remnants of nearshore stratovolcano at S margin of submerging trough. K-Ar ages of igneous activity: early intrusion 17.3-16.8 Ma, main intrusion 16.8-13.1 Ma)

Brocard, G., S. Zahirovic, T. Salles & P. Rey (2018)- Plio-Pleistocene river drainage evolution in New Guinea. Implications for reservoir mineralogy predictions. In: Proc. Australian Exploration Geoscience Conf. (AEGC 2018), Sydney, p. 1-6. *(Extended Abstract)*
(online at: http://www.publish.csiro.au/EX/ASEG2018abT5_1A)
(River drainage of New Guinea evolved rapidly since Pliocene time. Relief growth initiated in accreted oceanic terranes in N and migrated into Australian margin interior over time. Rise of Highlands and Papuan Peninsula spurred drainage reorganization, and affected composition of clastic sediments delivered to shelves)

Brown, C.M. (1977)- Yule, Papua New Guinea- 1:250,000 geological series. Bureau Mineral Res., Geology & Geophysics, Australia, Explanatory Notes, SC/55-2.

Brown, C.M (1978)- Mesozoic geology of Papua New Guinea. Geol. Survey Papua New Guinea, Dept. Minerals and Energy, p.

Brown, C.M. (1982)- Kavieng, Papua New Guinea- 1:250,000 geological series. Geol. Survey Papua New Guinea, Explanatory Notes, SA/56-9.

Brown, C.M., P.E. Pieters & G.P. Robinson (1975)- Stratigraphic and structural development of the Aure Trough and adjacent shelf and slope areas. Australian Petrol. Explor. Assoc. (APEA) J. 15, 1, p. 61-71.

Brown, C.M., C.J. Pigram & S.K. Skwarko (1980)- Mesozoic stratigraphy and geological history of Papua New Guinea. Palaeogeogr. Palaeoclim. Palaeoecology 29, p. 301-322.
(Two distinct Mesozoic successions: 'Fly Association' (S part foldbelt- Papuan platform; derived from Australian continent) and 'Sepik Association' (N and E parts of foldbelt; around margins of volcanic arc))

Brown, C.M. & G.P. Robinson (1982)- Kutubu, Papua New Guinea - 1:250,000 geological series. Geol. Survey of Papua New Guinea, Explanatory Notes, SB/54-12, p. 1-43.
(Geologic map and explanatory notes of Southern Highlands, between 6-7° S and 142°30'- 144° E. Most of area Central range foldbelt, with outcrops of Miocene Darai Limestone, overlain by major Late Pliocene-Quaternary dormant volcanic centers (Bosavi, Kerewa, Giluwe, etc.). Oldest rocks exposed in anticlines in NE part of area (Upper Cretaceous))

Buchanan, P.G. & J. Warburton (1996)- The influence of pre-existing basin architecture in the development of the Papuan fold and thrust belt: implications for petroleum prospectivity. In: P.G. Buchanan (ed.) Petroleum exploration, development and production in PNG, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 89-109.
(Many of young surface anticlines in Papuan foldbelt believed to be inversions of Triassic- M Jurassic rifts/ half grabens (not like previous thin-skinned structural models of Hobson (1986) and Hill (1991))

Buddin, T. (1993)- Petroleum evaluation of the Aure thrust belt, Gulf of Papua, Papua New Guinea. Simon Petrol. Techn. Ltd., SOPAC Techn. Report 183, p. 1-39.
(online at: www.sopac.org/data/virlib/TR/TR0183.pdf)

(Aure Thrust Belt is SE continuation of producing Papuan Fold Belt. Late Miocene Talama Fm volcanics (6-7 Ma) mark top of pre-deformational sequence, Pliocene Orubadi Beds exhibit marked growth sequences. ATB likely to be gas province, charged from Miocene Aure Fm source rocks)

Burns, B.J. & J. Bein (1980)- Regional geology and hydrocarbon potential of the Mesozoic of the western Papuan Basin. Australian Petrol. Explor. Assoc. (APEA) J. 20, 1, p. 1-15.

Caffi, P. (2008)- Evolution of an active metamorphic core complex, Suckling-Dayman Massif, eastern PNG B.S. Honours Thesis, Macquarie University, Sydney, p. 1-165.

Callot, J.P., K.C. Hill, R. Divies, S. Wood, F. Roure & W. Sassi (2015)- Pressure and basin modeling in foothills: a study of the Kutubu area, Papua New Guinea fold and thrust belt. AAPG/SEG Int. Conf. Exhibition, Melbourne, 23p. *(Extended abstract)*
(online at: www.searchanddiscovery.com/documents/2015/30431callot/ndx_callot.pdf)
(PNG petroleum system studied along 200 km transect in frontal fold-thrust belt, based on regional balanced cross section. Scenario integrates Jurassic rifting and passive margin stage, uplift related to Coral Sea rifting and Plio-Pleistocene shortening, together with U Cretaceous erosion (600-1300m), and early growth of Hedinia Anticline. Deep type III source rock explains small extent of maturation. Type II/III Cretaceous source rock maturation starts in M Cretaceous with strong increase during late tectonic burial (50% in last 7 Ma))

Callot, J.P., W. Sassi, F. Roure, K.C. Hill, N. Wildon & R. Divies (2017)- Pressure and basin modeling in foothill belts: a study of the Kutubu Area, Papua New Guinea fold and thrust belt. In: M.A. AbuAli et al. (eds) Petroleum systems analysis- case studies, AAPG Memoir 114, Chapter 7, p. 165-190.
(Full paper of Callot et al. 2015 Abstract above)

Carey, S.W. (1937)- The morphology of New Guinea. Australian Geographer 3, p. 5-31.

Carey, S.W. (1938)- Tectonic evolution of New Guinea and Melanesia. D.Sc. Thesis, University of Sydney, p. 1-200. *(Unpublished)*

Carey, S.W. (1945)- Notes on Cretaceous strata in the Purari Valley, Papua. Proc. Royal Soc. Victoria 56, 2, p. 123-130.
(Cretaceous 6000' dark, thick massive or thick-bedded sandstones and dark thin-bedded shales in SE Highlands. Except for one 10' thick 'Exogyra' mollusc bed, sandstone with belemnite Tetrabelus macgregori and some plant material, sandstones unfossiliferous, and shales have poor fauna. Cretaceous unconformably overlain by Eocene limestone (Lacazina limestone; known from loose blocks only?))

Carey, S.W. (1990)- Fifty years of oil search. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby 1990, p. 17-26.

Carman, G.J. (1987)- The stratigraphy of the Aure Scarp, Papua New Guinea. Petroleum Expl. Soc. Australia (PESA) Journal 11, p. 26-35.
(Aure Scarp/fault in NE Papuan Fold Belt defines major thrust which displaces at least 4450 m of stratigraphic slab. Exposures with 500m of Cretaceous Ieru Fm marine siltstones/ mudstones, 950m of Paleocene-Oligocene Mendi Fm carbonates (micrites and cherty limestones) and ~3000m of Miocene Aure beds. Pale Sandstone Mb proposed for Campanian barrier bar or beach deposit at top Ieru Fm: 150m of m-c quartz sst in, 1-2 m coarsening-upward beds. Puri oil well, 40 km W of Aure Scarp, flowed oil 1610 BOD from similar carbonate. Major decollement below Pale Sst)

Carman, G.J. (1990)- Occurrence and nature of Eocene strata in the eastern Papuan Basin. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby 1990, p. 169-183.

(M Eocene bioclastic, siliceous and cherty limestones occur along 1000km of E Papuan Basin from Mendi/ Kagua to Aure Scarp. Chimbu Lst with Lacazinella and Nummulites neritic, most others deep marine? with radiolaria, planktonic foraminifera)

Carman, G.J. (1993)- Palaeogeography of the Coral Sea, Darai and foreland megasequences in the eastern Papuan basin. In: G.J. & Z. Carman (eds.) Petroleum exploration and development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby, PNG Chamber of Mines and Petroleum, p. 291-309.

(Late Cretaceous (88 Ma) pillow basalts on Aure Scarp record onset and N-most locality for Coral Sea rift. Campanian Pale sst and Barune Sst interpreted to be synrift sediments. Maastrichtian-Paleogene shallow carbonates on Cretaceous rift shoulder. With Campanian- Pliocene paleogeographic maps of S PNG)

Carman, G.J. & N.W. Archbold (1990)- Macrofossil evidence for a palaeo-high, Erun Anticline, PNG. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea. Proc. First PNG Petroleum Convention, Port Moresby, p. 397-402.
(Erun anticline at E side of Crater Montain volcano (presumably frontal Aure foldbelt- SE end of Kubor Terrane?) with relatively shallow marine Aptian- Cenomanian (Turonian?) marls with Pecten-type mulluscs in core of anticline. Unconformably overlain by Late Eocene- E Oligocene Chimbu Limestone with Discocyclina (and Biplanispira?))

Carne, J.E. (1913)- Notes on the occurrence of coal, petroleum and copper in Papua. Australia Dept. of External Affairs, Melbourne, Bull. 1, p. 1-116.
(First verification of reported oil -gas seeps and coal occurrences in PNG by Australian Government officer. Most of book is description of gas and oil seeps at Opa and Akauda (off Vailala River), with comparisons to Indonesian oil fields and oil types. Also reviews of Astrolabe copper field, coal at Purari, etc.. (follow-up historic reports by Stanley ( ) and Wade (1927))

Causebrook, R.M. & G.J. Solomon (1990)- Hydrocarbon exploration and structure of the Northwest Darai Plateau. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. First PNG Petrol. Convention, Port Moresby, p. 337-350.
(Darai Plateau is deeply karstified NW-SE trending elevated block, S of Papuan foldbelt oil-gas gas fields Iagafu and Hedinia. Miocene Darai Limestone at surface. Structure interpeted as relatively simple Miocene inversion of Mesozoic rift)

Challinor, A.B. (1990)- A belemnite biozonation of the Jurassic-Cretaceous of Papua New Guinea and a faunal comparison with Eastern Indonesia. BMR J. Australian Geol. Geophysics 11, p. 429-447.
(online at: www.ga.gov.au/corporate_data/81270/Jou1990_v11_n4_p429.pdf)
(Central PNG highlands belemnites show Bathonian-Tithonian age for Maril shale, Berriasian Toro sst, etc. Belemnite succession of PNG resembles that of E Indonesia Sula islands)

Chapman, F. (1914)- Description of a limestone of Lower Miocene age from Bootless Inlet, Papua. Proc. Royal Soc. New South Wales, Sydney 48, p. 281-301.
(online: https://ia801701.us.archive.org/5/items/journalproceedi481914roya/journalproceedi481914roya.pdf)
(One of earliest micropaleontological papers on PNG rocks, in SE PNG. Little or no locality information, but adequate descriptions of larger foraminifera (presence of Lepidocyclina (Eulepidina) and possible Heterostegina borneensis indicate Lower Te letter stage, now assigned to latest Oligocene; JTvG))

Chapman, F. (1925)- On some palaeontological and stratigraphical relations of the Cainozoic rocks of Papua and New Guinea with these of the East Indies. Verhandelingen Geologisch-Mijnbouwkundig Genootschap Nederland Kol., Geol. Serie 8 (Verbeek volume), p. 81-88.
(Brief discussion of Cenozoic rocks and macrofossils known from PNG, and comared to Indonesian faunas)

Chapman, F. & A. Wade (1918)- Report on a collection of Cainozoic fossils from the oil-fields of Papua. Bull. Territory of Papua 5, Melbourne, p. 1-17.

Chappell, J. (1974)- Geology of coral terraces, Huon Peninsula, New Guinea: a study of Quaternary tectonic movements and sea-level changes. Geol. Soc. America (GSA) Bull. 85, p. 553-570.
(More than 20 offlapping Late Pleistocene coral terraces, up to 220 kyr old and up to 600m in elevation, formed during uplift of NE Huon Peninsula in NE PNG)

Chappell, J. (1974)- Upper mantle rheology in a tectonic region: evidence from New Guinea. J. Geophysical Research 79, 2, p. 390-398.
(Deformed coral terraces on NE New Guinea coast provide opportunity for estimating lithosphere-asthenosphere rheology in tectonic region. Terraces can be traced for ~130 km and extrapolated to point of convergence ~55 km beyond zone of least rapid uplift)

Chappell, J. (1983)- A revised sea-level record for the last 300,000 years from Papua New Guinea. Search 14, p. 99-101.

Chappell, J. (1993)- Contrasting Holocene geologies of lower Daly River, northern Australia, and lower Sepik-Ramu, Papua New Guinea. Sedimentary Geology 83, p. 339-358.
(Holocene geology of Sepik and Ramu River systems strongly affected by post-glacial sealevel changes, and differs from N Australia Daly River)

Chappell, J., A. Omura, T. Esat, M. McCulloch, J. Pandolfi, Y. Ota & B. Pillans (1996)- Reconciliation of late Quaternary sea levels derived from coral terraces at Huon Peninsula with deep sea oxygen isotope records. Earth Planetary Sci. Letters 141, p. 227-236.
(Late Quaternary sea level changes from 120ka- now derived from raised coral reef terraces at Huon Peninsula in PNG now good correspondence with trends derived from oxygen isotopes in deep sea cores)

Chappell, J., Y. Ota & K. Berryman (1996)- Late Quaternary coseismic uplift history of Huon Peninsula, Papua New Guinea. Quaternary Science Reviews 15, 1, p. 7-22.
(Huon Peninsula episodic uplift shown by regressive terraces cut into raised late Quaternary reef tracts. Uplift events believed to be coseismic. Amplitude of uplift events averages ~3 m and increases from NW to SE)

Chappell, J., Y. Ota & C. Campbell (1998)- Decoupling post-glacial tectonism and eustasy at Huon Peninsula, Papua New Guinea. In: I.S. Stewart & C. Vita-Finzi (eds.) Coastal tectonics, Geol. Soc, London, Special Publ. 146, p. 31-40.

Chappell, J. & H.A. Polach (1976)- Holocene sea-level change and coral reef growth at Huon Peninsula, Papua New Guinea. Geol. Soc. America (GSA) Bull. 87, p. 235-240.
(At tectonically rising terraced coast of Huon Peninsula Holocene reef emerged by 12m. Uplift of Pleistocene reefs in area ~1.9 m/1000 yr. If uplift uniform rate, position of sea level at 6000 yrs ago ~ -4m; 8000 yr ago~ -14m)

Chivas, A.R., J.R. O'Neil & G. Katchan (1984)- Uplift and submarine formation of some Melanesian porphyry copper deposits: stable isotope evidence. Earth Planetary Sci. Letters 68, p. 326-334.
(Hydrogen and oxygen isotope from young porphyry copper deposits in PNG (Ok Tedi; 1.2 Ma and Yandera; 6.5 Ma), Solomon Islands (Koloula; 1.6 Ma), etc. indicate mixing with meteoric water with isotopic signature of consistent with elevation of 200m a.s.l. or less at time of mineralization; exposed deposit now at 1800m a.s.l. Influx of meteoric water at Yandera when ground surface above deposit was at ~600m a.s.l. Deposit now at 1600m indicating uplift of ~2.2 km, with removal of 1.2 km of overburden by erosion)

Christopherson, K.R. (1991)- Applications of magnetotellurics to petroleum exploration in Papua New Guinea; a model for frontier areas. The Leading Edge 10, 4, p. 21-27.

Cole, J.P., M. Parish & D. Schmidt (2000)- Sub-thrust plays in the Papuan fold belt: the next generation of exploration targets. In: P.G. Buchanan et al. (eds.) Papua New Guineaǒs petroleum industry in the 21st century, Proc. 4th PNG Petroleum Convention, Port Moresby, p. 87-100.

Connelly, J.B. (1979)- Mode of emplacement of the Papuan ultramafic belt. BMR J. Australian Geol. Geophysics 4, p. 57-65.
(online at: https://d28rz98at9flks.cloudfront.net/80985/Jou1979_v4_n1_p057.pdf)
(Papuan Ultramafic Belt probably overthrust sheet of oceanic crust and mantle, with thicker crustal section than normal oceanic crust. Left-lateral faulting of Belt after emplacement evident from displacement of ultramafic bodies. Belt aligned N-S when originally emplaced, and emplaced from W, 30° S of present latitude, before Australian Plate started to move N at ~55 Ma. Estimated uplift of presently exposed part up to 10 km)

Conybeare, C.E.B. & R.G.C. Jessop (1972)- Exploration for oil bearing sand trends in the Fly River area, western Papua. Australian Petrol. Explor. Assoc. (APEA) J. 12, 1, p. 69-73.

Cooper, G.T., K.C. Hill & K. Baxter (1996)- Rifting in the Timor Sea and New Guinea; a template for compressional forward modelling. In: P.G. Buchanan (ed.) Petroleum exploration, development and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 133-146.
(Foldbelt of New Guinea underlain by Mesozoic rifts, along strike to Late Jurassic Vulcan sub-basin of Australia NW Shelf (but New Guinea margin rifting/ breakup Triassic?))

Cooper, G., D. Kendrick, F. Waina, C. Hamilton & M. Nongkas (2012)- New insights in to the structural and thermal development of the Papuan Foreland: implications for hydrocarbon charge and prospectivity. In: Eastern Australian Basins Symposium (EABS) IV, Brisbane, Petroleum Expl. Soc. Australia (PESA), 14p.
(Thermochronological data for 29 wells in Papuan Foreland show present-day heat flow consistent with median values for Australian continental plate. Paleothermal data suggest Cecilia Trough and Morehead Graben presently at maximum temperatures, but wells in central Foreland much higher temperatures in past, suggesting either km-scale uplift and erosion or (less likely) elevated heat flows associated with Coral Sea Rifting in Late Cretaceous-Paleocene)

Cooper, P. & B. Taylor (1987)- Seismotectonics of New Guinea: a model for arc reversal following arc continent collision. Tectonics 6, 1, p. 53-68.
(Seismicity shows active subduction zones. E of 149°E Solomon Plate subducted to N and S. W of 149°E forearcs collided and override doubly subducted Solomon Plate. Ramu-Markham suture plunges W at 5° angle below N New Guinea coastal ranges. From 144°-148° E convergence between Bismarck and Indo-Australian plates accommodated by thrusting in Finisterre and Adelbert ranges and compression of New Guinea orogenic belt, together with basement-involved foreland folding/ thrusting to S. Finisterre block overthrusts New Guinea foldbelt, Adelbert block sutured to New Guinea and overthrusts oceanic lithosphere of Bismarck Sea. W of 144°E seismicity defines S-dipping Benioff zone and oblique subduction along New Guinea Trench)

Corbett, D.W.P. (1962)- Geological reconnaissance in the Ramu Valley and adjacent areas, New Guinea. Bureau Mineral Res. Geol. Geoph., Record 1962/032, p. 1-14.
(online at: www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=10922)
(Survey at NE coastal area of PNG around Lower Ramu Valley. At S side NE foothills of Schrader Ranges all greenschist facies unfossiliferous greywackes/ siltstones. In N Adelbert Mts (Miocene-Recent volcanics-dominated sediments))

Corbett, G.J. (1994)- Regional structural control of selected Cu/Au occurrences in Papua New Guinea. In: R. Rogerson (ed.) Proc. PNG Geology, exploration and mining conference, Lae 1994, Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, p. 57-70.
(NE-trending structural grain in Papuan Fold Belt and relation to copper-gold deposits)

Corbett, G.J. (2005)- The geology and mineral potential of Papua New Guinea. Papua New Guinea Department of Mining, Port Moresby, p. 1-152.

Corbett, G.J. (2009)- Tectonic/structural control to Papua New Guinea Au-Cu mineralisation. *(Abstract Only)* *(online at: www.smedg.org.au/Corbett%20Au-Cu%20in%20PNG%20May09.pdf)*

Corbett, G.J., T.M. Leach, R. Stewart & B. Fulton (1995)- The Porgera gold deposit: structure, alteration and mineralisation. In: Proc. Pacific Rim Congress 95, Auckland 1995, Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, p. 151-156.

Craig, M.S. & K. Warvakai (2009)- Structure of an active foreland fold and thrust belt, Papua New Guinea. Australian J. Earth Sci. 56, 5, p. 719-738.
(Seismic lines across foreland at SW side of Papuan foldbelt show en echelon anticlines: Strickland, Cecilia, and Wai Asi. Folding mainly in upper 2000m, which consist of Darai Lst overlain by Miocene- Quaternary siliciclastics. Competent Darai Lst ~1000m thick, overlying similar thickness of relatively incompetent Cretaceous Ieru Fm. Age of folding Late Pliocene and Pleistocene)

Craig, M.S., K. Warvakai & H.L. Davies (2000)- Seismic structure of the Strickland Anticline, Papuan fold belt. In: P.G. Buchanan et al. (eds.) Papua New Guinea's petroleum industry in the 21st century, Proc. 4th PNG Petroleum Convention, Port Moresby, p. 443-456.

Crespin, I. (1938)- The occurrence of *Lacazina* and *Biplanispira* in the Mandated Territory of New Guinea. Bureau Mineral Res., Canberra, Palaeont. Bull. 3, p. 3-8.
(online at: www.ga.gov.au/corporate_data/200/Bull_003.pdf)
(Eocene limestone near Chimbu aerodrome, PNG, with abundant calcareous algae (Lithothamnium), common larger forams Lacazina and also Pellatispira and rare Biplanispira. These genera not normally found associated (illustrations on Plate 2 look convincing, but Pellatispira/Biplanispira not seen in these rocks by Bain & Binnekamp 1973; JTvG)

Crespin, I. (1938)- A Lower Miocene limestone from the Ok Ti River, Papua. Bureau Mineral Res., Canberra, Palaeont. Bull. 3, p. 9-12.
(online at: www.ga.gov.au/corporate_data/200/Bull_003.pdf)
(Limestone beneath 'mudstone grit series' at W bank Ok Ti River (= Upper Tedi River; near Irian Jaya border, with headwaters in Star Mts). Assemblage of Heterostegina borneensis, Borelis pygmaeus and Eulepidina (practically identical to assemblages from W Java Rajamandala Limestone= Te1, Latest Oligocene; JTvG))

Crespin, I. (1958)- Microfossils in Australian and New Guinea stratigraphy. J. Proc. Royal Soc. New South Wales 92, 4, p. 133-147.
(Review of progress of micropalaeontology in Australia and New Guinea, with bibliography of key papers. Groups of microfossils recognized foraminifera, radiolaria, calpionellidae, holothurian sclerites, alcyonarian sclerites, sponge spicules, conchostraca, ostracoda, microplankton, conodonts, spores-pollens, diatoms)

Crespin, I. (1962)- *Lacazinella*, a new genus of trematophore Foraminifera. Micropaleont. 8, p. 337-342.
(New genus name for Lacazina wichmanni from Upper Eocene limestone near Chimbu aerodrome in PNG)

Crespin, I. & D.J. Belford (1955)- Foraminifera from the Upper Sepik River, Western New Guinea. Bureau Mineral Res. Geol. Geoph., Record 1955/46, p.
(online at: www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=9037)
(Brief report on samples from river float, derived from Central Range near W Papua border. Of limited use)

Crespin, I. & D.J. Belford (1955)- Micropalaeontological examination of rock samples from the Cape Vogel area, Papua. Bureau Mineral Res. Geol. Geoph., Record 1955/96, p.
(online at: www.ga.gov.au/corporate_data/8990/Rec1955_096.pdf)
(107 samples collected by J.E. Thompson from Cape Vogel area, E end of Papuan Peninsula, are mainly U Miocene- Pliocene open marine fauna. A few limestones contain Lower Tf (M Miocene) larger forams, incl. Miogypsina polymorpha, Katacycloclypeus, etc.))

Crespin, I. & D.J. Belford (1956)- Micropalaeontological examination of rock samples from the Upper Sepik-August River area, New Guinea. Bureau Mineral Res. Geol. Geoph., Record 1956/20, p. 1-5.
(online at: www.ga.gov.au/corporate_data/10180/Rec1956_020.pdf)
(Samples of E and M Miocene limestones, clastics with common reworked U Cretaceous and Paleocene planktonics, etc. For geology of area see Perry (1956))

Crespin, I. & D.J. Belford (1957)- Micropalaeontological examination of rock samples from the Central Highlands, New Guinea. Bureau Mineral Res. Geol. Geoph., Record 1957/91, p. 1-6.
(online at: www.ga.gov.au/corporate_data/10290/Rec1957_091.pdf)
(Micropaleontological analysis of outcrop samples collected by McMillan & Johnson (1960) around E part of Bismarck Range/ Goroka Valley. In Watabung and Bena-Bena area at S side of Bismarck anticline U Cretaceous with Pseudorbitoides, Eocene pebbles with Nummulites, Discocyclina and Pellatispira spp, Oligocene and Miocene with Lepidocyclina, Miogypsina, etc.. No locality maps)

Crespin, I. & G.A.V. Stanley (1965)- Palaeontological investigations, Papua and New Guinea. A revision of list in BMR Report 20, with additions to the end of 1965. Bureau Mineral Res. Geol. Geoph., Record 1965/186, p. 1-44.
(online at: www.ga.gov.au/corporate_data/11639/Rec1965_186.pdf)
(Comprehensive listing of paleontological reports for PNG by Bureau of Mineral Resources, 1922-1965)

Crook, K.A.W. (1961)- Diagenesis in the Wahgi valley sequence, New Guinea. Proc. Royal Soc. Victoria 74, 1, p. 77-81.
(Wahgi valley sequence Permian- U Jurassic-Miocene sediments on Paleozoic basement. In Chim and Wahgi valleys 24.800' of pre-Miocene sediments, once overlain by probable 10,000' of Miocene shales-greywackes. Sediments that were buried to depths of 13,000'- 28,000' show diagenesis characteristic of laumontite facies. Sediments buried below 28,000' in prehnite-pumpellyite facies of diagenesis)

Crook, K.A.W. (1989)- Suturing history of an allochthonous terrane at a modern plate boundary traced by flysch-to-molasse facies transitions. Sedimentary Geology 61, p. 49-79.
(S boundary of S Bismarck plate in PNG (Ramu-Markham FZ) changes character from W to E as result of oblique collision and suturing of Finisterre Terrane with New Guinea margin. Correlations between facies and tectonic settings: (1) terrane yet to dock, western New Britain Trench: conglomeratic flysch; (2) terrane now docking, Huon Gulf: marine molasse (3) terrane already docked, Markham Valley: fluvial molasse)

Crowhurst, P.V. (1999)- The tectonic history of Northern Papua New Guinea. Ph.D. Thesis, La Trobe University, Melbourne, p. 1-414. *(Unpublished)*

Crowhurst, P.V., K.C. Hill, D.A. Foster & A.P. Bennett (1996)- Thermochronological and geochemical constraints on the tectonic evolution of northern Papua New Guinea. In: R. Hall & D. Blundell (eds.) Tectonic evolution of Southeast Asia, Geol. Soc., London, Spec. Publ. 106, p. 525-537.
(Bewani-Torricelli Mts along N margin of PNG formed as island arc in Late Eocene- E Oligocene and accreted to margin by Late Oligocene. E Miocene extension due to inferred rollback of subducting slab beneath New Guinea. Two inferred metamorphic core complexes rapid cooling from 27-23 Ma and 20-18 Ma. Continued subduction beneath New Guinea resulted in Maramuni Arc in M Miocene and end of extension. Collision of Melanesian Arc caused regional uplift of N PNG, mainly from 8-5 Ma, with >3-4 km of denudation)

Crowhurst, P.V., R. Maas, K.C. Hill, D.A. Foster & C.M. Fanning (2004)- Isotopic constraints on crustal architecture and Permo-Triassic tectonics in New Guinea: possible links with eastern Australia. Australian J. Earth Sci. 51, 1, p. 107-124.
(New ages for Triassic igneous and metamorphic rocks. Triassic volcanic arc in N New Guinea intrudes high-grade metamorphic rocks probably resulting from Late Permian- E Triassic (~260-240 Ma) orogenesis, as recorded in New England Fold Belt. Late Triassic magmatism in New Guinea (~220 Ma) related to coeval extension and rifting as precursor to Jurassic breakup of Gondwana margin. Amanab- Idenburg metadiorite

near PNG border ~240 Ma. Second magmatic event in Late Triassic ~220 Ma (Kubor granodiorite, Strickland granite, etc.). Evidence for two metamorphic events in Amanab block: one high-grade before 240 Ma (Late Permian- E Triassic) and lower grade event in Miocene)

Cullen, A.B. (1991)- The North New Guinea Basin, Papua New Guinea; a case study of basin evolution at a modern accretionary plate boundary. Ph.D. Thesis, University of Oklahoma. Norman, p. 1-313. *(Unpublished)*

Cullen, A.B. (1991)- Neogene tectonic evolution of the Ramu Basin, Papua New Guinea; evidence of subsidence analysis of the Tsumba 1 Well. The Compass (University of Oklahoma) 68, 3, p. 181-190.

Cullen, A.B. (1996)- Ramu Basin, Papua New Guinea: a record of Late Miocene terrane collision. American Assoc. Petrol. Geol. (AAPG) Bull. 80, 5, p. 663-684.
(Ramu Basin Late Miocene collisional successor basin developed as Finisterre/Adelbert terrane collided with Maramuni arc. Age of arc volcanism Late Oligocene- M Miocene. Subduction polarity uncertain)

Cullen, A.B. & J.D. Pigott (1989)- Post-Jurassic tectonic evolution of Papua New Guinea. Tectonophysics 162, p. 291-302.
(Series series of kinematically constrained tectonic reconstructions of PNG, documenting post-Jurassic evolution of N margin Australian plate from rifted, passive continental margin to one composed of accreted, tectonostratigraphic terranes undergoing sinistral oblique transpression. Allochthonous terranes represent marginal basins and fringing island arcs which began docking to Australian plate in Miocene. At present, assemblage forms diffuse suture zone between Australian and Pacific plates)

Daczko, N.R., P. Caffi, J.A. Halpin & P. Mann (2009)- Exhumation of the Dayman dome metamorphic core complex, eastern Papua New Guinea. J. Metamorphic Geol. 27, 6, p. 405-422.
(~750 km2 Dayman dome of Late Cretaceous Suckling-Dayman massif, E PNG rises 2850m high, with >1000m high fault scarp at N edge, which is part of microplate boundary separating continental crust of New Guinea highlands from continental and oceanic crust of Woodlark microplate. Eclogite-bearing core complexes NE of Dayman dome exhumed from 24-28 kbar in last few millions of years. Pumpellyite-actinolite facies assemblages with local lawsonite and/or glaucophane in core of complex indicate exhumation from depths of 20-30 km)

Daczko, N.R., P. Caffi & P. Mann (2010)- Structural evolution of the Dayman dome metamorphic core complex, eastern Papua New Guinea. Geol. Soc. America (GSA) Bull. 123, p. 2335-2351.
(Shallow-dipping ductile mylonitic shear zone and concordant brittle detachment fault (Mai'iu fault) control orientation of dip slopes on flanks of Mt Dayman, E Papuan Peninsula, PNG. Dip slopes in all directions. Orientation of megacorrugations on Mt Dayman domed surface (footwall) consistent with NNE-directed transport of hanging-wall block of low-grade volcanic and sedimentary rocks and minor ultramafic rocks. Previously documented as thrust surface, but more likely extensional origin (boudinaged veins, etc.))

Dalrymple, R.W., E.K. Baker, P.T. Harris & M.G. Hughes (2003)- Sedimentology and stratigraphy of a tide-dominated foreland-basin delta (Fly River, Papua New Guinea). In: F.H. Sidi, D. Nummedal et al. (eds.) Tropical deltas of Southeast Asia- sedimentology, stratigraphy and petroleum geology, SEPM Spec. Publ. 76, p. 147-173.

Daniels, M.C. (1993)- Formation pressure measurements and their use in oil exploration in the Kutubu project, Papua New Guinea. In: G.J. & Z. Carman (eds.) Petroleum Exploration and Development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby 1993, p. 579-588.

Daniels, M.C. & N.I. Duncan (1990)- The application of gas ratios in Papua New Guinea. In: G.J. & Z. Carman (eds.) Petroleum Exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby, p. 83-94.

Daniels, M., M.I. Jacobson, J.D. Lee, D.T. Moffat & K.C. Richards (2000)- The application of exploration principles to define the potential of the S.E. Gobe field forelimb. In: P.G. Buchanan et al. (eds.) Papua New

Guineaôs petroleum industry in the 21st century, Proc. 4th PNG Petroleum Convention, Port Moresby 2000, p. 369-383.

Darnault, R., K. Hill, J.M. Mengus, J.M. Daniel, J.P. Callot & J.C. Ringenbach & (2015)- Analogue modelling of the Papua New Guinea fold and thrust belt. 77th EAGE Conf. Exhib., Madrid, WS04-P01, 5p. *(Extended Abstract*
(Brief review of IFP sandbox modeling of PNG foldbelt structure. Many folds formed as inversions of basement normal faults)

Darnault, R., K.C. Hill, J.M. Mengus, J.M. Daniel & N. Wilson (2016)- Analogue modeling of the Papua New Guinea fold and thrust belt. AAPG/SEG Int. Conf. Exhibition, Melbourne 2015, Search and Discovery Art. 30439, p. *(Extended abstract)*
(online at: www.searchanddiscovery.com/documents/2016/30439darnault/ndx_darnault.pdf)
(Sandbox experiments to model PNG foldbelt structures. Pre-existing normal fault in basement led to development of detachment fold in cover abutting the basement in footwall. Development of overturned detachment fold enhanced when basement fault was first partially inverted)

Darnault, R., K.C. Hill, J.M. Mengus & N. Wilson (2015)- Analogue modeling of the Papua New Guinea fold and thrust belt. In: Proc. Eastern Australian Basins Symposium (EABS), Petroleum Expl. Soc. Australia (PESA), p. 249-254.
(Similar to Darnault et al. 2015, 2016)

Davey, R.J. (1988)- Palynological zonation of the Lower Cretaceous, Upper and uppermost Middle Jurassic in the northwestern Papuan Basin of Papua New Guinea. Geol. Survey Papua New Guinea, Port Moresby, Memoir 13, p. 1-77.
(Robertson Research Jurassic-Cretaceous marine dinoflagellate zonation, from samples along Strickland River in W PNG. Similar to Helby, Morgan, Partridge (1987) zonation, but more elaborate (12 zones in Callovian-Ttihonian). (See also revised Helby et al. zonations updated in 2004 and 2006; JTvG))

Davey, R.J. (1999)- Revised palynological zonation for the Late Cretaceous and Late Jurassic of Papua New Guinea. Geol. Survey Papua New Guinea, Port Moresby, Memoir 17, p. 1-51.

Davies, H.L. (1968)- Papuan ultramafic belt. Proc. 23rd Sess. Int. Geological Congress, Prague 1968, 1, p. 209-230.
(Papuan Ultramafic Belt of SE PNG ~400 km long and 40 km wide, composed of gabbro and peridotite. Thought to represent fragment of oceanic crust and mantle that moved W-ward since Cretaceous and forced upward after collision with sialic core of PNG))

Davies, H.L. (1969)- Peridotite-gabbro-basalt complex in eastern Papua; an overthrust plate of oceanic mantle and crust. Ph.D. Thesis, Stanford University. Stanford, p. 1-88. *(Unpublished)*
(online at: http://sul-derivatives.stanford.edu/derivative?CSNID=00018812&mediaType=application/pdf)
(Early investigation of 400km long and 40km wide Papuan Ultramafic Belt, a peridotite-gabbro-basalt complex, thought to be part of plate of Cretaceous oceanic mantle and crust. NW-SE trending outcrop belt 400 km long, 40 km wide, on NE side of Owen Stanley Range in E PNG. Ultramafics thrusted over generally sialic metamorphic rocks in Eocene or Oligocene (Cretaceous sediments?, now in blueschist and greenschist facies)

Davies, H. L. (1969)- Notes on Papuan Ultramafic Belt mineral prospects, Territory of Papua and New Guinea Bureau Mineral Res., Canberra, Record 1969/67, p. 1-19.
(online at: https://d28rz98at9flks.cloudfront.net/12326/Rec1969_067.pdf)
(Presence of nickel sulphide and chromitite lenses. Lateritic nickel prospects in Ultramafic Belt deemed uneconomic)

Davies, H.L. (1971)- Peridotite-gabbro-basalt complex in Eastern Papua: an overthrust plate of oceanic mantle and crust. Bureau Mineral Res. Geol. Geoph., Bull. 128, p. 1-48.

(online at: www.ga.gov.au/metadata-gateway/metadata/record/145/)
(Similar to above. Papuan Ultramafic Belt peridotite-gabbro-basalt complex thought to be part of overthrust sheet of Cretaceous oceanic mantle and crust. From top to bottom complex consists of (1) Basalt zone (Basalt and spilite, massive and as pillow lavas, some dacite, 4-6 km thick); (2) Gabbro zone (4 km); (3) Ultramafic zone (cumulates, up to 0.5 km; noncumulates: harzburgite, etc., with metamorphic textures; 4-8 km thick)

Davies, H.L. (1976)- Papua New Guinea Ophiolites. 25th Int. Geological Congress, Sydney, Excursion Guide 52A, p. 1-16.

Davies, H.L. (1978)- Geology and mineral resources of Papua New Guinea. In: P. Nutalaya (ed.) Proc. 3rd Regional Conf. Geology and Mineral Resources of SE Asia (GEOSEA III), Bangkok, Asian Inst. Techn., p. 685-699.
(Early review of PNG geology)

Davies, H.L. (1980)- Folded thrust fault and associated metamorphics in the Suckling-Dayman Massif, Papua New Guinea. American J. Science 280-A, p. 171-191.
(Suckling-Dayman Massif in SE PNG mainly metamorphosed Late Cretaceous basalt and limestone, apparently metamorphosed by underthrusting to 25-35 km depth in N-dipping Eocene subduction system. Massif partly surrounded by ophiolite outcrops and in places overlain by ultramafic rocks)

Davies, H.L. (1980)- Crustal structure and emplacement of ophiolite in southeastern Papua New Guinea. In: C. Allegre & J. Aubouin (eds.) Orogenic mafic ultramafic association, Colloques Int. Centre Nat. Recherches Scient. (CNRS), Paris, 272, p. 17-33.

Davies, H.L. (1981)- The major ophiolite complex in Southeastern Papua New Guinea. In: A.J. Barber & S. Wiryosujono (eds.) The geology and tectonics of Eastern Indonesia, Proc. CCOP-IOC SEATAR Working Group Mtg., Bandung 1979, Geol. Res. Dev. Centre (GRDC), Bandung, Spec. Publ. 2, Bandung, p. 391-408.
(Papuan Ultramafic Belt NE of Owen Stanley Range simple layered sequence of basalt (4 km), gabbro (4 km) and ultramafic rocks (4-8 km). Ophiolite complex thought to represent Jurassic and/or Cretaceous Pacific oceanic crust, juxtaposed with Cretaceous sediments of NE Australian continental margin in NE-dipping subduction zone in E or M Eocene, choking subduction here ('choked subduction zone model' of ophiolite emplacement and uplift). Complex exposed by vertical movements in Neogene. NE dipping ophiolite complex continuous with crust and upper mantle of Solomon Sea Basin)

Davies, H.L. (1982)- The Papua New Guinea thrust belt, longitude 141-144 East. Bureau Mineral Res., Geol. Geoph., Canberra, Record 1982/3, p. 1-24.

Davies, H.L. (1982)- Mianmin, Papua New Guinea. 1:250,000 Geological Series- Explanatory notes. Dept. Minerals and Energy, Geol. Survey Papua New Guinea, SB/54-3, p. 1-44.
(PNG map sheet immediately E of W Papua border, N side of Central Range. Three geologic units: Papuan Basin(Pliocene thrust belt) in S, Central basement massif (with ultramafics, Ambunti metamorphics, Jurassic black phyllite/ schist (Om Beds), Cretaceous- Eocene Salumei Fm volcanic arc/ arc trench deposits, Tau blueschist, etc.) and Lumi Trough (Sepik) Neogene basin in N (oldest recorded sediments M Miocene). M Miocene Frieda dioritic complex with porphyry copper mineralization. In SW corner Late Miocene Pliocene Antares monzodiorite complex (= Star Mountains; ~8- 4 Ma))

Davies, H.L. (1983)- Wabag, Papua New Guinea. 1:250,000 Geological Series- Explanatory notes. Dept. Minerals and Energy, Geol. Survey Papua New Guinea, SB/54-8, p. 1-84.
(PNG map sheet in NW part of Central Range thrust belt. Two main provinces, separated by Stolle- Lagaip-South Kubor Fault Zone: (1) Papuan Basin in SW (Central Range thrust belt; with M Jurassic - Tertiary Australian margin shelf sediments), and (2) Central orogenic Belt in NE ('mobile zone'; with M-L Triassic sediments and volcanics). Most faults NE-dipping reverse/ thrust faults, with possible 70km of left-lateral strike slip along Stolle-Lagaip-South Kubor fault. With Porgera gold mine, associated with M-L Miocene diorite intrusives into folded Late Cretaceous Chim Fm sediments. Oil seeps in SW)

Davies, H.L. (1990)- Structure and evolution of the border region of New Guinea. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby, p. 245-269.
(Geology and stratigraphy of border region between W Papua and PNG, from Australian craton in S, across foldbelt, to accreted terranes in N. Disconformity at K-T boundary, spanning latest Maastrichtian- E Paleocene zone P2. Transcurrent faulting and narrowing of foldbelt at PNG- W Papua border may coincide with E border of more rigid Precambrian craton. Major M Miocene calc-alkaline volcanics in border regions (Maramuni Arc) and common Late Miocene- younger intrusives. Main development of PNG foldbelt 4-2 Ma, still continuing. Bismarck-Kubor moved relative to Fly Platform (paleomag suggests large Pliocene CCW rotation))

Davies, H.L. (1991)- Regional geologic setting of some mineral deposits of the New Guinea region. In: R. Rogerson (ed.) Proc. PNG Geology, Exploration and Mining Conf. 1991, Rabaul, Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, p. 49-57.
(Mineral deposits in C New Guinea associated with Neogene intrusions of magma of mantle origin that penetrated thick Precambrian and Paleozoic continental crust. Magmatism not obviously subduction-related)

Davies, H.L. (1992)- Mineral and petroleum resources of Papua New Guinea with notes on geology and history. Department of Geology, University of Papua New Guinea, 35p.

Davies, H.L., W.J.S. Howell, R.S.H. Fardon, R.J. Carter & E. Bumstead (1978)- History of the Ok Tedi copper prospect, Papua New Guinea, I: The years 1966-1976 and II: The years 1975-1978. Economic Geology 73, p. 796-809.
(Ok Tedi porphyry copper-gold deposit at Mt Fubilan in Star Mts of W PNG discovered and tested by Kennecott Copper subsidiary in 1968-1971. Mining operation negotiations failed in March 1975. In 1976 PNG government entered into agreement with BHP-led consortium)

Davies, H.L. & D.S. Hutchison (1982)- Ambunti, Papua New Guinea- 1:250,000 geological series with Explanatory Notes. Geol. Survey of Papua New Guinea, Port Moresby, SB/54-4, p.
(Map sheet in Sepik River region, N PNG)

Davies, H.L. & A.L. Jaques (1984)- Emplacement of ophiolite in Papua New Guinea. In: I.G. Gass et al. (eds.) Ophiolites and oceanic lithosphere, Geol. Soc. London, Spec. Publ. 13, p. 341-349.
(Major ophiolite complexes of PNG on NE margin of Australian craton and flanked by Paleogene volcanic arcs. Ophiolites are segments of oceanic lithosphere, in forearc zone prior to arc-continent collision. Central Range ophiolite (April ultramafics) complex structure and probably developed as series of thrust sheets in subduction system; thrust sheets subjected to renewed deformation after arc-continent collision)

Davies, H.L., J. Lock, D.L. Tiffin, E. Honza, Y. Okuda, F. Murakami & K. Kisimoto (1987)- Convergent tectonics in the Huon Peninsula region, Papua New Guinea. Geo-Marine Letters 7, 3, p. 143-152.
(Anticlinal nappe forming Huon Peninsula and adjacent ranges extends offshore as Huon Ridge. Frontal thrust of nappe is Ramu-Markham Fault (onshore) and deformation front along line of Markham Canyon (offshore). Timing and geometry of Finisterre arc-continent collision controversial, and origin of Finsch Deep unresolved)

Davies, H.L. & M. Norvick (1974)- Blucher Range, Papua New Guinea. BMR and Geol. Survey of PNG, 1:250,000 Geological Map series and explanatory notes, sheet SB/54-7, p. 1-29.
(Geologic map and explanatory notes of PNG Central Highlands, E of Indonesia border, between 5-6° S and 141° - 142°30'E. Major anticlines like Muller Anticline with Jurassic- Cretaceous section exposed in core)

Davies, H.L. & M. Norvick (1977)- Blucher Range stratigraphic nomenclature. Geol. Survey Papua New Guinea, Report. 77-14, p. 1-43.

Davies, H.L., R.C.B. Perembo, R.D. Winn & P. Kengemar (1997)- Terranes of the New Guinea Orogen. In: G.E. Hancock (ed.) Proc. Papua New Guinea Geology, Exploration and Mining Conference 1997, Madang, Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, p. 61-66.
(History of terrane accretion to N margin of Australian craton starts earlier (Late Cretaceous) than previously suggested. Collisions in C Highlands in Late Paleocene-E Eocene and Finisterre collision that precedes and is distinct from Pliocene Bismarck volcanic arc collision)

Davies, H.L. & I.E. Smith (1970)- Geology of Eastern Papua: a synthesis. Bureau Mineral Res. Geol. Geoph., Canberra, Record 1970/116, p. 1-27.
(online at: www.ga.gov.au/corporate_data/12529/Rec1970_116.pdf)
(Brief review of geology of SE PNG mainland with Owen Stanley Range and nearby D'Entrecasteaux, Woodlark and Louisiade islands, All with rel. widespread metamorphic and ultramafic rocks)

Davies, H.L. & I.E. Smith (1971)- Geology of Eastern Papua. Geol. Soc. America (GSA) Bull. 82, p. 3299-3312.
(Geology of E Papua Peninsula around Owen Stanley Range. Core of mainly Cretaceous sialic rocks metamorphosed in early Eocene, at time of emplacement of Papuan ultramafic belt, flanked by Mesozoic and younger mafic rocks)

Davies, H.L. & I.E. Smith (1974)- Tufi-Cape Nelson, Papua New Guinea- 1:250,000 Geol. Map Series. Bureau Mineral Res., Canberra, and Geol. Survey of Papua New Guinea, Explanatory Notes, SC/55-84, p. 1-34.

Davies, H.L., I.E. Smith, G. Cifali & D.J. Belford (1968)- Eastern Papua geological reconnaissance. Bureau Mineral Res. (BMR) Geol. Geophysics, Canberra, Record 1968/66, p. 1-31.
(Geology of SE 'tail' of PNG mainland)

Davies, H., M. Swift & L. Jonda (2014)- Puzzling juxtaposition of extensional and contractional tectonics in southeastern Papua New Guinea. Proc. 6th Research Science Technology (RST) Conf. University PNG, 141119, p. 1-5.
(SE one-third of Peninsula shows extensional tectonics N of ~10°S, with outcrops of ophiolite and metamorphic rocks, and contractional tectonics S of that line. Extensional tectonics reflect W-ward propagation of Woodlark Rift, contractional structures due to convergence between Papuan Plateau and Papuan Peninsula)

Davies, H.L. & A.N. Williamson (2001)- Buna, PNG 1:250,000 Geological map series, Sheet SC/55-3, Explanatory Notes to accompany Buna 1:250,000 geologic map, Geol. Survey Papua New Guinea, Port Moresby, p. 1-23.

Davies, H.L., R.D. Winn & P. KenGemar (1996)- Evolution of the Papuan Basin: a view from the orogen. In: P.G. Buchanan (ed.) Petroleum exploration, development and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 53-62.
(New Guinea orogen formed by succession of collisions of Australian craton with microcontinents and volcanic island arcs, from Late Cretaceous- today. Five main collision events: (1) Irian ophiolite event (end-Cretaceous collision of Australian craton and volcanic island arc, wih K-Ar ages of metamorphic sole 61-68 Ma); (2) Late Paleocene- E-M Eocene Kami event (closing of Kami small ocean basin and suturing of (para-autochthonous?) Bena Bena, Jimi and Kubor terranes with Australian craton); (3) Late Eocene- Oligocene Sepik collision of Australian continent and major volcanic arc(s), accomodating foreland loading and deposition of Darai Limestone; (4) Late Oligocene collision of East Papua Composite Terrane and (5) E Miocene collision of Oligocene- E Miocene Finisterre volcanic arc, with downwarping of continental margin creating Ramu-Markham basin. Often delay in time between collision and uplift)

Davis, K., K. Pedersen, B. Todd & K. Wall (2000)- Integrated geological and engineering evaluation of Central Moran field, Papua New Guinea. In: P.G. Buchanan et al. (eds.) Papua New Guineaȇs petroleum industry in the 21st century, Proc. 4th PNG Petroleum Convention, Port Moresby 2000, p. 397-425.

(Moran Field in S highlands of PNG is 1996 oil discovery in E Cretaceous Toro and Digimu Fms sands. Narrow, SW vergent anticline with overturned forelimb)

Dekker, F., H. Balkwil, A. Sister, R. Herner & W. Kampschuur (1991)- A structural interpretation of the Onshore Eastern Papuan fold belt, based on remote sensing and fieldwork. In: G.J. & C.Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby, p. 319-336.

Dekker, F., H.R. Balkwill, A. Slater, R.R. Herner & W. Kampschuur (1991)- Exploring Papua New Guinea with remote sensing field work. World Oil 212, p. 71-86.

Denison, C.N. & J.S. Anthony (1991)- New Late Jurassic subsurface lithostratigraphic units, PPL-100, Papua New Guinea. In: G.J. & C.Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Port Moresby 1990, Proc. First PNG Petroleum Convention, Port Moresby, p. 153-158.
(Kimmeridgean- Tithonian lithostratigraphic- biostratigraphic units of PNG)

DesOrmeau, J.W., S.M. Gordon, T.A. Little, S.A. Bowring & N. Chatterjee (2017)- Rapid time scale of Earthôs youngest known ultrahigh-pressure metamorphic event, Papua New Guinea. Geology 45, 9, p. 795-798.
(Youngest known UHP eclogite from eastern PNG (Mailolo Dome) shows crustal rocks subducted to P 27-31 kbar and T ~715 °C. Zircons suggest ages of 6.0 ± 0.2 Ma to 5.2 ± 0.3 Ma for UHP metamorphism and 3.2-2.3 cm/yr exhumation rate. Subsequent retrogression of terrane near base of crust and final emplacement in upper crust in < ~3 My)

De Vis, C.W. (1905)- Fossil vertebrates from New Guinea. Annals Queensland Museum 6, p. 26-31.

DeVries, M.S., R.D. Parish & J.L. Ryan (1996)- Horizontal well drilling in the Kutubu project, Papua New Guinea. In: P.G. Buchanan (ed.) Petroleum exploration, development and production in Papua New Guinea; Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 551-561.

Dickins, J.M. (1958)- Jurassic pelecypods from the Kubor Ranges, New Guinea. Unpublished Report.
(First identification of Late Jurassic Buchia malayomaorica from Kubor Ranges)

Dixon, J.M. (1996)- Physical model investigation of the influence of early extensional (growth) faults on fold-thrust structures, with application to the Papuan fold and thrust belt. In: P.G. Buchanan (ed.) Petroleum exploration, development and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 147-160.
(Papuan foldbelt result of protracted Mesozoic- E Tertiary continental rifting and passive margin sedimentation and folding-thrusting in Late Tertiary. Plasticine- silicone structure modeling stress hydrocarbon potential of footwall structural traps)

Dobmeier, C.J. & B. Poke (2012)- Geological map publication series of Papua New Guinea, 1:100 000, Sheet 7887 Aiome. Mineral Resources Authority, Port Moresby.

Dobmeier, C.J., B. Poke & B. Wagner (2012)- Geological map publication series of Papua New Guinea, 1:100 000, Sheet 7886 Minj. Mineral Resources Authority, Port Moresby.

Donaldson, J.C. & J.T. Wilson (1990)- Geology and hydrocarbon potential of the Sepik-Ramu area, Ramu Basin. In: G.J. & C.Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby, p. 499-512.
(Improved seismic processing over Sepik-Ramu area, N New Guinea, suggests major tectonic event took place in Late Miocene- Early Pliocene, not M Miocene as previously suggested. Thick Miocene section contains 70x12 km area of E-M Miocene carbonates with pinnacle reefs, potentially analogous to Salawati Basin)

Donaldson, J.C. & J.T. Wilson (1996)- Geology and hydrocarbon potential of the Sepik-Ramu area, Ramu Basin, Papua New Guinea. In: G.P. & A.C. Salisbury (eds.) Trans. 5th Circum-Pacific Energy and Mineral Resources Conference, Honolulu 1990, Gulf Publishing, Houston, p. 279-299.
(Same paper as Donaldson & Wilson 1990)

Doust, H. (1990)- Geology of the Sepik Basin, Papua New Guinea. In: G.J. & Z. Carman (eds.) Petroleum Exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby, p. 461-477.
(Sepik Basin in N part of New Guinea orogen is Neogene successor basin underlain and surrounded by terranes that were accreted in Oligocene-Miocene. Torricelli- Prince Alexander Mts in N are island arc/ oceanic terranes with some E-M Miocene limestones, mountains to S mainly metamorphics. Shell 1986 Nopan well 1, drilled of fault block, penetrated mainly M-L Miocene marine sediments before reaching weathered chlorite-epidote schist at 2312m, without oil shows or anticipated carbonate reservoirs)

Dow, D.B. (1961)- The relationship between the Kaindi metamorphics and Cretaceous rocks at Snake River, Territory of Papua and New Guinea. Bureau Mineral Res. Geol. Geoph., Record 1961/160, p. 1-10.
(online at: https://www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=10885)
(Snake River area at NW end of Owen-Stanley folded zone (SW of Lae and W of Morobe granodiorite) has thick Cretaceous greywackes previously regarded as part of Kaindi Metamorphics, but are less metamorphosed and less complexely folded. Cretaceous molluscs fauna previously described by Glaessner (1949) include Trigonia. Kaindi Metamorphics are greenschist facies metasediments withe marble lenses and possibly correlative of Permian Omung metamorphics of Kubor Block)

Dow, D.B. (1962)- A geological reconnaissance of the Jimi and Simbai Rivers, Territory Papua and New Guinea. Bureau Mineral Res. Geol. Geoph., Record 1962/110, p. 1-31.
(online at: www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=10999)
(Area of Jimi Anticline at N side of Jimi River (SW of Upper Ramu River and NW of Mt Herbert/Mt Wilhelm of Bismarck Range. Stratigraphy from old to young: (1) indurated ?Permian greywackes, (2) thick-bedded Jimi Fm greywackes with minor basic volcanics (with U Triassic bivalves Gervillea, Costatoria bivalves); (3) U Jurassic Maril shale with Inoceramus and Buchia malayomaorica (4) Lower Cretaceous basaltic Kondaku Tuff; (5) M Cretacous Genjinji/ Chim Gp marine shales with belemnites (6) thick U Cretaceous submarine basaltic Kumbruff volcanics ('spilites'); (7) thick Eocene Asai Beds (siltstone, shale, limestone with locally common Nummulites/ Discocyclina; metamorphosed to North. Triassic- Jurassic section appears to thicken from W to E (NE? Some of the main faults appear to have transcurrent component)

Dow, D.B. (1977)- A geological synthesis of Papua New Guinea. Bureau Mineral Res. Geol. Geoph., Bull. 201, p. 1-41.
(online at: www.ga.gov.au/corporate_data/90/Bull_201.pdf)
(Main island of PNG formed by interaction between Australian Plate in SW and Pacific Plate in NE. Between platform and oceanic crust and island arcs, is deformed mobile belt ~150 km wide. Platform stable continental crust of Paleozoic crystalline rocks, overlain by Mesozoic and Tertiary sedimentary rocks, mostly undeformed. Mobile belt deformed since at least Late Mesozoic, with variety of geosynclinal sediments and also site of widespread igneous activity. Oceanic crust and island arcs form NE margin of mobile belt. Oldest rocks in oceanic crust and island arcs are Late Cretaceous ophiolites and island-arc volcanics. Major orogeny in Oligocene, forming belt of metamorphics along length of mobile belt (metamorphics overlain by Upper Te/ E Miocene forams at several localities). E Miocene widespread shelf sediments (mainly limestone). Etc.)

Dow, D.B. & H.L. Davies (1964)- The geology of the Bowutu Mountains, New Guinea. Bureau Mineral Res. Geol. Geoph., Report 75, p. 1-31.
(online at: www.ga.gov.au/products-services/legacy-publications/reports.html)
(Geologic map of Bowutu Mountains, at NW end of Papuan Ultrabasic belt in SE PNG, between Owen Stanley Range and Morobe Coast. Bowutu Mts consist of igneous rocks of Papuan Basic Belt (emplaced in U Cretaceous or Early Tertiary) and Mageri Volcanics (M Miocene); Owen Stanley Range is made up of metasediments of Owen Stanley Metamorphics)

Dow, D.B. & F.E. Dekker (1964)- The geology of the Bismarck Mountains, New Guinea, Bureau Mineral Res. Geol. Geoph., Report 76, p. 1-45.
(online at: www.ga.gov.au/products-services/legacy-publications/reports.html)
(W Bismarck Mts W of Mt Wilhelm are NE of main Central Range of PNG and SW of Ramu Valley. Oldest rocks Upper Triassic Jimi Greywacke and Kana Fm volcanoclastics, unconformably overlain by E Jurassic Balimbu Greywacke, M Jurassic Mongum Volcanics and Late Jurassic Maril Shale. Bismarck granodiorite probably U Triassic- lowermost Jurassic)

Dow, D.B. & M.D. Plane (1965)- The geology of the Kainantu goldfields. Bureau Mineral Res., Geol. Geoph., Canberra, Report 79, p. 1-28.
(online at: www.ga.gov.au/corporate_data/14993/Rep_079.pdf)
(Area of NE PNG Kainantu goldfields with Paleozoic? Bena Bena Fm metamorphics, intruded by U Triassic or younger Bismarck and Mt Victor granodiorites, overlain by Lower Miocene (Te) Nasananka conglomerate and Omaura greywacke (w. Spiroclypeus, Eulepidina, etc.). Unconformably overlain Lower Tf Lamari Conglomerate (w. Miogypsina, Miogypsinoides dehaartii, Lepidocyclina (N)) and ?Pliocene andesitic Aifunka Volcanics with gold lodes)

Dow, D.B., J.A.J. Smit, J.H.G. Bain & R.J. Ryburn (1972)- Geology of the South Sepik region, New Guinea. Australia Bureau Mineral Res. Geol. Geoph., Bull. 133, p. 1-88.
(online at: https://d28rz98at9flks.cloudfront.net/128/Bull_133.pdf)
(Geology of N part of Central Range mountains to Sepik River in North. Oldest rocks M Triassic Yuat Fm black shale and U Triassic dacitic Kana Volcanics. Triassic unconformably overlain by M Jurassic- Cretaceous (incl. Maril Shale with M. malayomaorica). Ambunti Metamorphics are post-Eocene and pre-Middle Miocene in age. p. 26: Salumei Fm of S Sepik region Upper Cretaceous- Eocene thick turbiditic greywacke series with volcanic beds, Cretaceous planktonics and Eocene limestone lenses with Biplanispira, Pellatispira. Time- equivalent of bulk of Lagaip beds, but no volcanics in Lagaip Fm. Widespread M Miocene (Tf1-2) arc volcanics)

Downes, P.M., R.H. Findlay, S. Nekitel, J. Arumba & G. Kopi (1994)- Review of the geology and mineralisation of the Kainantu Area, Papua New Guinea. In: R. Rogerson (ed.) Proc. PNG Geology, Exploration and Mining Conf., Lae, Australasian Inst. of Mining and Metallurgy (AusIMM), p. 1-9.
(Kainantu area in composite Scrapland composed of Mesozoic greenschist - amphibolite facies Bena Bena and Goroka Fm metamorphics and intrusives, overlain by Late Cretaceous-Miocene marine sediments, volcanics and M-L Miocene intrusives. Four deformation events, oldest producing slaty cleavage and isoclinal E-W trending folds. Known mineralization gold-copper skarn, porphyry copper epithermal and gold placer deposits, many associated with 9-13 Ma old porphyry intrusives)

Duck, B.H. (2001)- The Boundary Volcano- its geological associations and implications for exploration. In: G. Hancock (ed.) Geology, Exploration and Mining Conference, Port Moresby 2001, Proc. Australasian Inst. of Mining and Metallurgy (AusIMM), Parkville, p. 87-92.

Dugmore, M.A. & P.W. Leaman (1998)- Mount Bini copper-gold deposit. In: D.A. Berkman & D.H. Mackenzie (eds.) Geology of the mineral deposits of Australia and Papua New Guinea, Australasian Inst. of Mining and Metallurgy (AusIMM), Monogr. Series 22, p. 833-848.

Dugmore, M.A., P.W. Leaman & R. Philip (1996)- Discovery of the Mt Bini porphyry copper-gold-molybdenum deposit in the Owen Stanley Ranges, Papua New Guinea- A geochemical case history. J. Geochemical Exploration 57, p. 89-100.
(Bini Cu-Au-Mo deposit with overprinted epithermal Au-Ag in Owen-Stanley Ranges, 50 km NE of Port Moresby, located by stream sediment and rock float sampling. Part of calc-alkaline Bavu Igneous Complex of probable Pliocene age, intruded into Owen Stanley Metamorphics)

Durkee, E.F., W.D. Stewart & G. Francis (1987)- Oil and gas potential of Papua New Guinea. In: M.K. Horn (ed.) Trans. Fourth Circum Pacific Energy and Mineral Resources Conf., Singapore 1986, p. 63-101.
(Review of oil-gas plays and discoveries of PNG Papuan Basin, Bougainville, New Ireland, North New Guinea)

Earnshaw, J.P., A.J.C. Hogg, N.H. Oxtoby & S.J. Crawley (1993)- Petrographic and fluid inclusion evidence for the timing of diagenesis and petroleum entrapment in the Papuan Basin. In: G.C. & Z. Carmen (eds.) Petroleum Exploration and Development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby, p. 459-476.
(Fluid inclusion study in Papuan foldbelt discoveries suggests petroleum emplacement occurred after quartz cementation, probably during active thrusting of Late Pliocene- Recent)

Edwards, A.B. (1950)- The petrology of the Miocene sediments of the Aure Trough, Papua. Proc. Royal Soc. Victoria 60, p. 123-148.
(Miocene in Aure Trough ~15,000' thick graywackes, mudstones, conglomerates and limestone. Sediments composed mainly of material derived from andesitic tuffs and lavas, transported over short distance)

Edwards, A.B. (1950)- The petrology of the Cretaceous greywackes of the Purari Valley, Papua. Proc. Royal Soc. Victoria 60, p. 163-171.
(online at: http://takata.slv.vic.gov.au/...)
(Purari valley Cretaceous low-quartz (clear, 5-15%) and high feldspar (30-55%) and chlorite, etc., matrix, and metamorpic and igneous lithics. Derived mainly of granitic material, but also from sedimentary schists and andesitic tuffs)

Edwards, A.B. & M.F. Glaessner (1953)- Mesozoic and Tertiary sediments from the Wahgi Valley, New Guinea. Proc. Royal Soc. Victoria 64, p. 93-112.
(online at: http://takata.slv.vic.gov.au/...)
(In Chimbu area N of Kubor Range, S of Bismarck Range, very thick 'geosynclinal' Upper Jurassic- Eocene section (22,500'!). Upper Jurassic Maril Shale with common Buchia malayomaorica, Belemnopsis gerardi, Inoceramus cf. haasti, Calpionella alpina, etc.. Kondaku Tuff (6100'?) with Aptian- Cenomanian ammonites (Deshayites, etc.). U Cretaceous Maram shales rel. unfossiliferous, but yielded some Cenomanian ammonites, Inoceramus and foraminifera. Chimbu Tuff mainly unfossiliferous, except reportedly with Fasciolites wichmanni (abundant) and Lacazina wichmanni. Not sure if Lacazina, Pellatispia, Biplanispira were actually found here in Chimbu Limestone)

Eisenberg, L.I. (1993)- Hydrodynamic charcter of the Toro Sandstone, Iagafu/ Hedinia area, Southern Highlands Province, Papua New Guinea. In: G.J. & Z. Carman (eds.) Petroleum exploration and development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby, p. 447-458.
(Oil distribution in Iagafu/ Hedinia fault-propagation folds in frontal Papuan foldbelt affected by hydrodynamic flow in Toro Sst reservoir, causing tilted oil-water contact)

Eisenberg, L.I. (1996)- Strontium isotope analysis and structural interpretation of Pônyang Anticline, Papuan Fold Belt, Western Highlands Province, Papua New Guinea. In: P.G. Buchanan (ed.) Petroleum Exploration in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 231-244.
(Structure of P'nyang gas-bearing anticline in PPL101 in PNG Southern Highlands constrained by Sr isotope age analyses in Oligo-Miocene Darai Limestone (showing downfaulted nature of NE P'nyang Anticline))

Eisenberg, L.I., J.C. Phelps, T.L. Allen, J.A. Trotter, M.J. Korsch & D.J. Whitford (1996)- Darai Limestone depositional history and Strontium chronostratigraphy, Papuan fold belt, Papua New Guinea. In: P.G. Buchanan (ed.) Petroleum exploration, development and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 345-356.
(Sr isotope ratios important tool in determination of stratigraphic position within Oligo-Miocene Darai Limestone. In parts of area minimal or non-depostion during E Miocene. At Juha continuous carbonate deposition)

Eisenberg, L.I., M.V. Langston & R.E. Fitzmorris (1994)- Reservoir management in a hydrodynamic environment, Iagifu-Hedinia area, Southern Highlands, Papua New Guinea. In: SPE Asia Pacific Oil and Gas Conference, Melbourne 1994, 18p.

(Agogo and Iagifu/Hedinia fields in S Highlands produced first commercial oil in PNG in 1992. NW to SE regional scale water flow in Toro Sst parallels Papuan Fold Belt for 115km, passing through Iagifu/Hedinia oil field, affecting oil distribution in Toro reservoirs. NW side swept free of moveable oil. Oil/water contacts tilted up to 6 degrees and three members of Toro Sst Fm each have own hydrocarbon-water contacts)

England, R.N. & H.L. Davies (1973)- Mineralogy of ultramafic cumulates and tectonites from Eastern Papua. Earth Planetary Sci. Letters 17, p. 416-425.

Erceg, M.M., G.A. Craighead, R. Halfpenny & P.J. Lewis (1991)- The exploration history, geology and metallurgy of a high sulphidation epithermal gold deposit at Wafi River, Papua New Guinea. In: R. Rogerson (ed.) Proc. Geology, Exploration and Mining Conference, Rabaul 1991, Australasian Inst. of Mining and Metallurgy (AusIMM), Parkville, p. 58-65.

Erni, A. (1944)- Ein Cenoman Ammonit *Cunningtoniceras holtkeri* nov.spec. aus Neu Guinea, nebst Bemerkungen uber einige ander Fossilien von dieser Insel. Eclogae Geol. Helvetiae 37, p. 468-475.
(online at: http://retro.seals.ch/cntmng?type=pdf&rid=egh-001:1944:37::595&subp=hires)
('A Cenomanian ammonite Cunningtoniceras hoeltkeri n.sp. from New Guinea, with remarks on some other fossils from the island'. Ammonite collected in Wagi valley, PNG, during 1936/1939 anthropological New Guinea expedition. Ammonite pebbles viewed as 'magic stones' by natives)

Espi, J.O., K.I. Hayashi, K. Komuro, Y. Kajiwara & H. Murakami & (2005)- The Bilimoia gold deposit, Kainantu, Papua New Guinea: a fault-controlled, lode-type, synorogenic tellurium-rich quartz-gold vein system. In: 8th Biennial Meeting, Soc. Geology Applied to Mineral Deposits (SGA), Beijing, Springer, 9-19, p. 941-944.
(Bilimoia gold deposit in NE PNG is fault-hosted quartz-gold vein system hosted by 290-221 Ma years old basement that was regionally metamorphosed to greenschist facies at ~45 Ma. Mineralisation related to I-type, intermediate-felsic 9-7 Ma year-old porphyries)

Espi, J.O., K.I. Hayashi, K. Komuro, H. Murakami & Y. Kajiwara (2007)- Geology, wall-rock alteration and vein paragenesis of the Bilimoia gold deposit, Kainantu metallogenic region, Papua New Guinea. Resource Geology 57, 3, p. 249-268.
(Bilimoia gold deposit in eastern Central Mobile Belt of PNG in fault-hosted, NW-NNW-trending Au-quartz veins hosted by M-L Triassic greenschist that metamorphosed between Late Triassic and E-M Jurassic. Bilimoia deposit related to Late Miocene (9-7 Ma) I-type, intermediate to felsic and late mafic intrusions)

Espi, J.O., Y. Kajiwara, M.A. Hawkins & T. Bainbridge (2002)- Hydrothermal alteration and Cu-Au mineralization at Nena high sulfidation-type deposit, Frieda River, Papua New Guinea. Resource Geology 52, p. 301-313.
(Nena Cu-Au deposit in Frieda River mineral district of NW mainland PNG, discovered in 1975. Mineral district represents nearshore isolated island strato-volcano of Miocene age. Basement is U Cretaceous- Eocene Salumei Fm, metamorphosed between 27-25 Ma, Unconformaby overlain by EM Miocene Wogamush Fm volcanoclastics. April Ultramafics emplaced in Late Eocene-Early Miocene, before M Miocene Frieda River Intrusive Complex, with Nena Diorite age ~17.3-13.1 Ma. High sulfidation system)

Etheridge, R. (1889)- On our present knowledge of the palaeontology of New Guinea. Records Geol. Survey New South Wales 1, 3, p. 172-179.
(Includes first description of Jurassic ammonites from PNG, from river float at the Observatory Bend of the Strickland River, at 6°38'30'S and 142°E; Boehm, 1913)

Findlay, A.L. (1974)- The structure of the foothills South of the Kubor Range, Papua New Guinea. Australian Petrol. Explor. Assoc. (APEA) J. J. 14, 1, p. 14-20.
(Structural styles at S side of NW-SE trending Kubor Range, where Permian granodiorite intruded Paleozoic metamorphics. S side of Kubor Range up to 7km of Mesozoic sediments, including mid-Cretaceous Kondaku

Tuffs in N part. E-M Miocene Darai Lst in S replaced by basinal Aure Group closer to Kubor Range. U Miocene- Pliocene Orubadi Fm clastics in S, not deposited towards Kubor Range ?)

Findlay, R.H. (1995)- Stratigraphic constraints on the development and timing of arc-continent collision in Northern Papua New Guinea: discussion. J. Sedimentary Res. 65B. p. 281-282.
(Reply to Abbott et al. 1994 paper)

Findlay, R.H. (1998)- Palaeostress in the Ramu Markham obduction zone. In: Proc. GEOSEA'98, Ninth Reg. Congress Geology, Mineral and Energy Resources of Southeast Asia, Geol. Soc. Malaysia, p. 229-230.
(Abstract only) (Ramu-Markhan obduction zone consists of Southern Microcontinent (Scrapland) which accreted to Australia in Late Eocene- Oligocene (Sepik Event) and which is being overthrust by Finisterre terrane to N, strarting in Pliocene and continuing today)

Findlay, R.H. (2003)- Collision tectonics of northern Papua New Guinea: key field relationships in the Finisterre, Sarawaget and Adelbert Mountains and New Britain demand a new model. In: R.R. Hills & R.D. Muller (eds.) Evolution and dynamics of the Australian Plate, Geol. Soc. America (GSA), Spec. Paper 372, p. 291-307.
(Revised lithostratigraphy for Finisterre, Sarawaget and Adelbert Mountains of N PNG. Lithostratigraphic relations demand interpretation of Finisterre Volcanics as allochthonous terrane, which collided with Australian- PNG craton in Pliocene. Finisterre Volcanics formed as autochthonous plateau in backarc basin or intra-arc rift-basin of Sepik Arc to S which collided with Australia in Oligocene)

Findlay, R.H., L. Arumba, J. Kagl, G. Kopi, S. Nekitel et al. (1997)- Papua New Guinea 1:250,000 Geological Atlas, Markham, Sheet SB/55-10 (2nd ed.). Geol. Survey PNG, Port Moresby, p.

Findlay, R.H., L. Arumba, J. Kagl, S. Nekitel, N. Mosusu, C. Rangin & M. Pubellier (1997)- Revision of the Markham 1: 250 000 sheet, Papua New Guinea: what is the Finisterre Terrane? In: G. Hancock (ed.) Proc. PNG Geology, Exploration Mining Conf., Madang 1997, Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, p. 87-98.

Finlayson, D.M., B.J. Drummond, C.D.M. Collins & J.B. Connelly (1977)- Crustal structure under the Mount Lamington region of Papua New Guinea. In: R.W. Johnson (ed.) Volcanism in Australasia, Elsevier, Amsterdam, p. 259-274.
(Mt Lamington stratovolcanoN of Owen Stanley Range in E Papua underlain by Papuan Ultramafic Belt ophiolites. Moho depth shallows from 21km under N Papua coast to 8km under Mt Lamington. Crustal layers velocities compatible with oceanic crust, but crustal thickness along coast twice normal oceanic crust. Prominent negative magnetic anomaly associated with Papuan Ultramafic Belt. Volcanism cannot be associated with well-defined Benioff zone)

Finlayson, D.M., B.J. Drummond, C.D.M. Collins & J.B. Connelly (1977)- Crustal structures in the region of the Papuan ultramafic belt. Physics Earth Planetary Interiors 14, p. 13-29.
(Papuan Ultramafic Belt major dipping layered structure. Thickness of crustal material seaward of belt probably too great to be oceanic. Crustal thickness offshore 33 km in area of Huon Gravity Low in W Solomon Sea, 27 km in area N of Trobriand Platform, 13 km in C Solomon Sea. Crust under Trobriand Gravity High may contain ophiolite rock suite similar to Papuan Ultramafic Belt)

Finlayson, D.M., K.J. Muirhead, J.P. Webb, G. Gibson, A.S. Furumoto, R.J.S. Cooke & A.J. Russell (1976)- Seismic investigation of the Papuan Ultramafic Belt. Geophysical J. Royal Astronomical Soc. 44, p. 45-59.
(online at: http://gji.oxfordjournals.org/content/44/1/45.full.pdf+html)
(Seismic data from profile along NE Papuan peninsula coast indicate velocities which can be correlated with oceanic layers 1, 2 and 3, but with crustal thickness 20-25 km. Crustal thickness >2x thickness of gabbro and basalt components of ophiolite suite exposed inland. Low-velocity zone below Moho. Return to upper mantle velocities at ~50 km)

Finlayson, E.J., N.M.S. Rock & S.D. Golding (1988)- Deformation and regional carbonate metasomatism of turbidite-hosted Cretaceous alkaline lamprophyres (NW Papua New Guinea). Chemical Geology 69, p. 215-233.
(Metasomatised camptonite dykes and stocks, named Fu Intrusives, in thrust plates of Mesozoic slates in New Guinea Thrust Belt. Intrusions emplaced prior to Oligo-Miocene folding deformation and low-grade regional metamorphism of host (K-Ar ages of 75 Ma/ Campanian probable age of intrusion). REE patterns and initial Sr ratios typical of alkaline lamprophyres. Carbonate metasomatism of intrusive suite result of metamorphic dewatering of host rocks during slaty cleavage development)

Fisher, M.S. (1936)- The origin and composition of alluvial gold, with special reference to the Morobe goldfield, New Guinea. Trans. Inst. Mining Metallurgy 44, p. 337-563.

Fischer, M.W. & J. Warburton (1996)- The importance of Pre-Tertiary basin architecture for hydrocarbon accumulation in the Papuan fold and thrust belt: models, analogues and implications. In: P.G. Buchanan (ed.) Petroleum exploration, development and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 111-131.
(Late Miocene Papuan fold-thrust belt commonly interpreted as thin-skinned fold-thrust belt with layer-cake stratigraphy, but many surface anticlines are inverted footwalls of older extensional faults)

Fisher, N.H. (1939)- Metasomatism associated with Tertiary mineralization in New Guinea. Economic Geology 1939, p. 890-905.

Fisher, N.H. (1944)- Outline of the geology of the Morobe Goldfields. Proc. Royal Soc. Queensland 55, 4, p. 51-58.

Fitzgerald, E.M.G., J. Velez-Juarbe & R.T. Wells (2013)- Miocene sea cow (Sirenia) from Papua New Guinea sheds light on Sirenian evolution in the Indo-Pacific. J. Vertebrate Paleontology 33, 4, p. 956-963.
(Vertebrae and ribs of indeterminate sirenian from Burdigalian-Serravallian (Tf1) section, 150m below top of Darai Limestone in Selminum Tem cave, Hindenburg Range, W PNG. Represent earliest mammal recorded from New Guinea)

Fleming, A.W., G.A. Handley, K.L. Williams, A.L. Hills & G.J. Corbett (1986)- The Porgera gold deposit, Papua New Guinea. Economic Geology 81, p. 660-680.
(Porgera gold mine in highlands of PNG. M Miocene intrusive system, derived from melting of thickened crust, emplaced in Late Cretaceous sediments on N margin Papuan platform, ~25 km S of Central orogenic belt. Mineralization associated with porphyritic intrusions of mafic diorite)

Fleming, A.W. & T.I. Neale (1979)- Geochemical exploration at Yandera porphyry copper prospect, Papua New Guinea. J. Geochemical Exploration 11, p. 33-51.
(Case history of geochemical exploration of porphyry Cu-Mo system at Yandera prospect at foot of Mt Wilhelm in Bismark Ranges of PNG. Part of U Miocene batholith of Bismark Intrusive Complex)

Francis, G. (1983)- Tertiary biostratigraphy and lithostratigraphy of Petroleum Prospecting Licence (PPL) 30: a critical review. Geol. Survey Papua New Guinea, Report 83-8, p. 1-24.

Francis, G. (1986)- Some current problems of Mesozoic geology in the Papuan Basin. Geol. Survey Papua New Guinea, Techn. Note 4/86, p. *(Unpublished)*

Francis, G. (1990)- The North New Guinea Basin and associated infra-basins. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby 1990, p. 445-460.
(Good review of North New Guinea Miocene- Pleistocene basins N of Central Range (Aitape, Sepik, Ramu). With results of 7 exploration wells and Miocene- Pliocene paleogeographic maps (cross-sections show dominant fold-thrust style of tectonics; most authors interpret this as left-lateral transpressional system; JTvG))

Francis, G. & D. Deibert (1988)- Petroleum potential of the North New Guinea basin and associated infra-basins. Geol. Survey Papua New Guinea Report 88/37, p. 1-229.

Francis, G., R. Rogerson, D.W. Haig & J. Sari (1986)- Neogene stratigraphy, sedimentation and petroleum potential of the Oiapu-Yule Island- Oroi Region, Papua New Guinea. In: G.H. Teh & S. Paramananthan (eds.) Proc. 5th Reg. Congress Geology, Mineral and Energy Resources of SE Asia (GEOSEA V), Kuala Lumpur 1984, 1, Bull. Geol. Soc. Malaysia 19, p. 123-152.
(online at: https://gsmpubl.files.wordpress.com/2014/09/bgsm1986011.pdf)
(Miocene Aure association in SE PNG mainly bathyal shales and turbidite sandstones. Folding phase in latest M Miocene culminating with thrusting in Late Miocene to create SE Papuan foldbelt. Deformation associated with basaltic volcanism (Talama Fm). Local carbonate buildups on cores of anticlines (Ou-Ou Lst). Unconformably overlain by latest Miocene- E Pliocene Orubadi Beds. E Pliocene influx of coarser clastic from rising mountains to NE (Era beds). Second phase of thrusting in Late Pliocene- E Pleistocene. Most thrust faults dip to NE)

Francis, G., R. Rogerson, D.W. Haig & J. Sari (1986)- Neogene stratigraphy, structure and petroleum potential of the Yule Island-Delena region, Papua New Guinea. Comm. Co-ord. Joint Prospecting Mineral Resources in Asian Offshore Areas (CCOP), Techn. Bull. 17, p. 13-59.
(Same or similar paper as 1986 GEOSEA V paper)

Francis, G., R. Rogerson, D. Hilyard & D.W. Haig (1990)- Excursion guide to the Waghi and Chimbu Georges. In: R. Rogerson (ed.) Excursion Guide Series, Geol. Survey Papua New Guinea, Port Moresby, p. 1-55.

Francis, G., R. Rogerson & L. Queen (1991)- The distribution, petrology and mineralisation of mid-Cretaceous to Palaeogene marine volcanics in Papua New Guinea. In: R. Rogerson (ed.) Proc. PNG Geology, exploration and Mining Conf., Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, p. 17-25.

Francis, G. & G.E.G. Westermann (1993)- The Kimmeridgean problem in Papua-New Guinea and other parts of the Indo-Southwest Pacific. In: G.J. & Z. Carman (eds.) Proc. 2nd PNG Petroleum Convention, Port Moresby, p. 75-93.
(Ammonites rel. rare in PNG Late Jurassic; belemnites and bivalves more common. Diagnostic Kimmeridgean ammonites almost unknown in Indo-SW Pacific from Himalaya-PNG- New Zealand, making biozone-stage calibrations difficult in this region. Also provincialism of PNG belemnites makes direct correlations to Tethyan of Europe impossible. In(Sula Islands more complete Jurassic ammonite sequenc, with 3 Oxfordian zones. (from base: Wanaea spectabilis, upper W. spectabilis and Wanaea clathrata dinozones). Ammonite-rich zone overlain by ammonite-poor zone, then latest Tithonian- earliest Berriasian assemblage with P. iehiense dinos)

Franklin, S.P. & J.E. Livingston (1996)- Development of an infill well program to maximise economic return from the Iagafu- Hedinia Field: Part I. Integrated strauctural, stratigraphic and reservoir attribute modelling as input to reservoir simulation and well targeting. In: P.G. Buchanan (ed.) Petroleum exploration development and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 573-589.
(Iagafu- Hedinia oil-gas field in Papuan Fold Belt with 31 MMBO recoverable reserves. Large thrust fault duplex structure, with detachment surfaces in Cretaceous Ieru Shale, causing discordance between structure at surface and basal Cretaceous Toro Sst reservoir level. Toro Sst main reservoir 100m thick, composed of four stacked parasequences of wave-dominated delta complex, separated by marine flooding surfaces)

Gagel, C. (1913)- Beitrage zur Geologie von Kaiser Wilhelms-Land. In: Beitrage zur geologischen Forschung der deutschen Schutzgebiete, 4, Kon. Geolog. Landesanstalt, Berlin, p. 1-55.

Galewsky, J. (1998)- The dynamics of foreland basin carbonate platforms: tectonic and eustatic controls. Basin Research 10, p. 409-416.
(Numerical modeling of coral growth and flexural subsidence in foreland basin setting matches drowning and backstepping of Quaternary carbonate platforms in Huon Gulf, PNG)

Galewsky, J., E.A. Silver, C.D. Gallup, R.L. Edwards & D.C. Potts (1996)- Foredeep tectonics and carbonate platform dynamics in the Huon Gulf, Papua New Guinea. Geology 24, p. 819-822.
(Side-scan sonar and seismic data reveal history of carbonate platform growth, drowning, and back stepping in the Huon Gulf, documenting subsidence of Huon Gulf in response to encroaching Finisterre Mts at ~5.7 mm/yr for past 348 ky (highest subsidence in any any foredeep). Reefs may have formed during sea-level lowstands and drowned during rapid rates of sea-level rise)

Gardner, J.V. (1970)- Submarine geology of the western Coral Sea. Geol. America, Bull. 70, p. 1399-1424.
(Coral Sea Basin probably formed by Late Eocene- E Oligocene rotational spreading, with subsidence of basin margins. Erosional unconformity, previously identified on seismic across marginal Queensland Plateau, dated as E Miocene and represents initial marine transgression onto basin margin. Subsidence continued, accompanied by faulting which subdivided margin into four plateaus. Thick terrigenous turbidites derived from New Guinea deposited during last glacial stage, but predominately calcareous pelagic sediments since then)

George, S.C., F.W. Krieger, P.J. Eadington, R.A. Quezada, P.F. Greenwood et al. (1997)- Geochemical comparison of oil-bearing fluid inclusions and produced oil from the Toro sandstone, Papua New Guinea. Organic Geochem. 26, p. 155-173.
(Oil in Lower Cretaceous Toro Sst in Iagifu-7X different from fluid inclusion oil. DST oils sourced from oxic mixed marine/ terrestrial source, probably M- L Jurassic mudstones. Fluid inclusion oils from less terrestrially-influenced marine source rock deposited under less oxic conditions. Fluid inclusion oils early oil charge from probably Cretaceous source, which started migrating into Toro sst in Miocene. At Iagifu early oil diluted by larger volume of Jurassic oil generated at end-Miocene)

George, S.C., Volk, H., Ahmed, M., Middleton, H., T. Allan & D. Holland (2004)- Novel petroleum systems in Papua New Guinea indicated by terpane and methylhopane distributions. In: P.J. Boult et al. (eds.) Eastern Australasian Basins Symposium II, Adelaide, Petroleum Expl. Soc. Australia (PESA), Spec. Publ., p. 575-588.
(Most PNG oil production from W Papuan fold belt, with oils from Jurassic marine source with terrestrial organic matter. Puri-1 oil and Subu wells (Aure Scarp) bitumens indicate Jurassic source also in E Papuan Basin. Calcareous source rock may be regionally significant in E Papuan Basin. W Papuan Basin oils from Iagifu and P'nyang wells (W Fold belt) and Bujon 1 from foreland indicate Late Cretaceous or younger marine source with minor terrestrial organic matter. Oil from Koko 1 in foreland indicate lacustrine source. Oil stains in Bujon-1 also likely from this source, age unconstrained, but expelled later than Late Cretaceous or younger marine source rock which generated FI oil in Bujon 1. Future PNG petroleum plays not restricted to Jurassic source/- M Cretaceous reservoir paradigm)

George, S.C., H. Volk, M. Ahmed, W. Pickel & T. Allan (2007)- Biomarker evidence for two sources for solid bitumens in the Subu wells: implications for the petroleum prospectivity of the East Papuan Basin. Organic Geochem. 38, p. 609-642.
(Late Cretaceous sst from Subu 1,2 (Aure Scarp) with solid bitumens, reflect biodegradation of two oil families: (A) marine source with significant terrestrial organic matter, believed to be Jurassic; (B) more reducing; so far unidentified. Condensate charge relatively recent. Solid bitumen from Miocene volcanolithic sst from Ouha anticline from early mature Paleogene or late Cretaceous source with predominantly terrestrial organic matter in oxic environment. This sample proves existence of different oil source rocks in E Papuan Basin)

Giddings, J., C.T. Klootwijk, W. Sunata, C. Loxton, C. Pigram & H. Davies (1985)- Palaeomagnetism of Australia's active northern margin in New Guinea. In: E.C. Leitch & E. Scheibner (conv.) Third Circum-Pacific terrane conference, Extended abstracts, Geol. Soc. Australia 14, p. 83-86.

Glaessner, M.F. (1942)- The occurrence of the New Guinea turtle (*Carettochelys*) in the Miocene of Papua. Records Australian Museum 21, 2, p. 106-109.
(online at: http://australianmuseum.net.au/Uploads/Journals/17293/262_complete.pdf)
(Mold of turtle bone in Miocene dark tuffaceous sandstone in quarry near APC 01 well location, on road leading from left bank of Vailala River near mouth of Kariava Creek)

Glaessner, M.F. (1945)- Mesozoic fossils from the Central Highlands of New Guinea. Proc. Royal. Soc. Victoria 56, p. 151-168.
(U Jurassic and M Cretaceous molluscs from Central PNG. Incl. Late Jurassic Buchia malayomaorica, Belemnopis gerardi and Grammatodon virgatus from Kuabgen Range at Upper Fly River area, S Central Highlands. Also Albian Feing Group with belemnite Parahibolites blanfordi. Cretaceous from hills N of Purari River with Exogyra probably Aptian-Albian)

Glaessner, M.F. (1949)- Mesozoic fossils from the Snake River, Central New Guinea. Mem. Queensland Mus. 12, 4, p. 165-180.
(Mollusc faunas from Mesozoic beds of Snake river region, PNG, include Cucullaea (Ashcroftia) distorta, Glycymeris sp., Trigonia (Aganthotrigonia) phyllitica, Cardium sp., Voisella sp. and Tibia? morobica. Age of fauna is Cretaceous)

Glaessner, M.F. (1950)- Geotectonic position of New Guinea. American Assoc. Petrol. Geol. (AAPG) Bull. 34, p. 856-881.
(Division of New Guinea into twelve structural zones. N and E parts of island essentially Melanesian while W New Guinea influenced by Asiatic Banda arcs. S and C New Guinea essentially Australian and appear to continue as submerged median mass SW under Coral Sea)

Glaessner, M.F. (1952)- Geology of Port Moresby, Papua. In: Sir Douglas Mawson Anniversary Volume, University of Adelaide, p. 63-86.

Glaessner, M.F. (1958)- New Cretaceous fossils from New Guinea, Guinea, with a contribution on a new ammonite genus by R. Casey. Records South Australian Mus. 13, 2, p. 199-126.
(Cenomanian- Albian molluscs and ammonites from Central Highlands. Includes new Cenomanian ammonite species from Chim Fm near Chimu airstrip, Chimbuites sinuosocostatus)

Glaessner, M.F. (1960)- Upper Cretaceous larger foraminifera from New Guinea. Science Repts. Tohoku University, 2nd. Ser. (Geol.), Spec. Vol. 4 (Hanzawa Memorial Vol.), p. 37-44.
(Abundant larger forams Pseudorbitoides israelskii and Orbitoides tissoti described from Campanian of Port Moresby area, PNG. First report of this distinctive assemblage outside Caribbean-Gulf of Mexico area)

Glaessner, M.F., K.M. Llewellyn & G.A.V. Stanley (1950)- Fossiliferous rocks of Permian age from the Territory of New Guinea. Australian J. Sci. 13, p. 24-25.
(Short report on first discovery of 200' of 'Permian' limestone at Gum/Kum Creek 4 miles SSE of Hagen airstrip, overlying Mt Kubor granite. Subsequently re-interpreted as Late Triassic in age. Limestone not contactmetamorphic. Coarser parts have grains of quartz, feldspar, mica flakes. Associated with quartzite)

Glen, R.A., E. Belousova & W.L. Griffin (2016)- Different styles of modern and ancient non-collisional orogens and implications for crustal growth: a Gondwanaland perspective. Canadian J. Earth Sci. 53, 11, p. 1372-1415.
(online at: http://www.nrcresearchpress.com/doi/pdf/10.1139/cjes-2015-0229)
(Review of 'accretionary orogens' of N and E Gondwana (convergent margin orogens without continental block collisions), including chapter on Papua New Guinea Orogen)

Goldberg, A. & D. Holland (2008)- Inversion tectonics and the structural development of the Elk/ Antelope gas field, Papua New Guinea. In: J.E. Blevin et al. (eds.) Third Eastern Australasian Basins Symposium, Sydney 2008, Petroleum Expl. Soc. Australia (PESA), Spec. Publ., p. 247-258.
(Elk/Antelope gas field in a complex zone of deformation at front of E-most Papuan Foldbelt, where orientation of foldbelt changes from WNW/ESE strike inW, to NW/SE strike in E. Basement-involved inversion played key role. Elk structure formed from thrust detatchment within Ieru Fm above large inverted fault block. Same level of detatchment interpreted for Puri structure)

Goldberg, A., M. Wilson & S. Sioni (2010)- Quantitative seismic interpretation for characterizing carbonate diagenesis; an Elk/Antelope Gas field study. In: N. Harrison (ed.) 21st Geoph. Conf. Australian Soc. Exploration Geophysicists (ASEG), Sydney 2010, p. 1-4. *(Extended Abstract)*
(Elk/Antelope gas field in PNG is hosted in Miocene reefal and deepwater carbonates. Carbonates exhibit multiple diagenetic overprints and complex internal seismic reflector heterogeneity. Dominant control on seismic reflection events within reservoir are porosity variations)

Gow, P.A., P. Upton, C. Zhao & K.C. Hill (2002)- Copper-gold mineralisation in New Guinea: numerical modelling of collision, fluid flow and intrusion-related hydrothermal systems. Australian J. Earth Sci. 49, 4, p. 753-771.
(Porphyry Cu-Au mineralisation in New Guinea foldbelt tied to local dilation, facilitating magma emplacement by reactivation of arc-normal transfer faults, where they cut weakened fold belt. Rapid uplift and erosion greatest in W of W Papua, where stronger Australian crust acts as buttress. In Papuan Fold Belt uplift greatest near margins, where weaker fold belt abuts stronger crust and/or major faults have been reactivated)

Gow, P.A & J.L. Walshe (2005)- The role of preexisting geologic architecture in the formation of giant porphyry-related Cu ± Au deposits: examples from New Guinea and Chile. Economic Geology 100, 5, p. 819-833.
(Development of porphyry copper-gold deposits in New Guinea during Tertiary magmatic event that overprinted extensional Mesozoic passive margin. During collision deeply detached listric faults were inverted and focused uplift/exhumation. Steep transverse faults formed wrench systems with pathways for magma or fluids. Competent units of flat-lying stratigraphic packages like Darai/Mendi Limestone impeded magma ascent and formed cap on magma and/or fluid system)

Grainge, A. (1993)- Recent developments in prospect mapping in the Hides/Karius area of the Papuan fold belt. In: G.J. & Z. Carman (eds.) Petroleum exploration and development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby 1993, p. 527-537.
(Of the 26 structures drilled in Papuan Foldbelt Toro fairway half have been discoveries, all in readily identifiable thrust-related anticlines. Better surface geologic maps being made using Remote sensing, Strontium isotope stratigraphy, magnetotelluric methods, etc.)

Grainge, A.M., A.J.D. Hine & P.J. Brawley (1990)- Discovery and development of the Hides gas field in Licence PPL 27, Papua New Guinea. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby, p. 539-550.
(Hides gas field 1987 BP discovery in S Highlands Province. Structure large NW-SE trending anticline. Reservoir Early Cretaceous (Berriasian) Toro Fm quartz sandstone. Reserves estimate 1-3 Tcf gas)

Grainger, D.J. & R.L. Grainger (1974)- Explanatory notes of the 1:2,500,000 Mineral deposits map of Papua New Guinea. Bureau Mineral Res., Canberra, Bull. 148, p. 1-171.
(online at: https://d28rz98at9flks.cloudfront.net/114/Bull_148.pdf)
(Gold widely distributed through PNG, associated with Tertiary acid and intermediate rocks. Major porphyry copper province (Panguna, Ok Tedi deposits). Bauxite on Manus Island. Chromite and nickel mineralization disseminated in ultramafic rocks in SE Papua. Molybdenum in several minor occurrences. Small deposits of manganese, phosphate, asbestos, diatomite, graphite, mercury, pumice and sulphur, but not or marginally economic. Many occurrences of lignite, but mostly low-grade and in remote localities. Many oil and gas seepages (listed and shown on map))

Grant, J.N. & R.L. Nielsen (1975)- Geology and geochronology of the Yandera porphyry copper deposit, Papua New Guinea. Economic Geology 70, 7, p. 1157-1174.
(Porphyry copper- molybdenum- gold mineralization at Yandera, 100 km SW of Madang, in N part of PNG highlands. Associated with M Miocene (12-14 Ma) Bismarck synorogenic batholith complex, emplaced during collision of Australian plate and island-arc zone. Intruded into strongly folded-faulted Goroka Fm metamorphics. Mineralization genetically related to aplitic quartz monzonite porphyry, emplaced at ~6.5 Ma. (see also Titley et al. 1978, Watmuff 1978))

Grant-Mackie, J., G. Francis, G.E. Westermann & A.B. Challinor (2006)- Jurassic molluscan palaeontology of the Telefomin area, Papua New Guinea. Geol. Survey PNG Mem. 19, p. 1-101.

Green, D.H. (1961)- Ultramafic breccias from the Musa Valley, Eastern Papua. Geol. Magazine 98, 1, p. 1-17.
(Musa Valley area rocks of Papuan Ultramafic Belt outcrop over 25x 45 miles, part of folded layered sequence of magnesian dunite and peridotite. Agglomerate-like breccias of fragments of ultramafic rock in variable matrix occur as irregular vent-like bodies in peridotite and as horizontal sheets in Pleistocene-Recent sediments. Breccias interpreted as vent and extrusive breccias resulting from penetration, brecciation and local entrainment (fluidization) of peridotitic country rock by volcanic gases)

Green, R. & R.B. Pitt (1967)- Suggested rotation of New Guinea. J. Geomagn. Geoelectr. 19, p. 317-321.
(online at: www.jstage.jst.go.jp/article/jgg1949/19/4/19_4_317/_pdf)
(Palaeomagnetic sampling at 8 Cretaceous- Recent sites in New Guinea (no locality map; mainly N of Central Range?) suggest increase in westerly declination with age, stretching back as far as Cretaceous (U Cretaceous sample= Chimbu River volcanics). Australia and New Guinea moved N during Tertiary, with New Guinea rotating anticlockwise)

Gregory, J.W. & J.B. Trench (1916)- Eocene corals from the Fly River, Central New Guinea. Geol. Magazine, N.S., 3, 11, p. 481-488.
(Descriptions of fossil corals in river float collected by MacGregor in 1890 in Fly River area S of Macrossan Island. Probably M Eocene age. Descriptions of Feddenia, Circophyllia and new species Stylophora papuensis, Stylina macgregori, Leptoria carnei, Dachiardia macgregori, Plesiastrae horizontalis, Kobya hemicribriformis)

Gregory, J.W. & J.B. Trench (1916)- Eocene corals from the Fly River, Central New Guinea (2). Geol. Magazine, N.S., 3, 12, p. 529-536.
(Continuation of Gregory and Trench (1916). Descriptions of Actinacis maitlandi n.sp., A. sumatraensis (Tornquist) (= Cretaceous species from Sumatra), Porites deshayesana, Montipora antiqua n.sp.)

Griffin, T.J. (1979)- Granitoids of the Tertiary continent- island arc collision zone, Papua New Guinea. Geol. Survey Papua New Guinea, Report 79/22, 28p.
(See also Griffin (1983) GSA publication below)

Griffin, T.J. (1983)- Granitoids of the Tertiary continent- island arc collision zone, Papua New Guinea. In: J.A. Roddick (ed.) Circum-Pacific plutonic terranes, Geol. Soc. America (GSA) Mem. 159, p. 61-76.
(Similar Tertiary I-type calkalkaline granitoids in 3 structural-tectonic zones of PNG: island arc, continental-orogenic and cratonic. Associated with volcanics and porphyry Cu-Au mineralization. Tied to partial melting at base of crust, possibly resulting from subduction, crustal thickening or crustal buckling)

Grund, R.B. (1976)- North New Guinea Basin. In: R.B. Leslie et al. (eds.) Economic geology of Australia and Papua New Guinea, 3, Petroleum, p. 449-506.

Gunson M.J., D.W. Haig, B. Kruman, R.A. Mason, R.C.B. Perembo & R. Stewart (1997)- Stratigraphic reconstruction of the Porgera region, Papua New Guinea. In: Papua New Guinea Geology, Exploration and Mining Conf., Port Moresby 1997, Australasian Inst. of Mining and Metallurgy, Madang, 1, p. 99-108.

Gunson M.J., G. Hall & M. Johnston (2000)- Foraminiferal coloration index as a guide to hydrothermal gradients around the Porgera intrusive complex, Papua New Guinea. Economic Geology 95, p. 271-282.
(Porgera intrusive complex and gold mineralization in Cretaceous black mudstones of Central Range of PNG. Color changes in bathyal agglutinated foraminifera (Cribrostomoides, Dorothia, Marssonella), from white to dark gray, used to map thermal maturation. Foraminiferal coloration showed pairing of hot and cold areas across major structures, associated with upflow (hot) and recharge (cold) of fluids)

Haberle, S.G. (1998)- Late Quaternary vegetation change in the Tari Basin, Papua New Guinea. Palaeogeogr. Palaeoclim. Palaeoecology 137, p. 1-24.

Haddad, D. & A.B. Watts (1999)- Subsidence history, gravity anomalies, and flexure of the Northeast Australian margin in Papua New Guinea. Tectonics 18, p. 827-842.
(online at: http://onlinelibrary.wiley.com/doi/10.1029/1999TC900009/pdf)
(PNG folbelt at least 2 major orogenic loading events: (1) start of Miocene and marking initial docking of an exotic terrane with Australian craton; associated with widespread carbonate deposition and (2) earliest Pliocene main phase of fold-thrust belt uplift, representing ongoing history of collision at NE margin of Australian continent)

Haig, D.W. (1979)- Early Jurassic foraminiferids from the western Highlands of Papua New Guinea. Neues Jahrbuch Geol. Palaont., Monatshefte 4, p. 208-215.
(Sinemurian-Pliensbachian shelfal foraminifera from gently folded Balimbu greywacke in upper Jimi River area near Mongum, S foothills of Bismarck Range in western (should be eastern?) PNG Highlands. Assemblage dominated by nodosarians and includes Lingulina, Frondicularia, Involutina liassica. No agglutinants)

Haig, D.W. (1981)- Mid-Cretaceous foraminiferids from the Wahgi Valley, Central Highlands of Papua New Guinea. Micropaleontology 27, p. 337-351.
(Albian-Cenomanian open marine forams from Kondaku Tuff and Chim Fm at N flank Kubor Anticline. Cretaceous overlies Jurassic Maril shale with minor unconformity. Planktonic forams include Favusella washitensis, Hedbergella delrioensis, Hedbergella implicissima, Planomalina buxtorfi, Praeglobotruncana, Rotalipora appenninica, R. greenhornensis, etc. Diverse benthic assemblage, dominated by agglutinants)

Haig, D.W. (1982)- Deep-sea foraminifera from Paleocene sediments, Port Moresby, Papua New Guinea. J. Foraminiferal Research 12, 4, p. 287-279.
(online at: http://jfr.geoscienceworld.org/content/12/4/287.full.pdf)
(Tropical Paleocene (P1-P7) planktonic foram assemblages from lower bathyal calcareous mudstones in highly folded 'Port Moresby Beds'. No stratigraphic sections, limited geologic context)

Haig, D.W. (1985)- *Lepidocyclina* associated with Early Miocene planktic foraminiferids from the Fairfax Formation, Papua New Guinea. In: J.M. Lindsay (ed.) Stratigraphy, palaeontology, malacology; papers in honour of Dr. Neil Ludbrook, South Australia Dept. Mines and Energy Spec. Publ. 5, p. 117-131.
(Friable bathyal marine mudstone in upper Fairfax Fm 25 km NW of Port Moresby with Early Miocene/ Burdigalian zone N7 planktonic foraminifera and displaced shallow marine Lepidocyclina (Nephrolepidina) sumatrensis, L. (N.) ferreroi, L. (N) martini and Miogypsina, characteristic of Lower Tf Letter Stage. Average degree of curvature of Lepidocyclina embryon of 43% agrees with age-equivalent assemblages from Indonesia)

Haig, D.W. (1994)- Zone N18 in foreland basin and oceanic platform sequences, Lower Pliocene, Papua New Guinea. In: Forams '94 International Symposium on Foraminifera, Berkeley, Paleobios 16, 2, Suppl., p. 33.
(Planktonic and benthonic foraminifera from zone N18 in the siliciclastic Orubadi Beds of Papuan Foreland Basin. Type section >2000m thick and includes two mid bathyal- inner neritic shallowing upward sequences, Orubadi Beds and underlying Puri Lst (pelagic middle bathyal base of sequence) belong to N17B and N18. No reworking in foraminiferal assemblages, although reworked nannofossils and dinoflagellates flood mud-fraction of sediment, suggesting extensive sediment plumes clouded surface waters of foreland basin)

Haig, D.W. (1996)- Late Neogene bathyal depocentres in mainland Papua New Guinea. In: P.G. Buchanan (ed.) Petroleum exploration, development and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 313-327.
(Late Miocene- Pliocene bathyal deposits in Papuan foreland basin, Aure Trough, SW border of Papuan Peninsula and N New Guinea basin. Significant crustal loading in central orogenic belt in PNG at ~8.5 Ma produced bathyal troughs in Purari depocenter (Orubadi Fm) and along SW margin of Papuan Peninsula. Sepik Basin rapid uplift at ~7 Ma and subsidence between 6.5- 2 Ma. Onset of unroofing of Finisterre terrane between 4.1-3.1 Ma. Spine of mainland PNG was barrier to oceanic circulation: Papuan assemblages 'Trans-

Equatorial', with Gr. menardii/ Gr. limbata/ Globigerinoides; N New Guinea assemblages dominated by Gr. tumida group)

Haig, D.W., G.S. Humphreys, R. Rogerson & G. Francis (1986)- Field guide to the Kubor Anticline, Central Highlands. 12th Int. Sedimentological Congress, Canberra 1986, Field trip 34B, Geol. Survey of Papua New Guinea, Port Moresby, p.

Haig, D.W. & D.A. Lynch (1993)- A late early Albian marine transgressive pulse over northeastern Australia, precursor to epeiric basin anoxia: foraminiferal evidence. Marine Micropaleontology 22, 4, p. 311-362.
(Major transgressive pulse in late E Albian in W Papuan Basin, changing character of foraminiferal faunas from impoverished agglutinated-dominated Ammobaculites assemblages to diverse calcareous Marssonella/ Hedbergella assemblages. Similar change in coeval deposits of other basins on NE margin of Australian continent (incl. black shales of Toolebuc Fm). Rapid marine regression in W Papuan Basin immediately after latest Albian)

Haig, D.W. & S. Malagun (1980)- Uppermost Cretaceous and lowermost Tertiary sediments around Bogoro Inlet near Port Moresby, Papua New Guinea. Science in New Guinea 7, 1, p. 12-21.
(Maastrichtian-Paleocene deep marine limestones with planktonic foraminifera, unconformably overlain by Eocene calcarenite with larger forams, incl. Pellatispira)

Haig, D.W. & D. Medd (1996)- Latest Miocene to early Pliocene bathymetric cycles related to tectonism, Puri Anticline, Papuan Basin, Papua New Guinea. Australian J. Earth Sci. 43, 3, p. 451-465.
(Four bathyal-to-neritic progradational clastics cycles in 2000m thick Orubadi Fm (Late Miocene- E Pliocene N17B-N18; ~6.2-4.7 Ma) in Puri Anticline, Papuan foreland basin near frontal foldbelt, overlying Late Miocene pelagic Puri Limestone. Cycles reflect pulses of folding. Development of foredeep either in lower N17 or N16; ~11.5- 7 Ma?)

Haig, D.W. & R.C.B. Perembo (1990)- Foraminifera as Neogene stratigraphic guides for Papua New Guinea. In: G.J. & Z. Carman (eds.) Petroleum Exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby, p. 381-395.
(Broad overview of Neogene planktonic and larger foram zonations, and paleobathymetry applicable to PNG. Top larger foram zone Te calibrated to planktonic foram zone ~N6)

Haig, D.W., R.C.B. Perembo, D.A. Lynch, G.J.Milner & M. Zammit (1993)- Marine stratigraphic units in Central Province, Papua New Guinea: age and depositional environments. In: G.J. & Z. Carman (eds.) Petroleum exploration and development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby, p. 47-60.
(SW part of Papuan Peninsula two main stratigraphic divisions: (1) incoherent Campanian- M Eocene units, ('Port Moresby Association'), with inner neritic Campanian 'Barune quartz sandstone' with Pseudorbitoides and Orbitoides (equivalent of Pale Sst of Aure Scarp), overlain by bathyal Maastrichtian- Paleocene pelagic carbonate mudstones and E-M Miocene bathyal-abyssal deposits (incl. radiolarian cherts), overlain by (2) rel. coherent M Oligocene - Pliocene succession, mainly deep water deposits with 5 possible shallowing-upward sequences. Late Oligocene Boera Beds outcrop 17km NW of Port Moresby with reworked Late Eocene forams, incl. Pellatispira, Asterocyclina, Nummulites)

Haig, D.W. & W. Tamu (1980)- Stratigraphic relationship between Barune Sandstone (Upper Cretaceous) and Baruni Calcarenite (Lower Tertiary) near Port Moresby, Papua New Guinea. Science in New Guinea 7, 3, p. 148-156.
(Baruni Sst with Campanian Pseudorbitoides israelskii and Orbitoides tissoti, originally described by Glaessner 1960. Overlain by deeper water Maastrichtian pelagic Bogoro Lst and Paleocene- E Eocene Port Moresby Beds, unconformably overlain by M-L Eocene 'Baruni calcarenite' with Nummulites and Discocyclina. Description of Barune sst suggests possible turbidites, dominated by calcareous bioclasts, but with some angular quartz. No volcanic/ igneous lithics observed. (Beds of this age generally absent in PNG foreland, but present in terranes of N New Guinea and of Birds Head?; JTvG))

Hall, R.J., R.M. Britten & D.D. Henry (1990)- Frieda River copper-gold deposits. In F.E. Hughes (ed.) Geology of the mineral deposits of Australia and Papua New Guinea, Australasian Institute of Mining and Metallurgy (AusIMM), Melbourne, Monograph 14, p. 1709-1715.

Hamilton, P.J., R.W.Johnson, D.E. Mackenzie & R.K. OćNions (1983)- Pleistocene volcanic rocks from the Fly-Highlands province of western New Guinea: a note on new Sr and Nd isotopic data and their petrogenetic implications. J. Volcanology Geothermal Res. 18, p. 449-459.
(Rb-Sr and Sm-Nd isotopes and trace-elements from 6 Pleistocene volcanoes of Fly-Highlands province suggest contamination of mantle-derived magmas by continental crust. No Benioff zone beneath Fly-Highlands province, suggesting mantle-derived magmas related to Pliocene crustal uplift formed in response to mid-Tertiary continent/island-arc collision)

Hammarstrom, J.M., D. Saroa, B.T. Setiabudi, D.N. Sunuhadi, G.R. Robinson, C.L. Dicken, B.J. Drenth, S. Ludington, A.A. Bookstrom & M.L. Zientek (2013)- Porphyry copper assessment for Tract 009pCu7203, Eastern Medial New Guinea magmatic belt- Papua New Guinea and Indonesia. In: J.M. Hammarstrom et al., Porphyry copper assessment of Southeast Asia and Melanesia, U.S. Geol. Survey, Scient. Invest. Rept. 2010-5090-D, Appendix O, p. 219-238.
(online at: http://pubs.usgs.gov/sir/2010/5090/d/sir2010-5090d_text.pdf)
(Assessment of porphyry copper deposits in E part of late Miocene to Pliocene-Pleistocene Medial New Guinea magmatic belt)

Hammarstrom, J.M., D. Saroa, B.T. Setiabudi, D.N. Sunuhadi, G.R. Robinson, C.L. Dicken, S. Ludington, A.A. Bookstrom & M.L. Zientek (2013)- Porphyry copper assessment for Tract 009pCu7205, Maramuni Arc- Papua New Guinea. In: J.M. Hammarstrom et al., Porphyry copper assessment of Southeast Asia and Melanesia, U.S. Geol. Survey, Scient. Invest. Rept. 2010-5090-D, Appendix P, p. 239-250.
(online at: http://pubs.usgs.gov/sir/2010/5090/d/sir2010-5090d_text.pdf)
(Assessment of porphyry copper deposits in M Miocene (~18-12 Ma) Maramuni magmatic arc in central part of PNG (S of Melanesian Arc terrane and N of Medial New Guinea magmatic belt), resulting from SW-dipping subduction of Solomon Sea Plate beneath E New Guinea. Known porphyry copper deposits include Frieda River (12 Ma). Yandera and Wafi-Golpu nearby but probably part of younger trend)

Hammarstrom, J.M., D. Saroa, B.T. Setiabudi, D.N. Sunuhadi, G.R. Robinson, C.L. Dicken, S. Ludington, A.A. Bookstrom & M.L. Zientek (2013)- Porphyry copper assessment for Tract 009pCu7208, Inner Melanesian Arc Terranes II-Northern New Guinea Island, Papua New Guinea. In: J.M. Hammarstrom et al., Porphyry copper assessment of Southeast Asia and Melanesia, U.S. Geol. Survey, Scient. Invest. Rept. 2010-5090-D, Appendix S, p. 268-274.
(online at: http://pubs.usgs.gov/sir/2010/5090/d/sir2010-5090d_text.pdf)
(Assessment of porphyry copper deposits in Eocene-Oligocene- E Miocene accreted Inner Melanesian magmatic arc terranes along N margin of island of Papua New Guinea, (Bewani-Torricelli Mts, Finisterre-Adelbert Arc). May be related to S-ward subduction of Pacific Plate or Philippine Sea Plate, fragmented by strike-slip faulting since 25 Ma. Rocks age-equivalent to New Britain assemblage. No known deposits)

Hanani, A., P. Lennox & K. Hill (2016)- The geology and structural style of the Juha gas field, Papua New Guinea. In: Proc. 25th ASEG-PESA Int. Geophysical Conf. Exhib., Adelaide, p. 1-7.
(online at: http://www.publish.csiro.au/ex/pdf/ASEG2016ab272)
(Juha gas-condensate field in25 km long/ up to 8 km wide anticlinal structure in SW Papuan foldbelt. Lower Cretaceous quartz sandstone reservoir buried by 1.5 km Cretaceous shale (regional seal), 1.5 km Miocene limestone and >1.6 km Pliocene-Pleistocene 'flysch' and 'molasse', before late Pliocene-Pleistocene uplift-erosion. Seismic indicates inverted basement faults beneath Juha, with detachment in Cretaceous mudstones, so overlying Miocene Limestone deforms partly independently. Deepest burial and gas-generation in Pliocene, before compressional deformation in Pleistocene. Part of ExxonMobil gas development)

Handley, G.A. (1987)- Exploration of the Porgera gold deposit. In: E. Brennan (ed.) Proc. Pacific Rim Congress

1987, Gold Coast, Australasian Inst. of Mining and Metallurgy (AusIMM), Parkville, p. 145-149.

Handley, G.A. & D.D. Henry (1987)- Porgera gold deposit. In: F.E. Hughes (ed.) Geology of mineral deposits of Australia and Papua New Guinea, Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, 2, p, 1717-1724.

Harnish, S.A. (1990)- Tectonics and mineralization of the western and central New Guinea Mobile Belt. Proc. Pacific Rim 90 Congress, Australasian Inst. of Mining and Metallurgy (AusIMM), Parkville, 3, p. 141-151.

Harrison, D. (1991)- The gravity field of the Papuan fold belt and its geological implications. Ph.D. Thesis University of London, p. *(Unpublished)*

Harrison, D. & J. Milsom (1996)- Paleo-rift controls on mechanisms of isostatic compensation in the Papuan Fold Belt. In: P.G. Buchanan (ed.) Petroleum exploration, development and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, PNG Chamber of Mines and Petroleum, p. 77-88.
(New Guinea Highlands divided into northern zone of accreted allochthonous terranes and southern zone (Papuan foldbelt) of deformed Australian continental margin sediments. Change in strength of lithosphere at former rifted margin of Australia. Margin now under foldbelt, but position may be deduced from sediment thickness and gravity data. Lithosphere weakened by loading unable to support topographic loads; strong lithosphere resists significant foreland basin formation)

Harrison, J. (1969)- A review of the sedimentary history of the island of New Guinea. Australian Petrol. Explor. Assoc. (APEA) J. 1969, p. 41-48.

Haupt, O. (1905)- Eine Kreide-ahnlicher, wahrscheinlich Jungtertiarer Mergel aus Kaiser Wilhelmsland (Deutsch Neu-Guinea). Zeitschrift Deutschen Geol. Gesellschaft, Berlin, 57, Monatsberichte 12, p. 565-569.
(online at: https://www.biodiversitylibrary.org/item/186976#page/1293/mode/1up)
('A chalk-like, probably Late Tertiary marl from Kaiser Wilhelms Land (German New Guinea'. Brief note on chalky marl collected by Boehm from Huon Peninsula, near Finschafen, NE PNG. With globigerinid forams, radiolaria, diatoms, sponge spicules, calcareous nannofossils)

Hawkins, M.A. (2001)- Controls on high-grade hypogene porphyry Cu-Au mineralisation at Frieda River, PNG. In: G Hancock (ed.) Proc. PNG Geology, Exploration and Mining Conference, Port Moresby 2001, Australasian Inst. of Mining and Metallurgy (AusIMM), Parkville, p. 135-144.

Hawkins, M.A. & A.K. Akiro (2001)- Geology and exploration of the Irumafimpa gold project. In: G Hancock (ed.) Proc. PNG Geology, Exploration and Mining Conference, Port Moresby 2001, Australasian Inst. of Mining and Metallurgy (AusIMM), Parkville, p. 145-156.
(Mining project in northern E Highlands of PNG, part of Kainantu Complex)

Hebberger, J.J. (1992)- A synthesis of regional elements of the Papuan fold and thrust belt of Papua New Guinea. AAPG Int. Conf., Sydney 1992, Search and Discovery Art. 91015. *(Abstract only)*
(Evolution of PNG fold- thrust belt: (1) development of passive margin during Late Triassic-Early Jurassic rifting, with escape of Kubor Anticline continental fragment to NE, causing development of restricted marine basin with Late Triassic and Jurassic source rocks. Basin affected depositional extent of Cretaceous-Tertiary rocks (e.g. Cretaceous Toro Sst, Miocene Darai Lst). Cretaceous deposition caused maturation of Jurassic source and migration into passive margin traps around basin margins. Pliocene-Pleistocene collision along N margin of New Guinea caused development of Papuan fold-thrust belt, uplift and movement of Kubor Anticline back to SW, partially over basinal area, and remigration of oil into thrust belt structures)

Hebberger, J.J., S.P. Franklin, W.H. Uberawa & A.M. Pytte (2000)- Development of the Iagifu-Hedinia Field, PNG fold belt; a multi-disciplinary reservoir management success story. Australian Petrol. Prod. Explor. Assoc. (APPEA) J. 40, 1, p. 546-561.

(Iagifu-Hedinia oil field discovered by Chevron in 1986 in PNG Highlands. Discovered without seismic data due to intense karst development in area. First oil produced in 1992)

Hebberger, J.J. & J.C. Phelps (1992)- Change in structural style from thin-skinned to thick-skinned along the strike of the Papuan fold and thrust Belt, Papua New Guinea. AAPG Int. Conf., Sydney 1992, Search and Discovery Art. 91015. *(Abstract only)*
(In Papuan fold-thrust belt gradual (150 km) change along strike from thin-skinned thrust folds with 1-8 km spacing in area of Iagifu/Hedinia oil discoveries to 20-40 km wide basement-involved folds near Irian Jaya border. No dramatic difference in thickness or composition of U Jurassic- Tertiary sediments evident. Gravity data suggest increase in depth to granitic basement along strike, but not in same area as change thin- to thick-skinned thrusting. Change in style may be related to different levels of detachment. In both areas two major detachment levels: one 15-20 km below top of basement, one near base of sedimentary section)

Hegner, E. & I.E. Smith (1992)- Isotopic compositions of Late Cenozoic volcanics from southeast Papua New Guinea; evidence for multi-component sources in arc and rift environments. Chemical Geology 97, p. 233-249.
(Transition from collisional to extensional tectonics in SE Papuan Peninsula reflected in cessation of arc-type volcanism and eruption of rifting-related transitional basalts. Trachytes inherited isotopic signatures either from lower crust recycled into upper mantle, possibly during Mesozoic rifting of Australian craton, or from unknown ancient continental block in Late Cretaceous basement of E PNG)

Helby, R.J. & A.D. Partridge (1976)- Palynological analysis of Aramia-1, Papuan Basin. Esso Australia Ltd., Palaeontological Report 1976/5A, p. 1-14.
(On microfiche appendix 1 in R. Helby et al. (eds.) (1987) A palynological zonation of the Australian Mesozoic, Mem. Assoc. Australasian Palaeontologists 4, p. 85-98)
(Bathonian- Albian palyno-biostratigraphic zonation)

Helby, R.J. & A.D. Partridge (1976)- Palynological analysis of Barikewa-1, Papuan Basin. Esso Australia. Esso Australia Ltd., Palaeontological Report 1976/12, p. 1-13.
(On microfiche appendix 1 in R. Helby et al. (eds.) (1987) A palynological zonation of the Australian Mesozoic, Mem. Assoc. Australasian Palaeontologists 4, p. 100-112)
(Bathonian- Albian palyno-biostratigraphic zonation)

Helby, R.J. & A.D. Partridge (1976)- Palynological analysis of the Mesozoic cores samples from Iehi 1, Papuan Basin. Esso Australia. Esso Australia Ltd., Palaeontological Report 1976/13, p. 1-17.
(On microfiche appendix 1 in R. Helby et al. (eds.) (1987) A palynological zonation of the Australian Mesozoic, Mem. Assoc. Australasian Palaeontologists 4, p. 114-124)
(Callovian- Albian palyno-biostratigraphic zonation)

Helby, R.J. & A.D. Partridge (1977)- Palynological analysis of the Mesozoic sequence in Iamara-1, Esso Australia. Esso Australia Ltd., Palaeontological Report 1977/3, p. 1-11.
(On microfiche appendix 1 in R. Helby et al. (eds.) (1987) A palynological zonation of the Australian Mesozoic, Mem. Assoc. Australasian Palaeontologists 4, p. 126-142; (Bathonian- Aptian palyno-biostratigraphic zonation)

Helby, R.J. & A.D. Partridge (1977)- Palynological analysis of Omati-1 and Omati-2 wells, Papuan Basin. Esso Australia Ltd., Palaeontological Report 1977/10, p. 1-23.
(On microfiche appendix 1 in R. Helby et al. (eds.) (1987) A palynological zonation of the Australian Mesozoic, Mem. Assoc. Australasian Palaeontologists 4, p. 144-166)
(Oxfordian-Albian palyno-biostratigraphic zonation)

Hennig, A., N. Yassir, M.A. Addis & A. Warrington (2002)- Pore-pressure estimation in an active thrust region and its impact on exploration and drilling. In: A. Huffman & G. Bowers (eds.) Pressure regimes in sedimentary basins and their prediction, American Assoc. Petrol. Geol. (AAPG), Mem. 76, 9, p. 89-105.

(Pore pressures in PNG fold belt and foreland basin highly variable and compartmentalized. Conventional pore-pressure detection techniques in shales cannot be used with confidence in tectonically active regions)

Henry, D.D. (1984)- Copper deposits of the Frieda River prospect- Papua New Guinea. In: S.T. Watson (ed.) Trans. Third Circum-Pacific Energy and Mineral Resources Conference, Honolulu 1982, American Assoc. Petrol. Geol. (AAPG), p. 279-283.
(Frieda River porphyry copper prospect in PNG Mobile Belt, close to W Papua border. Mineralization associated with M Miocene andesitic volcanic complex. Ore grades generally low)

Hill, K.C. (1987)- New tectonic framework for PNG and the Caroline Plate: implications for cessation of spreading in back-arc basins. In: E. Brennan (ed.) Proc. Pacific Rim Congress 1987, Gold Coast, Australasian Inst. of Mining and Metallurgy (AusIMM), Parkville, p. 179-182.

Hill, K.C. (1989)- The Muller anticline, Papua New Guinea: basement-cored, inverted extensional fault structures with opposite vergence. Tectonophysics 158, p. 227-245.
(Papuan Foldbelt two dominant structural styles: (1) in NE 1 km thick, thin-skinned thrust-imbricate slices of Miocene limestone, (2) in SW much larger asymmetrical folds, with thicker stratigraphic sections, resulting from Mio-Pliocene inversion of Mesozoic- Paleogene extensional faults. Outcrop of basement in centre of Muller Range 8 km above regional. E Muller anticline basement thrust to SW, W Muller anticline thrust to NE. Faults under Muller anticline active as extensional faults in Mesozoic, soling at mid-crustal detachment. Extensional faults beneath EMA and WMA opposite vergence and separated by transfer zone)

Hill, K.C. (1990)- Structural styles and hydrocarbons in the Papuan Fold Belt, a review. In: G.J. & Z. Carman (eds.) Petroleum Exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby, p. 301-310.
(Early version of numerous Hill PNG structure papers)

Hill, K.C. (1991)- Structure of the Papuan Fold Belt, Papua New Guinea. American Assoc. Petrol. Geol. (AAPG) Bull. 75, 5, p. 857-872.
(Papuan lithosphere rel. weak, dissected by Mesozoic faults that partly reactivated during Neogene compression, forming basement-involved anticlines)

Hill, K.C. (1991)- Timing of deformation and thermal history in Papua New Guinea: a review. Petroleum Expl. Soc. Australia (PESA) Journal 19, p. 62-67.
(Apatite fission track analysis of Fly Platform and S Papuan Fold Belt suggests widespread M Cretaceous volcanism and Late Cretaceous thermal maximum, probably related to rift-drift in Coral Sea. Most N and W samples reached thermal maximum during Pliocene deformation of Papuan foldbelt. Rapid uplift of basement-cored Muller Anticline in W Papuan Foldbelt and Kubor Anticline in E Papuan Fold Belt at 4.0 ± 0.5 Ma (Kubor thrusting continuing to present day. Cretaceous and Miocene granites NE of Kubor Anticline uplifted at 10- 5 Ma, part of ongoing shortening in C PNG over last 10 Ma, propagating to SW)

Hill, K.C., K. Bradey, J. Iwanec, N. Wilson & K. Lucas (2008)- Structural exploration in the Papua New Guinea fold belt. In: J.E. Blevin et al. (eds.) Third Eastern Australasian Basins Symposium, Sydney 2008, Petroleum Expl. Soc. Australia (PESA) Spec. Publ., p. 225-238.
(In PNG foldbelt large N-S-striking Triassic folds within basement, that influenced subsequent faulting, facies changes and reservoir compartments. Early inversion faults pre-requisite to substantial offset on thin-skinned detachments. Early structures probably trapped migrating hydrocarbons; subsequent thin-skinned deformation decapitated inversion crests, retaining hydrocarbons in newly folded and thrusted hanging wall structures)

Hill, K.C., J. Forwood, C. Rodda, C. Smyth & G. Whitmore (1993)- Structural styles and hydrocarbon prospectivity around the northern Muller anticline, PNG. In: G.J. & Z. Carman (eds.) Petroleum exploration and development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby, p. 325-324.
(Discussion of surface anticlines N of large Muller Anticline in W PNG foldbelt, with Triassic (222 Ma) granodiorite basement and Mesozoic sandstones exposed in core)

Hill, K.C. & A.J.W. Gleadow (1989)- Uplift and thermal history of the Papuan Fold Belt, Papua New Guinea: apatite fission track analysis. American Assoc. Petrol. Geol. (AAPG) Bull. 75, p. 857-872.

Hill, K.C. & A.J.W. Gleadow (1989)- Uplift and thermal history of the Papuan foldbelt, Papua New Guinea: apatite fission track analysis. Australian J. Earth Sci. 36, p. 515-539.
(Papuan fold belt uplifted and eroded from earliest Pliocene (5 Ma) to present, suggesting Late Miocene collision of New Guinea with island arc to N. Mountain front anticlines like Iehi underwent heating in Late Cretaceous, prior to Paleocene uplift and associated with opening of Coral Sea. Thermal modelling of Iehi 1 indicates ~800m of Late Cretaceous eroded in Paleocene)

Hill, K.C. & A.J.W. Gleadow (1990)- Apatite Fission Track analysis of the Papuan Basin. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby, p. 119-136.
(Widespread Albian volcanogenic detritus in Papuan Basin and E Australia probably sourced from N PNG. AFTA of Ieru Fm in S Papuan basin suggest no heating above 60°C, so underlying Jurassic at best marginally mature for hydrocarbons. S Papuan basin probably at max. T in Late Cretaceous, before Paleogene uplift)

Hill, K.C., G. Grey, D. Foster & R. Barrett (1993)- An alternative model for the Oligo-Miocene evolution of the northern PNG and the Sepik-Ramu basins. In: G.J. & Z. Carman (eds.) Petroleum exploration and development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby, p. p. 241-259.
(N New Guinea underwent extension in Late Oligocene- E Miocene, probably related to initiation of oblique sourthern subduction under New Guinea margin (not compression as suggested in other models; there is no obvious body colliding at that time). Mid-crustal rocks with E Miocene cooling ages are local metamorphic core complexes. M Miocene volcanic detritus fill of Sepik- Ramu basins from Maramuni Arc. Late Miocene collision of Adelbert-Finisterra Arc resulted in compressional deformation through much of New Guinea and transpressional regime in Sepik area)

Hill, K.C. & K.A. Hegarty (1987)- New tectonic framework for PNG and the Caroline Plate: implications for cessation of spreading in back-arc basins. In: Pacific Rim Congress 87, Gold Coast 1987, Australasian Inst. of Mining and Metallurgy (AusIMM), Parkville, p. 179-182.
(New plate tectonic scenario for N PNG. In N New Guinea Late Oligocene- E Miocene obduction of Mesozoic oceanic crust, followed by S-dipping subduction beneath New Guinea causing extensive M Miocene volcanism. E Pliocene uplift/ folding of main Papuan Foldbelt at ~4 Ma tied to collision of extinct Eocene- Oligocene island arc system with New Guinea margin)

Hill, K., J. Iwanec & D. Lund (2012)- Near-field, subthrust and deep reservoir tests of the Kutubu oil and gas fields, Papua New Guinea. AAPG Int. Conf. Exhib., Singapore 2012, Search and Discovery Art. 20183, p. 1-34. *(Presentation)*
(online at: www.searchanddiscovery.com/documents/2012/20183hill/ndx_hill.pdf)
(Kutubu oil field (= Iagafu- Hedinia) is thrust-faulted anticline in Papuan Fold-Belt, en echelon to smaller Agogo oil field. Structures first drilled in mid-80's and produced over 300 MBO from basal Cretaceous Toro and Digimu sst reservoirs. Reservoirs overlain by ~1 km of Cretaceous shale and ~1 km of Miocene limestone. Kutubu subthrust structure drilled in 2011. Toro-Digimu reservoirs overturned in footwall, with oil-bearing Toro. Koi-Iange test further back on Kutubu field encountered interbedded sands-shales of Koi-Iange Fm)

Hill, K.C., K. Lucas & K. Bradey (2010)- Structural styles in the Papuan Fold Belt, Papua New Guinea: constraints from analogue modelling. In: G.P. Goffey et al. (eds.) Hydrocarbons in contractional belts, Geol. Soc., London, Spec. Publ. 348, p. 33-56.
(Structural styles in oil-producing areas of Papuan Fold Belt include inverted basement faults, detachment faults in Jurassic 1-2 km beneath Neocomian Toro Sst reservoir, and tight, overturned folds in reservoir sequence. Highly variable thicknesses in Cretaceous Ieru Fm, including detachments that isolate Miocene Darai Limestone. Large-offset thrust faults only produced in models with pre-cut faults, generating early

inversion then large ramp anticlines, similar to Kutubu oil field. Kutubu oilfield trend probably underlain by large normal fault and oil-rich source rocks may be confined to hanging wall (N side) of this fault)

Hill, K.C. & L. Mahoney (2018)- Compressional evolution of the PNG margin from an orogenic transect from Juha to the Sepik. In: Proc. Australian Exploration Geoscience Conf. (AEGC 2018), Sydney, ASEG Extended Abstracts 2018, 1, p. 1-3. *(Extended Abstract)*
(online at: www.publish.csiro.au/ex/pdf/ASEG2018abT5_3A)
(Regional restored cross-section across PNG orogenic belt shows Oligocene- Recent compressional deformation of margin. N end of section with Landslip Metamorphics, an accreted continental terrane, separated from main foldbelt by Jurassic April Ultramafics/ Om Metamorphics/ Eocene volcanics, together constituting accretionary prism. Suture overlain by Miocene sediments indicating Oligocene docking prior to E Miocene subsidence, consistent with E Miocene extension in PNG and emplacement of metamorphic core complexes in Sepik area. Neogene compression started at ~12 Ma with shortening of ~12mm/yr from 12-4 Ma, and 2.5mm/yr from 4-0 Ma, consistent with change in structural style in foldbelt from thrust to more ductile, fold-dominated deformation. Etc.)

Hill, K.C., D. Medd & P. Darvall (1990)- Structure, stratigraphy, geochemistry and hydrocarbons in the Kagua-Kubor area, Papua New Guinea. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby 1990, p. 351-366.
(Structural geology of in Kagua area, 70 km SW of Kubor anticline)

Hill, K.C., M.S. Norvick, J.T. Keetley & A. Adams (2000)- Structural and stratigraphic shelf-edge hydrocarbon plays in the Papuan fold belt. In: P.G. Buchanan et al. (eds.) Papua New Guineaǿs petroleum industry in the 21st Century, Proc. 4th PNG Petroleum Convention, Port Moresby, p. 67-85.
(PNG Mesozoic-Tertiary shelf-basin transition 20-50 km NE of main oil-gas fields and penetrated by only one well. Interpreted to be long-lived fault zone, with thick basinal facies to N. In S shallow marine Miocene limestone unconformable over Lower Cretaceous shelf clastics; in N more complete Upper Cretaceous-Miocene deep water marls. Numerous oil seeps. Main potential reservoir Lower Cretaceous Toro sst, but possibly distal facies. Re-entrants may have focused Toro fans)

Hill, K.C. & A. Raza (1999)- Arc-continent collision in Papua Guinea: constraints from fission track thermochronology. Tectonics 18, p. 950-966.
(Paleogene arc along S margin of Caroline plate juxtaposed against PNG in E Miocene, coeval with locking of W-dipping Solomon subduction zone by Ontong Java Plateau. These events initiated wrenching along N PNG margin. Mobile Belt underwent extension above downgoing slab with rapid cooling of metamorphic rocks at 17 Ma, immediately before emplacement of Maramuni Arc from 17-12 Ma. Change in plate motion at 12-10 Ma terminated arc and caused PNG-Caroline plate convergence, creating New Guinea orogenic belt from 12 -4 Ma. This resulted in ~4.5 km of uplift and ~3 km of denudation and cooling of entire Mobile Belt in Late Miocene, propagating W along Mobile Belt at 8-5 Ma and S-ward into Fold Belt at 5-4 Ma. Change in plate motion at 4-3 Ma returned margin to transpression with local compression along strike-slip faults and ongoing collision of Finisterre Arc terrane)

Hill, K.C., R.J. Simpson, R.D. Kendrick, P.V. Crowhurstt, P.B. O' Sullivan & I. Saefu (1996)- Hydrocarbons in New Guinea, controlled by basement fabric, Mesozoic extension and Tertiary convergent margin tectonics. In: P.G. Buchanan (ed.) Petroleum exploration, development and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 63-76.
(PNG mobile belt formed by Oligocene compression followed by E Miocene extension. Foldbelt hydrocarbons largely controlled by basement architecture and style of folding-thrusting. Bosavi lineament separates oil province to E from gas province in W)

Hill, K.C. & R.H. Wightman (2015)- Inversion, detachment folds, and out-of-sequence thrusts in the Papua New Guinea Fold Belt. 77th EAGE Conf. Exhib., Madrid, WS04-D01, 5p *(Extended Abstract)*
(Profiles through oil- gas-fields of Papuan Fold Belt indicates pre-existing basement configuration played significant role in compressional deformation at Moran-Paua, Agogo and Usano)

Hill, K.C., R.H. Wightman & L. Munro (2015)- Structural style in the Eastern Papuan Fold Belt, from wells, seismic, maps and modelling. AAPG/SEG Int. Conf. Exhibition, Melbourne, Search and Discovery Art. 30433, 10p. *(Extended Abstract)*
(online at: www.searchanddiscovery.com/documents/2015/30433hill/ndx_hill.pdf)
(Structural deformation in PNG Fold belt involves reactivation of basement, detachment folds and out-of-sequence thin-skinned thrusts. Frontal, SW, portion of fold belt large oil-gas reserves. Large Miocene- Recent inversion structures preserved in foreland ahead of leading edge fold belt (e.g. Darai Plateau), suggesting crustal-scale faulting prior to thin-skinned deformation. Areas with thick syn-rift section developed large detachment folds, probably enhanced by early basement inversion or thrusting)

Hill, K.C., R.H. Wightman & L. Munro (2015)- Structural style in the Eastern Papuan Fold Belt, from wells, seismic, maps and modelling. In: Proc. Eastern Australian Basins Symposium (EABS), Petroleum Expl. Soc. Australia (PESA), p. 265-271.
(Similar to Hill et al. 2015)

Hilyard, D., R. Rogerson & G. Francis (1988)- Accretionary terranes and evolution of the New Guinea orogen, Papua New Guinea. Geol. Survey Papua New Guinea, Report 88/9, p. 1-88.

Hilyard, D., R. Rogerson, A. Lloyd, H. Hekel & A. Webb (1988)- New micropalaeontological and isotopic age data from the highlands of Papua New Guinea. Geol. Survey Papua New Guinea, Report 88/16.

Hirst, J.P.P. & C.A. Price (1996)- Sequence stratigraphy and sandstone geometry of the Toro and Imburu Formations within the Papuan fold belt and foreland. In: P.G. Buchanan (ed.) Exploration, development and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 279-299.
(Six sequences in Late Oxfordian- Berriasian of Papuan Fld Belt. Passive margin setting after Triassic- E Jurassic rifting. Steady onlap of granitic basement to SW and W. Lower Toro sandstone K5 (upper P. apiculatum dinozone) is of Berriasian age and widespread lowstand shoreface deposit)

Hobson, D.M. (1986)- A thin-skinned model for the Papuan thrust belt and some implications for hydrocarbon exploration. Australian Petrol. Explor. Assoc. (APEA) J. 26, p. 214-224.

Holm, R.J. (2013)- Magmatic arcs of Papua New Guinea: insights into the late Cenozoic tectonic evolution of the northern Australian plate boundary. Ph.D. Thesis, James Cook University, p. 1-220.
(online at:http://researchonline.jcu.edu.au/32125/)
(Late Cenozoic Maramuni Arc intrudes New Guinea Orogen. Early arc magmatism in U Oligocene, with initiation of subduction beneath New Guinea. Arc magmatism related to N-dipping subduction punctuated by arrival of Australian continent at ~12 Ma, etc. Inherited zircon populations in Quaternary volcanics help identify northern extension of Tasman Line under younger crust)

Holm, R.J., S. Richards, C. Spandler & G. Rosenbaum (2013)- Tracking the Tasman Line in New Guinea: insights into the role of major structure at accretionary margins. Asia Oceania Geosc. Soc. (AOGS) 10th Ann. Meeting, Brisbane, SE26-A004. *(Abstract and Poster)*
(Tasman Line of E Australia is continental suture, separating E margin of Precambrian basement from W limit of Phanerozoic Tasmanides. Extension into New Guinea in W Papua New Guinea indicated by Quaternary magmatism (more intense volcanism in E, inherited zircons of Paleoproterozoic age (~1850 Ma) in W; Permian-Triassic (~250, 270 Ma) age peaks in E), morphological changes in axial ranges of New Guinea, dramatic displacement of Papuan ophiolite belt, etc. Important implications for understanding the occurrence of mineral deposits in region)

Holm, R.J., G. Rosenbaum & S.W. Richards (2016)- Post 8 Ma reconstruction of Papua New Guinea and Solomon Islands: Microplate tectonics in a convergent plate boundary setting. Earth-Science Reviews 156, p. 66-81.

(Since ~6 Ma crustal elements that comprise PNG and Solomon Islands began interacting with impending collision between Ontong Java Plateau and Australian continent, leading to regional microplate tectonics and escalation in tectonic complexity. Bismarck Sea initially formed as back-arc basin behind New Britain arc, but later modified during arc-continent collision. Ttc.)

Holm, R.J., C. Spandler & S.W. Richards (2015)- Continental collision, orogenesis and arc magmatism of the Miocene Maramuni arc, Papua New Guinea. Gondwana Research 28, 3, p. 1117-1136.
(Late Miocene (~12- 6 Ma and older?) Maramuni arc in E Papuan Highlands with intrusive rocks in Kainantu region. From ~12-9 Ma subduction-zone magmas, with increasing incompatible trace element contents and decreasing εHf with time, reflecting increase in crustal component of magmas. Porphyry suites emplaced at 7.5-6 Ma with HREE-depletion. Geodynamic model involves arrival of Australian continent at N-dipping slab at Pocklington Trough (=W continuation of Aure Trough) from ~12 Ma. Continent collision led to underthrusting of leading continental margin, contributing crustal material to magma at ~9 Ma. From ~7 Ma slab break-off and lithospheric delamination reflected in second phase of orogenesis that produced HREE-depleted geochemical signatures of magmatic rocks. Small proportion of zircons Late Permian-M Cretaceous ages (previous interpretations show S-dipping slab from N New Guinea Trench?; JTvG))

Home, P.C., D.G. Dalton & J. Brannan (1990)- Geological evolution of the western Papuan basin. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby, p. 107-117.
(BP review of stratigraphy, paleogeography and geologic evolution of W Papuan Basin. Eight megasequnces in Triassic- Neogene. Earliest sediments over Paleozoic metamorphics/ Permo-Triassic granites are M Triassic-M Jurassic rift deposits, with two rift events before break-up of Gondwana margin. Seafloor spreading began in M Jurassic, followed by passive margin phase with thermal subsidence. M Cretaceous (Cenomanian) second rift episode, related to rifting before seafloor spreading in Coral Sea. Regional thermal uplift/erosion at end-Cretaceous (major hiatus). Widespread Late Oligocene- M Miocene limestone deposition (Darai Lst). ~Langhian age ophiolite obduction in N PNG. Late Miocene (~10 Ma) inversion event tied to collision of N Papuan margin and Melanesian island arc)

Hopwood, B. (2013)- A regional study of the Toro and Imburu Formation aquifers in the Papuan Basin, Papua New Guinea. B.Sc. Hons. (Geology) Thesis, University of Adelaide, p. 1-119.
(online at: https://digital.library.adelaide.edu.au/dspace/bitstream/2440/105356/1/02whole.pdf)
(presentation at: https://digital.library.adelaide.edu.au/dspace/bitstream/2440/105356/2/03SuppMaterial.pdf)
(In Papuan foldbelt hydrocarbon distribution likely influenced by hydrodynamic bahavior in Toro and Imburu Fm reservoirs. E Cretaceous Toro Sst extensive hydrodynamic aquifer that likely flows NW to SE, from Lavani Valley Toro outcrop (recharge region) in Highlands, through to Kutubu Complex, potentially via Hides, (possibly Angore) and Mananda/SE Mananda Fields)

Hornafius, J.S. & R.E. Denison (1993)- Structural interpretations based on Strontium isotope dating of the Darai Limestone, Papuan fold belt, New Guinea. In: G.J. & Z. Carman (eds.) Petroleum exploration and development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby, p. 313-324.
(Darai Limestone in Muller and Kopiago anticlines of PNG foldbelt unconformably overlies U Cretaceous (Coniacian) marine sediments. First paper to use Sr-isotope dating, confirming E Oligocene- M Miocene age of Darai Lst (33-15 Ma). Sedimentation rates much higher between 15-19 Ma than 20-33 Ma (unusual overlap of Te larger forams Spiroclypeus/Eulepidina and Katacycloclypeus (Tf) reported; not repeated in other studies on New Guinea/ Darai limestone like Allan et al. 2000))

Hughes, F.E. (ed.) (1990)- Papua New Guinea- geology and mineral deposits. In: Geology of the mineral deposits of Australia and Papua New Guinea. Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, Monograph 14, 2, p. 1681-1830.
(Chapter 9 in major review collection of mineral occurrences in Australia- New Guinea. With general overviews of PNG mineral deposits and sub-chapters on 20 gold and copper-gold deposits)

Hulse, J.C. & G.I. Harris (2000)- The Darai Plateau play: foreland basin potential. In: P.G. Buchanan, A.M. Grainge & R.C.N. Thornton (eds.) Papua New Guineaõs petroleum industry in the 21st century, Proc. 4th PNG Petroleum Convention, Port Moresby, p. 169-185.
(Darai Plateau is large Plio-Pleistocene inversion of Mesozoic half-graben. Seismic imaging difficult in karsted terrain. E Cretaceous Toro Fm sandstones primary reservoir targets. With Toro Fm sandstone isopach map)

Hutchison, D.S. (1975)- Basement geology of the North Sepik region, Papua New Guinea. Bureau Mineral Res. Geol. Geoph., Canberra, Report, 1975/162, p. 1-55.
(online at: www.ga.gov.au/corporate_data/13402/Rec1975_162.pdf)
(N Sepik region mainly Mesozoic- Paleogene basement rocks, overlain by Neogene- Quaternary marine and non-marine sediments. Dominant feature is E-trending basement axis (left-lateral strike-slip fault-zone with horizontal slickensides; continuation of Sorong FZ of W Papua?), which separates metamorphic basement in S from mainly volcanic basement in N (Bliri Volcanics; with Eocene (Tab) Nummulites- Discocyclina and E-M Miocene Te Puwani Lst.). S of Sepik River sporadic exposures of probable U Cretaceous- Eocene greenschist and amphibolite-grade metamorphics correlate with Ambunti metamorphics. In E of area (E Prins Alexander Mts) Mt Turu complex ultramafics in contact with Oligocene metamorphics on S side. Ambunti metamorphics at S side have Eocene limestone lenses (Discocyclina, Nummulites) and are overlain by unmetamorphosed U Oligocene limestone with Lepidocyclina. In stream S of Amanab recrystallized limestone with U Cretaceous Pseudorbitoides. Late Permian- E Triassic intrusive rocks (242-257 Ma) in Border Mts SW of Amanab))

Hutchison, D.S. & M.S. Norvick (1978)- Wewak, Papua New Guinea- 1:250,000 geological series. Bureau Mineral Res. Geol. Geoph., Canberra, and Geological Survey PNG, Explanatory Notes, SA/54-16, p. 1-34.
(Geologic map sheet along N coast of PNG (N of Sepik River))

Hutchison, D.S. & M. Norvick (1980)- Geology of North Sepik region, Papua New Guinea. Bureau Mineral Res., Canberra, Record 1980/24, p. 1-163.
(online at: www.ga.gov.au/products-services/legacy-publications/records/1980s.html)
(Geology of NW coastal area of PNG, E of West Papua border. Basement in N Sepik region consists of late Mesozoic and early Tertiary volcanic and metamorphic rocks, and is unconformably overlain by thick Neogene-Quaternary non-volcanic clastics. Complex of ultramafic and basic intrusive rocks in E Prince Alexander Mountains (Mt Turu Complex) probably of Jurassic age and possibly small fragment of oceanic crust, emplaced to surface in Oligocene. Mixed high-grade metamorphic and acid intrusive rocks form Late Cretaceous Prince Alexander Complex in W and C Prince Alexander Mts. Basic- intermediate volcanics and related Paleocene- E Miocene sediments (Bliri volcanics) in Bewani and Torricelli Mountains and N coastal ranges, appear to be remnants of early Tertiary island arc. Large, E-trending, dominantly transcurrent fault systems run length of region. Several oil- gas seeps are known, and few unsuccessful wells drilled in 1924-1927)

InterOil Australia (2011)- Formation evaluation, carbonate reservoir characterisation and resource assessment of the Elk and Antelope gas fields in the onshore Eastern Papuan Basin of Papua New Guinea. Proc. 2011 SE Asia Petroleum Expl. Soc. (SEAPEX) Conf., Singapore, p. 1-86. *(Abstract + Presentation)*
(2006-2008 discovery of >7 TCF Elk-Antelope gas field in onshore E Papuan Basin in foothills of Central Range. Gas field at crest of fold structure in leading edge of Aure Tectonic Belt. Reservoir fractured Oligocene-Miocene reefal carbonate. Not much on geology)

Jack, R.L. & R. Etheridge (1892)- The geology and palaeontology of Queensland and New Guinea. Geol. Survey of Queensland Publ. 72, p. 1-768. *(3 vols., 68 plates, map)*
(Classic work on Queensland geology, Devonian- Cretaceous stratigraphy and fauna. Thick Devonian with corals Favosites, Heliolites, Pachypora and Stromatopora and brachiopods Spirifera, Atrypa, Rhynchonella, Pentamerus and Stringocephalus. Permo-Carboniferous Bowen series with coal and Glossopteris flora, brachiopods, etc. Also chapter on Papua New Guinea geology)

Jackson, R. (1982)- Ok Tedi: the pot of gold. University of Papua New Guinea, Boroko, p. 1-199.

Jaques, A.L. (1976)- High-K2O island-arc volcanic rocks from the Finisterre and Adelbert Ranges, northern Papua New Guinea. Geol. Soc. America (GSA) Bull. 87, p. 861-867.
(Thick Oligocene- Early Miocene volcanics in Finistere- Adelbert Ranges. Probably formed in volcanic arc N of NE dipping subduction zone)

Jaques, A.L. (1981)- Petrology and petrogenesis of cumulative peridotites and gabbros from the Marum Ophiolite Complex. J. Petrology 22, 1, p. 1-40.
(N PNG Marum ophiolite complex composed of two allochthons thrusted over Cretaceous to Eocene low-grade metasediments in Paleocene- Eocene. 3-4 km thick sequence of ultramafic and mafic cumulates, with mainly dunite at base, through wehrlite, lherzolite, plagioclase lherzolite, pyroxenite, olivine norite-gabbro and norite-gabbro to anorthositic gabbro and ferrogabbro at top. Parent magmas Mg olivine-poor tholeiite. May result from partial melting of depleted mantle lherzolite at shallow depth at mid-ocean ridge or back-arc basin)

Jaques, A.L. (1981)- Ophiolites of Papua New Guinea. In: N. Bogdanov (ed.) IGCP Project 39 Ophiolites, p.

Jaques, A.L. & B.W. Chappell (1980)- Petrology and trace element geochemistry of the Papuan Ultramafic Belt. Contrib. Mineralogy Petrology 75, p. 55-70.
(In Papuan Ultramafic Belt of PNG harzburgites at base of ophiolite are depleted in lithophile elements, consistent with proposed origin as 'depleted' upper mantle, residual after extraction of basaltic melt. Overlying layered ultramafic-mafic cumulates point to magnesian olivine-poor tholeiite parent magma(s) strongly depleted in 'incompatible' elements. LREE-depleted lavas in overlying basalt sequence resemble most depleted mid-ocean ridge basalts. Intruded Eocene tonalites genetically unrelated to ophiolites, and appear related to andesites of Cape Vogel and others at N end of PUB, and represent early stages of island-arc magmatism associated with NE-dipping subduction zone in E Eocene immediately prior to emplacement of PUB)

Jaques, A.L., B.W. Chappell & S.R. Taylor (1978)- Geochemistry of LIL-element enriched tholeiites from the Marum Ophiolite Complex, northern Papua New Guinea. BMR J. Australian Geol. Geophysics 3, p. 297-310.
(online at: www.ga.gov.au/metadata-gateway/metadata/record/80972/)
(Geochemistry of spilitic pillow basalts (Tumu River basalts) associated with peridotites and gabbros of Marum ophiolite complex in N mainland PNG, thrust over low-grade metasediments of mainly Late Cretaceous-Eocene age. Comparable to tholeiites from oceanic islands. Reflect mantle-source composition rather than particular tectonic setting within ocean basin)

Jaques, A.L., B.W. Chappell & S.R. Taylor (1983)- Geochemistry of cumulus peridotites and gabbros from the Marum Ophiolite Complex, Northern Papua New Guinea. Contrib. Mineralogy Petrology 82, p. 154-164.
(Late Mesozoic Marum ophiolite peridotite-gabbro sequence NE of Central Range in N PNG incomplete: upper part extrusives missing. Parent magmas of Marum cumulates strongly depleted in incompatible trace elements, and not of MORB composition)

Jaques, A.L. & G.P. Robinson (1977)- The continent/ island arc collision in northern Papua New Guinea. BMR J. Australian Geol. Geophysics 2, p. 289-303.
(online at: www.ga.gov.au/corporate_data/80936/Jou1977_v2_n4_p289.pdf)
(Adelbert-Finisterre Paleogene oceanic volcanic arc above NE-dipping Indo-Australian Plate subduction zone active in Late Eocene- E Miocene. First collided with Australian continental crust in E Miocene in west, progressing eastward. In collision zone SW of arc with NE-dipping Marum ophiolite complex, with Eocene pelagic sediments interbedded with pillow basalts. SW of ophiolite Bismarck-Schrader Ranges low-grade metamorphics, laterally grading into Late Cretaceous- Eocene clastics and limestones. Metamorphics formed from continental slope flysch with abundant detritus of granitic, metamorphic and volcanic rocks)

Jaques, A. L. & G.P. Robinson (1980)- Bogia, Papua New Guinea, Sheet SB/55-1, 1:250. Geological Series-Explanatory Notes, PNG Dept. Minerals and Energy, p. 1-27.
(Geologic map sheet in NE PNG (Finisterre Range, etc.))

Jenkins, D.A.L. (1974)- Detachment tectonics in western Papua New Guinea. Geol. Soc. America (GSA) Bull. 85, p. 533-548.
(PNG foldbelt deformation in M-L Pliocene. Pattern of detachment related to configuration of two large basement uplifts, aligned WNW en echelon to spine of island. Uplift continued after thrusting ceased)

Jenkins, D.A.L. & A.J. Martin (1972)- Recent investigations into the geology of the southern highlands, Papua. In: Proc. 4th Symp. Development of petroleum resources of Asia and the Far East, UN ECAFE Mineral Resources Dev. Ser. 41, 1, p. 288-294.

Johnson, R.W. (1979)- Geotectonics and volcanism in Papua New Guinea: a review of the Late Cainozoic. Bureau Mineral Res. (BMR) J. Australian Geol. Geophysics 4, p. 181-207.
(online at: www.ga.gov.au/corporate_data/81001/Jou1979_v4_n3_p181.pdf)
(At least 6-perhaps 10, plate boundaries in PNG. Most are zones of convergence and ridge-transform zones where new sea floor is being created. Australian continent and Ontong Java Plateau reached region in Cenozoic. Late Cenozoic volcanoes of PNG widely distributed and chemically diverse. Andesite is common, but comendites, intra-plate rhyolites, strongly undersaturated rocks, and basalts also present)

Johnson, R.W. (1982)- Papua New Guinea. In: R.S. Thorpe (ed.) Andesites, John Wiley, p. 225-244.

Johnson, R.W. (2013)- Fire mountains of the islands- a history of volcanic eruptions and disaster management in Papua New Guinea and the Solomon Islands. Australian National University (ANU) Press, Canberra, p. 1-391.
(online at: www.oapen.org/download?type=document&docid=462202)
(Popular review of 57 active volcanoes of E PNG mainland and islands to East)

Johnson, R.W. & A.L. Jacques (1980)- Continent-arc collision and reversal of arc polarity: new interpretation from a critical area. Tectonophysics 63, p. 111-124.
(N New Guinea regarded as region where polarity of island arc reversed following collision with Australian continent, but evidence not compelling. Because present-day volcanism off PNG N coast associated with steeply N-dipping Benioff zone and late Cenozoic volcanoes in central highlands cannot be related to Benioff zone, more acceptable interpretation is that, following collision, N-dipping slab beneath arc became suspended nearly vertically. Active marginal basin N of arc is unlikely subducted S beneath mainland, because lithosphere beneath marginal basins appears to be neither thick nor cold enough for initiation of subduction)

Johnson, R.W., D.E. MacKenzie & I.E.M. Smith (1971)- Seismicity and Late Cenozoic volcanism in parts of Papua New Guinea. Tectonophysics 12, p. 15-22.
(Late Cenozoic volcanoes in New Guinea Highlands- E Papua of calc-alkaline and shoshonitic compositions; N coast of New Britain and islands toW tholeiitic basalt, andesite, dacite, and rhyolite. Earthquake foci for 1958-1970, can not be tied to S-dipping Benioff zone. Well-defined Benioff zone dips N beneath New Britain)

Johnson, R.W., D.E. MacKenzie & I.E.M. Smith (1978)- Delayed partial melting of subduction modified mantle in Papua New Guinea. Tectonophysics 46, p. 197-216.
(Late Cenozoic volcanoes in E PNG assigned to nine volcanic provinces, seven of which related to arc-trench systems. Four of these seven associated with present-day subduction of lithosphere. Volcanism in three other provinces not related to subduction (higher 87Sr/86Sr values, etc.) and may have originated in mantle lithosphere chemically modified in Early Cenozoic or Late Mesozoic by slab-derived fluids)

Johnson, R.W., D.E. MacKenzie & I.E.M. Smith (1978)- Volcanic rock associations at convergent plate boundaries: reappraisal of the concept using case histories from Papua New Guinea. Geol. Soc. America (GSA) Bulll. 89, p. 96-106.
(Three volcanic rock associations in seven Late Cenozoic provinces at convergent plate boundaries in PNG)

Johnson, R.W., D.E. Mackenzie, G.A.M. Taylor & I.E.M. Smith (1973)- Distribution and petrology of the late Cainozoic volcanoes in Papua New Guinea. In: P.J. Coleman (ed.) The Western Pacific: island arcs, marginal seas, geochemistry, Western Australia University Press, p. 523-534.

Johnson, T.L. (1979)- Alternative model for the emplacement of the Papuan ophiolite, Papua New Guinea. Geology 7, 10, p. 495-498.
(New model for geologic development of Papuan Peninsula, based on reinterpretation of nature of Owen Stanley metamorphic belt. Owen Stanley rocks interpreted as sediments deposited on oceanic crust and accreted to E- dipping island arc as underlying crust was subducted. Emplacement of ophiolite in two stages: (1) uplift due to buoyancy of lighter material accreted under ophiolite during subduction; (2) further uplift of ophiolite to present position when island arc collided with and partially subducted semicontinental material)

Johnstone, D.C. & J.K. Emmett (2000)- Petroleum geology of the Hides gas field, Southern Highlands, Papua New Guinea. In: P.G. Buchanan et al. (eds.) Papua New Guineaôs petroleum industry in the 21st century, Proc. 4th PNG Petroleum Convention, Port Moresby, p. 319-336.
(Hides field in central highlands of PNG, discovered in 1987. SW-verging asymmetrical anticline with >2000m structural relief (and 1300m gas column?). Five gas-bearing reservoirs in clean quartz sandstones of Late Jurassic- Early Cretaceous Imburu and Toro Fms, with 7=10.6% porosity. Rel. dry gas, tied to clastic source with mixed terrestrial and marine kerogens. Estimated reserves 5.3 TCF gas and >100 MB Condensate)

Jongsma, D. (1970)- Marine geology and recent sediments of Milne Bay, New Guinea. Bureau Mineral Res., Geol. Geoph., Canberra, Record 1970/010, p. 1-24.
(online at: www.ga.gov.au/corporate_data/12423/Rec1970_010.pdf)
(Report version of Jongsma (1972). Milne Bay at SE tip of mainland PNG originated during formation of Owen Stanley fault onshore and Pocklington shear zone. Bay floor sinking in Quaternary, accumulating thick marine sediments)

Jongsma, D. (1972)- Marine geology and Recent sediments of Milne Bay, eastern Papua. Geological Papers 1969, Bureau Mineral Res., Geol. Geoph., Bull. 125, p. 35-54.
(online at: www.ga.gov.au/corporate_data/125/Bull_125.pdf)
(See also Jongsma (1970))

Kaczmarek, M.A., L. Jonda & H.L. Davies (2015)- Evidence of melting, melt percolation and deformation in a supra-subduction zone (Marum ophiolite complex, Papua New Guinea). Contrib. Mineralogy Petrology 170, 19, p. 1-23.
(Geochemistry of Marum Ophiolite of E PNG, which obducted in Paleocene and Eocene, and is composed of two allochthons thrusted over Cretaceous to Eocene low-grade metasediments. Marum ophiolite is piece of depleted mantle, made of dunite and harzburgite, showing compositions of supra-subduction zone peridotite)

Kamenetsky, V.S., A.V. Sobolev, S.M. Eggins, A.J. Crawford & R.J. Arculus (2002)- Olivine-enriched melt inclusions in chromites from low-Ca boninites, Cape Vogel, Papua New Guinea: evidence for ultramafic primary magma, refractory mantle source and enriched components. Chemical Geology 183, p. 287-303.
(Study of melt inclusions in high-Cr primitive spinel in Paleocene low-Ca boninites from Cape Vogel, PNG. Cape Vogel primary melts could have originated from melting of refractory, hot (>1500°C) harzburgitic mantle fluxed by subduction-related, H2O-bearing enriched components)

Kaufman, R.L., J.C. Phelps & K.J. Kveton (1997)- Petroleum systems of the Papuan Basin, Papua New Guinea. In: J.V.C. Howes & R.A. Noble (eds.) Proc. Petroleum Systems of SE Asia and Australia Conf., Jakarta, Indon. Petroleum Assoc. (IPA), Jakarta, p. 237-246.
(Three petroleum systems in PNG: 1. Jurassic-Imburu (proven play); 2. Cretaceous (tentative; concluded from seeps oil analyses); 3. Tertiary (common oleanane in oil seep near Goroka, N of other seeps/ fields)

Kaufman, R.L. & B. Robertson (1999)- Application of reservoir geochemistry in the Iagifu-Hedinia Field, Papua New Guinea. Australian Petrol. Explor. Assoc. (APEA) J. 39, p. 421-436.

(Combination of oil fingerprint and RFT pressure data in Iagifu-Hedinia Field demonstrated some seals effective over geologic time frames while others effective only on production timeframe. Geochemical data also indicate presence of reservoir compartments where other data were missing or inconclusive)

Kawagle, S.A. (2005)- The mineral resources of Papua New Guinea. Resource Geology 55, 3, p. 285-288.
(Brief review of PNG mining. Three world class, open pit mines at Ok Tedi, Porgera and Lihir; two medium-scale underground operations at Tolukuma and Kainantu. PNG y produced 68 Tonnes of gold in 2003 and 73.6 tonnes in 2004. Copper production averages around 200,000 Tonnes/ year)

Kawagle, S.A. (2007)- Petroleum resources of Papua New Guinea. Resource Geology 57, 3, p. 347-350.
(Brief review of PNG petroleum status. Petroleum sector has substantially grown in last 2 years. Oil- gas fields in Papuan fold belt and foreland and Fly platform. First commercial oil discovery in 1986 with first production in 1992. Oilfields small by world standards. Second major contributor to PNG revenue, after minerals)

Kawagle, S.A. & J.B. Meyers (1996)- Structural and sequence geometry of the Kiunga area, Papuan foreland basin, Papua New Guinea. In: P.G. Buchanan (ed.) Petroleum exploration, development and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, PNG Chamber of Mines and Petroleum, Port Moresby, p. 175-193.
(PNG foreland basin S of Papuan foldbelt with 4 seismic megasequence boundaries: M Jurassic breakup unconformity, top Mesozoic Megasequence and top of Lower and Upper Darai Megasequence. Late Cretaceous? NW-trending wrench faults)

Keenan, S.E. & K.C. Hill (2015)- The Mananda Anticline, Papua New Guinea: a third oil discovery, appraisal programme and deep potential. AAPG/SEG Int. Conf. Exhibition, Melbourne, Search and Discovery Art. 10803, 13p. *(Extended Abstract)*
(online at: www.searchanddiscovery.com/documents/2015/10803keenan/ndx_keenan.pdf)
(Mananda Anticline one of larger structures in Papuan Fold Belt (40x15 km, up to 2000m high. Stratigraphy 1 km of Miocene limestone over 1 km of Cretaceous shale over earliest Cretaceous Toro and Digimu sandstone reservoirs and inferred Jurassic source. Size of structure suggests basement inversion. Since 1971 nine wells drilled along topographic crest, including SE Mananda-1 oil-gas discovery in 1991. New work indicated structural crest SE of topographic crest. Mananda 5, 6 wells tested oil and gas in Toro Sst reservoirs)

Keenan, S.E. & K.C. Hill (2015)- The Mananda Anticline, Papua New Guinea: a third oil discovery, appraisal programme and deep potential. Proc. Eastern Australian Basins Symposium (EABS), Petroleum Expl. Soc. Australia (PESA), p. 297-306.
(Same as Keenan and Hill 2015, above)

Keetley, J.T., K.C. Hill & K.J. Kveton (2000)- 3D structural modeling of the Moran Oilfield, Papua New Guinea. In: P.G. Buchanan et al. (eds.) Papua New Guineaôs petroleum industry in the 21st century, Proc. 4th PNG Petroleum Convention, Port Moresby, p. 309-318.
(3D restoration models of Moran anticine in central part of Papuan foldbelt (Late Miocene- Pliocene S-directed folding-thrusting))

Khan, A.M. (1976)- Palynology of Neogene sediments from Papua (New Guinea) stratigraphic boundaries. Pollen et Spores 16, 2, p. 265-284.
(Early, dated paper on Neogene palynology from Iviri 1 well, Fly River Delta)

Kicinski, F.M. (1955)- Micropalaeontological examination of rock samples from Buna-Kokoda area, Eastern Papua. Bureau Mineral Res. (BMR) Geol. Geoph., Record 1955/009, p.
(Samples from Robinson Bay Limestone (which occur as caps on volcanic Iauga Fm Trobriand arc volcanics), have Lower Tf larger forams (= Burdigalian- Serravallian; Miogypsina kotoi, Austrotrillina, Flosculinella bontangensis, etc.)

King, S.J., D. Haig & A.G. Annette (2000)- The tectonic implications of rapid vertical facies changes in the Yule Island section, Aure Trough, Papua New Guinea. AAPG Int. Conf. Exhib., Abstracts, American Assoc. Petrol. Geol. (AAPG) Bull. 84, 9, p. 1449.
(Yule Island section ~1.5 km thick marine M. Miocene- E Pliocene. Two separate cycles of tectonic uplift and subsidence in Aure Trough. Tectonic events recorded in succession include: 1) development of proximal foredeep in response to tectonic loading possibly accretion of E Papuan Composite Terrane prior to ~14.8 Ma; 2) 'marginal' uplift associated with development of a fold-and-thrust-belt from ~11.4 Ma; 3) second tectonic loading event, possibly accretion of Adelbert-Finisterre volcanic terrane at ~8.8 Ma; and, 4) pervasive basin-wide uplift associated with development of second and fold-thrust-belt from ~5.2 Ma)

Kivior, I., S. Markham & L. Mellon (2015)- Mapping sub-surface geology from magnetic data in the Hides Area, Western Papuan Fold Belt, Papua New Guinea. Proc. Eastern Australian Basins Symposium (EABS), Petroleum Expl. Soc. Australia (PESA), p. 307-319.
(Structure interpretation of magnetic data in area of Hides and Karius gas fields, PNG foldbelt, consistent with structures mapped from seismic and well data)

Kivior, I., S. Markham & L. Mellon (2016)- Mapping sub-surface geology from magnetic data in the Hides Area, Western Papuan Fold Belt, Papua New Guinea. AAPG/SEG Int. Conf. Exhib., Melbourne 2015, Search and Discovery Article 30438, 14p.
(online at: www.searchanddiscovery.com/pdfz/documents/2016/30438kivior/ndx_kivior.pdf.html)
(Same as Kivior et al. 2015))

Klimchuk, G.A. (1993)- Provenance and depositional setting of the Pliocene Era Formation, Aure fold and thrust belt, Papua New Guinea. M.A. Thesis, University of Texas at Austin, p. 1-130. *(Unpublished)*

Klootwijk, C., J. Giddings & C. Pigram (1993)- Palaeomagnetic constraints on terrane tectonics: Highlands and Sepik regions, Papua New Guinea. Exploration Geophysics (Bull. Soc. Australian Exploration Geophysicists) 24, 2, p. 291-294.
(New Guinea more than 32 terranes of oceanic, continental or composite affinity. Paleomagnetic control on terrane movement of mainland New Guinea restricted to Bird's Head (Giddings et al., 1993), and North Sepik and Highland regions of Papua New Guinea. Paleocene- E Miocene Bliri Volcanics of Bewani- Torricelli Arc complex in N Sepik region show overprint acquired at latitude of ~150 °S, attributed to latest-Oligocene-E Miocene accretion of arc onto N margin of Australian plate. Declinations from Bliri Volcanics and cover sediments show meridional trend and indicate CCW rotations of Bewani-Torricelli Arc between 30°-110° relative to Australian craton. Also CCW rotations between 30°-100° in Kubor Anticline and Jimi terrane. In Mendi area of S Highlands CW rotations of 30°-50°)

Klootwijk, C., J. Giddings, C. Pigram, C. Loxton, H. Davies, R. Rogerson & D. Falvey (2003)- Papua New Guinea Highlands: palaeomagnetic constraints on terrane tectonics. Tectonophysics 362, p. 239-272.
(Paleomagnetic study of 21 localities in PNG Highlands. Three magnetic components: (1) recent overprint; (2) mainly normal polarity overprint during M-L Miocene intrusive activity in central cordillera; (3) primary component. Interior zone with Triassic- Miocene of Kubor Anticline, Jimi Terrane and Yaveufa Syncline in C and E Highlands 30°- 100°+ CCW rotations. Exterior zone is basement-involved Pliocene foreland fold-and-thrust belt in S Highlands. Exterior zone 30°- 50°+ clockwise rotations in Mendi area. Contrasting rotations across Tahin and Stolle-Lagaip-Kaugel Fault zones indicate decoupling of zones. CCW rotations in Kubor Anticline-Jimi Terrane cratonic spur interpreted as non-rigid rotation of continental terranes as they were transported W across NE Australian craton margin. This margin became reorganised after M Miocene, when N-advancing Australian craton impinged into W-moving Pacific plate/buffer-plate)

Klootwijk, C., J. Giddings, C. Pigram, C. Loxton, H. Davies R. Rogerson & D. Falvey (2003)- North Sepik region of Papua New Guinea: palaeomagnetic constraints on arc accretion and deformation. Tectonophysics 362, p. 273-301.
(Bewani-Torricelli Arc of N Sepik, Paleocene- E Miocene Bliri Volcanics counterclockwise rotations of 30°+-110°+ relative to Australian craton, and clockwise rotations of 100°- 170°+ of detached Tring Block.

Latitudinal evolution of Bewani-Torricelli Arc similar to Baining Arc (Finisterre-Huon-New Ireland-New Britain), and indicates N-ward movement from ~30°S in Late Eocene to ~15°S in E-M Miocene, suggesting both arcs may be parts of larger E-W-oriented arc complex, possibly located on Pacific plate prior to accretion)

Klootwijk, C., J. Giddings, W. Sunata, C. Pigram, C. Loxton, H. Davies, R. Rogerson & D. Falvey (1987)- Paleomagnetic constraints on terrane tectonics in New Guinea. In: E. Brennan (ed.) Proc. Pacific Rim Congress 1987, Gold Coast, Australasian Inst. of Mining and Metallurgy (AusIMM), Parkville, p. 237-239.
(Paleomagnetic work for New Guinea shows common Late Tertiary overprints. Birds Head probably some N-ward movement relative to Australia between M Eocene and M Miocene and some post E-M Miocene counterclockwise rotation. In N Sepik region Torricelli and Border Mountain blocks 100° or more CCW rotations. In Highlands Kubor Block 50-100°CCW rotation)

Kloppenburg, A. & K.C. Hill (2015)- The Gobe Field, PNG: influence of basement architecture on fold and thrust belt structural style. In: Proc. Eastern Australian Basins Symposium (EABS), Petroleum Expl. Soc. Australia (PESA), p. 273-279.
(25 km long sinuous Gobe Anticline in SE Papuan Fold Belt three structural compartments, believed to be in part controlled by E Jurassic rift architecture in Permo-Triassic basement. Main oil gas reservoir U Jurassic Iagifu Sst. Overlying 1 km thick Cretaceous mudstone detached reservoir sequence from overlying 1 km thick Miocene limestone that formed Pliocene- Recent thin-skinned structures at the surface. Nearby basement-cored Iehi Anticline. Gobe Anticline resulted from interplay of two conjugate contractional fault sets)

Kloppenburg, A. & K.C. Hill (2016)- The Gobe Field, PNG: influence of basement architecture on fold and thrust belt structural style. AAPG/SEG Int. Conf. Exhib., Melbourne 2015, Search and Discovery Art. 20339, 11p.
(online at: www.searchanddiscovery.com/documents/2016/20339kloppenburg/ndx_kloppenburg.pdf)
(Similar to Kloppenburg & Hill 2015))

Knight, C.L. (ed.) (1976)- Economic geology of Australia and Papua New Guinea. Australasian Inst. of Mining and Metallurgy (AusIMM) Mon., vol. 1. Metals, Parkville, Victoria, p. 1-1126.

Knight, C.L. (ed.) (1976)- Economic geology of Australia and Papua New Guinea. Australasian Inst. of Mining and Metallurgy (AusIMM) Mon., vol. 2. Coal, Parkville, Victoria, p. 1-398.

Knight, C.L. (ed.) (1976)- Economic geology of Australia and Papua New Guinea. Australasian. Inst. Mining and Metallurgy (AusIMM) Mon., vol. 3. Petroleum, Parkville, Victoria, p. 1-541.k

Knight, C.L. (ed.) (1976)- Economic geology of Australia and Papua New Guinea. Australasian Inst. of Mining and Metallurgy (AusIMM) Mon., vol. 4. Industrial minerals and rocks, Parkville, Victoria, p. 1-423.

Kopi, G., I. Abiari, P.G. Quilty, T.W. Kilya, S. Nekitel, R.H. Findlay, C. Mortimer & P. Kia (2002)- Cretaceous macrofossils from the Ramu Valley and the Snake River, Papua New Guinea, place the northern terranes of PNG and the Owen Stanley Metamorphics in Gondwana. In: V.P. Preiss (ed.) Geoscience 2002, 16th Australian Geol. Conv., Geol. Soc. Australia. 67, p. 363. *(Abstract only)*

Koulali, A., P. Tregoning, S. McClusky, R. Stanaway, L. Wallace & G. Lister (2015)- New insights into the present-day kinematics of Papua New Guinea from GPS. Geophysical J. Int. 202, 2, p. 993-1004.
(New GPS derived velocity field based on 1993-2008 observations at 30 GPS sites, combined with published GPS velocities in N and NW PNG. New Guinea Trench is active plate boundary, accommodating most of the convergence between Pacific and Australian plates in NW PNG with rates >90 mm/ yr. Some convergent deformation partitioned into shear along Bewani-Torricelli fault zone and S Highlands fold-thrust Belt. Fault system N of Highlands fold-thrust belt is major boundary between the rigid Australian Plate and N Highlands block, with convergence between ~6-11.5 mm/yr. N New Guinea Highlands and Papuan Peninsula two blocks separated by boundary through Aure Fold belt Belt. Ramu-Markham fault accommodates deformation associated with Finisterre arc-continent collision)

Krawczynski, L. (2015)- Hydrocarbon generation and distributon in the foreland part of the Papuan Basin. Proc. SE Asia Petroleum Expl. Soc. (SEAPEX) Conf. 2015, Singapore, 8.2, 3p. *(Extended Abstract)*
(Papuan Basin of PNG similar petroleum system to Mesozoic of Australia NW Shelf. Commercial discoveries in PNG foldbelt/ foothills and Tertiary carbonates play, but no fields in foreland basin yet. Active source rocks: (1) Triassic lacustrine shales, (2) Jurassic mixed marine-terestrial Imburu Fm and (3) Late Cretaceous and younger terrestrial source rocks. Recent foreland basin wells Manta 1 and NW Koko 1 rely on long-distance (100km) migration from mature Jurassic source)

Krieger, F.W., P.J. Eadington & L.I. Eisenberg (1996)- Rw, reserves and timing of oil charge in the Papuan Fold Belt. In: P.G. Buchanan (ed.) Petroleum exploration and development in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby 1996, p. 407-416.
(Significant decreases in salinity in Cretaceous and Jurassic aquifers through evolution of Papuan basin, suggesting recharge with low salinity meteoric water (after oil charge))

Kristan-Tollman, E. (1986)- Beobachtungen zur Trias am Sudost-Ende der Tethys- Papua/ Neuguinea, Australien, Neuseeland. Neues Jahrbuch Geol. Palaont., Monatshefte 4, p. 201-222.
('Observations on the Triassic of the SE margin of the Tethys- Papua New Guinea, Australia and New Zealand'. Upper Triassic Tethyan faunas remarkably similar all the way E to New Zealand, NW Australia. Includes discussion of Kubor terrane Rhaetian Gurumugl reefal limestones ESE of Mount Hagen, PNG, which contains latest Triassic corals (Montlivaltia norica, Thecosmilia chlathrata) and diverse forams, incl. Tetrataxis, Involutina liassica, Galeanella tollmanni, etc.), suggesting Rhaetian age)

Kristan-Tollman, E. (1986)- Foraminiferen aus dem Rhatischen Kuta-Kalk von Papua- Neuguinea. Mitteilungen Osterreichischen Geol. Gesellschaft 78 (1985), p. 291-317.
(online at: http://geologie.or.at/index.php/downloads2/category/7-archiv-mitteilungen)
(First description of Rhaetian foraminifera from Kuta limestone, Mt. Hagen area, PNG Highlands. Fauna of Tethyan affinity, similar to same age faunas from Mediterranean/ Alps area. Three biofacies types: near-reef (with Trocholina, Coronipora, Semiinvoluta, etc.), fore-reef (crinoid detrital limestones with Variostoma cochlea, etc.) and lagoonal (low diversity with Angulodiscus, Glomospira/ Glomospirella)

Kristan-Tollman, E. (1990)- Rhaet-Foraminiferen aus dem Kuta-Kalk des Gurumugl-Riffes in Zentral-Papua/Neuguinea. Mitteilungen Osterreichischen Geol. Gesellschaft 82 (1989), p. 211-289.
(online at: http://geologie.or.at/index.php/downloads2/category/7-archiv-mitteilungen)
('Rhaetian foraminifera from the Kuta Limestone of the Gurumugl Reef in central PNG'. Detailed account of latest Triassic foram assemblage of 85 species from W part of Gurumugl Reef, W Kundiawa. Incl. Involutina liassica, Tetrataxis, Duotaxis, Triasina oberhauseri, Galeanella, Gaudryina, Agathammina, Endothyra, etc. All species also known from West Tethys, showing uniformity of Late Triassic Tethyan reef faunas. No stratigraphic info)

Kugler, A. (1966)- The stratigraphy, structure and tectonics of the Kukukuku Lobe Permit 22, Papua. Ph.D. Thesis University of Tasmania, Hobart, p. 1-365. *(Unpublished)*
(part online at: http://eprints.utas.edu.au/12292/7/kugler_intro-chp2.4.pdf)

Kugler, A. (1990)- Geology and petroleum plays of the Aitape Basin, New Guinea. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby 1990, p. 479-490.
(Aitape Basin at NW most corner of PNG near W Papua border. Uup to 6 km thick Miocene-Pleistocene sediments (Boap Creek 1 well has 1500m of Pleistocene N22 section) on Oligocene and older volcanics and intrusives. Three 1980's BHP dry exploration wells. Oil and gas seeps along Torricelli-Bewani fault zone at S side of basin (with up to 10 km of throw). Several seismic anomalies indicative of Early Miocene reefal buildups; similaries with hydrocarbon-bearing Salawati basin in W Papua suggested)

Kugler, K.A. (1993)- Seismic structure and stratigraphy within the Aure fold and thrust belt, Gulf of Papua, Papua New Guinea. M.A. Thesis University of Texas at Austin, p. 1-104. *(Unpublished)*
(With 29 seismic profiles in separate container)

Kugler, K.A. (1993)- Detailed analysis from seismic data of the structure within the Aure fold and thrust belt, Gulf of Papua, Papua New Guinea. In: G.J. & Z. Carman (eds.) Petroleum exploration and development in Papua New Guinea, Proc. 2nd PNG Petroleum Conference, Port Moresby, p. 399-411.
(Onshore and offshore (N Gulf of Papua) Aure fold-thrust belt folds with amplitudes up to 3500m. Multiple sub-horizontal detachment zones in Paleogene- Pliocene; no evidence that crystalline basement is involved. Minimum shortening 20% for Late Miocene beds. First observable compression by Late Miocene (~5.3- 7.2 Ma), with deformation continuing today at frontal foldbelt)

Kulange, B.J., Y. Kajiwara & K. Komuro (2002)- Cu-Fe Bearing zinc sulfide from Laloki stratabound massive sulfide deposit, Papua New Guinea: chemical characterization. Resource Geology 52, p. 67-72.
(On unidentified, Cu-Fe zinc sulfide in Laloki sulfide deposit, ENE of Port Moresby, PNG. Laloki stratabound massive sulfide deposit part of Astrolabe Mineral Field. Mineralization in latest Paleocene siliceous-calcareous mudstone and rare chert in Cretaceous- Miocene thrust-faulted deep marine clastics and bioclastics with tuff and volcaniclastics. Sadowa Gabbro (~56 Ma) intrusice of tholeiitic affinity)

Kulig, C., R. McCaffrey, G.A. Abers & H. Letz (1993)- Shallow seismicity of arc-continent collision near Lae, Papua New Guinea. Tectonophysics 227, p. 81-93.
(Ramu-Markham Valley separates island arc rocks (Huon Penisula) to N from those of continental origin to S (Kubor Uplift) and appears to be western, onland extension of New Britain trench. E end of RMV narrow, near-vertical belt of seismicity between 10-30 km depth (Lae Seismic Zone), probably within lower plate of gently N-dipping thrust)

Lamerson, P.R. (1990)- Evolution of structural interpretations in Iagifu/Hedinia field, Papua New Guinea. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby, p. 283-300.

Large, S.J. E., A. von Quadt, J.F. Wotzlaw, M. Guillong & C.A. Heinrich (2018)- Magma evolution leading to porphyry Au-Cu mineralization at the Ok Tedi deposit, Papua New Guinea: trace element geochemistry and high-precision geochronology of igneous zircon. Economic Geology 113, 1, p. 39-61.
(Ok Tedi is Earth’s youngest giant porphyry-skarn deposit. Zircons with inherited older cores in all intrusions. Inherited zircon populations and Hf isotopes of Pleistocene zircons record Proterozoic basement assimilation. Crystallization ages extend over 212 ± 44 k.y.. Youngest zircons in each intrusion reflect emplacement age and suggest three pulses separated by ~160 k.y. Injection of more mafic magma into magma reservoir preceded emplacement of Fubilan porphyry at ~1.19 Ma and may be trigger for Au-Cu mineralization)

Larue, D. & M. Daniels (2000)- Stratigraphic architecture, facies and stratigraphic modeling of the upper and lower Iagifu reservoir intervals, Gobe and Southeast Gobe Fields, Papua New Guinea. In: P.G. Buchanan et al. (eds.) Papua New Guineaôs petroleum industry in the 21st century, Proc. 4th PNG Petroleum Convention, Port Moresby, p. 349-367.
(Latest Jurassic Iagafu Fm in Gobe Main and SE Gobe fields in S Highlands of central PNG. Multiple sandstone reservoirs mainly shoreline-associated facies, separated by marine shale flooding surfaces. Lower Iagafu is prograding parasequence set)

LaRue, R.H. (1993)- Leading edge architecture of the Papuan fold belt. In: G.J. & Z. Carman (eds.) Petroleum exploration and development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby, PNG Chamber of Mines, p. 371-383.
(Structural modeling of leading edge of Papuan Fold Belt (Puri, Gobe anticlines). Many folds may be hybrid fault-propagation folds and fault-bend folds)

Leamon, G.R. & G.L. Parsons (1986)- Tertiary carbonate plays of the Papua Basin. Proc. 6h Offshore SE Asia Conf. 1986, Singapore, Proc. SE Asia Petrol. Expl. Soc. (SEAPEX) 7, p. 213-227.
(Overview of Eocene- Miocene carbonate play fairways in PNG)

Levett, J. & K.J.F. Logan (2012)- Geophysics of the Porgera gold mine, Papua New Guinea. Exploration Geophysics 29, 4, p. 472-476.

Li, W.G, C.Y Fu, Z.Y. Yao, D. Xin, Z.L. Ge, X.X. Song & T.G. Wang (2014)- Tectonic settings, genetic types and main metallogenic features of copper-gold deposits in Papua New Guinea. Regional Geology of China 2014, Z1, p. 270-282.

Lindley, I.D. (2014)- Suckling Dome and the Australian-Woodlark plate boundary in eastern Papua: the geology of the Keveri and Ada'u Valleys. Australian J. Earth Sci. 61, 8, p. 1125-1147.
(Owen Stanley Fault Zone is low-angle thrust boundary between Australian and Woodlark plates. W extension of OSFZ links with Woodlark Basin spreading centre. Gravity data show OSFZ and Papuan Ultramafic Belt pass north of Mt Suckling. Mafic and ultramafic rocks of Mt Suckling district reassigned to Awariobo Range Complex. Extensive pillow basalts previously referred to M Eocene reassigned to Late Oligocene-M Miocene Wavera Volcanics. Buoyant uplift of Suckling Dome tied to granite intrusion into thick crust of E Papua region, and coincides with initiation of Woodlark rifting)

Lindley, I.D. (2016)- Epithermal and arc-related layered mafic platinum-group element mineralisation in the mafic-ultramafic rocks of eastern Papua. Australian J. Earth Sci. 63, 4, p. 393-411.
(Platinum-group element mineralisation in mafic-ultramafic rocks of E PNG)

Lingrey, S (2000)- Structural interpretation and modeling of seismic data from the Moran and Paua area, PNG foldbelt. In: P.G. Buchanan et al. (eds.) Papua New Guineaǿs petroleum industry in the 21st century, Proc. 4th PNG Petroleum Convention, Port Moresby, Papua New Guinea Chamber of Mines and Petroleum, p. 385-396.

Lisk, M., J. Hamilton, P. Eadington & T. Kotaka (1993)- Hydrocarbon and pore water migration history in relation to diagenesis in the Toro and Iagifu sandstones, SE Gobe-2. In: G.J. & Z. Carman (eds.) Petroleum exploration and development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby, p. 477-488.
(Fluid inclusion and isotope studies of cement in Iagafu reservoir sandstone in SE Gobe field suggests charge of high-maturity oil largely post-dated quartz overgrowth cements)

Liu, K. & K.A.W. Crook (1992)- Sedimentary basin evolution during propagating arc-continent collision, PNG. AAPG Int. Conf., Sydney 1992, Search and Discovery Art. 91015. *(Abstract only)*
(Oblique collision between Finisterre arc-Australian continent at NE PNG margin created isolated basins along Markham Suture since Late Miocene. Basins initially formed by convergence of irregular plate margins. In SE end of Markham Suture sedimentary basin evolution recorded in Pliocene-Pleistocene Erap Complex and Leron Fm of accretionary prism. Remnant basin with >1000m of deep sea turbidites was enclosed by two plate promotories on Australian plate around 5 Ma. Around 3 Ma, as arc-continent collision proceeded, turbidites incorporated into approaching forearc, with thick submarine fan/ slope deposits in trench slope basins. As collision progressed, area was uplifted to form intramountane basin with fan delta deposition)

Liu, K. & K.A.W. Crook (1993)- Miocene- Pleistocene deep-sea to alluvial fan delta sedimentation in the Markham Basin, Papua New Guinea: sedimentary response to arc-continent collision. In: G.J. & Z. Carman (eds.) Petroleum exploration and development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby 1993, p. 97-109.
(Markham basin in NE PNG started out in ~M Miocene as remnant oceanic basin during collision of Finisterre Terrane and N PNG. Shallowing-upward basin fill sequence. M Miocene- E Pliocene clastic detritus derived from continent in S and deposited as deep sea fans, etc. Late Pliocene deposits dominated by clastics derived from volcanic terrane to N. Became intermontane basin in last 1 Myrs)

Liu, K. & K.A.W. Crook (2001)- Neogene sedimentary basin evolution in northern Papua New Guinea: a model for basin evolution in convergent margins settings. In: K.C. Hill & T. Bernecker (eds.) Eastern Australasian basins symposium, a refocused energy perspective for the future, Melbourne 2001, Petroleum Expl. Soc. Australia (PESA), Spec. Publ., p. 169-177.
(Mainly on M Miocene- Pleistocene predominantly deep-water stratigraphy of Markham basin, E PNG. Change from Australian plate- sourced Sukurum unit to Finisterre Arc terrane- sourced Nariawang unit at 3.7- 3.1 Ma, representing collision of Finisterre arc and Australian Plate. Collision earlier (10 Ma) in Ramu Basin)

Lloyd, A.R. (1978)- An outline of the Tertiary palaeontology and stratigraphy of the Gulf of Papua, Papua New Guinea. In: Wiryosujono & A. Sudradjat (eds.) Proc. Regional Conf. Geology and Mineral Resources of Southeast Asia (GEOSEA), Jakarta 1975, p. 43-54.
(8 offshore and 2 onshore wells in N Gulf of Papua penetrated succession of Late Eocene limestones with Pellatispira, Spiroclypeus, Discocyclina Distichoplax, etc., Late Oligocene marls, etc. Oligocene sediments mostly absent. E-M Miocene limestones with Miogypsina, Spiroclypeus, Katacycloclypeus, etc. Late M- Late Miocene absent due to late M Miocene widespread uplift. Rapid subsidence in Pliocene- Recent)

Lloyd, A.R. (1988)- The geology and hydrocarbon potential of Southern Papua New Guinea. Allan R. Lloyd & Associates, p. 1-132. *(Unpublished consultant report)*

Lloyd, A.R. (1993)- The geology, biostratigraphy and hydrocarbon potential of the Papuan Basin, Papua New Guinea. Supplement, Allan R. Lloyd & Associates, p. 1-198. *(Unpublished consultant report)*

Loffler, E. (1972)- Pleistocene glaciation in Papua and New Guinea. Zeitschrift Geomorphologie 13, p. 32-58.

Loffler, E. (1977)- Geomorphology of Papua New Guinea. Australian Nat. University Press, Canberra, p. 1-258.
(Book on landforms and geomorphological processes in Papua New Guinea, linked to geologic history)

Loffler, E. (1978)- Karst features in igneous rocks in Papua New Guinea. In: J.L. Davies & M.A.J. Williams (eds.) Landform evolution in Australasia, Australian Nat. University Press, Canberra, p. 238-249.

Loffler, E., D.E. MacKenzie & A.W. Webb (1980)- Potassium-Argon ages from some of the Papua New Guinea volcanoes and their relevance to Pleistocene geomorphic history. J. Geol. Soc. Australia 25, p. 387-397.
(PNG Highlands volcanics ages suggest start of volcanic activity at 1.6 Ma, major activity ceasing at 0.2 Ma. Glacial activity on Mt Giluwe may date back to 0.7 Ma, and certainly to ~0.3 Ma, indicating altitudes of present magnitudes existed early in Pleistocene, and that most volcanism postdates uplift of central ranges)

Loudon, A.G. (1987)- Gold in Papua New Guinea. In: E. Brennan (ed.) Proc. Pacific Rim Congress 1987, Gold Coast, Australasian Inst. of Mining and Metallurgy (AusIMM), Parkville, p. 767-772.
(Brief history of gold discovery and production in PNG)

Lowenstein, P.L. (1982)- Economic geology of the Morobe Goldfield, Papua New Guinea. Geol. Survey of Papua New Guinea, Port Moresby, Memoir 9, 2 vols., p. 1-228.
(Review of discovery, exploitation, geology and economic potential of Morobe Goldfield of E PNG (includes Bulolo, Edie Creek, Wau, etc.))

Lowenstein, P.L. & P.E. Pieters (1974)- Gold and platinum in the East and West Sepik Districts. Dept. of Lands, Surveys and Mines, Geol. Survey of Papua New Guinea, Report 74/25, p. 1-32.

Lucas, K. (2004)- Physical analog modelling of primary stratigraphic and structural controls on the evolution of the Papuan fold belt, Papua New Guinea, with implications for hydrocarbon exploration. M.Sc. Thesis Queen's University, Kingston, ON, Canada, 117p. *(Unpublished)*
(Papuan Foldbelt structures range from thin-skinned deformation of cover to reactivation of extensional basement faults. Scaled physical analog models used to predict structural style. Modelling of reactivation of

extensional faults in thin-skinned setting indicates reactivation may occur early in deformation sequence, locally absorbing majority of shortening and controlling location of fold versus thrust-dominated structures)

Lus, W.Y., I. McDougall & H.L. Davies (2004)- Age of the metamorphic sole of the Papuan Ultramafic Belt ophiolite, Papua New Guinea. Tectonophysics 392, p. 85-101.
(Papuan Ultramafic belt >400km long, 12 km thick. Probably Maastrichtian age oceanic crust (Ar-Ar ages 67-59.5 Ma). Emplaced during collision of Cape Vogel island arc and rifted fragment of Australia around K-T boundary. Thick metamorphic sole of 300m amphibolite-granulite, grading into lower-grade Emo metamorphics, cooled at ~58 Ma, Paleocene)

Lynch, D.A. & G.J. Milner (1993)- The Maastrichtian- Danian disconformity in the Mendi-Nipa region, Southern Highlands Province, Papua New Guinea. In: G.J. & Z. Carman (eds.) Petroleum Exploration in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby 1993, p. 61-73.
(Stratigraphic gap across K-T boundary of 2 My (66.4-64.5) in Mendi-Nipa Region in PNG Southern Highlands, in more proximal Nipa region 4.5 My (69- 64.5 Ma))

MacKenzie, D.E. (1975)- Plate boundary evolution in the New Guinea region: Volcanic and plate tectonic evolution of central Papua New Guinea. Exploration Geophysics (Bull. Soc. Australian Exploration Geophysicists) 6, 2/3, p. 66-68.
(Volcanic activity in C PNG began in Late Triassic with submarine and terrestrial eruption of andesitic and dacitic lavas on and neaar NE corner of Australian Paleozoic continental crust. Minor basaltic to rhyolitic eruptions in Jurassic in same general area. In Cretaceous, volcanic activity increased in intensity and distribution, spreading to N and W, with mainly andesitic lavas, which may correlate with beginning of spreading in Pacific basin to NE and could be first subduction in area. No evidence to link earlier volcanism with subduction, although it took place near plate boundary).

MacKenzie, D.E. (1976)- Nature and origin of late Cainozoic volcanoes in western Papua New Guinea. In: R.W. Johnson (ed.) Volcanism in Australasia, Elsevier, Amsterdam, p. 221-238.
(Of Late Cenozoic volcanic centers in W PNG 16 rest on 25-30km thick Paleozoic crust and 10km of post-Paleozoic sediments; one on 35km thick pile of eugeosynclinal sediments. Basaltic rocks dominant in 11 centers, others mainly andesite. Magmas originated in upper mantle low velocity layer)

MacKenzie, D.E. (1978)- Plate-tectonic evolution and delayed partial melting in Western Papua New Guinea. Exploration Geophysics 9, p. 89-90.
(See also Johnson et al. 1978. Late Cenozoic volcanoes in PNG Highlands overlie cratonic crust but produce arc-type volcanics. Mantle magma source chemically modified during subduction and passed through rapid and pronounced changes in tectonic setting may later on be source of magmas produced during favourable but non-arc tectonic regime)

MacKenzie, D.E. & B.W. Chappell (1972)- Shoshonitic and calc-alkaline lavas from the Highlands of Papua New Guinea. Contrib. Mineralogy Petrology 35, p. 50-62.
(Pleistocene- Recent stratovolcanoes in PNG Highlands calc-alkaline to shoshonitic lava, tuff, agglomerate, ash, and lahars. Volcanics originated either in base of thick sialic crust which is undergoing stabilization after major orogeny and uplift, or more probably, in eclogite sinking through underlying mantle)

MacKenzie, D.E. & R.W. Johnson (1984)- Pleistocene volcanoes of the western Papua New Guinea highlands: Morphology, geology, petrography, and modal chemical analyses. Bureau Mineral Res., Geol. Geoph., Canberra, Report 246, p. 1-271.
(online at: https://www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=15157)
(15 Pleistocene composite stratovolcanoes in PNG highlands in S part of C and W Ranges and adjacent Fly-Purari plains, rising 1000-2000m above basement and up to 3800m above sea level. Volcanism began in E Pleistocene or Late Pliocene, largely complete by ~200 000 years B.P. Mainly basaltic (70-80%) and andesitic lavas. Basalts generally overlain by andesites. General decrease in silica-saturation from NNE to SSW)

Macnab, R.P. (1969)- Geology of the Area - Upper Dilava- Auga- Middle Angabunga Rivers Area, Papua. Bureau Mineral Res. Geol. Geoph., Record No. 1969 /126, p. 1-49.
(Area NNW of Port Moresby. N- trending schists/ metasediments of Owen Stanley Metamorphics are flanked to W by similarly trending, steeply E-dipping marine sediments of Upper Cretaceous (Senonian) and Lower Miocene Auga Beds, underlain by U Cretaceous submarine basaltic Aibala Volcanics (overtrusting from E, probably in M Miocene). Auga River section >25,000' of sediments and volcanics. Lower Miocene limestones have common reworked Eocene forams. M Miocene Talama Volcanics unconformable over metamorphics and Auga Gp))

Madu, S. (1996)- Correlation sections of the Late Jurassic to Early Cretaceous succession in the Papuan fold belt, Papuan Basin. In: P.G. Buchanan (ed.) Petroleum exploration, development and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 259-277.
(Twelve eustatic cycles around Toro and pre-Toro reservoir cross-sections along Agogo- Iagafu- Hedinia-Gobe fields trend. Sediment supply in Late Jurassic- E Cretaceous sandstones from SW)

Mahoney, L., K. Hill, S. McLaren, A. Hanani (2017)- Complex fold and thrust belt structural styles: examples from the Greater Juha area of the Papuan Fold and Thrust Belt, Papua New Guinea. J. Structural Geol. 100, p. 98-119.
(Greater Juha area in Eastern Muller Ranges of Papuan Fold Belt in PNG with evidence of major inversion, detachment and triangle zone faults. Exposed Cenozoic Darai Lst shows ~13-21% shortening, yet structures elevated up to 7 km above regional, suggesting inversion of pre-existing rift architecture. Pervasive arc-normal oriented structures related to weakened Paleozoic basement cross-structures that affected E Mesozoic rifting)

Maillet P., M. Monzier, M. Selo & D. Storzer (1983)- The D'Entrecasteaux Zone (Southwest Pacific); a petrological and geochronological reappraisal. Marine Geol. 53, 3, 179-197.

Maire, R. (1983)- Les karsts de haute montagne et la notion dœtagement des karsts en Nouvelle Guinee. Revue Geomorphologie Dynamique 32, p. 49-68.
('The highland karsts and the concept of layering of New Guinea karsts' Study of karst types in PNG (Huon Peninsula, etc.) from tropical coastal karst to snow karst in highlands)

Maitland, G. (1892)- Geological observations in British New Guinea. Geological Survey Queensland, Report 85, p.
(Includes first description of granite outcrops at Mabaduan, PNG south coast)

Maitland, G. (1905)- The salient features of British New Guinea (Papua). West. Australian Natural History Soc. 2, p. 32-56.
(includes report of supposedly Devonian grey limestone with coral Heliolites porosa on Tauri River (only, but unverified report of Devonian rocks in PNG?; JTvG))

Manser, W. (1976)- Stratigraphy of Papua New Guinea. 25th Int. Geological Congress, Sydney, Excursion Guide 51A, p. 1-41.
(Brief overview of PNG geology and 4-day fieldtrip itinerary)

Marchant, S. (1969)- A photogeological assessment of the petroleum geology of the northern New Guinea basin North of the Sepik River, Territory of New Guinea. Bureau Mineral Res. (BMR), Canberra, Rept. 130 (Report PNG 4), p. 1-78.
(online at: www.ga.gov.au/...   (202MB)
(Set of 1: 100,000 photogeological maps of NW part of PNG, N of Sepik River. Area of Bewani Mts, Torricelli Mts, Sepik Plains, etc., structurally complex. Some oil and gas seeps known from region)

Mason, D.R. (1978)- Compositional variations in ferromagnesian minerals from porphyry copper-generating and barren intrusions of the western highlands, Papua New Guinea. Economic Geology 73, 5, p. 878-890.
(On amphiboles and biotites from porphyry copper-generating and barren intrusions in W Highlands, PNG)

Mason, D.R. & J.E. Heaslip (1980)- Tectonic setting and origin of intrusive rocks and related porphyry copper deposits in the western Highlands of Papua New Guinea. Tectonophysics 63, p. 123-137.
(Tertiary and younger calc-alkaline intrusives and related porphyry copper mineralization in two tectonic settings: New Guinea Mobile Belt to N, and Australian Continental Block to S. Ages dominantly M Miocene (15-10 Ma) in Mobile Belt, Late Miocene- Pleistocene (7-1 Ma) in Continental Block. Transcurrent- and block-faulting controlled emplacement of intrusives)

Mason, D.R. & J.A. McDonald (1978)- Intrusive rocks and porphyry copper occurrences in the Papua New Guinea- Solomon island region: a reconnaissance study. Economic Geology 73, p. 857-877.
(Study of 141 Tertiary and younger intrusive igneous rocks from PNG main island to Solomon Islands region, representing barren and porphyry copper-mineralized intrusions from island-arc, continental margin, and continental settings)

Mason, H.D. & B.A. McConachie (2000)- Cross Catalina anticline: an oil accumulation in the New Guinea fold belt in Irian Jaya. In: P.G. Buchanan, A.M. Grainge & R.C.N. Thornton (eds.) Papua New Guineaȏs petroleum industry in the 21st century, Proc. 4th PNG Petroleum Convention, Port Moresby, p. 475-485.
(Cross Catalina 1 well 51m net oil-saturation in E Cretaceous Woniwogi Fm sst, but low porosity due to quartz overgrowths (2-12%). Cross Catalina structure ~200 km2 and potential OIP may be >500 MBO)

Mason, R.A. (1994)- Structural evolution of the western Papuan fold belt, Papua New Guinea. Ph.D. Thesis, Royal School of Mines, Imperial College, University of London, p. 1-331.
(online at: https://spiral.imperial.ac.uk/handle/10044/1/37523)
(Papuan Fold Belt in PNG comprises deformed basement, platformal and basinal Mesozoic and Tertiary sediments. Deformation in fold belt started possibly in M-L Late Miocene and is currently continuing. Structure of W part of foldbelt characterised by thin-skinned thrusting and basement involved structures (inversion of Mesozoic-Tertiary extensional faults. Inversion thought to have post-dated initiation of thin skinned thrusting by ~5 Ma)

Mason, R.A. (1996)- Structure of the Western Papuan Fold Belt. In: P.G. Buchanan (ed.) Petroleum exploration, development and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 161-173.
(Western Papuan foldbelt three structural domains: (1) frontal foldbelt with thick-skinned deformation (inversion folds over Mesozoic half-grabens); (2) central domain of thin-skinned imbricate thrust sheets of Darai Lst; (3) northern zone of intensely folded low-metamorphic rocks ('Om Beds' near Sepik River))

Mason, R.A. (1997)- Structure of the Alice anticline, Papua New Guinea: serial balanced cross-sections and their restoration. J. Structural Geol. 19, 5, p. 719-734.
(Structures of W part of Papuan Fold Belt both thin-skinned thrusting and basement involved structures. Alice anticline is frontal foldbelt basement-involved structure, formed due to inversion of older extensional fault system, with varying amounts of shortening along strike. Rotations about vertical axes attributed to pinning of foreland propagating deformation, coincident with relay zones in early extensional fault geometry)

Matsumoto, T. & S.K. Skwarko (1991)- Ammonites of the Cretaceous Ieru Formation, western Papua New Guinea. BMR J. Australian Geol. Geophysics 12, 3, p. 245-262.
(online at: www.ga.gov.au/corporate_data/49552/Jou1991_v12_n3.pdf)
(Eleven ammonite species from five localities in Ieru Fm (above Toro Sst) in W PNG Ok Tedi sheet. Four are typical Cenomanian species, others more likely Turonian- Santonian)

Matsumoto, T. & S.K. Skwarko (1993)- Cretaceous ammonites from South Central Papua New Guinea. AGSO J. Australian Geol. Geophysics 14, 4, p. 411-433.
(online at: www.ga.gov.au/corporate_data/81375/Jou1993_v14_n4_p411.pdf)
(Eleven ammonite species from 11 localities in Central Higlands and foothills to S, collected by APC 1954-1969. Fauriella boissieri from Maril Shale is part of Berriasian Tethyan fauna. Large Puzosia aff. mayoriana

and Pachydesmoceras suggest Cenomanian age. Acanthoceras rhotomagense, Cunningtoniceras cunningtoni, etc. definitive Cenomanian age. Romaniceras deverianum indicates Turonian age.

Matzke, R.H., J.G. Smith & W.K. Foo (1992)- Iagafu/Hedinia Field. First oil from the Papuan fold and thrust belt. In: M.T. Halbouty (ed.) Giant oil and gas fields of the decade 1978-1988, American Assoc. Petrol. Geol. (AAPG), Mem. 54, p. 471-482.
(Iagifu-Hedinia first oil development in PNG fold-thrust belt. Discovery well Iagifu-2X drilled in 1986 flowed 45° API oil and gas from thrust-cored anticline. Primary reservoir E Cretaceous (Berriasian) Toro sandstone. Well locations selected on basis of surface geology and well results. Estimated reserves of 146.6 MBO)

McClusky, S., K. Mobbs, A. Stolz, D. Barsby, W. Loratung, K. Lambeck & P. Morgan (1994)- The Papua New Guinea satellite crustal motion surveys. The Australian Surveyor 39, p. 194-214.

McConachie, B. & E. Lanzilli (2000)- Stanley gas condensate field discovery and the oil potential of the Western Papuan Basin. In: P.G. Buchanan et al. (eds.) Papua New Guineaȏs petroleum industry in the 21st century, Proc. 4th PNG Petroleum Convention, Port Moresby, p. 427-442.
(Stanley 1 well drilled Oligocene inverted foreland structure, close to W Papua border and tested gas in Early Cretaceous Toro sandstone. Cecilia- Tarim foredeep loaded with ~1500m of ?M Miocene- Pliocene clastic foreland sediments. Oligocene Sirga Fm ('Stanley sandstone') ~35m thick and unconformably overlies Cretaceous Ieru Fm. Toro reservoir thickness 28.5 net sand in EK10 E. torynum dinoflagellate zone)

McGee, W.A. (1987)- The chromite resources of Papua New Guinea. In: Pacific Rim Congress 87, Gold Coast 1987, Australasian Inst. of Mining and Metallurgy (AusIMM), Parkville, p. 317-320.
(Chromite deposits associated with ophiolite complexes across PNG. Not currently exploitable, but potential where contained in laterites or sediments derived from ultramafic members of ophiolites)

McInerney, P., A. Goldberg & D. Holland (2007)- Using airborne gravity data to better define the 3D limestone distribution at the Bwata Gas Field, Papua New Guinea. Proc. 19th Geophysical Conf. Australian Soc. Expl. Geoph. (ASEG 2007), Perth, 6p.
(Bwata gas-condensate field in E Papua Basin is 1960 discovery on structural high of fractured Miocene Puri Limestone, with 157 m of gas pay. Geologic model constrained with new airborne potential field data, new seismic and data from nearby Triceratops-1 well, increasing gas in place resource to 762 BCF)

McMillan, N.J. & E.J. Malone (1960)- The geology of the eastern Central Highlands of New Guinea. Bureau Mineral Res. Geol. Geoph., Canberra, Rept. 48, p. 1-57.
(online at: https://d28rz98at9flks.cloudfront.net/14963/Rep_048.pdf)
(Area NE of Central Range foldbelt, with Bismarck Range (incl. Mt Wilhelm; 4509m) in center, Goroka Valley in S and Ramu valley in N (part of Bena-Bena Terrane of Davies, etc.). Large anticlinal structure cored by pre-Cretaceous Goroka/ Bena-Bena metamorphics (comparable to Kubor Block Omung Fm?), intruded by Permian? Bismarck granodiorite and overridden by Marum ophiolite in N. Locally overlain by folded Late Cretaceous arenaceous limestone- calcareous shale, with Pseudorbitoides cf. israelskyii and Globotruncana. Towards NE metamorphics overlain directly by shallow marine Eocene (Nummulites, Discocyclina) or latest Oligocene- E Miocene Te (Spiroclypeus, Miogypsinoides, etc.), overlain by M Miocene Tf (Miogypsina, Katacycloclypeus) marine sediments and M Miocene basic Daulo Volcanics, unconformably overlain by intermediate Pliocene Aifunka Volcanics)

McWalter, M. (1996)- Oil exploration in Papua and the Mandated Territory of New Guinea; reprint of an historical paper from 1940 with an introduction. In: P.G. Buchanan (ed.) Petroleum exploration, development and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 17-49.

McWalter, M. (2017)- Why has Papua New Guinea been successful in producing oil and gas? In: SE Asia Petroleum Expl. Soc. (SEAPEX) Exploration Conf. 2017, Singapore, Session 6, 24p. *(Abstract + Presentation)*

Medd, D.M. (1993)- A geological evaluation of the Pangia anticline, Southern Highlands Province, PNG. In: G.J. & Z. Carman (eds.) Petroleum exploration and development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby, PNG Chamber of Mines, p. 385-397.
(Three structural models of Pangia Antcline in N-Central Papuan Thrust Belt, to explain missing Late Cretaceous- Paleocene section)

Medd, D.M. (1996)- Triangle zone deformation at the leading edge of the Papuan fold belt. In: P.G. Buchanan (ed.) Petroleum exploration, development and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 217-229.
(Puri anticline, near SE part of leading edge of Papuan Fold Belt, is part of structural triangle zone, with backthrusts in roof section)

Medd, M.D. (1996)- Recent triangle zone deformation in Papua New Guinea. Bull. Canadian Petrol. Geol. 44, 2, p. 400-409.
(Description of Puri anticline in PNG; in triangle zone along leading edge PNG foldbelt)

Menzies, D., S. Shakesby, J. Wass, D. Finn, N. Fitzpatrick, G. Morehari et al. (2013)- The Wafi-Golpu porphyry Cu-Au deposit: mineralisation and alteration zonation, surface geochemical expression and paragenesis. In: Proc. Symp. East Asia: geology, exploration technologies and mines, Bali 2013, Australian Inst. Geoscient., Bull. 57, p. 60-63. *(Extended Abstract)*
(Miocene Wafi-Golpu porphyry Cu-Au deposit and epithermal Au mineralisation in Morobe Province of PNG. System bounded by NE- SW trending Wafi Transfer fault zone and intrudes basement of weakly metamorphosed Oligocene Langimar Fm siltstones- conglomerates (previously interpreted as Owen Stanley Metamorphics))

Menzies, J., H.L. Davies, W.J. Dunlap & S.D. Golding (2008)- A possible early age for a diprotodon (Marsupialia: Diprotodontidae) fossil from the Papua New Guinea highlands. Alcheringa 32, p. 129-147.
(Jawbone of fossil diprotodon (large wombat-type marsupial) from Pleistocene lacustrine sediments near Yonki in PNG highlands is coated with cemented fine breccia or tuff, suggesting it was originally buried in volcanic breccia (Ar/Ar age 13.2 Ma, M Miocene) and subsequently reworked by river erosion and redeposited)

Miller, S.R., S.L. Baldwin & P.G. Fitzgerald (2012)-Transient fluvial incision and active surface uplift in the Woodlark Rift of eastern Papua New Guinea. Lithosphere 4, 2, p. 131-149.
(online at: https://gsw.silverchair-cdn.com/gsw/Content_public/Journal/lithosphere/4/2/10.1130_L135.1/2/)
(Rapid extension led to formation of metamorphic core complexes ahead of W-ward-propagating Woodlark basin spreading center. Stream profiles on D'Entrecasteaux Islands and E PNG show prominent knickpoints, likely formed from transient Quaternary stream erosion due to increase in uplift rate)

Milsom, J.S. (1971)- Structure of Eastern Papua: an approach via gravity and other geophysical methods. Ph.D. Thesis, University of London, p. 1-183. *(Unpublished)*

Milsom, J.S. (1973)- Papuan Ultramafic Belt: gravity anomalies and the emplacement of ophiolites. Bull. Geol. America, 84, p. 2243-2258.
(Papuan Ultramafic Belt one of largest ophiolitic complexes in world. Most likely emplacement process is large-scale splitting of oceanic lithosphere as it approaches subduction zone)

Milsom, J.S. (1973)- The gravity field of the Papuan Peninsula. Geologie en Mijnbouw 52, 1, p. 13-19.
(online at: https://drive.google.com/file/d/0B7j8bPm9Cse0YlR2ckxCR01kckE/view)
(Large gravity anomalies on Papuan Peninsula, PNG, associated with Papuan Ultramafic Belt, an overthrust ophiolitic complex which may once have formed frontal zone of island arc. Very low fields over outcrop of underthrust sialic metamorphics. Extreme E of peninsula built up of basaltic lava over with moderately high gravity fields; structure of this area is most simply explained in terms of Recent extensional movements)

Milsom, J. (1974)- East New Guinea. In: A.M. Spencer (ed.) Mesozoic-Cainozoic orogenic belts, Geol. Soc., London, Spec. Publ. 4, p. 463-474.

(Brief overview of geology of eastern part of Papua New Guinea, from Coral Sea to Papuan Peninsula (with Owen Stanley Range, Papuan Ultramafic Belt), Solomon Sea, New Britain and Bismarck Sea)

Milsom, J.S. (1981)- Neogene thrust emplacement from a frontal arc in New Guinea. In: K. McClay & N.J. Price (eds.) Thrust and nappe tectonics, Geol. Soc. London, Spec. Publ. 9, p. 417-426.
(N New Guinea evidence for Neogene collision of N margin Australian continent with S-facing island arc. Still active volcanism along length of arc and deep oceanic trench opposite segment E of collision zone. Finisterre Range, part of former frontal arc and now part of N New Guinea, up to 50 km S of expected position with respect to segments to E and W. Offset not deep seated feature, but result of movement on shallow thrust. Detachment of thrust sheet along volcanic arc line of weakness. Mobile segment may have been part of frontal arc that first collided with continental margin. Adjacent segments at time of collision opposite oceanic, deeper trenches, have not moved in this way)

Milsom, J.S. (1984)- The gravity field of the Marum ophiolite complex, Papua New Guinea. Geol. Soc., London, Spec. Publ. 13, p. 351-357.
(Marum ophiolite outcrops in NE PNG in fault contact with sialic rocks of continental core of island. To N overlain by thick sediments of Ramu Basin with major gravity low. Gravity anomaly high offset towards N edge of outcrops of basic rock. Anomaly similar in form, but smaller than Papuan Ultramafic Belt anomaly to E)

Milsom, J. (1989)- New Guinea and the western Melanesian arcs. In: A.E.M.Nairn et al. (eds.) The ocean basins and margins 7A, The Pacific Ocean, Plenum Press, New York, p. 551-605.

Milsom, J. (1991)- Oblique collision in New Guinea; implications for hydrocarbon exploration. In: J.W. Cosgrove & M.E. Jones (eds.) Neotectonics and resources, Belhaven Press, London, p. 257-267.

Milsom, J. (1999)- Geophysical contributions to the COASTPLAN project, Lae area, Papua New Guinea, 1998. In: G.H. Teh (ed.) Proc. 9th Reg. Congress Geology, Mineral and Energy Resources of SE Asia (GEOSEA ô98), Kuala Lumpur 1998, Bull. Geol. Soc. Malaysia 43, p. 667-675.
(online at: https://gsmpubl.files.wordpress.com/2014/09/bgsm1999065.pdf)
(Gravity survey around Huon Peninsula in Leron-Lae-Finschafen area of NE PNG confirmed presence of major foreland basin gravity low in N Markham Valley and probability of extension of Papuan Ultramafic Belt beneath Huon Peninsula)

Milsom, J. (2003)- Forearc ophiolites: a view from the western Pacific. In: Y. Dilek & P.T. Robinson (eds.) Ophiolites in Earth history. Geol. Soc. London, Spec. Publ. 218, p. 507-515.
(Many of world's largest ophiolite masses now interpreted as remnants of oceanic forearcs, stranded on continental margins in course of arc-continent collision. In C New Guinea, ophiolites emplaced along N flank of main mountain spine, ~100 km S of exposures of arc-volcanic basement in N coast ranges. Papuan Ultramafic Belt of E Peninsula backed to N and E by oceanic Solomon Sea)

Milsom, J. & R.H. Findlay (2000)- Petroleum prospects in the Ramu-Markham foreland basin, northeastern Papua New Guinea. AAPG Int. Conf., Bali 2000, American Assoc. Petrol. Geol. (AAPG) Bull. 84, 9 (Abstract only)
(Adelbert and Finisterre ranges (AFR) of N PNG separated from C New Guinea by Ramu- Markham valleyswith >6 km sediments. Gravity data indicate still thicker sediment beneath S-ward thrusting Finisterre Range. Majority of Ramu-Markham and AFR sediments derived from S. Seismic zones dipping both N, beneath AFR, and S beneath New Guinea Highlands testify to former presence of oceanic crust between two. Solomon Sea, believed to be Miocene age, is eastern extension of basin. Miocene back-arc spreading created oceanic crust, followed by arc reversal and basin destruction)

Milsom, J., R. Findlay & G. Kopi (2001)- Early nappe deformation in arc-continent collision: gravity evidence from the Huon Peninsula, Papua New Guinea. In: G. Hancock (ed.) Proc. Geology, Exploration and Mining Conference, Port Moresby 2001, Australasian Inst. of Mining and Metallurgy, Parkville, p. 275-280.

Milsom, J. & I.E. Smith (1975)- Southeastern Papua: generation of thick crust in a tensional environment? Geology 3, 3, p. 117-120.
(Extreme SE part of Papuan Peninsula mainly M Eocene submarine basalt, resembling mid-ocean ridge tholeites. Gravity suggests thick crust)

Mollan, R.G. & G.J. Blackburn (1990)- Petroleum potential of the Fly-Bamu Deltas region. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby, p. 215-226.

Munroe, S.M. & I.S.Williams (1996)- The Archaean basement of Papua New Guinea; evidence from the Porgera intrusive complex. In: J.M. Kennard (ed.) Geol. Soc. Australia Abstracts No.41, p. 308.
(Porgera intrusive complex in W PNG contains mixture of Late Miocene and Archean zircons)

Montgomery, J.N. (1930)- A contribution to the Tertiary geology of Papua: The oil exploration work in Papua and New Guinea. Anglo-Persian Oil Company, 4, p. 3-85.

Morgan, G.D. (2005)- Sequence stratigraphy and structure of the Tertiary limestones in the Gulf of Papua, Papua New Guinea. Ph.D. Thesis, University of New South Wales, Kensington, p. 1-315.
(online at: http://unsworks.unsw.edu.au/fapi/datastream/unsworks:798/SOURCE01?view=true)
(Good overview of Eocene- E Oligocene Mendi Lst and Late Oligocene- M Miocene Darai Lst stratigraphy and structure in Gulf of Papua (mainly subsurface seismic/ wells study). During middle E Miocene major global eustatic sea-level fall or flexure of Papuan Basin associated with E Miocene ophiolite obduction subaerially exposed carbonate shelf. During middle M Miocene, subtle inversion associated with ophiolite obduction subaerially exposed carbonate shelf, and resulted in submarine erosion of forereef and basin margin sediments. By Late Miocene, carbonate deposition ceased across most of area)

Morton, A.C., B. Humphreys, G. Manggal & C.M. Fanning (2000)- Provenance and correlation of Upper Jurassic and Lower Cretaceous reservoir sandstones in Papua New Guinea using heavy mineral analysis. In: P.G. Buchanan et al. (eds.) Papua New Guineaǒs petroleum industry in the 21st century, Proc. 4th PNG Petroleum Convention, Port Moresby, p. 187-203.
(Variations in heavy mineral assemblages used to correlate reservoir sandstones. Source area for PNG Lower Cretaceous Toro, etc. sandstones comprises metasedimentary basement terrain, including some high-grade rocks (granulite facies), with granite intrusions. Detrital zircon ages from 300- 3304 Ma (major cluster around ~1840-1880 Ma= late Barramundi orogeny felsic volcanism in N Australia; minor Carboniferous ages)

Munro, L., K.C. Hill & R.H. Wightman (2015)- Construction of 2D and 3D models of the Kutubu Oilfield, Papua New Guinea fold belt. In: Proc. Eastern Australian Basins Symposium (EABS), Petroleum Expl. Soc. Australia (PESA), p. 281-287.
(Kutubu Field in mountains of PNG comprises Hedinia Anticline (mainly gas) and oil-bearing Iagifu Anticline. Produced >300MMBBL oil from basal Cretaceous Toro Sst reservoir, overlain by 1 km of Cretaceous shale and 1 km of karstic Miocene limestone)

Munro, L., K.C. Hill & R.H. Wightman (2016)- Construction of 2D and 3D models of the Kutubu Oilfield, Papua New Guinea Fold Belt. AAPG/SEG Int. Conf. Exhib., Melbourne 2015, Search and Discovery Art. 20340, 11p.
(online at: www.searchanddiscovery.com/documents/2016/20340munro/ndx_munro.pdf)

Murray, A.P., R.E. Summons, J. Bradshaw & B. Pawih (1993)- Cainozoic oil in Papua New Guinea- evidence from geochemical analysis of two newly discovered seeps. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby, p. 489-498.
(Two new oil seeps in Lufa District, ~20-30 km S of Goroka, in New Guinea mobile belt, just beyond N border of Papuan Basin foldbelt. Oils not biodegraded, and contain biomarkers indicative of mature Cenozoic source rocks (abundant oleananes, bicadinanes, etc. Little resemblance of biomarkers with Jurassic oils from Papuan foldbelt, but similar to fluvio-deltaic NW Java basin Arjuna field oil)

Nakamori, T., S. Matsuda, A. Omura & Y. Ota (1995)- Depositional environments of the Pleistocene reef limestones at Huon Peninsula, Papua New Guinea, on the basis of hermatypic coral assemblages. J. Geography (Chigaku Zasshi) 104, 5, p. 725-742. *(mainly in Japanese)*
(online at: https://www.jstage.jst.go.jp/article/jgeography1889/104/5/104_5_725/_pdf)

Nelson, A. & B. Turner (2015)- Lateral velocity variations in the Darai Limestone, Papua New Guinea foreland. In: Proc. 24th ASEG-PESA Int. Geophysical Conf. Exhib., Perth, p. 1-4.
(online at: http://www.publish.csiro.au/ex/pdf/ASEG2015ab245)
(Significant lateral velocity variation across >1km thick Late Oligocene-Miocene Darai Limestone, due to alteration, including dolomitisation. Most alteration associated with small-scale faulting)

Newton, R.B. (1918)- Foraminiferal and nullepire structures in some Tertiary limestones from New Guinea. Geol. Magazine 6, 5, 5, p. 203-212.
(Pebbles from Upper Fly River, PNG, collected by MacGregor in 1890 include Eocene limestone with Alveolina wichmanni, Lacazinella wichmanni and Orthophragmina (=Discocyclina) and Miocene limestone with Carpenteria, Alveolina and Lithothamnium)

Noku, S.K., M. Akasaka & H. Matsueda (2011)- The Crater Mountain deposit, Papua New Guinea: porphyry-related Au-Te System. Resource Geology 61, p. 63-75.

Noku, S.K., H. Matsueda, M. Akasaka & J.O. Espi (2009)- The Laloki massive sulfide strata-bound deposit, Papua New Guinea: geology, mineralogy and geochemistry. In Proc. 10th Biennial Mtg. Soc. Geology Applied to Mineral Deposits (SGA), Townsville, p. 731-733.
(Laloki massice Au-Ag sulfide deposit in Astrolabe Field, 20km E of Port Moresby, SE PNG. Stratigraphically hosted by Paleo-Eocene mudstone and grey cherts. Early massive sulfide stage and late stage remobilization and brecciation. Temperatures of early and late stage mineralization range 309-498° C and 266-338° C).

Norvick, M. (2001)- Chronostratigraphic sections of the Northern margins of the Australian Plate. Consultant Report, Melbourne, p. *(Unpublished)*

Norvick, M. & D.S. Hutchison (1980)- Aitape-Vanimo, Papua New Guinea. 1:250,000 Geol. Series. Geol. Survey Papua New Guinea, Explanatory Notes SA/54-11, SA/54-15, p. 1-45.
(Map sheet in NW corner of PNG, immediately E of W Papua border, N of Sepik River. Dominated by E-W Bewani- Torricelli mountain Ranges across central part of map sheet, composed of island arc association of U Cretaceous- E Miocene intrusives (Torricelli Intrusive Complex) and related volcanics and sediments (Bliri Volcanics), Overlain (and onlapped?) by E Miocene and younger sediments of Lumi (to S) and Atape (to N) Troughs. Includes Late Permian (257-242 Ma) granitoid boulders in Border Mountains of PNG- W Papua border area (possibly correlatice to Kubor grandiorite of PNG Highlands). In SW Ambunti metamorphic complex)

Nye, P.B. & N.H. Fisher (1954)- The mineral deposits and mining industry in Papua-New Guinea, Bureau Mineral Res., Geol. Geoph., Canberra, Report 9, p. 1-35.
(online at: www.ga.gov.au/corporate_data/14926/Rep_009.pdf)
(Brief, old review of history and status of mining activity in PNG in 1954)

Ollier, C.D. & C.F. Pain (1980)- Actively rising surficial gneiss domes in Papua New Guinea. J. Geol. Soc. Australia 27, p. 33-34.
(Surficial gneiss domes 2000-3000m high and 10's of km across in E-most PNG, consisting of gneiss. Dissected domes, unlikely formed by differential erosion. Foliation in gneiss parallel to dome surface, and therefore concentric in plan. Domes formed in area of thick crust in tensional environment. Faults can be traced around gneiss dome on Goodenough Island and around other domes in SE PNG. Each dome probably originated by pushing of granite pluton (see also Daczko et al. 2009, 2010))

Ollier, C.D. & C.F. Pain (1981)- Active gneiss domes in Papua New Guinea- new tectonic landforms. Zeitschrift Geomorphologie, N.F. 25, p. 133-145.

Oppel, T.W. (1970)- Exploration of the southwest flank of the Papuan Basin. Australian Petrol. Explor. Assoc. (APEA) J. 10, 2, p. 62-69.

Osborne, N. (1945)- The Mesozoic stratigraphy of the Fly River headwaters. Proc. Royal Soc. Victoria 56, 2, p. 133-148.
(Thick (~7500') marine Mesozoic in headwaters of Fly River. U Jurassic (?Callovian-Oxfordian Kuabgen Gp) with Malayomaorica- Belemnopsis gerardi, overlain by M Cretaceous (Albian-Cenomanian Feing Gp) with Inoceramus. Cretaceous unconformably overlain by Tertairy limestone, with U Cretaceous-Eocene missing)

Osborne, D.G. (1990)- The hydrocarbon potential of the western Papuan Basin foreland- with reference to worldwide analogues. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby, p. 197-213.

Ota, Y. & J. Chappell (1999)- Holocene sea-level rise and coral reef growth on a tectonically rising coast, Huon Peninsula, Papua New Guinea. Quaternary Int. 55, p. 51-59.

Ota, Y., J. Chappell, R. Kelley, N. Yonekura, E. Matsumoto, T. Nishimura & J. Head (1993)- Holocene coral reef terraces and coseismic uplift of Huon Peninsula, Papua New Guinea. Quaternary Research 40, 2, p. 177-188.
(Six levels of emerged Holocene coral terraces along 40 km of Huon Peninsula coastline. Holocene reef crest, ~6000 yr B.P., is tilted down to NW and descends from 23 to 12 m in study area)

Ott, B. & P. Mann (2015)- Late Miocene to Recent formation of the Aure-Moresby fold-thrust belt and foreland basin as a consequence of Woodlark microplate rotation, Papua New Guinea. Woodlark microplate rotation, Papua New Guinea, Geochem. Geophys. Geosystems 16, p. 1988-2004.
(online at: http://onlinelibrary.wiley.com/doi/10.1002/2014GC005668/epdf)
(Aure-Moresby fold-thrust belt of SE PNG not SE extension of Papuan fold-thrust belt. Rel. narrow foldbelt and foreland basin in E Gulf of Papua formed in Late Miocene-Recent as result of CCW rotation of Woodlark microplate. 400 km long, NW trending Aure-Moresby fold-belt exposed onshore PNG plunges to SE, where continuous folds and NE-dipping thrusts can be imaged in subsurface for >250 km. CCW rotation of Woodlark microplate driven by slab pull of subducting N edge)

Owen, A.D. & J.C. Lattimore (1998)- Oil and gas in Papua New Guinea. Energy Policy 26, 9, p. 655-660.
(Late 1990's status of oil and gas reserves and production in Papua New Guinea)

Owen, M. (1973)- Upper Cretaceous planktonic foraminifera from Papua New Guinea. Palaeontological Papers 1970-1971, Bull. Bureau Mineral Res. Geol. Geoph. 140, p. 47-65.
(online at: www.ga.gov.au/corporate_data/107/Bull_140.pdf)
(Diverse Turonian- Maastrichtian planktonic foraminifera assemblage from Lagaip Beds, Wabag area, W Highlands. Descriptions of 38 species (incl. Globotruncana wabagensis n. sp.) from 19 samples)

Page, R.W. (1976)- Geochronology of igneous and metamorphic rocks in the New Guinea Highlands. Bureau Mineral Res. Geoph. Bull. 162, p. 1-117.
(online at: https://www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=74)
(Mainland PNG Pretertiary igneous intrusive activity only in S part of C Highlands. Kubor Granodiorite Upper Permian (240 Ma;= E-M Triassic?) largest and oldest. Increased mid-Tertiary tectonism suggested by four 27-20 Ma metamorphic ages and granitic intrusive in S Sepik Ambunti Metamorphics. Volcanic and plutonic peak of igneous activity in M Miocene, 15-12 Ma)

Page, R.W. (1976)- Geochronology of Late Tertiary and Quaternary mineralized intrusive porphyries in the Star Mountains of Papua New Guinea. Economic Geology 70, p. 928-936.

(Majority of intrusions associated with porphyry copper mineralization between 7-1 Ma. Ok Tedi intrusion 2.6 Ma, mineralization 1.1 Ma; Star Mts intrusives 4.6- 3.6 Ma; Antares Monzonite 3.1-2.4 Ma)

Page, R.W. & R.W. Johnson (1974)- Strontium isotope ratios of Quaternary volcanic rocks from Papua New Guinea. Lithos 7, 2, p. 91-100.
(also as BMR Record 1973/91 at: https://d28rz98at9flks.cloudfront.net/12915/Rec1973_091.pdf)
(Sr isotope data for Quaternary volcanic rocks from six areas in PNG suggest two broad groups: (1) island volcanoes with lower Sr37/Sr38 ratios (0.7034–0.7043), probably from relatively homogeneous upper mantle source regions; (2) PNG mainland volcanoes with higher and wider range of Sr37/Sr36 ratios, probably affected by sialic crustal contamination, or derived from heterogeneous sources in upper mantle)

Page, R.W. & I. McDougall (1970)- Potassium-Argon dating of the Tertiary f1-2 stage in New Guinea and its bearing on the geological time-scale. American J. Science 269, p. 321-342.
(In N PNG 13-15 Ma old volcanics between Tf1-2 limestones, suggestive of Middle Miocene age)

Page, R.W. & I. McDougall (1972)- Ages of mineralization of gold and porphyry copper deposits in the New Guinea highlands (Papua New Guinea). Economic Geology 67, p. 1034-1048. *(also BMR Record 1972/113)*
(K-Ar and Rb-Sr ages from five different areas of gold and porphyry copper mineralization in Highlands of PNG. Gold-bearing porphyries in Morabe Goldfield indicate 3.1-3.8 Ma age for mineralization. Gold- copper mineralization in Kainantu Goldfields as young as M-L Miocene. In Yanderra prospect 5 My gap between main M Miocene emplacement of pluton and Late Miocene copper mineralization. Frieda copper prospect intrusion in M Miocene. Mount Fubilan near Ok Tedi River mineralization age Pleistocene, 1.1- 1.2 Ma. All deposits so far dated are M Miocene or younger; magmatic activity and mineralization may have been triggered by interaction and collision between Pacific plate and Australian plate in about M Miocene)

Pain, C.F. (1983)- Volcanic rocks and surfaces as indicators of landform age: the Astrolabe Agglomerate, Papua New Guinea. Australian Geographer 15, 6, p. 376-381.
(Astrolabe Agglomerate pyroclastics with basaltic lavas at top, dated as 5.7 Ma. Since deposition unit slightly warped and deeply dissected. Sogeri Plateau largest remnant of larger erosion surface that may have extended over much of Owen Stanley Ranges)

Pain, C.F. (1983)- Geology and geomorphology of the Purari River catchment. In: T. Petr (ed.) The Purari- tropical environment of a high rainfall river basin, Monographiae Biologicae 51, p. 27-46.

Pain, C.F. & R.J. Blong (1976)- Late Quaternary tephras around Mt. Hagen and Mt. Giluwe, Papua New Guinea. In: R.W. Johnson (ed.) Volcanism in Australasia, Elsevier, Amsterdam, p. 239-251.

Pain, C.F., C.J. Pigram, R.J. Blong & G.O. Arnold (1987)- Cainozoic geology and geomorphology of the Wahgi Valley, Central Highlands of Papua New Guinea. BMR J. Australian Geol. Geophysics 10, 3, p. 267-276.
(online at: www.ga.gov.au/corporate_data/81224/Jou1987_v10_n3_p267.pdf)
(Wahgi Valley structural depression, between Bismarck Fault Zone to N and Kubor Anticline to S. Kubor Anticline cored with Paleozoic metamorphics and Triassic granodiorite and flanked by U Triassic, U Jurassic and Cretaceous sediments, which also occur on N side of Wahgi Valley, where they are deformed by Bismarck Fault Zone and intruded by Miocene intrusives Area land since ~35 Ma, latest Eocene)

Palmer, S.M., R. Carter & T. Varney (1992)- Sequence stratigraphy and reservoir prediction for the Toro Formation, Papua New Guinea. AAPG Int. Conf., Sydney 1992, Search and Discovery Art. 91015, 1p.
(Abstract only. Toro Fm reservoir sands of PNG foldbelt 6 genetic stratigraphic units, separated by flooding surfaces. Biostratigraphy allows correlation of max. flooding surfaces. Sequence boundaries recognized as sharp-based inner shelf/shoreface sands over mid-outer shelf, bioturbated muds/silts. Primary reservoirs in shelf margin systems tracts. Further reservoirs in highstand and transgressive systems tracts)

Palmieri, V. (1971)- Occurrence of Danian at Port Moresby. Report Geological Survey Queensland, Brisbane, 63, 8p.

Park, S.C. & J. Mori (2007)- Are asperity patterns persistent? Implication from large earthquakes in Papua New Guinea. J. Geophysical Research 112, B3, B03303, p. 1-16.
(online at: http://onlinelibrary.wiley.com/doi/10.1029/2006JB004481/epdf)
(Asperities not persistent features when portions of New Britainsubduction zone slip in large earthquakes)

Parkin, J.N., S.M.T. Marsh & W.L. Wardlaw (1996)- The integration of exploration techniques in petroleum prospecting licenses PPL123, 156, 176 and 177 within the onshore and offshore Papuan Gulf region of Papua New Guinea. In: P.G. Buchanan (ed.) Petroleum exploration, development and production in Papua New Guinea, Proc. 3rd Papua New Guinea Petrol. Conv., Port Moresby, p. 243-256.
(Exploration of Mesozoic in blocks in coastal and shallow marine parts of S PNG, geologically part of foreland of Papuan Fold Belt and extending into Aure Trough and NE part of Fly Platform)

Parsons, G.L. & E.A. Bowen (1986)- The tectonic evolution and petroleum potential of the Papuan Basin, Papua New Guinea. Proc. 6h Offshore SE Asia Conf. 1986, Singapore, Proc. SE Asia Petroleum Expl. Soc. (SEAPEX) 7, p. 96-110.

Passmore, V.L., P.E. Williamson, A.R.G. Gray & P. Wellman (1993)- The Bamaga basin- a new exploration target. In: G.J. & Z. Carman (eds.) Petroleum exploration and development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby, PNG Chamber of Mines and Petroleum, p. 233-240.
(Undrilled Bamaga Basin sequence is lowermost basin in E Gulf of Carpenteria stacked basin sequence. Northerly trending sag basin of Paleozoic or Triassic age)

Paterson, S.J. & F.M. Kicinski (1956)- An account of the geology and petroleum prospects of the Cape Vogel Basin, Papua. In: Papers on Tertiary micropalaeontology, Bureau Mineral Res. Geol. Geoph., Canberra, Report 25, p. 47-70.
(online at: https://d28rz98at9flks.cloudfront.net/14939/Rep_025.pdf)
(Cape Vogel Basin in E PNG between Morobe Arc/ Owen Stanley folded-metamorphic and peridotite Zone and D'Entrecasteau metamorphics-granites Arc. At Cape Vogel Peninsula ~14,000' of M Miocene- Recent mainly arenaceous sediments exposed, with gentle post-Pliocene folding. Common shallow and non-marine sediments, no surface indications of oil, no oil in three test wells, and long history of volcanic activity suggest area has limited petroleum potential. In N part E Miocene Iauga Fm at base Tertiary 2000' thick with Miogypsina in upper part, overlain by Lower Tf (Burdigalian) Robinson Bay limestone)

Paterson, S.J. & W.J. Perry (1964)- The geology of the upper Sepik- August River area, New Guinea. J. Geol. Soc. Australia 11, 2, p. 199-211.
(Petroleum Permit 21 area with mountain ranges of pre-Upper Cretaceous (Paleozoic?)Gwin Metamorphics and igneous rocks. S-trending embayment, blanketed by alluvium and volcanic rocks, with 9320' composite Upper Cretaceous and Mio- Pliocene sediments. Upper Cretaceous greywackes and mudstones rel. deep marine with common planktonic foraminifera, incl. (Maastrichtian?) Globotruncana, etc.. Miocene greywackes and detrital limestones with Upper Te- Tf larger foraminifera. Pleistocene Yapsei Volcanics)

Paul, R.J. & J.E. Bain (1998)- Reducing the risk: integrating gravity, magnetic, and seismic data in Papua New Guinea. The Leading Edge, p. 59-62 + 134.
(PPL 123 on Gulf of Papua Central coast. Gravity-magnetics used to support interpretation of poor seismic)

Pawih, B. (1989)- The stratigraphy of the Maprik district, Papua New Guinea. Petroleum Expl. Soc. Australia (PESA) Journal 14, p. 25-33.
(~4000m thick series of Pliocene basinal turbidites and ?Pleistocene fluvial deposits in Maprik district of NW PNG (S of Torricell/ Prince Alexander Mts). Well exposed Amogu and Ninab Rivers. Structure dominated by S-dipping homocline, related to loading of overthrust terranes. Metamorphic and deformed plutonic rocks in Prince Alexander Complex forms basement in N. Immature sandstones indicate rapid erosion, transport and

burial. Most Neogene detritus from terrane dominated by amphibolites (= not Prince Alexander Mts))

Pawih, B. (1990)- Stratigraphy and tectonics of the Wewak Trough. In: G.J. & Z. Carman (eds.) Petroleum Exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby 1990, p. 491-497.
(Wewak Trough in N New Guinea Basin contains <2000m of Pliocene (N18-N20) clastics and minor coral reef limestones, overlying 'Ambunti' metasediments in S and Miocene arc volcanoclastics in N)

Pegler, G., S. Das & J.H. Woodhouse (1995)- A seismological study of the eastern New Guinea and western Solomon Sea regions and its tectonic implications. Geophysical J. Int. 122, p. 961-981.
(online at: http://gji.oxfordjournals.org/content/122/3/961.full.pdf+html)
(Study of earthquake data from E PNG. Solomon Sea plate at depth beneath Finisterre Mts no longer influenced by tectonic forces acting at surface, but breaking up and sinking under own gravitational forces. N-dipping seismic zone with thrust mechanisms imaged above deeper Solomon Sea plate seismic zone and extrapolates to surface to Ramu Markham Fault, which marks suture between Finisterre Terrane and Australia-New Guinea plate and may extend to depth of 90km beneath W limit of Finisterre mountains)

Perembo, R. (1983)- Stratigraphy of Delena Headland, Central Province, Papua New Guinea. Science in New Guinea 10, p. 137-165.

Perembo R.C.B. (2000)- Miocene bathyal deposits of foreland megasequence 1 in the Papuan fold belt, Papua New Guinea. In: P.G. Buchanan et al. (eds.) Papua New Guineaôs petroleum industry in the 21st century, Proc. 4th PNG Petroleum Convention, Port Moresby, p. 123-138.
(Biostratigraphy of E-M Miocene (~20-10 Ma) widespread bathyal siliciclastic facies across PNG Fold Belt. Planktonic foram zones N5/N6- N14 recognized (but mainly N8-N11?; ~17-13 Ma; JTvG). This is part of foreland basin sequence, tied to late Early Miocene subdidence of Darai carbonate platform due to ophiolite obduction in northern PNG. Foreland basin fill terminated with Late Miocene hiatus (uplift around 10 Ma))

Perembo, R.C.B., H.L. Davies, E. Neinen & J. Agua (2000)- Port Moresby basement geology; a mid-Cainozoic accretionary prism. In: C.G. Skilbeck & T.C. Hubble (eds.) Understanding planet Earth; searching for a sustainable future, Abstracts Geol. Soc. Australia 59, p. 386.

Perry, W.J. (1955)- Report on a reconnaissance of Petroleum Permit No. 21, Sepik. District, New Guinea. Bureau Mineral Res. Geol. Geoph., Record 1955/39, p. 1-7.
(online at: www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=9030)
(Preliminary version of Perry 1956)

Perry, W.J. (1956)- A geological reconnaissance of the Upper Sepik-August River area, Sepik district, New Guinea. Bureau Mineral Res. Geol. Geoph., Record 1956/31, p. 1-12.
(online at: www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=10154)
(Geology of area of NW PNG near W Papua border. In N West and Landslip Ranges mainly composed of metamorphic rocks, possibly of Paleozoic age. In S rocks of upper August, upper Sepik and Hoffnungs Rivers are tightly folded, low-grade metasediments (slates, phyllites, quartzites), tentatively correlated with Mesozoic rocks near Telefomin. Isolated Tertiary sediments in W side of area, some with reworked U Cretaceous and Paleocene planktonics, and minor limestone with Lower Tf larger forams (see Crespin & Belford 1956))

Peterson, A., S. Chandra & C. Lundberg (2004)- Landforms from the Quaternary glaciation of Papua New Guinea: an overview of ice extent during the Last Glacial Maximum. Dev. Quaternary Science 2, p. 313-319.

Peterson, E.C. & J.A. Mavrogenes (2014)- Linking high-grade gold mineralization to earthquake-induced fault-valve processes in the Porgera gold deposit, Papua New Guinea. Geology 42, 5, p. 383-386.

Phelps, J.C. & C.N. Denison (1993)- Stratigraphic thickness variations and depositional systems of the Ieru Formation, Southern Highlands and Western Provinces, Papua New Guinea. In: G.J. & Z. Carman (eds.)

Petroleum exploration and development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby, p. 169-189.
(Abrupt changes in thickness of Cretaceous Ieru Fm in Papuan fold-thrust belt partly overprint of Neogene-Recent thrust faulting. Ieru Fm deposition shelfal marine with deepening to upper bathyal in late Albian (incl. abundant Ticinella planktonic forams), then return to shelfal deposits in Cenomanian- Turonian. TV thickness in wells 760-1900m; much of thickness variation in Late Cenomanian, possibly tied to initiation of Coral sea rifting? (widespread Santonian- Eocene hiatus in PNG foldbelt also tied to Coral Sea opening?; JTvG))

Pieters, P.E. (1978)- Port Moresby-Kalo-Aroa, Papua New Guinea. Bureau Mineral Res. Geol. Geoph. Australia and Geol. Survey Papua New Guinea 1: 250,000 geological map series, Explanatory Notes SC/55-6, 7, 11, p. 1-55.
(Port Moresby geologic map, covering much of Owen Stanley Range of E Papuan Peninsula. Oldest rocks Mesozoic NE-dipping rocks of Papuan Ultramafic Belt, juxtaposed with high P Emo 'metamorphic sole', containingn rare lawsonite and glaucophane, indicating formation under high-P conditions, but with greenschist facies overprint. Metamorphism decreases to SW, grading into Kagi Metamorphics (greenschist facies), then U Cretaceous (Kemp Welch Fm)- Lower Eocene (Port Moresby Fm) clastics. In S Sadowa gabbro/basalt/dolerite batholith, emplaced between Late Eocene- M Oligocene. Area not prospective for oil and gas)

Pieters, P.E. (1980)- Kikori, Papua New Guinea, 1:250,000 geological map sheet SB/55-13. Bureau Mineral Res., Geol. Geophysics, Canberra, Record 1980/79.

Pigott, J.D. (1994)- Irian Jaya- Papua New Guinea hydrocarbon exploration: constraints from regional distribution of geothermal gradients and heat flow. Proc. 23rd Ann. Conv. Indon. Petroleum Assoc., 1, p. 75-100.
(Present thermal state pervasive NW striking trend paralleling central cordillera with basinal and intra-basinal anomalies. Heat flow averages for Salawati 1.98 ± 0.76 HFU, Bintuni 1.49 ± 0.77 HFU, Papua Basins 1.57 ± 0.49 HFU. Av. geothermal gradients for three basins 3.90 ± 1.48 °C/100m, 3.31 ± 1.51 °C/100m, and 2.61 ± 0.81°C/100m, respectively)

Pigott, J.D. & D.G. Neese (1995)- Seismic stratigraphy of the Northern New Guinea Basin: insight into the tectonic evolution of a segmenting basin. Proc. 24th Ann. Conv. Indon. Petroleum Assoc. 1, p. 383-396.
(Piore and Sepik Basins in N New Guinea Basin depositionally contiguous during Miocene. Both floored by Paleogene basement assemblage including fragments of volcanic arc and sporadic Bliri Sequence sediments. Overlying Miocene Sepik Sequence shallow marine to pelagic carbonates and axially transported slope systems which thin northward. Late Miocene basin-wide unconformity. Pliocene uplift of Bewani-Torricelli Mts along active N New Guinea Fault System separated Sepik Basin to S and Piore Basin to N)

Pigott, J.D., N.I. Trumbly & M.V. O'Neal (1984)- Northern New Guinea wrench fault system: a manifestation of late Cenozoic interactions between Australian and Pacific plates. In: S.T. Watson (ed.) Trans. Third Circum-Pacific Energy and Mineral Resources Conference, Honolulu 1982, p. 613-620.
(Two major products of Australia- Pacific convergence are Sorong Fault Zone of W Papua and Ramu-Markham fault zone of PNG. Two are possibly linked and for major left-lateral strike-slip system)

Pigram, C.J. (1978)- Geology of the Schrader Range. Geol. Survey of Papua New Guinea, Report 76/4, p.

Pigram, C.J., P.J. Davies, D.A. Feary & P.A. Symonds (1989)- Tectonic controls on carbonate platform evolution in southern Papua New Guinea: passive margin to foreland basin. Geology 17, p. 199-202.
(M Oligocene collision of N Australian craton margin with complex subduction system created thrust mass and foreland basin from Coral Sea to Indian Ocean. Carbonate platform facies in SW PNG reflect transition from Eocene passive margin to early foreland basin. Initially, terrigenous sedimentation confined to proximal foredeep, with carbonate deposition adjacent to peripheral forebulge. Subsequent S-ward migration of basin resulted in thick carbonate platform deposition, followed by burial by clastic sediments from emerging orogen after proximal foredeep became filled)

Pigram, C.J., H.L. Davies, D.A. Feary, P.A. Symonds & G.C.H. Chaproniere (1990)- Controls on Tertiary carbonate platform evolution in the Papuan Basin: new play concepts. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, First PNG Petroleum Convention, Port Moresby, p. 185-195.
(Oligo-Miocene Darai Lst carbonate platform deposited in Papuan foreland basin. Oligo-Miocene limestones much larger areal extent and inboard of Late Eocene carbonate platform rim)

Pigram, C.J. & P.A. Symonds (1993)- Eastern Papuan Basin- a new model for the tectonic development, and implications from petroleum prospectivity. In: G.J. & Z. Carman (eds.) Petroleum exploration and development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby, p. 213-231.
(Study of tectonic evolution of E Papuan basin and W Coral Sea. NE-trending sinistral wrench fault between E Plateau and Gulf of Papua, accomodating Coral Sea opening)

Pinchin, J., K.F. Fowler & C.S. Bembrick (1986)- Fault structures within the Central Papuan Basin- implications for petroleum exploration. Proc. 6h Offshore SE Asia Conf. 1986, Singapore, Proc. SE Asia Petroleum Expl. Soc. (SEAPEX) 7, p. 111-124.
(Previously unrecognized Late Cretaceous- Paleocene wrench faulting on Fly Platform, primarily in two NW trending parallel systems, Komewu and Fly. Rejuvenation of faults in Miocene)

Plane, M.D. (1967)- Stratigraphy and vertebrate fauna of the Otibanda formation, New Guinea. Bureau Mineral Res., Geol. Geoph., Bull. 86, p. 1-64.
(online at: www.ga.gov.au/corporate_data/165/Bull_086.pdf)
(Thick Late Tertiary intermontane lacustrine and fluviatile deposits in the Morobe District, NE PNG, with vertebrate fossils. Pyroclastic rocks below mammal horizons K/Ar ages 6.1-7.6 Ma; 5.7 Ma associated with faunal locality. Fauna include incisor of earliest known rodent from Australian region and new representatives marsupials; also gastropods, crocodilians, snakes, birds, and dasyurid)

Plane, M.D. (1967)- Two new diprotodontids from the Pliocene Otibanda Formation, New Guinea. In: R.A. Stirton et al. (eds.) Tertiary Diprotodontidae from Australia and New Guinea, Bull. Bureau Mineral Res., Geol. Geoph., 85, p. 105-128.
(online at: www.ga.gov.au/corporate_data/164/Bull_085.pdf)
(Mandibles of three diprotodontid marsupial species in Otibanda Fm: Nototherium watutense, Kolopsis rotundus n.sp. and Kolopsoides cullridells n.gen., n.sp.)

Playford, G. (1982)- Neogene palynomorphs from the Huon Peninsula, Papua New Guinea. Palynology 6, p. 29-54.
(Palynology of shales from 3 low-grade coal occurrences in Pindiu area, C Huon Peninsula, NE PNG. 25 types of spores-pollen of Miocene-Pliocene age, representing low diversity tropical freshwater swamp deposits)

Pono, S. (1990)- Seismic images of Papua New Guinea. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. 1st PNG Petroleum Convention, Port Moresby, p. 33-49.

Powell, T.G. & D.M. McKirdy (1975)- Geologic factors controlling crude oil composition in Australia and Papua, New Guinea. American Assoc. Petrol. Geol. (AAPG) Bull. 59, 7, p. 1176-1197.
(Mainly on Australian oils. Oil from Miocene reef in offshore Papuan basin from marine source)

Pollard, P.J. (2014)- Grade distribution of the giant Ok Tedi Cu-Au deposit, Papua New Guinea- a discussion. Economic Geology 109, 5, p. 1489-1492.
(Critical discussion of Van Dongen et al. (2013) Ok Tedi mine paper. Argues in favor of two separate major mineralization events, first skarn mineralization, second with post-intrusive hydrothermal intrusive breccias)

Powell, T.G. & D.M. McKirdy (1976)- Geochemical character of crude oils from Australia and Papua New Guinea. In: R.B. Leslie et al. (eds.) Economic Geology of Australia and Papua New Guinea 3, Petroleum, Australasian Institute of Mining and Metallurgy, Parkville, p. 18-29.

Power-Fardy, D., R.M.D. Meares, A.R., Collins & P.T. Goldner (1990)- Platinum group element mineralisation in Papua New Guinea. In F. E. Hughes (ed.) Geology of the mineral deposits of Australia and Papua New Guinea, Monograph 14, Australasian Inst. Mining Metallurgy, Melbourne, p. 1703-1705.

Powis, G. (1993)- The sequence stratigraphy of the Mesozoic reservoirs of the Gobe Anticline, Papuan thrust belt. In: G.J. & Z. Carman (eds.) Petroleum exploration and development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby, p. 155-167.
(Sequence stratigraphy and facies maps of Late Jurassic- E Cretaceous reservoir sandstones along Gobe Anticline, PNG foldbelt. Late Tithonian- Berriasian Upper Imburu Fm with five eustatic cycles; Valanginian Toro Sst controlled by 3 cycles)

Purcell, P.G. (1990)- Marienberg-1 Sepik Basin. In: G.J. & Z. Carman (eds.) Petroleum Exploration in Papua New Guinea, Proc. 1st PNG Petroleum Convention, Port Moresby, p. 429-443.
(History and results of Marienburg 1 well, drilled in 1925-1928 in Ramu-Sepik Basin, on N coast along Sepik River (first 'deep' (825m) exploration well in N PNG). Mainly Late Miocene- Pliocene marine shale, with conglomerate near TD below 2600'. Some gas shows and oil stains encountered).

Queen, L.D. (2015)- The Tifalmin porphyry copper gold district, Star Mountains, Western Papua New Guinea. In: Proc. PACRIM 2015 Congress, Hongkong, Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, Publ. Ser. 2/2015, p. 357-360. *(Extended Abstract)*
(Tifalmin porphyry copper district in Star Mountains (~35 km NE of Ok Tedi mine) is cluster of related porphyry copper deposits and associated skarns. Located on N margin of Fly Platform, which is N limit of Australian craton, First discovered in 1960s. Mineralisation associated with 4-2 Ma age porphyritic diorites and tonalites that intrude U Eocene- M Miocene Darai Lst and underlying Cretaceous-Eocene Feing Gp)

Queen, L.D. & S.J. Tear (2015)- The Frieda Kiss- keeping it simple. In: Proc. PACRIM 2015 Congress, Hongkong, Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, Publ. Ser. 2/2015, p. 361-369.
(Extended Abstract. Evaluation of Frieda River Prospect in NW PNG)

Rand, A.L. & L.J. Brass (1940)- Results of the Archbold Expeditions No. 29. Summary of the 1936/1937 New Guinea expedition. Bull. American Museum Natural History 77, 7, p. 341-380.
(Report on geographic-biological expedition of Fly River area, PNG. Little or no geology)

Renton, J.F.A., J.H.S. Black & A.M. Grainge (1990)- The development of the Hides Gasfield, Papua New Guinea. Australian Petrol. Explor. Assoc. (APEA) J. 30, p. 223-237.
(Hides 1987 BP/ Oil Search gas discovery in PPL 27 in S Highlands. Hides-1 tested up to 15.9 mmscf/d gas with minor condensate from four intervals in Toro Sst. Gas to be supplied to Porgera goldmine)

Richards, J.P. (1990)- The Porgera gold deposit, Papua New Guinea: geology, geochemistry and geochronology. Ph.D. Thesis Australian National University, Canberra, p. 1-113.
(online at: https://openresearch-repository.anu.edu.au/handle/1885/12535)
(Porgera gold deposit in highlands of PNG associated with Porgera Intrusive Complex, hosted in Jurassic-Cretaceous shelf sediments. K-Ar dating of igneous biotite, and Ar/Ar dating of hornblende suggest age of emplacement of PIC 6.0 ± 0.3 Ma)

Richards, J.P. (1990)- Petrology and geochemistry of alkalic intrusives at the Porgera gold deposit, Papua New Guinea: J. Geochemical Exploration 35, p. 141-199.
(Porgera gold deposit in PNG Highlands close to, but on continental side of major trans-lithospheric fault (Lagaip Fault Zone) which separates Australian craton to S from accreted island-arc terrains to N. Middle-Late Miocene mafic intrusive complex consistent with intra-plate, alkaline parental magma, and derivation from enriched garnet lherzolite source in subcontinental lithosphere. Partial melting probably in response to M Miocene uplift of edge of Australian craton during collision with island-arc)

Richards, J.P. (1992)- Magmatic-epithermal transitions in alkalic systems: Porgera gold deposit, Papua New Guinea. Geology 20, 6, p. 547-550.
(Porgera Au-Ag mineralization in two main stages: (1) disseminated auriferous pyrite in phyllic alteration zones and (2) fault-related, quartz-roscoelite-cemented hydrothermal breccias and veins with locally abundant free gold and Au-Ag-tellurides. Associated with Late Miocene (6 Ma) epizonal intrusive complex, emplaced in continental crust immediately prior to E Pliocene continent- island-arc collision)

Richards, J.P., C.J. Bray, D.M. DeR.Channer & E.T.C. Spooner (1997)- Fluid chemistry and processes at the Porgera gold deposit, Papua New Guinea. Mineralium Deposita 32, p. 119-132.
(Porgera gold deposit in PNG example of alkalic-type epithermal gold system (stage II), which overprints precursor stage of magmatic-hydrothermal gold mineralization (stage I))

Richards, J.P., B.W. Chappell & M.T. McCulloch (1990)- Intraplate-type magmatism in a continent-island arc collision zone: Porgera intrusive complex, Papua New Guinea. Geology 18, p. 958-961.
(Porgera intrusive emplaced in Late Miocene, 6 Ma in Jurassic-Cretaceous shelf-facies sediments near edge of Australasian plate, apparently in backarc environment during subduction of oceanic microplate segment on two sides beneath continental margin and an island arc)

Richards, J.P., B.W. Chappell & M.T. McCulloch (1991)- The Porgera gold deposit, Papua New Guinea, 1: Association with alkalic magmatism in a continent-island-arc collision zone. Brazil Gold '91 Conf., p. 307-312.
(online at: www.iaea.org/inis/collection/NCLCollectionStore/_Public/24/058/24058940.pdf)
(Mesothermal- epithermal Porgera gold deposit associated with shallow level (< 2 km emplacement depth) stocks and dykes of Porgera Intrusive Complex, emplaced at 6.0 ± 0 3 Ma near NE edge of Australian craton, during period of Late Tertiary terrane accretion. Magmatism may have been related to deep subduction beneath continental margin. Gold mineralization immediately followed emplacement of PIC at 5-6Ma. Porgera intrusive suite sodic alkali basalts/gabbros, hawaiites, and mugearites)

Richards, J.P. & R. Kerrich (1993)- The Porgera Gold Mine, Papua New Guinea: magmatic hydrothermal to epithermal evolution of an alkali- type precious metal deposit. Economic Geology 88, 5, p. 1017-1052.
(Porgera Au deposit in PNG highlands associated with Late Miocene (6.0 ±0.3 Ma) epizonal intrusive complex, with close relationship between mafic alkalic magmatism and precious metal mineralizations. Mineralization shortly preceded E Pliocene collision between NE Australasian continental margin and island arc)

Richards, J.P. & I. Ledlie (1993)- Alkalic intrusive rocks associated with the Mount Kare gold deposit, Papua New Guinea; comparison with the Porgera intrusive complex. Economic Geology 88, 4, p. 755-781.
(Mount Kare gold deposit discovered in 1986, 18 km SW of giant Porgera mine in PNG highlands. Both deposits associated with Late Miocene alkalic intrusives emplaced in Mesozoic-Tertiary shelf sediments near edge of Australian plate. K-Ar analysis of illite from altered rock records age of 5.5 Ma, in middle of age ranges of Porgera Au deposit (5.1- 6.1 Ma). Similar alkalic epithermal ore-forming processes at both locations)

Richards, J.P., M.T. McCulloch, B.W. Chappell & R. Kerrich (1991)- Sources of metals in the Porgera gold deposit, Papua New Guinea: evidence from alteration, isotope, and noble metal geochemistry. Geochimica Cosmochimica Acta 55, 2, p. 565-580.
(Porgera gold deposit associated with Late Miocene mafic alkalic Porgera Intrusive Complex, emplaced within continental crust near Lagaip Fault Zone, which represents Oligocene suture between Australian craton and Sepik Terrane volcano-sedimentary rocks. Magmatism at Porgera probably occurred in response to Late Miocene elimination of oceanic microplate and subsequent Early Pliocene collision between craton margin and arc system on Bismarck Sea plate. Gold mineralization occurred within 1 Ma of time of magmatism)

Richards, J.P. & I. McDougall (1990)- Geochronology of the Porgera gold deposit, Papua New Guinea; resolving the effects of excess argon on K Ar and 40Ar/ 39Ar age estimates for magmatism and mineralization. Geochimica Cosmochimica Acta 54, 5, p. 1397-1415.
(Mesothermal/epithermal gold mineralization in Porgera Intrusive Complex and sedimentary host rocks. Conventional K-Ar ages of hornblende from different intrusions between 7-14 Ma, but biotite separates

concordant at 6.0 ± 0.3 Ma. Older apparent ages from conventional K-Ar and Ar/Ar analyses explained by excess 40Ar contamination. Late Miocene magmatism and mineralization occurred shortly prior to or during initiation of continent/arc collision and pre-dates Pliocene uplift and foreland deformation)

Richarz, P.S.R. (1910)- Der geologische Bau von Kaiser Wilhelms-Land nach dem heutigen Stand unseres Wissens. Neues Jahrbuch Mineral. Geol. Palaont., Beilage Band 29, p. 406-536.
('The geological framework of Kaiser Wilhelms Land'. Early geological description paper of the then German colony, now northern PNG. Includes description of 'Upper Cretaceous' shallow marine mollusc fauna from Torricelli Mts (but associated with Oligo-Miocene Lepidocyclina and andesites))

Rickwood, F.K. (1954)- Geology of the Western highlands of New Guinea. J. Geol. Soc. Australia 2, p. 63-82.
(Oldest rocks in W Highlands Omung metamorphics and Kubor-Bismarck granodiorites. Overlain by Permian (= Triassic; JTvG) limestone at Kubor anticline, unconformably overlain by U Jurassic Maril Fm silty shale with Buchia malayomaorica and Inoceramus haasti. ?Oxfordian-Kimmeridgean coral reef limestone lenses at W end of Kubor anticline (incl. Tithonian? cavity fill of coral with Calpionella alpina). Cretaceous marine sediments and mid-Cretaceous Kondaku tuff horizon. Eocene-Miocene Chimbu Lst (with Lacazina in Eocene, Nummulites intermedia in Lower Oligocene and zone Te larger forams in Upper Oligocene- basal Miocene), overlain by Miocene Globigerina marls. Sedimentary succession in E thicker than in W. Jurassic seas transgressed from E. W part of region out of range of Cretaceous vulcanism, so pelagic sedimentation continued into E Miocene. M Miocene volcanic island arc near Lai Syncline. Main folding at end-Pliocene, followed by erosion and extensive Pleistocene volcanism)

Rickwood, F.K. (1968)- The geology of Western Papua. Australian Petrol. Explor. Assoc. (APEA) J. 8, 2, p. 51-61.

Rickwood, F.K. (1992)- The Kutubu discovery: Papua New Guinea, its people, the country and the exploration and discovery of oil. Author edition, Sydney, 172p.

Ridd, M.F. (1976)- Papuan Basin- inshore. In: C.L. Knight (ed.) Economic geology of Australia and Papua New Guinea, 3, Petroleum, Australian Inst. Mining Metallurgy (AusIMM), Monogr. 7, p.

Riker-Coleman, K.E., C.D. Gallup, L.M. Wallace, J.M. Webster, H. Cheng, R.L. Edwards (2006)- Evidence of Holocene uplift in east New Britain, Papua New Guinea. Geophysical Research Letters 33, 18, 4p.
(Along SE coast of New Britain 6 raised reef terraces up to 270m above sea level. Average uplift rate 1.6 ± 0.4 m/ 1000 yrs)

Ripper, I.D. & K.T. McCue (1983)- The seismic zone of the Papua fold Belt. BMR J. Australian Geol. Geophysics 8, p. 147-156.
(online at: https://d28rz98at9flks.cloudfront.net/81143/Jou1983_v8_n2_p147.pdf)
(Seismicity of S highlands of PNG shows two zones: (1) S Highlands Seismic Zone follows Papuan Fold Belt from Kerema on Gulf of Papua through Star Mountains region into Irian Jaya (continuing Pliocene-Quaternary thrust faulting in Indo-Australian Plate); (2) Mount Hagen Seismic Zone, plunging NNE from S Highlands Seismic Zone S of Mount Hagen to intersect intermediate-depth seismicity beneath Ramu-Markham Valley)

Roberts, M.P. & R.A. Armstrong (2013)- Age and O, Hf isotope systematics of the Yandera porphyry rocks- constraints on magma sources, crystallisation history and crustal evolution. Proc. Symposium East Asia: Geology, exploration technologies and mines, Bali, Australian Inst. Geoscientists, p. 80-82. *(Extended Abstract)*
(Yandera Cu-Mo-(Au) porphyry deposit on N flanks of Mt Wilhelm in PNG highlands. Known since 1965, first production scheduled for 2016. Chalcopyrite and bornite main copper minerals and molybdenite for Mo. Porphyries typical calc-alkaline I-type granitoids. U-Pb zircon ages from Yandera porphyries 3 groups, spanning 7.1-6.3 Ma. No appreciably older inherited zircons, apart from one Mesozoic age (unlike Ok Tedi Cu-Au deposit, with much greater crustal contribution and old inherited zircon ages))

Robinson, G.P. (1970)- The geology of the Huon Peninsula, New Guinea. Geol. Survey Papua New Guinea, Port Moresby, Memoir 3, p. 1-71.
(Huon Peninsula of NE PNG with peaks up to 4121m above sealevel. Oldest rocks Lower Oligocene- Lower Miocene submarine andesitic-basaltic Finisterre Volcanics (locally with U Oligocene Spiroclypeus-Nephrolepidina Lst), Kwama basalt and associated small serpenitinite bodies. E-M Miocene volcanics-derived sandstone and >1000m thick E-M Miocene- Pliocene carbonates. Structure mainly N-tilting fault blocks with many high-angle normal faults, formed during intermittent Pliocene-Pleistocene uplift. Pleistocene reef terraces up to 700m above sea level. Stratigraphy and structural style similar to volcanic arc terranes of Solomon and New Hebrides Islands)

Robinson, G.P. (1974)- Huon-Sag Sag, Papua New Guinea- 1:250,000 geological series. Geol. Survey Papua New Guinea, Explanatory Notes, SB/55-11, 22p.

Robinson, G.P. & A.L. Jaques (1978)- Karkar Island, Papua New Guinea- 1:250,000 geological series. Bureau Mineral Res., Geol. Geoph., Canberra, and Geol. Survey Papua New Guinea, Explanatory Notes, SB/55-2, p.

Robinson, G.P., A.L. Jaques, & C.M. Brown (1976)- Madang, Papua New Guinea- 1:250,000 geological series. Bureau Mineral Res., Geol. Geoph., Canberra, and Geol. Survey Papua New Guinea, Explanatory Notes, SB/55-6, p.

Rock, N.M.S. & E.J. Finlayson (1990)- Petrological affinities of intrusive rocks associated with the giant mesothermal gold deposit at Porgera, Papua New Guinea. J. Southeast Asian Earth Sci. 4, 3, p. 247-258.
(Porgera mafic rocks not ordinary tholeiitic or calc-alkaline basalts, andesites, gabbros or diorites, but shoshonitic, more specifically appinitic/ lamprophyric, similar to contemporaneous shoshonitic rocks in PNG)

Rod, E. (1974)- Geology of Eastern Papua: discussion. Geol. Soc. America (GSA) Bull. 85, p. 653-658.
(Discussion of Davies and Smith 1971 paper)

Rod, E. & J.B. Connelly (1980)- Mode of emplacement of the Papuan ultramafic belt; discussion and reply. BMR J. Australian Geol. Geophysics 5, 1, p. 74-76.
(Discussion by Rod and Reply of Connelly (1979) paper on emplacement of Papuan Ultramafic Belt)

Rodgers K.A. (1975)- A comparison of the geology of the Papuan and New Caledonian ultramafic belts. J. Geology 83, p. 47-60.

Rogerson, R. (1993)- Location, age, characteristics and exploitation potential of Papua New Guinea coal occurrences. In: A.J. Hargraves & C.H. Martin (eds.) Australasian coal mining practice, Australasian Inst. of Mining and Metallurgy, Melbourne (AusIMM), Monogr. Ser. 12, p. 56-61.

Rogerson, R. & G. Francis (1983)- Owen Stanley Metamorphic Complex: type of initial prograde metamorphism. Science in New Guinea 10, p. 60-64.

Rogerson, R.J., D.W. Haig & S.T.S. Nion (1981)- Geology of Port Moresby. Geol. Survey Papua New Guinea, Report 1981/16, p. 1-56.

Rogerson, R.J. & D.B. Hilyard (1990)- Scrapland: a suspect composite terrrane in Papua New Guinea. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby, p. 271-282.
(Suspect composite terrane outboard of Australian margin in E PNG, including basement blocks of Bena Bena/ Goroka, Kubor, Amanab, etc. Originated by mainly transform faulting along Australian-Pacific margin prior to and following Coral Sea opening (Late Cretaceous- E Eocene). Late Oligocene- E Miocene Aure/ Omaura Fm is oldest overlap assemblage of Scrapland and main body of PNG. Re-accretion to PNG margin certainly by N17 (Late Miocene), possibly as early as Late Oligocene)

Rogerson, R.J., D.B. Hilyard, E.J. Finlayson, D.J. Holland, S.T. Nion et al. (1987)- The geology and mineral resources of the Sepik headwaters region, Papua New Guinea. Geol. Survey Papua New Guinea, Mem. 12, p. 1-97.

Rogerson, R., D. Hilyard, G. Francis & E. Finlayson (1987)- The foreland thrust belt of Papua New Guinea. In: E. Brennan (ed.) Proc. Pacific Rim Congress 87, Gold Coast, Australasian Inst. of Mining and Metallurgy (AusIMM), Parkville, p. 579-583.
(PNG mainland dominated by foreland thrust belt. 'Body' is floored by Paleozoic granites and metamorphics of 'Fly Platform' and is part of Tasman Orogen. 'Tail' is underlain by Papuan Plateau, which rifted from Tasman Orogen during Coral Sea spreading (near K-T boundary). Thrusting began in E Miocene and continues today)

Rogerson, R. & C. McKee (1990)- Geology, volcanism and mineral deposits of Papua New Guinea. In: F.E. Hughes (ed.) Geology of the mineral deposits of Australia and Papua New Guinea. Australasian Inst. of Mining and Metallurgy (AusIMM), Parkville, Monogr. Ser. 14, p. 1689-1701.

Rogerson, R. & A. Williamson (1986)- Age, petrology and mineralization associated with two Neogene intrusive types in the Eastern Highlands of Papua New Guinea. In: G.H. Teh & S. Paramananthan (eds.) Proc. 5th Reg. Congress Geol. Min. Energy Res. SE Asia (GEOSEA V), Kuala Lumpur 1984, 2, Bull. Geol. Soc. Malaysia 20, p. 487-502.
(online at: www.gsm.org.my/products/702001-101415-PDF.pdf)
(Numerous Neogene porphyritic basic-intermediate intrusives outcrop in eastern highlands of PNG between 144°E and 146°E, with radiometric ages from 18-7 Ma. Two distinct phases of plutonism: (1) oldest Akuna-type, large complexes (18-12 Ma; incl. Bismarck Intrusive Complex) with rel. little mineralization; (2) Elandora-type (incl. Yandera), 9-7 Ma, with hydrothermal Cu-Au-Ag mineralization smaller stocks, dykes, etc. (subsequently also called 'Maramuni Arc'?; JTvG))

Rogerson, R., A. Williamson & G. Francis (1986)- Recent advances in the knowledge of geology, energy resources and metallogenesis of Papua New Guinea since 1981. In: G.H. Teh & S. Paramananthan (eds.) Proc. 5th Reg. Congress Geology, Mineral and Energy Resources of SE Asia (GEOSEA V), Kuala Lumpur 1984, 2, Bull. Geol. Soc. Malaysia 20, p. 23-37.
(online at: https://gsmpubl.files.wordpress.com/2014/09/bgsm1986b02.pdf)
(Review of new early 1980's geoscience and mineral exploration work in PNG)

Ronacher, E. (2002)- The Porgera gold deposit: fluid characteristics, ore deposition processes, and duration of the ore forming event. Ph.D. Thesis University of Alberta, Edmonton, p. 1-132.
(Porgera gold deposit in PNG foldbelt 40Ar/39Ar age of igneous biotite (5.99± 0.11 Ma) interpreted age of intrusive event; two hydrothermal roscoelite samples with 5.99± 0.08 Ma age of ore formation)

Ronacher, E., J.P. Richards & M.D. Johnston (1999)- New mineralisation and alteration styles at the Porgera gold deposit, Papua New Guinea. In: G. Weber (ed.) Proc. PACRIM '99 Congress, Bali, Australasian Inst. of Mining and Metallurgy (AusIMM), Publ. 4-99, p. 91-94.
(Porgera gold mine in PNG highlands producing gold since 1990. Deposit associated with 6 Ma-old mafic alkalic intrusions emplaced at shallow levels into unconsolidated Jurassic- Cretaceous sediments, where they caused formation of peperites)

Ronacher, E., J.P. Richards & M.D. Johnston (2000)- Evidence for fluid phase separation in high-grade ore zones at the Porgera gold deposit, Papua New Guinea. Mineralium Deposita 35, 7, p. 683-688.

Ronacher, E., J.P. Richards, M.H. Reed, C.J. Bray, E.T.C. Spooner & P.D. Adams (2004)- Characteristics and evolution of the hydrothermal fluid in the North zone high-grade area, Porgera gold deposit, Papua New Guinea. Economic Geology 99, 5, p. 843-867.

Ronacher, E., J.P. Richards, M.E. Villeneuve & M.D. Johnston (2002)- Short life-span of the ore-forming system at the Porgera gold deposit, Papua New Guinea: laser 40Ar/39Ar dates for roscoelite, biotite, and hornblende. Mineralium Deposita 37, p. 75-86.
(Porgera gold deposit associated with sodic-alkalic intrusions of alkali basaltic- mugearitic composition, emplaced into Cretaceous mudstones- siltstones in latest Miocene. Magmatic biotite date of 5.99± 0.11 Ma, interpreted as onset of mineralizing activity. Age of main ore deposition event ~5.9 Ma. Ages for intrusive and mineralizing events nearly identical, suggesting magmatic and ore-forming system was short-lived)

Ross, L. (1993)- Evolution of structural models of two anticlines in the Papuan Thrust Belt by application of magnetotellurics. In: G.J. & Z. Carman (eds.) Petroleum exploration and development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby, p. 351-370.
(Structure modeling of deeper structure of Irou (PPL76) and West Anesi (PPL56) anticlines, PNG foldbelt, constrained by magnetotelluric input)

Rush, P.M. & H.J. Seegers (1990)- Ok Tedi copper-gold deposits. In: F.E. Hughes (ed.) Geology of the mineral deposits of Australia and Papua New Guinea, Australasian Inst. of Mining and Metallurgy (AusIMM), Monograph Ser. 14, 2, p. 1747-1754.

Russell, N.J. (1990)- Application of vitrinite reflectivity to paleogeothermometry studies: some examples from Papua New Guinea basins. In: G.J. & Z. Carmen (eds.) Petroleum Exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby, p. 403-420.
(On the use of vitrinite reflectivity for paleogeothermometry in PNG)

Ruxton, B.P. (1966)- Correlation and stratigraphy of dacitic ash-fall layers in northeastern Papua. J. Geol. Soc. Australia 13, 1, p. 41-67.
(Thick weathered dacitic ash for up to 48 km from Mount Lamington strato-volcano and thins with distance from it. Age of Mount Lamington ~90,000 years)

Ryburn, R.J. (1980)- Blueschists and associated rocks in the south Sepik region, Papua New Guinea; field relations, petrology, mineralogy, metamorphism and tectonic setting. Ph.D. Thesis University of Auckland, p. 1-220. *(Unpublished)*
(online at: https://researchspace.auckland.ac.nz/handle/2292/2448)
(Blueschists in S Sepik formed in N-dipping subduction zone, beneath Paleogene arc system accreted along N coast of New Guinea. Blueschists in allochthonous Tau body E-W lens (55 x 8 km) and smaller allochthons E of Tau. Blueschists in late-Mesozoic- Eocene Salumei Fm (mostly pelitic sediments derived from S) and in ophiolite fragments and other volcanogenic rocks, related to arc to N. Salumei Fm near Tau metamorphosed from prehnite-pumpellyite to low-greenschist grade during Oligocene- E Miocene metamorphism. Blueschists mostly mafic schists with blue amphibole. Metamorphic grade increases to N. Isolated mafic tectonic blocks in and N of Tau body include high-grade blueschist, eclogite and amphibolite, all metamorphosed mafic ophiolite. Metamorphic conditions require blueschists and eclogites formed in subduction system. Active and rapid transport is needed to bring these rocks back to shallow levels, and term 'retrojection' is coined)

Sandy, M.J., A.C.M. Laing & C. Warrillow (1986)- Petroleum potential of the northwest Fly Platform, Papua New Guinea. Geol. Survey of Papua New Guinea, Report 86/15, p. 1-19. *(Unpublished)*

Sari, J. (1988)- Aspects of stratigraphy, sedimentology and petroleum geology of the Toro Sandstone Formation. Geol. Survey Papua New Guinea, Report, 88/3, p. *(Unpublished)*

Sari, J. (1990)- Revised stratigraphic definition of the Toro Formation: a proposal. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby, p. 159-168.
(Type section of basal Cretaceous Toro Sandstone Fm at Mt. Toro escarpment, Strickland River area, Papuan basin. Upper Toro Sst Mb in outcrop 225m thick. With Berriasian age dinoflagellates (at base Peridictyocysta miriabilis zone to Leptodinium pinnosum zone at top; Davey 1987))

Sari, J., R. Failing & K. Wulff (1996)- The Giero Sandstone: a potentially new play in the Papuan Basin. In: P.G. Buchanan (ed.) Petroleum exploration, development and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention Port Moresby, p. 301-312.
(Cenomanian- Turonian (D. multispinum dinozone) turbiditic deep water sandstone in middle part of Giero Mb in parts of Papuan Basin foldbelt. Up to 70m thick sand-rich submarine fan intervals penetrated in Juha, Egele, Hides and Muller wells)

Schluter, H. (1928)- Jurafossilien vom oberen Sepik auf Neu-Guinea. Nova Guinea 6, 3, p. 53-62.
('Jurassic fossils from the Upper Sepik, New Guinea'. M-U Jurassic macrofossils from geodes in float of Upper Sepik River near 4°15' S- 141° E, collected in 1910 by German 'border commission'. Includes ammonites Macrocephalites keeuwensis, Perispinctes spp., Idoceras, Phylloceras, Hoplites. Also canaliculate belemnites and Incoceramus galoi. Similarities with fauna from Sula islands, Cenderawasih Bay and Himalaya Spiti Beds)

Schmidt, D. (2000)- Seismic attribute studies of the Flinders amplitude anomaly- Gulf of Papua. In: P.G. Buchanan et al. (eds.) Papua New Guineaǿs petroleum industry in the 21st century, Proc. 4th PNG Petroleum Convention, Port Moresby, p. 469-474.

Schmidt, P.W., D.A. Clark & K.J. Logan (1997)- Palaeomagnetism, magnetic petrophysics and magnetic signature of the Porgera intrusive complex, Papua New Guinea. Exploration Geophysics 28, 2, p. 276-280.
(Hornblende diorite and hornblende diorite porphyry most magnetic rock types in Porgera Complex. Both normal and reverse polarity preserved in Complex. Primary magnetisation carried by (titano)magnetite. Primary remanence directions demonstrate tilting of intrusions since emplacement (up to 50°- 60°). Tectonic rotations response to thin-skinned tectonic processes which accompanied rapid uplift of Complex)

Schneider, L., B.V. Alloway, R.J. Blong, G.S. Hope, S.J. Fallon, C.F. Pain, W.A. Maher & S.G. Haberle (2017)- Stratigraphy, age and correlation of two widespread Late Holocene tephras preserved within Lake Kutubu, Southern Highlands Province, Papua New Guinea. J. Quaternary Science 32, 6, p. 782-794.
(Sediment cores from Lake Kutubu, S Highlands, PNG, with two prominent tephra layers, correlated with Tibito and Olgaboli tephras described nearby. Tibito tephra possibly from Long Island; Olgaboli tephra possibly from Karkar Island source)

Schofield, S. (2000)- The Bosavi Arch and the Komewu Fault zone: their control on basin architecture and the prospectivity of the Papuan foreland. In: P.G. Buchanan, A.M. Grainge & R.C.N. Thornton (eds.) Papua New Guineaǿs petroleum industry in the 21st century, Proc. 4th PNG Petroleum Convention, Port Moresby, p. 101-122.
(Kimu 1 and Koko 1 wells in PNG foreland, S of Mount Bosavi volcano. Most of Cretaceous section eroded at Base Tertiary unconformity in Koko 1 (uplift and erosion across Fly Platform coincides with Coral Sea rift event). Well TD in E-M Permian granite (269±7 Ma). E-M Jurassic section onlaps onto basement highs; thickening to N and E; facies more marine from SW to NE; Middle- early Late Jurassic extension formed localized depocenters on NW trending faults. Late Jurassic- E Cretaceous passive ramp margin)

Schubert, R.J. (1910)- Uber Foraminiferen und einen Fischotolithen aus dem fossilen Globigerinenschlamm von Neu-Guinea. Verhandlungen Kon. kaiserl. Geol. Reichsanstalt, Vienna, 1910, 14, p. 318-328.
(online at: www.landesmuseum.at/pdf_frei_remote/VerhGeolBundesanstalt_1910_0318-0328.pdf)
('On foraminifera and a fish otolith from a fossil Globigerina marl of New Guinea'. Listing of Pliocene deep marine smaller foraminifera from blueish marls of Torricelli Mountains. Incl. new species Globigerina fistulosa (= Globigerinoides fistulosus))

Schultze-Jena, L. (1914)- Forschungen im Inneren der Insel Neuguinea (Bericht des Fuhrers uber die wissenschaftlichen Ergebnisse der deutschen Grenzexpedition in das westliche Kaiser-Wilhelmsland 1910). Mitteilungen aus den Deutschen Schutzgebieten, Erganzungsheft 11, S. Mittler, Berlin, p. 1-99.

('Investigations in the interior of New Guinea Island'. Results of 1910-1911 German-Dutch expedition along border of Dutch and German sectors of New Guinea. Reached 141° meridian in Central Range from Sepik River. Incl. report of Nummulites Limestone boulder)

Seno, T. (1984)- Was there a North New Guinea Plate? In: Y. Shimazaki (ed.) Proc. Int. Centennial symposium of the Geological Survey of Japan, Chishitsu Chosajo Hokoku (Report Geol. Survey of Japan) 263, p. 29-42.

Shedden, S.H. (1990)- Astrolabe mineral field. In: F.E. Hughes (ed.) Geology of the mineral deposits of Australia and Papua New Guinea, Australasian Inst. of Mining and Metallurgy, Melbourne, 14, 2, p. 1707-1708.
(Au-Cu field E of Port Moresby)

Sheppard, S. & L. Cranfield (2012)- Geological framework and mineralization of Papua New Guinea- an update. Mineral Resources Authority, Papua New Guinea, Port Moresby, p. 1-62.
(online at: www.mra.gov.pg/Portals/2/Publications/..)
(Update of chapters 4-6 on geological framework and mineralization of Williamson and Hancock (2005))

Siedner, G. (1958)- A geological reconnaissance of the Nambayat Creek area, Finisterre Range, New Guinea. Bureau Mineral Res. Geol. Geoph., Records 1958/037, p. 1-6.
(online at: https://www.ga.gov.au/products/servlet/controller?event=FILE_SELECTION&catno=10345)
(Survey Nambayat Creek area of S slopes of Finisterre Range, N PNG, to verify reported gold find (none found). Sediments thick series of NE dipping, probably Miocene age clastics, intruded by basic igneous rocks)

Silver, E.A., L.D. Abbott, K.S. Kirchoff-Sten, D.L. Reed, B. Bernstein-Taylor & D. Hilyard (1991)- Collision propagation in Papua New Guinea and the Solomon Sea. Tectonics 10, 5, p. 863-874.
(PNG mountain system grow by accretion of Australian margin strata to front of Papuan fold-and-thrust belt in S and by accretion of exotic terranes along NE margin. Finisterre Terrane accreting onto NE margin, with collision point migrating E within Solomon Sea. Rate of progression of collision ~212 km/ My in last My))

Simmons, M.D. & M.J. Johnston (1991)- *Permocalculus iagifuensis* sp.nov.; a new Miocene gymnocodiacean alga from Papua New Guinea. J. Micropalaeontology 9, 2, p. 239-244.
(online at: https://www.j-micropalaeontol.net/9/239/1991/jm-9-239-1991.pdf)
(New species of gymnocodiacean alga from reefal E Miocene Darai Lst Fm of Papuan Fold Belt S of Tari, PNG. Previously only known from Permian and Cretaceous. Associated microfauna Austrotrillina, Flosculinella bontangensis, Miogypsinoides, Miogypsina kotoi, etc.)

Skwarko, S.K. (1963)- Mesozoic fossils from Ramu 1:250,000 Sheet area, Territory of New Guinea. Bureau Mineral Res., Geol. Geoph., Record 1963/031, p.
(online at: www.ga.gov.au/corporate_data/11113/Rec1963_031.pdf)
(Macrofossils collected by Dow & Dekker from 5 units in U Triassic- U Jurassic S of Ramu River: (1) Jimi greywacke (M-U Triassic molluscs Costatoria, Gervillia, Spiriferina, Myophoria and ammonite Sirenites malayicus Welter, originally described from Timor); (2) Kana Fm detritus from acid volcanics (with Triassic Costatoria, Spiriferina); (3) Balimbu greywacke (Lower Jurassic Tropidoceras?); (4) Jurassic Mangum volcanics; (5) Maril Shale (U Jurassic Buchia malayomaorica, Inoceramus cf. haasti))

Skwarko, S.K. (1967)- Mesozoic Mollusca from Australia and New Guinea, 2, Mesozoic fossils from eastern New Guinea; (a) First Upper Triassic and ?lower Jurassic marine Mollusca from New Guinea. Bureau Mineral Res., Geol. Geoph., Bull. 75, p. 40-82.
(online at: https://d28rz98at9flks.cloudfront.net/161/Bull_075.pdf)
(Mesozoic of Jimi River, Bismarck Mts and Central Highlands five sedimentary units, 21 genera and species, half of them new. Highly provincial Late Triassic molluscs in thick Jimi Greywacke series. Overlain by Upper Triassic Kana Fm acid volcanoclastics, probably Lower Jurassic Balimbu greywacke, ?M Jurassic Mongum volcanics and Upper Jurassic Maril shale with Malayomaorica and Inoceramus haasti)

Skwarko, S.K. (1967)- Mesozoic Mollusca from Australia and New Guinea, 2, Mesozoic fossils from eastern New Guinea; (b) Lower Cretaceous Mollusca from the Sampa beds near Wau. Bureau Mineral Res., Geol. Geoph., Australia, Bull. 75, p. 85-98.
(online at: https://d28rz98at9flks.cloudfront.net/161/Bull_075.pdf)
(Eleven mollusc species from Lower Cretaceous Sampa beds of Lake Trist area, PNG)

Skwarko, S.K. (1973)- Middle and Upper Triassic mollusca from Yuat River, Eastern New Guinea. Palaeontological papers 1969, Bureau Mineral Res. Geol. Geoph. Bull. 126, p. 27-50.
(online at: https://d28rz98at9flks.cloudfront.net/101/Bull_126.pdf)
(M and U Triassic molluscs from Yuat River gorge in E PNG Highlands (= part of 'Jimi Terrane', outboard of Kubor Block?; JTvG). Yuat Fm black shale with Late Anisian ammonites, incl. Paraceratites cf. trinodosus, Ptychites, Beyrichites, Parapopanoceras, etc. Nearby Jimi River Ladinian- Carnian sandstones-shales with halobiid bivalves, Myophoria, etc.. Associated with volcanics. U Anisian fauna is Tethyan in character and Circum-Pacific in distribution)

Skwarko, S.K. (1973)- On the discovery of Halobiidae (Bivalvia, Triassic) in New Guinea. Palaeontological papers 1969, Bureau Mineral Res. Geol. Geoph. Bull. 126, p. 51-54.
(online at: https://d28rz98at9flks.cloudfront.net/101/Bull_126.pdf)
(First report of M-U Triassic Halobiidae molluscs from mainland New Guinea: Carnian-Norian (U Triassic) of Yuat River gorge, PNG Highlands, and from Ladino-Carnian in Jimi River area NE of Tabibuga, 80 km to ESE. New species, Daonella novoguineana described Jimi River area is closely related to Daonella indica Bittner 1899, known from Himalayas and Timor. Associated with Costatoria, Spiriferina, etc.)

Skwarko, S.K. (1973)- First report of Domerian (Lower Jurassic) marine mollusca from New Guinea. Palaeontological Papers 1970-1971, Bull. Bureau Mineral Res. Geol. Geoph. 140, p. 105-112.
(online at: www.ga.gov.au/corporate_data/107/Bull_140.pdf)
(S Sepik region Yuat River occurrence of marine Pliensbachian in 'Balimbu Greywacke/ Kana Fm', with Arieticeras ammonite and some bivalves)

Skwarko, S.K. (1978)- Stratigraphic tables, Papua New Guinea. Bureau Mineral Res. Geol. Geoph., Report 193, p. 1-137.
(online at: www.ga.gov.au/products-services/legacy-publications/reports.html)
(Tables of descriptions of stratigraphic units used in PNG)

Skwarko, S.K. (1981)- A new upper Mesozoic trigoniid from western Papua New Guinea. Palaeontological Papers 1981, Bureau Mineral Res. Geol. Geophys. Aust., Bull. 209, p. 53-55.
(online at: www.ga.gov.au/corporate_data/59/Bull_209.pdf)
(First report of U Jurassic or Lower Cretaceous genus Eselaevitrigonia from western Central Range, PNG)

Skwarko, S.K. (1981)- First report of Megatrigoniinae (Bivalvia, Cretaceous) from Papua New Guinea. Palaeontological Papers 1981, Bureau Mineral Res. Geol. Geophys., Bull. 209, p. 57-58.
(online at: www.ga.gov.au/corporate_data/59/Bull_209.pdf)
(First report of Neocomian Iotrigonia (Zaletrigonia?) telefominiana n.sp. from western Central Range, PNG)

Skwarko, S.K. (1981)- *Nototrigonia cinotuta* (Bivalvia, mainly Lower Cretaceous) from northern Queensland and Papua New Guinea. Palaeontological Papers 1981, Bureau Mineral Res. Geol. Geophys., Bull. 209, p. 59-61.
(online at: www.ga.gov.au/corporate_data/59/Bull_209.pdf)

Skwarko, S.K. (1981)- *Spia*, a new Triassic bakevellid bivalve from Papua New Guinea. Palaeontological Papers 1981, Bureau Mineral Res. Geol. Geophys., Bull. 209, p. 63-64.
(online at: www.ga.gov.au/corporate_data/59/Bull_209.pdf)

(Spia janeki new species of bivalve Bakevellia (Spia) from U Triassic Jimi Greywacke, west-C PNG. Only two known species referable to Spia, both from Carnian-Norian of PNG. Spia viewed as subgenus of Bakevellia by Ros-Franch et al. 2014))

Skwarko, S.K. (1983)- *Somareoides hastatus* (Skwarko) a new Late Triassic bivalve from Papua New Guinea. Palaeontological Papers 1983, Bureau Mineral Res., Geol. Geoph., Bull. 217, p. 67-72.
(On systematic position of new Upper Triassic bivalve from Jimi Greywacke, central PNG, first described by Skwarko 1967. Initially assigned to Permophorus?, this Carnian genus is viewed as endemic of 'Australian fauna' by Damborenea et al. 2002, Southern Tethys by Ros-Franch et al. 2014)

Skwarko, S.K. & B. Kummel (1974)- Marine Triassic molluscs from Australia and Papua New Guinea. Bureau Mineral Res. Geol. Geoph., Bull. 150, p. 111-127.
(Mainly on Australian material. Skwarko (1973) Jimi River sandstones and shales with Ladinian-Carnian halobiids and Carnian-Norian ammonite Sirenites cf. malayicus. Yuat River gorge in W Highlands with Anisian cephalopods (Beyrichites, Paraponanoceras, Paraceratites, etc.))

Skwarko, S.K., R.S. Nicoll & K.S.W. Campbell (1976)- The Late Triassic molluscs, conodonts and brachiopods of the Kuta Formation, Papua New Guinea. BMR J. Australian Geol. Geophysics 1, p. 219-230.
(online at: www.ga.gov.au/corporate_data/80882/Jou1976_v1_n3_p219.pdf)
(30-250m thick Kuta Limestone with Rhaetian brachiopods (Clavigera, Zugmayerella), cephalopods (Arcestes cf. sundaicus), bivalves and conodonts (Misikella posthernsteini), E of Mt Hagen. Faunas of Tethyan Province aspect. Kuta Fm grades laterally into calcareous breccia with metamorphic rocks. Limestone unconformably overlain by Upper Jurassic or Cretaceous)

Slater, A., H.R. Balkwill & G.U. Fong (1988)- Seismic evidence for structural style in the offshore Kerema area Papua New Guinea: application to petroleum exploration. Proc. Offshore South East Asia Conf. 1988, Singapore, Proc. SE Asia Petroleum Expl. Soc. (SEAPEX) 8, p. 69-78.
(Marine seismic data off Kerema gives rel. good imaging of PNG foldbelt. Shows common S-dipping backthrusts, frontal folds detached in Mesozoic shales, episodic SW-ward progression of foldbelt compression with younger stratigraphic sequences less tightly folded, etc.)

Slater, A. & F. Dekker (1993)- An overview of the petroleum geology of the Eastern Papuan fold belt, based on recent exploration. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby, p. 499-516.
(On- and offshore Aure Trough/ E Papuan foldbelt abundance of oil and gas seeps onshore suggest prolific hydrocarbon system. Cretaceous- Paleogene sediments part of Australian passive continental margin sequence. With map of potential Campanian Pale Sst fairway. Oligo-Miocene Puri Lst also good reservoir potential)

Smillie, R.W., P.J. Pollard, D.R. Hastings, A. Yame, M. Tangwari, J. Garu & E. Atase (2015)- Exploration of the Townsville Cu-Au-Ag skarn, Western Province, Papua New Guinea- preliminary observations of paragenesis and zoning. In: Proc. PACRIM 2015 Congress, Hongkong, Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, Publ. Ser. 2/2015, p. 593-600. *(Extended Abstract)*
(On Townsville gold prospect 4 km N of Ok Tedi copper-gold mine in W Province, PNG. Townsville gold deposits in breccia in older Darai Lst)

Smith, I.E.M. (1970)- Late Cainozoic uplift and geomorphology in south-eastern Papua. Search 1, p. 222-225.

Smith, I.E.M. (1972)- High-potassium intrusives from southeastern Papua. Contrib. Mineralogy Petrology 34, p. 167-176.
(Miocene high-K 'shoshonitic' rocks intrude Eocene submarine basalts in SE Papua. Two groups: 'near-saturated' gabbro to syenite, and nepheline normative 'undersaturated' group. Intrusion of shoshonitic rocks at start of period of major tectonic activity in SE Papua and may form part of island arc magmatic association)

Smith, I.E.M. (1977)- Peralkaline rhyolites from the D'Entrecasteaux islands, Papua New Guinea. In: R.W. Johnson (ed.) Volcanism in Australasia, Elsevier, Amsterdam, p. 275-285.
(Mildly peralkaline rhyolites (comendites) most abundant lavas in Quaternary volcanic province centered around Dawson Strait in D'Entrecasteaux islands, E PNG, associated with minor basaltic rocks. Tied to crustal extension and rifting)

Smith, I.E.M. (1982)- Volcanic evolution in Eastern Papua. Tectonophysics 87, p. 315-333.
(Basement formations of U Cretaceous and Eocene submarine basalt comparable to sea floor spreading centers and thought to be associated with Coral Sea basin spreading. Arc-trench type andesitic volcanism prominent during Late Cenozoic but no clear relationship to subduction event. Tectonic environment of E Papua during Late Cenozoic was one of block faulting and uplift associated with crustal tension. Quaternary peralkaline rhyolites suggests this environment now being replaced by active rifting)

Smith, I.E.M. (2013)- The chemical characterization and tectonic significance of ophiolite terrains in southeastern Papua New Guinea. Tectonics 32, p. 1-12.
(Papuan Ultramafic Belt marks collision between continental crust and subduction system. However, in SE Milne Terrain extensive sequence of U Cretaceous and Eocene basaltic rocks with MORB affinities is problematic. Probably associated with opening of Coral Sea Basin. Milne Terrain rocks represent lower plate in obduction system along which Papuan Ultramafic Belt was emplaced, and thus equivalent of continental crust which was separated from Australian continental block by opening of Coral Sea. Uplift (>4 km) of Milne Terrain may be due presence of underplated material associated with Late Miocene-Pliocene subduction immediately prior to encroachment of Woodlark spreading center into Papuan area)

Smith, I.E.M. (2014)- High-magnesium andesites: the example of the Papuan volcanic arc. In: A. Gomez-Tuena et al. (eds.) Orogenic Andesites and crustal growth, Geol. Soc., London, Spec. Publ. 385, p. 117-135.
(Late Cenozoic volcanic arc in SE PNG developed in environment of complex tectonic processes including obduction, subduction, rifting and sea floor spreading. Volcanic arc extends from Papuan Peninsula SE-ward through D'Entrecasteaux Islands into Louisiade Archipelago. Mainly basaltic andesite and andesite, but also basalt, dacite and rhyolite. Unusual abundance of high-Mg lavas in SE Papua related to extensional tectonics which allowed deep sourced magmas to rise without significant modification)

Smith, I.E.M. & D.S. Clarke (1982)- Intrusive rocks associated with gold mineralisation in southeastern Papua New Guinea. In: R. Rogerson (ed.) Proc. PNG geology, exploration and mining conference, 1991, Australasian Inst. of Mining and Metallurgy (AusIMM), Parkville, p. 34-39.

Smith, I.E.M. & W. Compston (1982)- Strontium isotopes in Cenozoic volcanic rocks from southeastern Papua New Guinea. Lithos 15, 3, p. 199-206.
(Sr isotope data from 28 samples representing four episodes of Late Cenozoic volcanism in SE PNG)

Smith, I.E. & H.L. Davies (1973)- Abau, Papua New Guinea, Sheet SC/55-12, 1:250,000. Bureau Mineral Res. Geol. Geophys. Australia and Geol. Survey Papua New Guinea, Geol. Serie, Explanatory Notes, p.

Smith, I.E. & H.L. Davies (1973)- Samarai, Papua New Guinea, Sheet SC/56-9, 1:250,000. Bureau Mineral Res. Geol. Geophys. Australia and Geol. Survey Papua New Guinea, Geol. Serie, Explanatory Notes, p.

Smith, I.E. & H.L. Davies (1976)- Geology of the southeast Papuan mainland. Bureau Mineral Res. Geol. Geophys., Canberra, Bull. 165, p. 1-109.
(online at: https://d28rz98at9flks.cloudfront.net/76/Bull_165.pdf)
(Geology of area of Papuan Peninsula/ Owen Stanley Range. E of 148°30'. Mostly U Cretaceous and M Eocene submarine basalts, with minor limestone and chert (incl. Upper Cretaceous and Eocene pelagic rocks with good planktonics and skeletal Eocene carbonates with Discocyclina, Nummulites). Also localized E-M Miocene reefal carbonates on Kutu Volcanics, commonly with reworked Eocene LBF. Some basalt metamorphosed to low greenschist facies. In NW peridotites of Papuan ultramafic belt are faulted against basalt, probably Eocene thrusting. Emergence of SE Papua started in Oligocene. With extensive appendix on foraminifera by Belford)

Smith, I.E.M. & R.W. Johnson (1981)- Contrasting rhyolite suites in the Late Cenozoic of Papua New Guinea. J. Geophysical Research 86, 11, p. 10257-10272.
(Discussion of 4 types rhyolites from New Britain, N Bismarck Sea (alkali rhyolites), Moresby Strait, Dawson Strait (comendites))

Smith, I.E. & J.S. Milsom (1984)- Late Cenozoic volcanism and extension in Eastern Papua. In: B.P. Kokelaar & M.F. Howells (eds.) Marginal basin geology, Geol. Soc., London, Spec. Publ. 16, p. 163-171.
(Sea floor around E PNG deep basins and submarine ridges with islands of metamorphic, volcanic or coralline rock. Extension phases since at least Paleocene, when Coral Sea basin formed. Compressive events include emplacement of Papuan Ultramafic Belt ophiolite in Oligocene. Extension-related volcanic rocks include low-K tholeiites and peralkaline rhyolite. Two Neogene phases of extension (1) M- Late Miocene, with formation of marginal basins related to subduction and (2) M Pliocene- today, response to changes in relative motions of surrounding plates. Active sea-floor spreading in Woodlark Basin today, and post-Miocene calc-alkaline and shoshonitic rocks of Papuan Peninsula and offshore islands reflect reactivation of subduction-modified mantle under this tensional regime, not renewed subduction)

Smith, I.E.M. & C.J. Simpson (1972)- Late Cenozoic uplift in the Milne Bay area, eastern Papua New Guinea. Bureau Mineral Res. Geol. Geoph., Bull. 125, p. 29-35.
(online at: https://d28rz98at9flks.cloudfront.net/125/Bull_125.pdf)
(Uplifted Late Plio- E Pleistoce erosional surface(s) up to 185m asl on Miocene- Pliocene volcanic rocks along Milne Bay on SE tip of PNG main island. Nearby uplifted coral reefs at >500m above sea level)

Smith, I.E.M., S.R. Taylor & R.W. Johnson (1979)- REE-fractionated trachytes and dacites from Papua New Guinea and their relationship to andesite petrogenesis. Contrib. Mineralogy Petrology 69, p. 227-233.

Smith, J.G. (1965)- Orogenesis in western Papua and New Guinea. Tectonophysics 2, p. 1-27.
(Pre-plate tectonic interpretation of orogenesis of W Papua and New Guinea, which commenced in Upper Miocene and reached culmination in Pliocene and Pleistocene)

Smith, J.W. & D.H. Green (1961)- The geology of the Musa River area, Papua. Bureau Mineral Res. Geol. Geoph., Report 52, p. 1-41.
(online at: www.ga.gov.au/products-services/legacy-publications/reports.html)
(Musa River area in E part of PNG. Occurrence of Papuan Belt ultrabasic rocks and glaucophane bearing metamorphics at Wowo Cap)

Smith, R.I. (1990)- Tertiary plate tectonic setting and evolution of Papua New Guinea. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby, p. 229-244.
(BP review of PNG tectonics. Six tectono-stratigraphic provinces. Four main plate tectonic events: (1) Paleo cene- E Eocene onset of rapid N drift of Australian Plate, short-lived spreading in Coral Sea; (2) M Eocene- E Oligocene Solomon Sea Plate evolved in back-arc of Melanesian Arc; (3) Late Oligocene- M Miocene obduction of S edge Solomon Sea Plate onto N margin of Australian Plate (Sepik and Owen Stanley obduction complexes, Papuan Basin foreland basin evolution); (4) Late Miocene- Recent collision of Melanesian Arc with PNG, resulting in compression of Papuan Thrust belt)

Snodin, S.R., D.J. Holland, J.M. James & D. Vukovic (2000)- Generation of a photogeological synthesis map of PPL 208, Papua New Guinea. In: P.G. Buchanan et al. (eds.) Papua New Guineaõs petroleum industry in the 21st century, Proc. 4th PNG Petroleum Convention, Port Moresby, p. 293-305.
(Photogeological map of E portion of Papuan foreland basin)

Spencer, J.E. (2010)- Structural analysis of three extensional detachment faults with data from the 2000 Space-Shuttle Radar Topography Mission. GSA Today 20, 8, p. 4-10.

(Examples of large grooved surfaces on Space Shuttle Radar Topography images interpreted as exhumed footwalls of recently active extensional detachment faults, incl. Dayman Dome on Owen Stanley Peninsula)

Spooner, M.I. & R.I. McCarthy (2018)- Structural and reservoir development of the Western Papuan Basin gas and condensate fields. In: Proc. Australian Exploration Geoscience Conf. (AEGC 2018), Sydney, p. 1-8. *(Extended Abstract)*
(online at: http://www.publish.csiro.au/ex/pdf/ASEG2018abT4_3A)
(Stanley, Elevala, Ketu and Ubuntu gas-condensate fields in foreland of W Papuan Basin. Basement architecture and regional NW-trending 3KB fault system control trap and Late Jurassic- E Cretaceous reservoir development (inversion of pre-existing faults and compactional drape of reservoirs over Basement highs). Map of spatial distribution of reservoir sands and paleogeographic models)

Stanaway, R. (2008)- PNG on the move- GPS Monitoring of plate tectonics and earthquakes. In: The surveyor in the dynamic technological world, 42nd Congress Assoc. Surveyors PNG, Port Moresby 2008, 7p.
(online at: www.quickclose.com.au/stanaway_tectonics2png08.pdf)
(Brief overview of GPS motions in PNG)

Stanaway, R., L. Wallace, Z. Sombo, J. Peter, T. Palusi, B. Safomea & J. Nathan (2009)- Lae, a city caught between two plates- 15 years of deformation measurements with GPS. In: 43rd Assoc. Surveyors PNG Congress, Lae 2009, 12p.
(online at: www.quickclose.com.au/LaeDeformation.pdf)
(Lae is located in Ramu-Markham Fault Zone where New Guinea Highlands and S Bismarck Plate (composed of New Britain, Finisterre Terrane and S Bismarck) are actively converging obliquely at up to 50 mm/yr along Ramu-Markham Fault, causing clockwise rotation of S Bismarck Plate)

Stanley, E.R. (1921)- A contribution to the geology of New Guinea. Bull. Territory of Papua No. 7, Home and Territories Dept., Melbourne, p. 1-15.
(Brief, early report on status of geologic knowledge British and part of formerly German parts of PNG by first Australian government geologist for Papuan territory)

Stanley, E.R. (1923)- Report on the salient geological features and natural resources of the New Guinea Territory. Commonwealth of Australia, Parliamentary Paper 18, Melbourne, p. 1-99.

Stanley, E.R. (1924)- The geology of Papua, to accompany the geological map of the Territory of Papua. A.J. Mullett, Govt. Printer, Melbourne, p. 1-56.
(First systematic account of geology of 'Australian' Territory of Papua by its first government geologist)

Stanley, E.R. (1926)- The structure of New Guinea. Proc. 2nd Pan-Pacific Science Congress, Australia 1923, 1, p. 764-772.
(Old, brief description of New Guinea structural domains)

Stanley, E.R. (1926)- Volcanic action in New Guinea. Proc. 2nd Pan-Pacific Science Congress, Australia 1923, 1, p. 830-833.

Stanley, E.R. (1926)- The Tertiary formations of New Guinea. Proc. 2nd Pan-Pacific Science Congress, Australia 1923, 1, p. 970-973.

Stanley, E.R. (1926)- Oil provinces in New Guinea. Proc. 2nd Pan-Pacific Science Congress, Australia 1923, 2, p. 1248-1251.

Stanley, G.A.V. (1939)- Geological reconnaissance of the Border Mountains, Sepik District, Territory of New Guinea. Report for Australian Petroleum Co. Pty, p. *(Unpublished)*

(Frequently quoted, unpublished survey report in NW PNG- West Papua border area. (Perry 1955: presence of Eocene limestone resting on metamorphics, with larger forams Nummulites, Assilina and Lacazina in Yagroner Hills)

Stead, D. (1990)- Engineering geology in Papua New Guinea: a review. Engineering Geol. 29, 1, p. 1-29.

Stevens, C., R. McCaffrey, E. Silver, Z. Zombo, P. English & J. van der Kevie (1998)- Mid-crustal detachment and ramp faulting in the Markham Valley, Papua New Guinea. Geology 26, p. 847-850.
(Earthquakes and geodetic evidence reveal presence of low-angle, mid-crustal detachment fault beneath Finisterre Range that connects to steep ramp surfacing near the Ramu-Markham Valley)

Stewart, W.D. & E.F. Durkee (1985)- Petroleum potential of the Papuan Basin. Oil and Gas J. 83, 13, p. 151-160.

St. John, V.P. (1967)- The gravity field in New Guinea. Ph.D. Thesis, University of Tasmania, Hobart, p. 1-200 + Appendix I and II.
(online at: http://eprints.utas.edu.au/21662/)
(Regional gravity survey of PNG suggests: mantle-thrust origin for the Papuan Ultrabasic Belt; deep Mesozoic sedimentary basin in S Highlands; upthrusting of very deep sediments in Adelbert, Finisterre and Saruwaged Ranges; and NE-trending transcurrent faulting in Madang and Goropu Mountains areas)

St. John, V.P. (1970)- The gravity field and structure of Papua and New Guinea. Australian Petrol. Explor. Assoc. (APEA) J. 10, 2, p. 41-55.

St. John, V.P. (1990)- Regional gravity and the structure of the Eastern Papuan Fold Belt. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby, p. 311-318.

Struckmeyer, H.I.M. (1990)- Papuan Basin data compilation: Mesozoic to Cainozoic stratigraphic summary colums and data maps. Bureau Mineral Res. Geol. Geoph., Canberra, Record 1990/67 (Palaeogeography 23), p. 1-115.
(online at: www.ga.gov.au/metadata-gateway/metadata/record/14353/)

Struckmeyer, H.I.M. (1991)- Mesozoic to Cainozoic plate tectonic reconstructions (preliminary) for Papua New Guinea. Bureau Mineral Res. Geol. Geoph., Canberra, Record 1991/75, p. 1-47.
(online at: https://d28rz98at9flks.cloudfront.net/14459/Rec1991_075.pdf)
(PNG is product of plate tectonic processes at N margin of Australian Plate. Two major extensional events in Late Triassic- E Jurassic and Late Cretaceous- Paleocene within passive margin setting. Change in movement direction of Pacific Plate in Eocene and rapid N-ward movement of Australian Plate from Paleocene onwards resulted in oblique convergence of two plates, and formation of island arcs above two major N-ward and S-ward dipping subduction zones to N. From Oligocene onward progressive accretion of allochthonous terranes of mixed and oceanic to island arc affinity to Australian margin caused displacement of parts of former passive margin and deposition of thick syntectonic sequence in foreland and in basins between accreting terranes. Formation of small ocean basins in M-L Pliocene, particularly opening of Manus Basin)

Struckmeyer, H.I.M. (1991)- Papua New Guinea data compilation: stratigraphic summary colums and data maps for the Papua New Guinea orogen and Neogene basins. Bureau Mineral Res. Geol. Geoph., Canberra, Record 1991/105 (Palaeogeography 37), p. 1-45.
(online at: www.ga.gov.au/metadata-gateway/metadata/record/14486/)
(Stratigraphic colums and data control maps for E Triassic- Pleistocene time slices of PNG)

Struckmeyer, H.I.M. & M. Yeung (1991)- Mesozoic to Cainozoic palaeogeographic maps from the eastern New Guinea region. Bureau Mineral Res., Geol. & Geoph., Australia, Record 1991/113 (Palaeogeography 38), p. 1-81.

(online at: www.ga.gov.au/image_cache/GA14222.pdf)
(Triassic- Quaternary paleogeographic/ plate reconstructions maps for E New Guinea. Showing Birds Head and E Indonesian terranes like Seram, Misool, Sula, Buton, attached to East New Guinea in Triassic time)

Surka, E. (1993)- The South East Gobe oilfield: technical aspects of a significant discovery in Papua New Guinea. In: G.J. & Z. Carman (eds.) Petroleum exploration and development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby, p. 431-444.
(SE Gobe oilfield 1991 discovery in Block PPL 56, PNG foldbelt, SE of Iagafu- Hedinia complex. Main reservoir latest Jurassic Iagafu Sst (76-85m thick); Valanginian Toro Sst (52-66m thick) and other potential sandstone reservoirs water-wet or shaled out)

Swift, M. (2012)- Torres Basin: a new Mesozoic petroleum system in Papua New Guinea. In: Proc. Eastern Australian Basins Symposium IV, Petroleum Expl. Soc. Australia (PESA), Brisbane, 34, p. 1-14.
(New basin name proposed for area offshore SE tip of PNG Eastern peninsula, N of Coral Sea oceanic basin. Part of Papuan Plateau that rifted from Queensland Plateau during Late Cretaceous- E Paleogene opening of Coral Sea)

Swift, M. & H. Davies (2015)- Extensional and contractional tectonics in southeastern Papua New Guinea. In: Proc. Eastern Australian Basins Symposium (EABS), Petroleum Expl. Soc. Australia (PESA), p. 231-236.
(Papuan Peninsula formed by collision and convergent tectonism in Late Miocene-Pliocene, but subsequently dominated by extensional tectonics. In SE part of Peninsula compressional structures on S side, extensional tectonics in center and north)

Syka, M.M. & M.S. Bloom (1990)- The geology and paragenesis of epithermal gold mineralisation at the Kerimenge Prospect, Papua New Guinea. Proc. Pacific Rim Congress 90, Gold Coast, 3, Australasian Inst. of Mining and Metallurgy (AusIMM), Parkville, p. 293-299.
(Epithermal vein and breccia hosted Au mineralisation at Kerimenge prospect, Wau district, PNG, in Pliocene fractured dacite porphyry at intersecting faults, adjacent to eroded vent of Late Pliocene-Pleistocene volcano)

Tallis, N.C. (1975)- Development of the Tertiary offshore Papuan basin. Australian Petrol. Explor. Assoc. (APEA) J. 15, 1, p. 55-60.

Tanner, J.J. (1972)- The ancestral Great Barrier Reef in the Gulf of Papua. In: Proc. Fourth Symp. Development of petroleum resources of Asia and the Far East, UN ECAFE Min. Res. Dev. Ser. 41, 1, p. 283-287.

Taylor, G.A.M. (1969)- Post-Miocene volcanoes in Papua New Guinea. Geol. Soc. Australia, Spec. Publ. 2, p. 205-208.

Terpstra, G.R.J. (1968)- Micropalaeontological examination of outcrop samples from Papua- New Guinea. Bureau Mineral Res. Geol. Geoph., Record 1968/33, p. 1-8.
(online at: www.ga.gov.au/...)
(Biostrat of samples collected by Smit from limestone outcrops in Aitape, Menyamya, Lake Kopiago and Star Mountains. Mainly Miocene, some Eocene, Oligocene)

Terpstra, G.R.J. (1969)- Micropalaeontological examination of outcrop samples from the Kemp Welch River and Tapini areas of the Central District, Papua-New Guinea. Bureau Mineral Res. (BMR) Geol. Geoph., Record 1969/68, p. 1-11.
(Kemp Welch River area in Port Moresby region includes M Miocene limestone. Auga River area contains E Miocene with reworked Eocene, etc.)

Thompson, J.E. (1965)- Sedimentary basins of the Territory of Papua and New Guinea and the stratigraphic occurrence of hydrocarbons. Bureau Mineral Res. (BMR) Geol. Geoph., Record 1965/176, p. 1-17.
(https://www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=11629)

(Thick sequences of Jurassic-Pliocene marine sediments are prospective for oil and gas. Unmetamorphosed Triassic exposed in Central Highlands, but not seen in outcrop elsewhere or in subsurface. Generalized stratigraphic tables for Papuan Basin, N New Guinea Basin and Cape Vogel Basin)

Thompson, J.E. (1967)- A geological history of eastern New Guinea. Bureau Mineral Res. (BMR) Geol. Geoph., Record 1967/022, p. 1-24.
(online at: www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=11966)
(Manuscript of Thompson 1967 APEA paper. Overview of history of PNG, with 7 generalized paleogeographic maps from Permian- Pliocene. Continental basement underlies SW stable flank of Papuan Basin and central highlands; oceanic basement underlies NE unstable flank of Papuan Basin)

Thompson, J.E. (1967)- A geological history of eastern New Guinea. Australian Petrol. Explor. Assoc. (APEA) J. 7, 2, p. 83-93.
(SE PNG continental area, while NE PNG underlain by oceanic basement with floating islands of detached continental crust. SE emergent between Permian- E Jurassic, inundated in Jurassic-Cretaceous, and exposed again in Late Cretaceous-Oligocene. NE was site of submarine volcanism from Late Triassic onward. In Miocene, seas covered SE, while islands emerged in NE. More land area exposed from Pliocene onward)

Thompson, J.E. (1967)- Sedimentary basins in the Tertiary of Papua and New Guinea, and the occurrence of hydrocarbons. United Nations ECAFE Mineral Res. Dev. Ser. 26, 1, p. .

Thompson, J.E. (1972)- Continental drift and the geological history of Papua New Guinea. Australian Petrol. Explor. Assoc. (APEA) J. 12, 2, p. 64-69.

Thompson, J.E. & N.H. Fischer (1967)- Mineral deposits of New Guinea and Papua and their tectonic setting. In: Proc. 8th Commonwealth Mining and Metallurgical Congress, 6, Inst. Min. Metallurgy Australia-New Zealand, p. 115-148.

Thornton, R.C.N., J.K. Emmett, J.A. Lyslo & R.R. Gottschalk (1996)- Integrated structural and stratigraphic analysis in PPL 175, Papuan fold belt, Papua New Guinea. In: P.G. Buchanan (ed.) Development and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 195-215.
(On hydrocarbon exploration risks in PPL 175 Block, N of Juha gas field in Papuan foldbelt. E Cretaceous Toro and Imburu reservoir sandstones present in block. Trap definition principal risk in this area of S-vergent imbricated thrust faults and folds)

Tingey, R.J. & D.J. Grainger (1976)- Markham, Papua New Guinea-1:250,000 geological series, Sheet SB/55-10. Bureau Mineral Res., Australia, and Geol. Survey of Papua New Guinea, Explanatory Notes, p. 1-49.

Titley, S.R., A.W. Fleming & T.I. Neale (1978)- Tectonic evolution of the porphyry copper system at Yandera, Papua New Guinea. Economic Geology 73, p. 810-828.
(Copper-molybdenum-gold porphyry system at Yandera, Bismarck Mts, N highlands of PNG, within NW-trending, faulted body of porphyritic rocks intrusive into Miocene (13-15 Ma) Bismarck batholith. Three separate intrusive events)

Tobin, J., S. Zahirovic, R. Hassan & P. Rey (2018)- Tectonic and geodynamic evolution of the Northern Australian margin and New Guinea. Proc. In: Proc. Australian Exploration Geoscience Conf. (AEGC 2018), Sydney, ASEG Extended Abstracts, 1, p. 1-7. *(Extended Abstract)*
(online at: http://www.publish.csiro.au/ex/pdf/ASEG2018abT5_4A)
(Modeling of Cenozoic evolution of New Guinea, collision of Sepik terrane at 50 or 30 Ma, and dynamic subsidence related to downgoing Sepik slab now under C Australia)

Upton, P. & P. Gow (1998)- Mechanical modelling of Recent New Guinean tectonics: implications for mineralisation. EOS 79, F863, p.

Valenti, G.L. (1993)- Pŏnyang Field: discovery and geology of a gas giant in the western Papuan Fold Belt, Western Province, Papua New Guinea. In: G.J & Z. Carman (eds.) Proc. 2nd PNG Petroleum Convention, Port Moresby, p. 413-430.
(Large (1.0-3.5 TCF) 1990 gas discovery at SW flank of Muller anticline. Reservoirs Late Jurassic (Tithonian P'nyang and Digimu Fms) and basal Cretaceous (Berriasian Toro Fm) sandstones. P'nyang 1X confirmed basement-involvement in structure by granodiorite at TD with latest Triassic K/Ar age of 205±5 Ma))

Valenti G.L. & G. Francis (1996)- Darai Limestone formation of the western Papuan Basin, Papua New Guinea: well strontium profiles, wireline logs/strontium ratio correlations and a chronostratigraphic reference section. In: P.G. Buchanan (ed.) Petroleum exploration in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 357-368.
(Darai Limestone chronostratigraphy developed based on Sr isotopes, suggesting age range ~30- 8 Ma (but youngest age anomalous relative to biostrat data?). Three distinct sedimentation rate episodes in Juha 1X limestone section. Top larger foram zone Te calibrated to ~22 Ma?, near top planktonic foram zone N4 In Juha 1 (see also Whitford et al. 1996))

Van Dongen, M., A.G. Tomkins & R.F. Weinberg (2007)- Trace element remobilization at the Ok Tedi porphyry Cu-Au deposit, Papua New Guinea. In: C.J. Andrew et al. (eds.) Digging deeper, Proc. 9th Biennial SGA Mtg, Dublin 2007, p. 427-430.
(online at: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.513.3434&rep=rep1&type=pdf)
(Geochemistry of Ok Tedi porphyry copper-gold deposit and nearby Mount Ian Complex inwestern PNG foldbelt. Original magmatic signatures lost due to intense alteration. Large part of sulphur in system may be provided by mafic magma replenishment)

Van Dongen, M., R.F. Weinberg & R.A. Armstrong (2008)- REE-Y, Ti, and P remobilization in magmatic rocks by hydrothermal alteration during Cu-Au deposit formation. Economic Geology 105, p. 763-776.
(Whole-rock trace-element and REE patterns of samples from Ok Tedi porphyry copper-gold deposit, PNG)

Van Dongen, M., R.F. Weinberg & A.G. Tomkins (2013)- Grade distribution of the giant Ok Tedi Cu-Au deposit, Papua New Guinea. Economic Geology 108, 7, p. 1773-1781.
(Ok Tedi porphyry Cu-Au deposit in PNG world-class mineral deposit in foldbelt near W Papua border. With 5.5 Mt Cu and 18.1 Moz Au. Skarn accounts for ~80% of resources. Two composite felsic intrusions in clastics and carbonates at ~1.16 Ma, in postcollisional tectonic setting, with magmatic-hydrothermal mineralization within ~200 k.y. Contrasting styles of mineralization, conform to classic skarn (where limestone present at depth) and porphyry-type mineralization (where impermeable siltstone present). (see also Pollard 2014))

Van Dongen, M., R.F. Weinberg, A.G. Tomkins & R.A. Armstrong (2008)- Timescale of forming a giant porphyry copper-gold deposit- Ok Tedi, Papua New Guinea. PACRIM Congress 2008, 4p.
(U-Pb dating of zircon at giant Ok Tedi porphyry copper-gold deposit show maximum age of intrusions that host mineralisation is 1.43 ± 0.2 Ma. Previous K-Ar dates constrained last thermal event at 1.11 Ma)

Van Dongen, M., R.F. Weinberg, A.G. Tomkins, R.A. Armstrong & J.D. Woodhead (2010)- Recycling of Proterozoic crust in Pleistocene juvenile magma and rapid formation of the Ok Tedi porphyry Cu-Au deposit, Papua New Guinea. Lithos 114, p. 282-292.
(Zircon from monzonite with U-Pb crystallisation ages of 1.16 Ma, making Ok Tedi youngest known giant porphyry copper-gold deposit. Mineralisation lasted <~0.5 Myr. Pleistocene zircons with inherited Proterozoic component of ~1.8-1.9 Ga. Cores with crustal oxygen isotopic signature, suggesting assimilation of Proterozoic continental crust by mantle-derived magma, similar to Pliocene Porgera Au deposit. Proterozoic ages compare to felsic magmatic rocks on mainland N Australia, in particular Mount Isa inlier)

Van Oyen, F.H. (1972)- Trough evidence along the southern foothills of the Prince Alexander Mountains (Sepik area of New Guinea). Australian Petrol. Explor. Assoc. (APEA) J. 12, 2, p. 74-78.
(Identification of significant Neogene sediment thickness in North PNG Sepik Basin from magnetic survey)

Van Wyck, N. & I.S. Williams (2002)- Age and provenance of basement metasediments from the Kubor and Bena Bena blocks, central Highlands, Papua New Guinea: constraints on the tectonic evolution of the northern Australian cratonic margin. Australian J. Earth Sci. 49, p. 565-577.
(Metamorphics in Kubor/ Bena Bena blocks in PNG Central Highlands with old detrital zircons, suggesting N Australian provenance. Ages of ~1.8 Ga (10%), ~1.55 Ga (10%), 470-440 Ma (Late Ordovician; 15%), ~340 Ma (E Carboniferous; 10%) and 290-260 Ma (E-M Permian; 40%) match zircons from Coen Inlier, NE Queensland, but contrast with ages from terranes further S, E and W. Omong Metamorphics protolith probably deposited in M-L Permian, deformed in Late Permian- E Triassic, intruded by E Triassic Kubor Intrusive Complex at ~245, 239 Ma)

Varney, T.D. & A.C. Brayshaw (1993)- A revised sequence stratigraphic and depositional model for the Toro and Imburu Formations, with applications for reservoir distribution and prediction. In: G.J. & Z. Carman (eds.) Petroleum exploration and development in Papua New Guinea, Proc. 2nd PNG Petroleum Convention, Port Moresby, p. 139-154.
(BP sequence stratigraphic model and facies maps of latest Jurassic sandstones (Late Kimmeridgean-Tithonian Iagafu, Hedinia sst; (Valanginian Digimu, Toro Sst) in Papuan foldbelt. Five genetic sequences)

Vigar, A.J., B. Lueck, I. Taylor, K. Prendergast & P. Dale (2015)- Kainantu gold-copper system, Papua New Guinea. In: Proc. PACRIM 2015 Congress, Hongkong, Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, Publ. Ser. 2/2015, p. 601-608. *(Extended Abstract)*
(Kainantu Project in NE part of New Guinea Thrust Belt, PN, in area with long mining history. Discovery of alluvial gold in 1928, followed by vein deposits of gold-copper at Kora in 1950s and current Irumafimpa vein gold mine Mineralisation includes gold, silver and copper, associated with M Miocene intrusions)

Volk, H., S.C. George, H. Middleton & S. Schofield (2005)- Geochemical comparison of fluid inclusion and present-day oil accumulations in the Papuan Foreland- evidence for previously unrecognised petroleum source rocks. Organic Geochem. 36, 1, p. 29-51.
(Suggest Cretaceous- Tertiary source rocks from Bosavi Arch fluid inclusion oils. Not clear how these ended up in Jurassic and E Cretaceous Toro reservoirs)

Wacaster, S. (2015)- The mineral industry of Papua New Guinea. In: 2013 Minerals Yearbook, Indonesia, U.S. Geol. Survey, p. 22.1-22.7.
(online at: https://minerals.usgs.gov/minerals/pubs/country/2013/myb3-2013-pp.pdf)
(Listing of 2013 mineral production in PNG, No geology)

Wade, A. (1914)- Report on petroleum in Papua. Government of the Commonwealth of Australia, Melbourne, p. 1-45.
(Includes evidence of oil along coastal belt 8-12 miles wide between Purari River Delta and Yule Island)

Wade, A. (1927)- The search for oil in New Guinea. American Assoc. Petrol. Geol. (AAPG) Bull. 11, 2, p. 157-176.
(Early overview of geography, geology, oil seeps and oil exploration activity in W and E New Guinea, where at that time no commercial production had yet been established. First gas seeps discovered at Upoia/ Opa, 30 miles from mouth of Vailala River, also site of first hydrocarbon exploration well drilled in PNG side in 1915)

Wai, K.M., M.J. Abbott & A.E. Grady (1994)- The Sadowa Igneous Complex, eastern Papua: ophiolite or not. Mineralogical Magazine 58, p. 949-950.
(online at: http://rruff.info/doclib/MinMag/Volume_58A/58A-2-949.pdf)
(Extended Abstract Goldschmidt Conf. 1994. Late Cretaceous- Eocene Sadowa Igneous Complex, E PNG, obducted onto Owen Stanley metamorphics in Late Eocene- M Oligocene to form E Papuan Composite Terrane. With plagiogranites similar to those from back arc basin rather than oceanic ridge. Sadowa Igneous Complex not complete ideal ophiolite sequence, but still similar to ophiolites elsewhere)

Waples, D.W. & K.J. Wulff (1996)- Genetic classification and exploration significance of oils and seeps of the Papuan Basin. In: P.G. Buchanan (ed.) Petroleum exploration and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 417-430.
(137 oil samples classified into 5 families from different Mesozoic- Tertiary sources. Four of the oil families in linear trends in Papuan Fold Belt. Family 3 oils tied to oil in Oxfordian sands. Family 1 oils with oleanane and bicadanes probably from Oligocene or younger rocks (only in seeps in SE). Family 2 oils with oleanane but no bicadanes probably from U Cretaceous or Paleogene source. Families 3-4 no oleananes, analogous to NW Shelf Mesozoic sources (in Papuan fold belt oil-gas fields))

Warburton, J., J. Iwanec, J. Lamb, D. Waples & K. Wulff (2017)- Potential for future petroleum resource growth in PNG. In: Proc. SE Asia Petroleum Expl. Soc. (SEAPEX) Exploration Conf. 2017, Singapore, Session 6, p.1-24. *(Abstract + Presentation)*
(Oil Search 2015 assessment determined ~4.8 GBOE recoverable resources discovered in PNG to date (85% gas). Additional 7 GBOE still to be discovered (40 TCF gas + 550 MMbarrels). In parts of interior PNG petroleum generated in Late Cretaceous, predating foldbelt. In other areas petroleum generated during Mio-Pliocene foldbelt formation near present-day mountain front where it continues to be generated today)

Warren, R.G. (1972)- A commentary on the metallogenic map of Australia and Papua New Guinea. Australian Govt. Publ. Service, Bureau Mineral Res., Canberra, Bull. 145, p. 1-85.
(online at: https://www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=99)
(Includes 1:1.5M scale map and brief review (p. 69-73) of PNG mineral occurrences)

Waterhouse, H.K. (1996)- Potential of palynostratigraphy for Neogene basin analysis in Papua New Guinea. In: P.G. Buchanan (ed.) Petroleum exploration, development and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 329-343.
(Palynostratigraphy of U Miocene- Lower Pliocene Orubadi Fm in Puri anticline of Papuan foreland basin. Several episodes of reworking of M Cretaceous- Miocene dinoflagellates from New Guinea Highlands)

Waterhouse, H.K. (1998)- Palynological fluorescence in hinterland reconstruction of a cyclic shallowing-up sequence, Pliocene, Papua New Guinea. Palaeogeogr. Palaeoclim. Palaeoecology 139, 1-2, p. 59-82.
(Variations in fluorescence of contemporaneous Pliocene and lower-fluorescent reworked palynological particles in shallowing-upward sequence of Lower Pliocene Orubadi Fm in Puri Anticline of Papuan Foreland Basin. Episodes of reworking in Puri Creek shown by nannofossils (Late Cretaceous, Late Paleocene, Oligocene-Miocene boundary, M-L Miocene) and palynomorphs (Cenomanian, Senonian), result of episodes of thrusting in New Guinea foldbelt)

Watmuff, G. (1978)- Geology and alteration-mineralization zoning in the central portion of the Yandera porphyry copper prospect, Papua New Guinea. Economic Geology 73, p. 829-856.
(Copper mineralization at Yandera in PNG central highlands associated with low-K tholeiite-calc-alkaline porphyry intrusives into M Miocene (13.5 Ma) Bismark Intrusive Complex. Three episodes of porphyry emplacement. Oldest and largest porphyry emplaced ~1 Myrs after intrusion of host Bismarck batholith)

Webb, P.K. & P. Woyengu (1999)- The internal fold and thrust belt play, Papua New Guinea. In: C.A. Caughey & J.V.C. Howes (eds.) Proc. Conf. Gas habitats of SE Asia and Australasia, Jakarta 1998, Indon. Petroleum Assoc. (IPA), Jakarta, p. 213-224.
(Brief overview of 600 km long x 230 km wide PNG foldbelt. Three segments, two trending NNW, middle one NW. Folding, thrusting, and uplift since Late Miocene)

Weiler, P.D. (1999)- Paleomagnetic study of an active arc-continent collision, Finisterre Arc Terrane, Papua New Guinea. Ph.D. Thesis University of California, Santa Cruz, p. 1-183.
(Larger scale paleomagnetic results from colliding Finisterre Arc: hemipelagic rocks indicate CW rotation of colliding terrane of ~40° in post-Miocene time. Decreasing paleomagnetic declination anomalies along strike in Finisterre Terrane, suggesting rotation results from rigid-body rotation of FT rather than sequential docking of colliding blocks)

Weiler, P.D. & R.S. Coe (1997)- Paleomagnetic evidence for rapid vertical-axis rotations during thrusting in active collision zone, northeastern Papua New Guinea. Tectonics 16, 3, p. 537-550.
(Three thrust sheets of foldbelt N of Ramu-Markham fault zone rapid CCW rotations in last 1 My, related to tectonic transport)

Weiler, P.D. & R.S. Coe (2000)- Rotations in the actively colliding Finisterre Arc Terrane: paleomagnetic constraints on Plio-Pleistocene evolution of the South Bismarck microplate, Northeastern Papua New Guinea. Tectonophysics 316, p. 297-325.
(Paleomagnetic results from actively colliding Finisterre Arc Terrane in N PNG indicate ~40° post-Miocene clockwise rotation of colliding terrane. Rotation reflects coherent rigid rotation of Finisterre Terrane rather than sequential docking of independently colliding blocks. S Bismarck/ Australia relative motion highly oblique collision in early stages, with Finisterre Arc Terrane converging along left-lateral Ramu-Markham suture, gradually changing to nearly orthogonal convergence observed today)

Weiser, T.W. & H.G. Bachmann (1999)- Platinum-group minerals from the Aikora River area, Papua New Guinea. The Canadian Mineralogist 37, p. 1131-1145.
(online at: http://rruff.info/doclib/cm/vol37/CM37_1131.pdf)
(Platinum-group minerals discovered in placers in Aikora River, derived from ophiolites of Papuan Ultramafic Belt of E PNG. Mainly Os-Ir-Ru alloys (88%) and minor Pt-Fe alloy)

Wells, M.L., G.K. Vallis & E.A. Silver (1999)- Tectonic processes in Papua New Guinea and past productivity in the eastern equatorial Pacific Ocean. Nature 398, p. 601-604.
(On relation between paleoproductivity and opal accumulation in Equatorial Pacific in last 12 My and tectonics of N New Guinea)

Welsh, A. (1990)- Applied Mesozoic biostratigraphy in the Western Papuan Basin. In: G.J. & Z. Carman (eds.) Petroleum exploration in Papua New Guinea, First PNG Petroleum Convention, Port Moresby, p. 369-380.
(BP Jurassic-Cretaceous palynology zonation of PNG LateJurassic- mid-Cretaceous section. A modified version of Helby et al. 1987 and Davey 1987 zonations. With PNG chronostratigraphic diagram)

Whalen, J.B., R.M. Britten & I. McDougall (1982)- Geochronology and geochemistry of the Frieda River prospect area, Papua New Guinea. Economic Geology 77, 3, p. 592-616.
(Intrusive and volcanic rocks of Frieda River prospect between Frieda and Lagaip fault zones of New Guinea Mobile Belt in W Sepik District all of andesitic composition and belong to normal K calc-alkaline suite. Frieda Complex is remnant edifice of island stratovolcano interstratified in M Miocene Wogamush Fm. with copper-gold and porphyry copper deposits along central axis of complex. Mianmin area is separate, unmineralized volcanic center. Nena Diorite N of Frieda Complex intrudes Upper Cretaceous- Eocene basement rocks, with igneous activity dated between ~17.3- 11.2 Ma)

Whattam, S.A., J. Malpas, J.R. Ali & I.E.M. Smith (2008)- New SW Pacific tectonic model: cyclical intra-oceanic magmatic arc construction and near-coeval emplacement along the Australia-Pacific margin in the Cenozoic. Geochem. Geophys. Geosystems G3 9, 3, p. 1-34.
(NE dipping subduction established off PNG by at least 65-60 Ma which resulted in emplacement of Papuan Ultramafic Belt (PUB) ophiolite at 59-58 Ma. PUB formed above NE dipping Cenozoic intraoceanic arc system which diachronously propagated (N-S) along E margin of Australian Plate. These 'infant arc' ophiolites represent fragments of supra-subduction zone lithosphere generated in earliest stages of magmatic arc formation, emplaced shortly after (<20 My) as result of forearc-Australian Plate collision. Subduction inception result of subsidence of older MORB-like lithosphere generated in extensive back arc basin. During emplacement of each ophiolite, a crustal fragment of older lithosphere was scraped off NE dipping slab and subsequently back-thrust beneath each ophiolite during emplacement)

Whitford, D.J, T.L. Allan, A.S. Andrew, S.J. Craven, P.J. Hamilton, M.J. Korsch et al. (1996)- Strontium isotope chronostratigraphy and geochemistry of the Darai Limestone: Juha 1X well, Papua New Guinea. In:

P.G. Buchanan (ed.) Petroleum exploration, development and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 369-380.
(Sr ages in 1600m thick Darai Lst of Juha 1X well show age range of 7.7- 28.9 Ma (Oslick et al. 1994 calibration), in good agreement with foram ranges. Top Te1-4 (Top Borelis pygmaeus) = 24 Ma, Top Te5 (Top Spiroclypeus) near 21 Ma, Top Tf1= 14 Ma (but picked horizon above observed tops Austrotrillina, Miogypsina; JTvG), Tf2 = ~11-12 Ma. Consistent Sr-isotope ratio trend, but also number of anomalous values)

Whitford, D.J., T.L. Allan, M.J. Korsch, H. Middleton & J.A.Trotter (2003)- Strontium isotope chronostratigraphy and the carbonate sedimentation history of the Papuan Basin, Papua New Guinea In: Proc. 5th Int. Symp. Applied Isotope Geochemistry, AIG-5. Int. Assoc. Geochem. Cosmochem., p. 265-268.

Williams, P.W. (1971)- Illustrating morphometric analysis of karst with examples from New Guinea. Zeitschrift Geomorphologie 15, p. 40-61.

Williams, P.W. (1972)- Morphometric analysis of polygonal karst in New Guinea. Geol. Soc. America (GSA) Bull. 83, p. 761-796.

Williamson, A. (1983)- Geology of Laloki deposit, Central Province. Geol. Survey Papua New Guinea, Report 83/220, p. *(Unpublished)*

Williamson, A. & G. Hancock (eds.) (2005)- The geology and mineral potential of Papua New Guinea. PNG Department of Mining, Port Moresby, p. 1-152.
(online at: www.infomine.com/publications/docs/PapuaNewGuinea2005.pdf)
(Well-illustrated review of geology and mineral deposits of PNG, compiled from initial report by G. Corbett, with contributions from H. Davies, etc.)

Wilson, C., R. Barrett, R. Howe & L.K. Leu (1993)- Occurrences and character of outcropping limestones in the Sepik Basin: implications for hydrocarbon exploration. In: G.J. & Z. Carman (eds.) Petroleum exploration and development in Papua New Guinea, Proc. Second PNG Petroleum Convention, Port Moresby, p. 111-124.
(Carbonates in and around Sepik Basin, mainly at N margin (= 'Idenburg Terrane'?; JTvG): (1) shallow marine, recrystallized Late Cretaceous Orbitoides limestone, overlying metamorphic rocks; (2) M-L Eocene Nummulites limestone, unconformably overlain by (3) >300m thick Late Oligocene- earliest M Miocene Puwani Lst., which form basal transgressive part of Sepik basin fill. With Sepik Basin Miocene paleogeographic maps)

Wilson, M.E.J., D. Lewis, O. Yogi, D. Holland, L. Hombo & A. Goldberg (2013)- Development of a Papua New Guinean onshore carbonate reservoir: a comparative borehole image (FMI) and petrographic evaluation. Marine and Petrol. Geol. 44, p. 164-195.
(Borehole image and petrographic study of Elk- Antelope gas fields in Miocene reefal, platformal and associated deepwater carbonates in present day foothills region of Fold and Thrust Belt in Gulf Province of PNG (~6 TCF recoverable gas in Miocene buildup))

Winn, R.D., R.C.H. Perembo, H.L. Davies & P. Pousai (1997)- Tectonic and stratigraphic evolution of the Tertiary Aure Trough, Papua New Guinea: foreland basin over microplate-craton suture. In: J.V.C. Howes & R.A. Noble (eds.) Proc. Int. Conf. Petroleum systems of SE Asia and Australasia, Jakarta 1997, Indon. Petroleum Assoc. (IPA), p. 307-318.
(Aure Trough formed over suture between E Papua composite terrane and Australian craton, which represents Oligocene docking event. Started as Oligocene foreland basin. Thick, mostly deep-marine clastics in M Miocene- Pliocene. Pliocene Aure fold-thrust belt deformation probably far-field response to collision of Bismarck-New Britain volcanic arc with N edge of New Guinea)

Winn, R.D. & P. Pousai (2010)- Synorogenic alluvial-fan- fan-delta deposition in the Papuan foreland basin: Plio-Pleistocene Era formation, Papua New Guinea. Australian J. Earth Sci. 57, 5, p. 507-523.
(Synorogenic Pliocene- ?Pleistocene U Orubadi and Era Fms at SW margin of Papuan Peninsula interpreted as alluvial-fan, fan-delta and shallow-marine sediments, deposited in foreland basin formed from loading of

Papuan-Aure fold-thrust Belt, where folding-thrusting related to docking and compression of Finisterre Terrane-Bismarck Arc against New Guinea Orogen. Era Fm siliciclastics sourced from volcanic, metamorphic and sedimentary rocks uplifted in orogen to NE. Volcanic sediment derived mostly from active volcanic arc likely related to SW subduction at Trobriand Trough)

Winn, S., J. Wilmot, J. Noonan, J. Bradshaw, M. Bradshaw, C. Foster, A. Murray, J. Vizy & G. Zuccaro (1994)- Australian Petroleum Systems Papuan basin module, Australian Geol. Survey Org. (AGSO), Canberra, Record 1994/13, vol. 1, p. 1-76.
(online at: www.ga.gov.au/corporate_data/37165/Rec1994_013_vol1.pdf)
(Review of PNG Central Range and foreland geology, with well data, biostrat, paleogeographic maps, etc.)

Winn, S., J. Wilmot, J. Noonan, J. Bradshaw, M. Bradshaw, C. Foster, A. Murray, J. Vizy & G. Zuccaro (1994)- Australian Petroleum Systems Papuan Basin Module, Australian Geol. Survey Org. (AGSO), Canberra, Record 1994/13, vols. 2-3.
(online at: www.ga.gov.au/corporate_data/37165/Rec1994_013_vol2.pdf and: ....vol3.pdf)
(Appendices to Volume 1, with data on (bio-)stratigraphy porosity-permeability, geochemistry, etc.)

Wonders, A.A.H. & C.G. Adams (1991)- The biostratigraphical and evolutionary significance of *Alveolinella praequoyi* sp. nov. from Papua New Guinea. Bull. British Museum (Natural History), Geology, 47, p. 169-175.
(Primitive Alveolinella, transitional between Flosculinella bontangensis and Alveolinella praequoyi, from M Miocene Tf1-2 Darai Limestone at Hides Anticline, PNG)

Wood, S. (2010)- Oil potential of the Upper Turama River and Fly River delta areas, Papua New Guinea foreland. M.Sc. Thesis University of Adelaide, p. 1-332. *(Unpublished)*
(online at: http://digital.library.adelaide.edu.au/dspace/bitstream/2440/78636/3/02whole.pdf)
(Petroleum potential study of two areas in Papuan foreland. Geochemical study of 35 oils from 10 wells and 2 seeps suggest five oil families: L (lacustrine; probably from Late Triassic synrift mudstones as drilled in Kanau 1 well), MC (marine carbonate; also Late Triassic?), LJ (Late Jurassic), O (Cretaceous-Tertiary; uncertain origin) and C (coal))

Wood, S., H. Volk, N. Sherwood & C.J. Boreham (2008)- Lacustrine petroleum systems in the Papua New Guinea foreland. In: J.E. Blevin et al. (eds.) Eastern Australasian Basins Symposium III- Energy security for the 21st century, Sydney, Petroleum Expl. Soc. Australia (PESA), Spec. Publ., p. 543. *(Abstract only)*
(Oil shows with lacustrine signature in PNG at Bujon-1 well (Philips Petroleum 1994), and biodegraded oil column at Koko-1 (Oil Search 1999): presence of β carotane, abundant gammacerane, C26/C25 tricyclic terpane ratios > 1, abundant 3β-methyhopanes and tetracyclic polyprenoids. Adiba-1 in S part of foreland, indicates that similar oil geochemistry. Early Jurassic or Triassic source rock?)

Worthing, M.A. (1987)- Deerite from Papua New Guinea. Mineralogical Mag. 51, p. 689-693.
(online at: www.minersoc.org/pages/Archive-MM/Volume_51/51-363-689.pdf)
(Deerite (=hydrous iron silicate) occurrence appears to be limited to glaucophane-lawsonite schist and associated transitional facies. First occurrence in PNG in two meta-ironstones from NE PNG, near Kokoda)

Worthing, M.A. (1988)- Petrology and tectonic setting of blueschist facies metabasites from the Emo Metamorphics of Papua New Guinea. Australian J. Earth Sci. 35, p. 159-168.
(Emo Metamorphics metabasites in Kokoda area, SE PNG, contain quartz-albite-phengite- stilpnomelane-ferroglaucophane- chlorite-almandine-epidote-sphene-apatite. Similar to lawsonite-epidote transition zone on New Caledonia. Suggests P-T conditions of metamorphism of ~7.0 kbar and 320°C. Emo Metamorphics may be sliver of oceanic crust caught up in thrusting that accompanied obduction of Papuan ophiolite)

Worthing, M.A. & M.A. Bennett (1988)- Geochemistry, mineralogy and tectonic setting of deerite-bearing meta-ironstones from the Emo Metamorphics of Papua New Guinea. Australian J. Earth Sci. 35, p. 29-38.
(Deerite-bearing meta-ironstones from Emo Metamorphics of SE PNG suggests deposition as metalliferous cherts enriched in manganese and iron by hydrothermal exhalative activity in ocean ridge system)

Worthing, M.A. & A.J. Crawford (1996)- The igneous geochemistry and tectonic setting of metabasites from the Emo Metamorphics, Papua New Guinea; a record of the evolution and destruction of a backarc basin. Mineralogy and Petrology 58, p. 79-100.
(Papuan ophiolite outcrops in 400km x 40km wide belt on NE side of Owen Stanley Range in Papuan Peninsula. Ophiolite complex, dipping NE at ~20° and is continuous with mantle and crust underlying SW Solomon Sea. Metabasites from Emo Metamorphics in thrust sheets below Papuan ophiolite, and derived mainly from basalt, gabbro, etc. (tholeiitic and back-arc basaltss). Four groups: garnet blueschists with glaucophane, amphibolites, lawsonite blueschists and greenschists. Most samples polymetamorphic history. Two new 39Ar-40Ar isochron ages of amphibolites: ~32-35Ma (= E Oligocene age of obduction of opholite after collision with Owen Stanley microcontinental terrane) and ~14.8 Ma (=M-Miocene arc-continent collision with continental crust of E and Papuan Plateaus of N Australian plate?))

Worthing, M.A., C.K. Midobatu & P.H. Nixon (1992)- Structural setting, petrology and emplacement of serpentinites in the Koki Fault Zone, Port Moresby, Papua New Guinea. J. Southeast Asian Earth Sci. 7, 2-3, p. 147-158.
(Serpentinites from Koki Fault Zone chemically comparable with cumulate members of ultramafic ophiolite sequence. Mapping showed presence of three structural domains: imbricate thrust stack, the KFZ and possible passive roof duplex structure, suggesting deformation occurred close to front of foreland thrust belt)

Yang Lei & Kang An (2011)- Geological characteristics and reef-forming pattern of Antelope Reef gas field in Papua Basin. Xinjiang Petroleum Geol. 2011, 2, p.
(Papua Mesozoic- Cenozoic basin on margin of Australian continental plate with large Antelope gas field. Antelope field is pinnacle reef, developed on carbonate platform, with great thickness of reef)

Yates, K.R. & R.Z. de Ferranti (1967)- Geology and mineral deposits Port Moresby/ Kemp Welch area, Papua. Bureau Mineral Res. Geol. Geoph., Report 105, p. 1-117.
(online at: www.ga.gov.au/products-services/legacy-publications/reports.html)
(Mainly geological-geochemical investigation of Astrolabe copper-gold field, SE PNG. Oldest rocks in area U Cretaceous pink sheared limestone, unconformably overlain by unsheared Eocene (or Paleocene?; with Distichoplax; JTvG) glauconitic limestone, indicating ~Paleocene deformation event. Sadowa Oligocene gabbro, overlain by Dokuna Tuff and 50-100' thick Bootless Inlet Limestone with Te larger foraminifera (called E Miocene, but more likely Late Oligocene with Eulepidina and Heterostegina borneensis; JTvG), including reworked Eocene Nummulites-Pellatispira. E-M Miocene Globada Lst with Miogypsina unconformably over Eocene-Oligocene. Astrolabe agglomerate Pliocene pyroclastics (more likely Late Miocene age; Pain 1983))

Yokoyama, Y., T.M. Esat & K. Lambeck (2001)- Coupled climate and sea-level changes deduced from Huon Peninsula coral terraces of the last ice age. Earth Planetary Sci. Letters 193, p. 579-587.
(Huon Peninsula of NE PNG, is uplifting shoreline ringed by emergent coral terraces, formed during episodes of rapid sea-level rise, and constructing coral platforms that were subsequently uplifted. Last glacial (OIS 3) coral terraces coincide with timing of major N Atlantic climate reversals between 30- 60 ka.Growth of terraces tied to sea-level rises arising from ice-calving episodes from major N Atlantic and Antarctic ice-sheets that precipitated extremes of cold climate called Heinrich events. Sea-levels at this time 60-90m lower than present)

Young, G.A. (1963)- Northern New Guinea Basin reconnaissance aeromagnetic survey 1961. Bureau Mineral Res. Geol. Geoph., Record 1963/117, p. 1-7.
(online at: https://www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=11200)
(Three reconnaissance profiles across N New Guinea Basin indicate pronounced regional geological structures parallel to known structural trends)

Zeng, Y. & B.A. McConachie (2000)- Application of integrated magnetic and seismic interpretation to identify petroleum prospects in Papua New Guinea. In: P.G. Buchanan et al. (eds.) Papua New Guineaĝs petroleum industry in the 21st century, Proc. 4th PNG Petroleum Convention, Port Moresby, p. 239-250.

Zhang, J., J.P. Davidson, M.C.S. Humphreys, C.G. Macpherson & I. Neill (2015)- Magmatic enclaves and andesitic lavas from Mt. Lamington, Papua New Guinea: implications for recycling of earlier-fractionated minerals through magma recharge. J. Petrology 56, 11, p. 2223-2256.
(online at: http://petrology.oxfordjournals.org/content/56/11/2223.full.pdf+html)
(Mt. Lamington composite volcano in PNG, on Papuan Ultramafic Belt (PUB) ophiolite. 1951 eruption produced andesitic dome lavas with basaltic–andesitic enclaves and few PUB ultramafic xenoliths. Presence of olivines in enclaves represents recycling of earlier-fractionated components through magma recharge)

Zhu, Z. & Z. Yang (2008)- Cenozoic adakites in Papua New Guinea and metallogetic significance. Jilin Daxue Xuebao (J. Jilin University), Earth Science Edition, 38, 4, p. 618-623.
(Adakites of PNG characterized by high Sr content, positive Sr anomaly peaks (average Sr/Y ratio >41.7) and negative Nb and Th anomalies. Y and Yb contents very low. 87Sr/86Sr values generally <0.704 5. Adakites of PNG located in both oceanic island arc and continental margin orogens in arc-continent collision setting. Some contain both world-class porphyry copper-gold deposits)

Zwingmann, H., T. Allan, K. Liu, D. Holland & D. Leech (2008)- Glauconite ages from Late Cretaceous reservoir sandstones of the Papuan Basin. In: J.E. Blevin et al. (eds.) Eastern Australasian Basins Symposium III, Sydney, Petroleum Expl. Soc. Australia (PESA) Spec. Publ., p. 259-262.
(Coniacian- Campanian glauconite ages of sandstones)

IX.12. Papua New Guinea (Bismarck Sea, Solomon Sea, Woodlark Basin)

Abers, G.A. (1991)- Possible seismogenic shallow-dipping normal faults in the Woodlark-DÕEntrecasteaux extensional province, PNG. Geology 19, p. 1205-1208.
(Inversions of large earthquakes in Woodlark-D'Entrecasteaux region of active continental extension show events consistent with normal dip slip on shallow-dipping faults. Largest earthquake near mapped Pliocene-Quaternary metamorphic core complex, with shallow-dipping plane between 10°-25°)

Abers, G.A. (2001)- Evidence for seismogenic normal faults at shallow dips in continental rifts. In: R.C.L. Wilson et al. (eds.) Non-volcanic rifting of continental margins: a comparison of evidence from land and sea, Geol. Soc. London, Spec. Publ. 187, p. 305-318.
(Woodlark Rift system extension rates vary along strike, with shallowest-dipping faults in most rapidly rifting segment. Several earthquakes suggest nodal planes dipping 23-35°, subparallel to shear zones bounding nearby metamorphic core complexes. No documented large earthquake exhibits seismic slip on subhorizontal surfaces)

Abers, G.A., A. Ferris, M. Craig, H. Davies, A.L. Lerner-Lam, J.C. Mutter & B. Taylor (2002)- Mantle compensation of active metamorphic core complexes at Woodlark rift in Papua New Guinea. Nature 418, p. 862-865.
(Seismic observations of metamorphic core complexes of western Woodlark rift show thinned crust beneath regions of greatest surface extension. Core complexes actively exhumed at 5-10 km/Myr, and thinning of underlying crust compensated by mantle rocks of anomalously low density)

Abers, G.A., Z. Eilon, J.B. Gaherty, G. Jin, Y.H. Kim, M. Obrebski & C. Dieck (2016)- Southeast Papuan crustal tectonics: imaging extension and buoyancy of an active rift. J. Geophysical Research, Solid Earth, 121, 2, p. 951-971.
(SE PNG hosts world's youngest ultra-high-pressure metamorphic rocks, in D'Entrecasteaux-Woodlark extensional gneiss domes/ metamorphic core complexes. Seismicity shows active deformation on core complex bounding faults, offset by transfer structures, consistent with N-S extension rather than radial deformation. Crustal thinning under core complexes of 30-50% and very low shear velocities at all depths beneath core complexes. Limited role of diapirism as secondary exhumation mechanism)

Abers, G., C.Z. Mutter & J. Fang (1994)- Shallow dips of normal faults during rapid extension; earthquakes in the Woodlark- D'Entrecasteaux rift system, Papua New Guinea. J. Geophysical Research 102, B7, p. 15301-15317.
(online at: http://onlinelibrary.wiley.com/doi/10.1029/97JB00787/pdf)
(In Woodlark-D'Entrecasteaux rift system low-angle normal faults (dipping 15°-35°) only between 150.5°E - 152.5°E, where transition occurs from seafloor spreading to continental rifting)

Arculus, R.J. & R.W. Johnson (1978)- Criticism of generalised models for the magmatic evolution of arc-trench systems. Earth Planetary Sci. Letters 39, p. 118-126.
(Recent geological and petrological results from PNG and other regions of arc-trench-type volcanism, provide exceptions to spatial, volumetric, and temporal relationships claimed for generalised volcanic arc models. Many alkalic and shoshonitic associations not over deepest parts of downgoing slabs. Several exceptions to K20/SiO2/depth-to-Benioff-zone relationship. Temporal sequence of early tholeiitic- middle calcalkalic- late shoshonitic/alkalic not well substantiated)

Arculus, R.J. & C. Yeats (2007)- Volcanism and tectonism of the South Bismarck microplate, Papua New Guinea. R/V Southern Surveyor Voyage Summary SS06/2007, CSIRO, p.

Ashley, P. M. & R.H. Flood (1981)- Low-K tholeiites and high-K igneous rocks from Woodlark Island, Papua New Guinea. J. Geol. Soc. Australia 28, p. 227-240.
(Woodlark Island, largest above-sea portion of Woodlark Rise, with pre-E Miocene basement of low-K tholeiitic basalt and dolerite, and minor sediments, overlain by E Miocene limestone and volcaniclastics and later Miocene high-K volcanics and intrusives. Basement part of ophiolitic slab en echelon with Papuan Ultramafic

Belt, thrust over equivalents of Cretaceous Owen Stanley Metamorphics. Periodicity in magmatism synchronous with major rifting episodes that formed Woodlark Basin)

Auzende, J.M., J. Ishibashi, Y. Beaudoin, J.L. Charlou, J. Delteil, J.P. Donval et al. (2000)- Les extremites orientale et occidentale du bassin de Manus, Papouasie-Nouvelle-Guinee, explorees par submersible: la campagne Manaute. Comptes Rendus Academie Sciences, Paris, Earth Planetary Science, 331, p. 119-126.
('The E and W ends of the Manus Basin, PNG, explored by submersible'. Submersible dives demonstrate that in E part of Manus basin oceanic accretion is reduced to two axes propagating between Djaul and Weitin FZ. In W part of Manus basin oceanic accretion is along two axes propagating rapidly to SW. Effect of subduction of Australian Plate in New Britain Trench evident throughout basin)

Baldwin, J.T, H.D. Swain & G. H. Clark (1978)- Geology and grade distribution of the Panguna porphyry copper deposit, Bougainville, Papua New Guinea. Economic Geology 73, 5, p. 690-702.
(Panguna mine producing since 1972. Pliocene phase of copper iron sulfide mineralization associated with initial intrusion of Kaverong Diorite into Panguna Andesite. Mineralization successively upgraded by remobilization of copper sulfides with intrusion of Biotite Granodiorite)

Baldwin, S.L., B.D. Monteleone, , L.E. Webb, P.G. Fitzgerald, M. Grove & E.J. Hill (2004)- Pliocene eclogite exhumation at plate tectonic rates in eastern Papua New Guinea. Nature 431, p. 263-267.
(online at: http://instruct.uwo.ca/earth-sci/fieldlog/cal_napp/napp/newfoundland/burlington/nature02846.pdf)
(Exposed metamorphic core complex with Pliocene (4.3 Ma) eclogite facies in D'Entrecasteaux Islands. Extremely rapid exhumation from ~75 km in extending region W of Woodlark basin spreading centre. Such rapid exhumation of high-P rocks facilitated by extension within transient plate boundary zones associated with rapid oblique plate convergence)

Baldwin, S.L. & T.R. Ireland (1995)- A tale of two eras: Pliocene-Pleistocene unroofing of Cenozoic and late Archean zircons from active metamorphic core complexes, Solomon Sea, Papua New Guinea. Geology 23, 11, p. 1023-1026.
(Youngest zircons from felsic gneisses and synkinematically emplaced granodiorites in D'Entrecasteaux Islands Late Pliocene (1.65, 1.98 Ma crystallization ages). Zircon ages from felsic gneisses (2.63, 2.72 Ma) growth subsequent to eclogite facies metamorphism. Felsic gneiss also zircons from Cretaceous-Miocene protoliths. Zircons from igneous and metamorphic clasts from Goodenough No. 1 well single population of 2781 Ma, and derived from basement rocks unroofed from D'Entrecasteaux core complexes. First direct evidence for Archean protoliths in basement rocks of SE PNG).

Baldwin, S.L., G.S. Lister, E.J. Hill, D.A. Foster & I. McDougall (1993)- Thermochronologic constraints on the tectonic evolution of active metamorphic core complexes, DôEntrecasteaux Islands, Papua New Guinea. Tectonics 12, 3, p. 611-628.
(Metamorphic core complexes in D'Entrecasteaux Islands formed by active extension at W end of propagating Woodlark Basin spreading center. Gneisses cooled rapidly at 2.7 to 3.0 Ma and 1.6 to 1.7 Ma., Shear zones active from 4.0-3.5 Ma and 1.9-1.4 Ma. Granodiorites associated with D'Entrecasteaux Islands domes represent syn-kinematically emplaced granitoids intruded into area of continental extension)

Baldwin, S.L., L.E. Webb & B.D. Monteleone (2008)- Late Miocene coesite-eclogite exhumed in the Woodlark Rift. Geology 36, 9, p. 735-738.
(Late Miocene-Pliocene eclogites exhumed in Woodlark Rift. Coesite in Late Miocene (~8 Ma), eclogite from D'Entrecasteaux Islands metamorphic core complexes, exhumed from mantle depths (≥90 km) to surface at plate tectonic rates (cm/ yr). Youngest exhumed ultrahigh-pressure rock on Earth)

Baldwin, S.L., L.E. Webb, B. Monteleone, T.A. Little, P.G. Fitzgerald, K. Peters & J.L. Chappell (2006)- Continental crust subduction and exhumation: insights from eastern Papua New Guinea. Geochimica Cosmochimica Acta 70, 18, Suppl. 1 *(Goldschmidt Conf. Abstract)*
E PNG exhumation of previously subducted continental crust in plate boundary zone characterized by rifting-to- seafloor spreading transition. Australian margin subducted N-ward beneath Late Paleocene- E Eocene

island arc. Eclogite and blueschist relicts in lower plates of metamorphic core complexes (MCCs). Rapid diachronous exhumation from 13 to 0.5 Ma, proceeding from E to W, prior to and synchronous with seafloor spreading in Woodlark Basin (6 Ma). Some rocks subducted to >100 km at ~8 Ma. Exhumation to shallow crustal levels by 1.5 Ma. W of active sea floor spreading rift tip mineral growth and cooling from 8 to 3 Ma; SE of active rift tip ages interpreted to record cooling and exhumation from 13-8 Ma)

Baumer, A. & B. Fraser (1975)- Panguna porphyry copper deposit, Bougainville. In: Economic geology of Australia and Papua New Guinea, 1. Metals, Australasian Inst. of Mining and Metallurgy, Melbourne. p. 855-866.

Beier, C., W. Bach, S. Turner, D. Niedermeier, J. Woodhead, J. Erzinger & S. Krumm (2015)- Origin of silicic magmas at spreading centres- an example from the South East rift, Manus Basin. J. Petrology 56, 2, p. 255-272.
(online at: http://petrology.oxfordjournals.org/content/56/2/255.full.pdf+html)
(Manus Basin is rapidly opening, magmatically active back-arc basin associated with N-ward subduction of Solomon Sea Plate. Samples from 40 km segment of SE Rift span compositional continuum from basalt to rhyolite (50-75 wt % SiO2). Data form a coherent array suggestive of closed-system fractional crystallization, and point to rapid evolution in relatively small magma lenses located near base of thick oceanic crust)

Beier, C., S.P. Turner, J.M. Sinton & J.B. Gill (2010)- Influence of subducted components on back-arc melting dynamics in the Manus Basin. Geochem. Geophys. Geosystems 11, 10.1029/2010GC003037, p. 1-21.
(Manus Basin behind New Britain volcanic arc. Basalts subdivided into those that are like Mid-Ocean Ridge Basalts (Ba/Nb < 16) and Back-Arc Basin Basalts influenced by subduction components (Ba/Nb >16). Rifts closest to arc dominated by BABB. Pb isotope data explained by mixing of subduction component into Indian MORB mantle source)

Belford, D.J. (1981)- Co-occurrence of middle Miocene larger and planktic smaller Foraminifera, New Ireland, Papua New Guinea. Palaeontological Papers 1981, Bureau Mineral Res. (BMR) Geol. Geoph. Bull. 209, p. 1-21.
(online at: www.ga.gov.au/corporate_data/59/Bull_209.pdf)
(Fauna with both larger foraminifera Lepidocyclina (N.) howchini (Lower Tf) and planktonic foraminifera (zones N11-N12) in M Miocene samples from New Ireland, PNG)

Belford, D.J. (1988)- Planktonic foraminifera, age of sediments and polarity reversals, New Britain, Papua New Guinea. Bureau Mineral Res. (BMR) J. Australian Geol. Geophysics 10, p. 329-343.
(online at: www.ga.gov.au/webtemp/1309887/Jou1988_v10_n4.pdf)
(Rudiger Point- Cape Ruge area, New Britain, not conformable Late Miocene-earliest Pliocene sequence, but two age groups (1) general M Miocene age, and (2) late Miocene age. Sample of volcanolithic sandstone of Late Pliocene- M Pleistocene, Zone N21-N22 age, youngest marine sediment recognised in New Britain. Planktonic Zone N18 correlated, at least in part, with normally magnetised interval)

Belford, D.J. (1988)- Late Tertiary and Quaternary foraminifera and paleobathymetry of dredge and core samples from the New Ireland Basin (Cruise L7-84-SP). In: M.S. Marlow et al. (eds.) Geology and offshore resources of Pacific island arcs- New Ireland and Manus region, Papua New Guinea, Circum-Pacific Council Energy and Mineral Resources, Houston, Earth Sci. Ser. 9, p. 65-89.
(Late Miocene (N17)- Recent foraminifera in seafloor samples N of New Ireland, New Hanover, Manus islands)

Benes, V., N. Bocharova, E. Popov, S.D. Scott & L.P. Zonenshain (1997)- Geophysical and morpho-tectonic study of the transition between seafloor spreading and continental rifting, western Woodlark Basin, Papua New Guinea. Marine Geology 142, p. 85-98.
(Two major morpho-tectonic domains, separated by major transfer zone, at transition between seafloor spreading and continental rifting in W Woodlark Basin. Oceanic domain new oceanic crust formed during Bruhnes Epoch, older transitional crust and rifted continental margins. Two rift branches in continental domain. S rift branch failed, N branch maximum extension with initial development of oceanic crust. Seafloor

spreading in W Woodlark Basin started between 3.5- 2.5 Ma. Frequent jumps of seafloor spreading centers indicate instability of Woodlark extensional system)

Benes, V., S.D. Scott & R.A. Binns (1994)- Tectonics of rift propagation into a continental margin: Western Woodlark Basin, Papua New Guinea. J. Geophysical Research 99, p. 4439-4456.

Bernstein-Taylor, B.L., K.M.M. Brown, E.A. Silver & S. Kirchoff-Stein (1992)- Basement slivers within the New Britain accretionary wedge: implications for the emplacement of some ophiolitic slivers. Tectonics 11, 4, p. 753-765.
(Seismic profiles from W Solomon Sea image several 2.5- 3km thick oceanic basement slivers in New Britain accretionary wedge, which may serve as modern analogue for detachment of some ophiolitic slivers. Arcward-dipping normal faults reactivated in response to flexural bending of downgoing oceanic plate are prominent feature of region. Small (13 km thick) basement slivers may be decoupled along favorably oriented zones of weakness formed by normal fault detachments within downgoing oceanic basement)

Bernstein-Taylor, B.L., S. Kimberly, S. Kirchoff-Stein, E.A. Silver, D.L. Reed & M. Mackay (1992)- Large-scale duplexes within the New Britain accretionary wedge: a possible example of accreted ophiolitic slivers. Tectonics 11, 4, p. 732-752.
(Seismic profiles in W Solomon Sea across New Britain accretionary wedge, interpreted as accreted duplexes of downgoing oceanic plate. Seaward edge of largest duplex 6 km from toe of accretionary wedge, suggesting recent incorporation into wedge. Prominent reflector, similar in character to basement reflector, higher in section and probably top of basement duplex)

Binnekamp, J.G. (1973)- Tertiary larger foraminifera from New Britain, Papua New Guinea. Bureau Mineral Res. Geol. Geoph. Bull. 140, p. 1-26.
(online at: www.ga.gov.au/corporate_data/107/Bull_140.pdf)
(Larger forams from 3 formations in New Britain: Eocene Baining volcanoclastics (incl. Pellatispira), Late Oligocene Merai Volcanics (Lower Te with Eulepidina, Nephrolepidina, Cycloclypeus, Halkyardia) and M Miocene (upper Te-Tf) with Nephrolepidina, Cycloclypeus, Katacycloclypeus, Austrotrillina, Flosculinella)

Binns, R.A. & S.D. Scott (1993)- Actively forming polymetallic sulphide deposits associated with felsic volcanic rocks in the eastern Manus back-arc basin, Papua New Guinea. Economic Geology 88, p. 2226-2236.
(E Manus basin back-arc extensional feature N of New Britain trench, ib remnant island-arc crust. E-W belt of en echelon neovolcanic structures composed of picritic basalt and dacite-rhyodacite. Pacmanus hydrothermal site with vent fauna and sulfide minerals, dominated by chalcopyrite)

Blackwell, J.L. (2010)- Characteristics and origins of breccias in a volcanic hosted alkalic epithermal gold deposit, Ladolam, Lihir Island, Papua New Guinea. Ph.D. Thesis, University of Tasmania, Hobart, p. 1-203.
(online at: http://eprints.utas.edu.au/11395/)

Blackwell, J.L., D.R. Cooke, J. McPhie & K.A. Simpson (2014)- Lithofacies associations and evolution of the volcanic host succession to the Minifie Ore Zone: Ladolam gold deposit, Lihir Island, Papua New Guinea. Economic Geology 109, p. 1137-1160.
(Ladolam gold deposit largest alkalic epithermal gold deposit in world. Four ore zones. Minifie ore zone three stages: (1) Plio-Pleistocene volcanosedimentary strata (part of alkalic composite volcanic island), (2) porphyry-style breccia dike, and (3) epithermal-style breccias. Quaternary uplift)

Blake, D.H. & Y. Miezitis (1967)- Geology of Bougainville and Buka Islands, New Guinea. Bureau Mineral Res. Geol. Geoph., Canberrra, Bull. 93 (PNG 1), p. 1-56.
(online at: www.ga.gov.au/corporate_data/169/Bull_093.pdf)
(Oldest exposed rocks of Bougainville- Buka probably U Oligocene- Lw Miocene Kieta Volcanics/ Buka Fm, consisting of subaerial andesitic and basaltic lavas, agglomerates, tuffs, basic pillow lava and volcanoclastics. Locally overlain by Lower Miocene reefal Keriaka Lst with rich larger foraminifera fauna (Upper Te zone, with Spiroclypeus, Miogypsina, Miogypsinoides; see also Terpstra 1965, 1966))

Bolton, B.R. & N.F. Exon (1988)- Geochemistry of bathyal ferromanganese deposits from the New Ireland region in the Southwest Pacific Ocean. In: M.S. Marlow et al. (eds.) Geology and offshore resources of Pacific island arcs- New Ireland and Manus region, Papua New Guinea, Circum-Pacific Council Energy and Mineral Resources, Houston, Earth Science Ser. 9, p. 131-136.
(Six samples with ferromanganese crusts dredged from seafloor at depths of 800-1500m around New Britain. Rel. low Co values)

Brownlee, S.J., B.R. Hacker, M. Salisbury, G. Seward, T.A. Little, S.L. Baldwin & G.A. Abers (2011)- Predicted velocity and density structure of the exhuming Papua New Guinea ultrahigh-pressure terrane. J. Geophysical Research, Solid Earth, 116, B08206, p. 1-15.
(Ultra High Pressue terrane in D'Entrecasteaux Islands of PNG actively exhuming. Seismic velocities based on predicted mineral assemblages indicate exhuming UHP terrane mainly mafic composition below ~20 km depth)

Bruns, T.R., J.G. Vedder & A.K. Cooper (1989)- Geology of the Shortland Basin region, Central Solomons Trough, Solomon Islands- review and new findings. In: J.G. Vedder & T.R. Bruns (eds.) Geology and offshore resources of Pacific island arc- Solomon Islands and Bougainville, Papua New Guinea regions, Circum-Pacific Council Energy and Mineral Resources, Houston, Earth Science Series 12, p. 125-144.
(Basement half graben underlies the center of Shortland basin; developed in Late Oligocene and E Miocene, coincident with arrival of the Ontong Java Plateau at Tertiary subduction zone. Max. sediment thickness 7 km)

Burkett, D., I. Graham, L. Spencer, P. Lennox, D. Cohen, H. Zwingmann et al. (2015)- The Kulumadau epithermal breccia-hosted gold deposit, Woodlark Island, Papua New Guinea. In: Proc. PACRIM 2015 Congress, Hongkong, Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, Publ. Ser. 2/2015, p. 205-212.
(Kulumadau intermediate-sufidation epithermal gold deposit, with mineralisation in hydrothermal breccias in pre-existing fault zones in M Miocene (~13 Ma) pyroclastic flow deposits)

Carman, G.D. (2003)- Geology, mineralization and hydrothermal evolution of the Ladolam gold deposit, Lihir Island, Papua New Guinea. Economic Geology, Spec. Publ. 10, p. 247-284.

Catalano, J.P. (2012)- Geochemical and 40Ar/39Ar contraints on the evolution of volcanism in the Woodlark Rift. M.Sc. Thesis Syracuse University, p. 1-124.
(online at: http://surface.syr.edu/cgi/viewcontent.cgi?article=1000&context=ear_thesis)
(Evolution of Pliocene-Recent volcanism in Woodlark Rift, using 40Ar/39Ar thermochronology and whole rock geochemistry. Volcanism in Woodlark Rise and D'Entrecasteaux Islands results from decompression melting of relict mantle wedge. Subduction zone geochemical signatures in lavas younger than 4 Ma are relict from older subduction beneath E Papua, probably in M Miocene)

Chadwick, J., M. Perfit, B. McInnes, G. Kamenov, T. Plank, I. Jonasson & C. Chadwick (2009)- Arc lavas on both sides of a trench: slab window effects at the Solomon Islands triple junction, SW Pacific. Earth Planetary Sci. Letters 279, 3, p. 293-302.
(Woodlark Spreading Center subducting at San Cristobal trench, forming triple junction at New Georgia Group arc in Solomon Islands. Volcanics chemistry suggests mantle migrates across plate boundary through slab windows created by subduction of spreading center. Presence of slab windows may also be responsible for unusual forearc volcanism and melting of slab window margins high-silica adakite-like lavas)

Chapman, F. (1905)- Notes on the older Tertiary foraminiferal rocks on the west coast of Santo, New Hebrides. Proc. Linnean Soc. New South Wales 30, 261, p.

Chapman, F. (1918)- Report on a collection of Cainozoic fossils from the oil fields of Papua, with geological introduction by Arthur Wade. Bull. Territory of Papua, Melbourne, 5, p. 1-18.
(Listing of Miocene-Recent fossils from oil-bearing strata along coast from Yule Island to Parare delta, PNG)

Clark, G.H. (1987)- Geology and resource estimation at the Panguna porphyry copper/gold mine, Papua New Guinea. Proc. Pacific Rim Congress 87, Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, p. 549-556.

Clark, G.H. (1990)- Panguna copper-gold deposit. I: F.E. Hughes (ed.) Geology of the mineral deposits of Australia and Papua New Guinea, vol. 2, Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, Monogr. 14, p. 1807-1816.

Clarke, D.S., R.W. Lewis & H.M. Waldron (1990)- Geology and trace-element geochemistry of the Umuna gold-silver deposit, Misima Island, Papua New Guinea. J. Geochemical Exploration 35, p. 201-223.
(Umuna epithermal gold-silver deposit on E Misima Island, Solomon Islands, hosted in 100-300-m-wide zone of fractures, veins, recognized over 3-km strike length. Host rocks metamorphosed Cretaceous-Paleogene volcano-sedimentary sequence, intruded by Neogene granodioritic bodies)

Connelly, J.B. (1976)- Tectonic development of the Bismarck Sea based on gravity and magnetic modelling. Geophysical J. Royal Astronomical Soc., 46, 1, p. 23-40.
(Bismarck Sea is small marginal sea N of New Britain island and its associated trench, surround on three sides by island arcs. Magnetic map shows E-W general trend of anomalies. Water depth ~2000m and Bouguer gravity values are +150 mGal. In E half of Sea active N-S extension)

Crawford, A.J., L. Briqueu, C. Laporte & T. Hasenaka (1995)- Coexistence of Indian and Pacific Oceanic upper mantle reservoirs beneath the Central New Hebrides Island Arc. In: B. Taylor & N. James (eds.) Active margins and marginal basins of the western Pacific, American Geophys. Union (AGU), Geophys. Monograph 88, p. 199-217.
(Throughout most of its 30 Myr history New Hebrides intra-oceanic island arc produced lavas with Pb-Nd-Sr isotopic signatures defining arrays interpreted to reflect mixing between a Pacific-type MORB mantle source. Collision of Eocene intra-oceanic arc (d'Entrecasteaux zone) with central part of New Hebrides arc at ~2-3 Ma produced shift in isotopic signatures to mix between mantle source like Indian Ocean mid-ocean ridge basalts and a slab-derived component very close to that involved in arc magmatism away from collision zone. Etc.)

Cunningham, H., J. Gill, S. Turner, J. Caulfield, L. Edwards, S. Day (2012)- Rapid magmatic processes accompany arc-continent collision: the Western Bismarck arc, Papua New Guinea. Contrib. Mineralogy Petrology 164, 5, p. 789-804.
(New geochemical and isotope data for young lavas from New Britain and W Bismarck arcs in PNG. New Britain is oceanic arc, W Bismarck is site of arc-continent collision)

Curtis, J.W. (1973)- The spatial seismicity of Papua New Guinea and the Solomon Islands. J. Geol. Soc. Australia 20, 1, p. 1-19.

Curtis, J.W. (1973)- Plate tectonics and the Papua New Guinea-Solomon Islands region. J. Geol. Soc. Australia 20, 1, p. 21-36.
(Earthquake focal mechanism solutions in PNG/ Solomon Islands regions used to delineate tectonic plates. Area of interaction of Australian and S Pacific plates, which here consists of Solomon Sea, New Britain and Manus plates. Subduction is apparent under New Britain and Solomon Islands, sinistral transcurrent movement between New Britain and Manus plates, sea-floor spreading in Woodlark Basin and continent/island arc collision in N New Guinea)

Davies, H.L. (1973)- Fergusson Island, Papua New Guinea. 1:250 000 Geological Series, Sheet SC/56-5, Bureau of Mineral Resources, Geology & Geophysics, Canberra.
(Geologic map of one of D'Entrecastaux island, off SE tip of PNG mainland)

Davies, H.L. (2015)- The geology of Bougainville. In: A.J Regan & H.M Griffin (eds.) Bougainville before the conflict, ANU eView, Australian National University, Canberra, p. 20-30.
(online at: http://eview.anu.edu.au/bougainville/pdf/ch02.pdf)

(Brief review of geology of Bougainville- Buka/ Solomon island Ridges, which started to form at ~45 Ma at Pacific- Australian plates boundary with eruption of submarine volcanic rocks (Late Eocene- E Oligocene Atamo Volcanics). Subduction active along Kilinailau Trenc until ~10 Ma, when collision of Ontong Java Plateau at ~10 Ma initiated reversal of subduction and started subduction of Australian Plate beneath Pacific Plate along New Britain- Bougainville- Makira Trench. Panguna porphyry copper mine active from 1972-1989)

Davies, H.L., E. Honza, D.L. Tiffin, J. Lock, Y. Okuda, J.B.Keene et al. (1987)- Regional setting and structure of the western Solomon Sea. Geo-Marine Letters 7, 3, p. 153-160.
(W Solomon Sea bounded by Paleogene collision complex of Papuan Peninsula to S and land masses formed by Cainozoic volcanism to N and E. Oblique collision of two trenches in W Solomon Sea produced structural complexities that may include doubling of crustal thickness and strong negative gravity anomaly W of 149°E)

Davies, H.L. & D.J. Ives (1965)- The geology of Fergusson and Goodenough Islands, Papua. Bureau Mineral Res., Geol. Geoph., Canberra, Report 82, p. 1-65.
(online at: www.ga.gov.au/corporate_data/14996/Rep_082.pdf)
(D'Entrecastreaux Islands, N of E end of Papuan mainland, are domes of metamorphic rocks with granodiorite cores. Thick metamorphics of unknown age, possibly related to, but higher grade than Owen Stanley metamorphics of E Papua mainland. Ultramafic rocks (marginal to metamorphic blocks and separated from them by major faults), granodiorites (with xenoliths of ultramafics, therefore younger) and Late Tertiary- Recent volcanics))

Davies, H.L. & R.C. Price (1987)- Basalts from the Solomon and Bismarck Seas. Geo-Marine Letters 6, 4, p. 193-202
(Solomon and Bismarck Seas formed by back-arc spreading in E-M Cenozoic and Pliocene- Quaternary respectively. Volcanic rocks from Solomon Sea Basin mostly ferrobasalt lavas similar to evolved MORB)

Davies, H.L., P.A. Symonds & I.D. Ripper (1984)- Structure and evolution of the southern Solomon Sea region. BMR J. Australian Geol. Geophysics 9, 1, p. 49-68.
(online at: www.ga.gov.au/corporate_data/81171/Jou1984_v9_n1_p049.pdf)
(Review of geology of Solomon Sea region, E of 'mainland' PNG. Solomon Sea bounded to N by New Britain active arc-trench subduction system. Lithosphere of Solomon Sea Basin probably formed by back-arc spreading in E Tertiary. As result of subduction to NE, NW and SW lithosphere anticlinally folded about E-W and N-S axes. Miocene- Holocene volcanics of SE Papua mostly arc-trench suite and probably related to Miocene-Quaternary subduction at Trobriand Trough. Trobriand Basin up to 5000m of Miocene- younger sediments)

Davies, H.L., P.A. Symonds & I.D. Ripper (1985)- Structure and evolution of the southern Solomon Sea region. Proc. 21st Sess. Comm. Co-ord. Joint Prospecting Mineral Resources in Asian Offshore Areas (CCOP), Bandung 1984, p. 170-199.
(Reprint of Davies et al. (1984) BMR paper. Good overview of onshore and offshore geology of Solomon Sea area, between E Papuan Peninsula and New Britain. Solomon Sea Basin probably formed by back-arc spreading in E Tertiary)

Davies, H.L. & R.G. Warren (1988)- Origin of eclogite-bearing, domed, layered metamorphic complexes (ócore complexesô) in the D'Entrecasteaux Islands, Papua New Guinea. Tectonics 7, 1, p. 1-21.
(Layered metamorphic rocks of D'Entrecasteaux Islands, PNG, folded into domes and antiforms bounded by faults parallel to metamorphic layering and foliation. Metamorphic grade in N islands amphibolite facies with pockets of eclogite and granulite, and greenschist facies in S island. All three islands sequence from felsic metamorphics at base to ultramafics at top. Association of metamorphic and ultramafic rocks developed in N-dipping Paleogene subduction system and exhumed to upper crustal level in Oligocene- E Miocene, possibly by reversal of faults in former subduction system. Uplift and development of domes and antiforms in Pliocene triggered by W-ward propagation of Woodlark Basin spreading ridge and accompanied by rift-related magmatism, rapid erosion and deposition of coarse sediment in adjacent Trobriand Basin)

Davies, H.L. & R.G. Warren (1992)- Eclogites of the D'Entrecasteaux Islands. Contrib. Mineralogy Petrology 112, 4, p. 463-474.
(Three types of eclogitic rocks on D'Entrecasteaux Islands, SE PNG: (1) true eclogites of omphacite-garnet-rutile; (2) retrogressed eclogites with some omphacite altered to albite and less-jadeitic clinopyroxene, and (3) eclogitic rocks in which clinopyroxene is jadeitic diopside. Eclogitic rocks lenticular boudins and small concordant tabular bodies in 2-3 km thick migmatitic gneisses. Gneiss sequence bounded by detachment faults above and younger granodiorite below. Eclogite equilibrated at T of 530-840°C and P of 12-24 kbar. Metamorphic complex developed during Paleocene N-ward subduction and Paleo-Eocene arc-continent collison, and elevated to crustal levels during Late Oligocene- E Miocene (~30-25 Ma) crustal extension. Plio-Quaternary rapid elevation and doming of metamorphics associated with rifting, magmatism and opening of Woodlark Basin No glaucophane and lawsonite found in D'Entrecasteaux Islands)

De Keyser, F. (1961)- Misima Island- geology and gold mineralization. Bureau Mineral Res., Geol. Geophysics, Report 57, p. 1-36.

Denham, D. (1971)- Seismicity and tectonics of New Guinea and the Solomon Islands. Royal Soc. New Zealand Bull. 19, p. 31-38.

DePaolo, D. & R. Johnson (1979)- Magma genesis in the New Britain island-arc: constraints from Nd and Sr isotopes and trace-element patterns. Contrib. Mineralogy Petrology 70, 4, p. 367-379.
(Nd-Sr isotopes suggest island arc lavas in general derived from mixture of suboceanic mantle and hydrothermally altered mid-ocean ridge-type basalt, but New Britain magma source homogeneous with little indication of involvement of oceanic crust or mantle inhomogeneity. Mafic lavas from New Britain and other island arcs anomalously high Sr/Nd, possibly due to components from subducted oceanic crust)

Eastoe, C.J. (1978)- A fluid inclusions study at the Panguna porphyry copper deposit, Bougainville, Papua New Guinea. Economic Geology 73, p. 721-748.

Eastoe, C.J. (1979)- The formation of the Panguna porphyry copper deposit, Bougainville, Papua New Guinea: with an appendix on the Frieda porphyry copper prospect, New Guinea. Ph.D. Thesis, University of Tasmania, Hobart, p. 1-255.
(online at: http://eprints.utas.edu.au/11544/)
(Panguna copper-gold deposit of Bougainville, NW of Solomon Islands, formed at S contact between Pliocene Kaverong Quartz Diorite and Panguna Andesite (3-5 Ma). Depth of formation near 3 km)

Eastoe, C.J. (1982)- The physics and chemistry of the hydrothermal systems in the Panguna porphyry copper deposit, Bougainville, Papua New Guinea. Economic Geology 77, p. 127-153.
(Copper in Panguan deposited mainly by salt-rich liquid expelled directly from magma (Kaverong Quartz Diorite)

Eastoe, C.J. & P.J Eadington (1986)- High temperature fluid inclusions and the role of the biotite granodiorite in mineralization at the Panguna porphyry copper deposit, Bougainville, Papua New Guinea. Economic Geology 81, p. 478-483.
(Porphyry copper mineralization at Panguna on Bougainville, PNG, located at S margin of Pliocene Kaverong Quartz Diorite stock, which intrudes andesites of Miocene age)

Eilon, Z.C. (2016)- New constraints on extensional environments through analysis of teleseisms. Ph.D. Thesis, Columbia University, p. 1-215.
(Use of teleseismic methodologies to investigate upper mantle structure in extensional environment of Woodlark Rift, SE PNG)

Eilon, Z., G.A. Abers, J.B. Gaherty & G. Jin (2016)- A joint inversion for shear velocity and anisotropy: the Woodlark Rift, Papua New Guinea. Geophysical J. Int. 206, 2, p. 807-824.

Eilon, Z., G.A. Abers, J.B. Gaherty & G. Jin (2015)- Imaging continental breakup using teleseismic body waves: the Woodlark Rift, Papua New Guinea. Geochem. Geophys. Geosystems 16, 8, p. 2529-2548.
(Imaging of upper mantle under D'Entrecasteaux Islands, PNG, providing insight into mantle deformation under highly rifted continent adjacent to propagating oceanic spreading center)

Eilon, Z., G.A. Abers, G. Jin & J.B. Gaherty (2014)- Anisotropy beneath a highly extended continental rift. Geochem. Geophys. Geosystems 15, 3, p. 545-564.
(online at: http://onlinelibrary.wiley.com/doi/10.1002/2013GC005092/epdf)
(On shear wave splitting in Woodlark-D'Entrecasteaux Rift, an area representing transitional stage between small-extension intracontinental rift and oceanic spreading center)

Ellis, S.M., T.A. Little, L.M. Wallace, B.R. Hacker & S.J.H. Buiter (2011)- Feedback between rifting and diapirism can exhume ultrahigh-pressure rocks. Earth Planetary Sci. Letters 311, p. 427-438.
(Young ultra-high-pressure rocks in Woodlark Basin, PNG, within active rift. Thermo-mechanical modeling shows UHP exhumation of gneiss domes in Woodlark Basin may result from feedback between rifting and diapiric rise of previously subducted continental fragment through lithosphere)

Exon, N.F. & M.S. Marlow (1988)- The petroleum potential of the New Ireland Basin, Papua New Guinea. In: In: M.S. Marlow et al. (eds.) Geology and offshore resources of Pacific island arcs- New Ireland and Manus region, Papua New Guinea, Circum-Pacific Council Energy and Mineral Resources, Houston, Earth Science Ser. 9, p. 185-201.
(Undrilled New Ireland basin forearc basin with up to 7km of M Eocene-Recent sediments on E Eocene (and older?) oceanic crust. Most of basin >1000m water depth. Sediments probably include common volcanoclastics. Possible Miocene source rocks. Miocene carbonates potential reservoir rocks. One bright spot on seismic. No anticlinal structures, but common fault blocks. Overall moderate hydrocarbon potential)

Exon, N.F. & M.S. Marlow (1988)- Geology and offshore resource potential of the New Ireland-Manus region- a synthesis. In: M.S. Marlow et al. (eds.) Geology and offshore resources of Pacific island arcs- New Ireland and Manus region, Papua New Guinea, Circum-Pacific Council for Energy Min. Res., Houston, Earth Science Ser. 9, p. 241-262.

Exon, N.F. & M.S. Marlow (1990)- The New Ireland Basin: a frontier Basin in Papua New Guinea. In: G.J. & Z. Carman (eds.) Petroleum Exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby 1990, p. 513-534.
(Onshore geology and seismic survey N of New Ireland Basin. Up to 2000m of M Eocene- earliest Miocene andesitic arc volcanics, built on oceanic crust. Subduction ceased in E Miocene, causing deposition of Miocene limestones. Followed by Late Miocene-Pliocene volcanics)

Exon, N.F., W.D. Stewart, M.J. Sandy & D.L. Tiffin (1986)- Geology and offshore petroleum prospects of the eastern New Ireland Basin, Northeastern Papua New Guinea. BMR J. Australian Geol. Geophysics 10, 1, p. 39-51.
(online at: www.ga.gov.au/corporate_data/81203/Jou1986_v10_n1_p039.pdf)
(New Ireland Basin NE of PNG and NE of New Hanover and New Ireland islands. Basin formed as fore-arc basin between Eocene- E Miocene volcanic arc in SW and outer-arc high in NE. Basin with up to 5 km of fill, interpreted as E Miocene and possibly Oligocene volcaniclastics, Miocene shelf carbonates, Late Miocene-Pliocene bathyal chalks and volcaniclastics, and Pleistocene-Recent sediments. In E Plio-Pleistocene volcanism has formed islands and greatly disturbed the older strata)

Exon, N.F. & D.L. Tiffin (1984)- Geology and petroleum prospects of offshore New Ireland Basin in northern Papua New Guinea. In: S.T. Watson (ed.) Trans. Third Circum-Pacific Energy and Mineral Resources Conference, Honolulu 1982, p. 623-630.
(NW trending New Ireland Basin 900km long, 160km wide, undrilled. Manus- New Hanover- New Ireland islands part of ?Late Eocene- Oligocene island arc that separated Indo-Australian Plate from Pacific Plate. Overlain by widespread Miocene limestones (see also Exon et al. (1986) paper above))

Falvey, D.A. & T. Pritchard (1984)- Preliminary palaeomagnetic results from Northern Papua New Guinea: evidence for large microplate rotations. In: S.T. Watson (ed.) Trans. Third Circum-Pacific Energy and Mineral Resources Conference, Honolulu 1982, American Assoc. Petrol. Geol. (AAPG), p. 593-599.
(Paleomagnetic data of Huon Peninsula and islands to N and E (New Britain, Manus, New Ireland, etc.). Huon-New Britain/ Manus/New Ireland rotated 60° CW, and may restore to Eocene NE trending arc, probably adjacent to Papuan Ultramafic belt at 45 Ma. Data from New Ireland- Buka indicate this part of N Solomon Islands part of Pacific Plate since ~10 Ma, Late Miocene)

Ferris, A. (2007)- Seismic imaging of active continental breakup in the Woodlark rift system of Papua New Guinea. Ph.D. Thesis Boston University, p. 1-125.

Ferris, A., G.A. Abers, B. Zelt, B. Taylor & S. Roecker (2006)- Crustal structure across the transition from rifting to spreading: the Woodlark rift system of Papua New Guinea. Geophysical J. Int. 166, p. 622-634.
(online at: http://gji.oxfordjournals.org/content/166/2/622.full.pdf+html)
(Woodlark rift system active ocean basin formation. Continental extension rates some of fastest on planet, with extension progressing E-wards to seafloor spreading. Seismic velocities suggest transition from diffuse continental rifting to localized seafloor spreading likely across narrow zone. Magmatism may not play significant role in altering crust until onset of seafloor spreading, except through underplating at base of crust)

Fitz, G.G. (2011)- Offshore mapping and modeling of Miocene-Recent extensional basins adjacent to metamorphic gneiss domes of the D'Entrecasteaux Islands, eastern Papua New Guinea. M.Sc. Thesis University of Texas at Austin, p. 1-183.
(online at: https://repositories.lib.utexas.edu/handle/2152/14789)
(D'Entrecasteaux Island gneiss domes fault-bounded domes with ~2.5 km of relief, exposing UHP and HP metamorphic gneisses and migmatites, exhumed in Oligocene-Miocene arc-continent collision-subduction zone, subject to Late Miocene- Recent continental extension. Subduction slowed at ~8 Ma as margin transitioned to extensional tectonic environment. Lack of upper crustal extension accompanying subsidence in Trobriand and Goodenough basins suggests lithospheric extension from 8-0 Ma accompanied uplift of DEI gneiss domes. Basin extension of 2.3-13.4 km in upper crust, while subsidence values indicate >21-24 km of lower crust extension since ~8 Ma. DEI domes formation involve vertical exhumation of buoyant lower crust, far-field extension from slab rollback, and inverted two-layer crustal density structure)

Fitz, G. & P. Mann (2013)- Evaluating upper versus lower crustal extension through structural reconstructions and subsidence analysis of basins adjacent to the DõEntrecasteaux Islands, eastern Papua New Guinea. Geochem. Geophys. Geosystems 14, 6, p. 1800-1818.
(D'Entrecasteaux Islands fault-bounded gneiss domes with ~2.5 km of relief, exposing high pressure gneisses and migmatites, exhumed in Oligocene-Miocene arc-continent collision and subject to Late Miocene- Recent continental extension. Trobriand basin formed as fore-arc basin during S-ward Miocene subduction at Trobriand trench. Subduction slowed at ~8 Ma as margin changed to extensional environment. Goodenough rift basin developed after extension began (~8 Ma) as hanging wall of N-dipping Owen-Stanley normal fault. Lack of upper crustal extension accompanying subsidence in Trobriand-Goodenough basins suggests depth-dependent lithospheric extension since 8 Ma accompanied uplift of gneiss domes. Crustal thinning preferentially accommodated in lower crust. Uplift of DEI domes involves vertical exhumation of buoyant, postorogenic lower crust, far-field extension from slab rollback, and inverted 2-layer crustal density structure)

Fitz, G. & P. Mann (2013)- Tectonic uplift mechanism of the Goodenough and Fergusson Island gneiss domes, eastern Papua New Guinea: constraints from seismic reflection and well data. Geochem. Geophys. Geosystems 14, 10, p. 3969-3995.
(HP and UHP fault-bounded gneiss domes of Goodenough and Fergusson Islands result of Late Miocene-Recent continental extension/ exhumation (diapiric uplift of previously subducted continental fragment). Seismic and well data from surrounding offshore areas suggest Trobriand basin formed as forearc basin at Trobriand trench, then at ~8 Ma margin transitioned to extensional tectonic environment)

Fountain, J.R. (1972)- Geological relationships in the Panguna porphyry copper deposit, Bougainville island, New Guinea. Economic Geology 67, p. 1049-1064.
(Pliocene diorite-granodiorite intrusives in hornfelsed andesite. Four units)

Francis G. (1988)- Stratigraphy of Manus Island, western New Ireland basin, Papua New Guinea. In: M.S. Marlow et al. (eds.) Geology and offshore resources of Pacific island arcs- New Ireland and Manus region, Papua New Guinea, Circum-Pacific Council Energy and Mineral Resources, Houston, Earth Science Ser. 9, p. 31-40.
(Manus Island underlain by M Eocene- earliest Miocene Tinniwi Fm island arc volcanics, probably on Paleogene oceanic crust. Overlain by Miocene- Pliocene marine sediments, several Miocene- E Pliocene lmestone formations and more E-M Miocene andesitic rocks)

Francis, G., J. Lock & Y. Okuda (1987)- Seismic stratigraphy and structure of the area to the southeast of the Trobriand Platform. Geo-Marine Letters 7, 3, p. 121-128.
(Area SE of Trobriand carbonate platform S of Woodlark Rise, SE PNG, contains E continuation of Oligocene-Quaternary Cape Vogel Basin. Three major seismic sequences recognized. A-B and B-D sequences faulted and gently folded in Late Miocene. To S and SE of this depocenter Cape Vogel Basin truncated by Pliocene opening of Woodlark Basin, an active W-ward-propagating spreading system. Goodenough 1 well Late Oligocene- E Miocene Iauge Volcanics, overlain my marine M Miocene- Pleistocene

Frantz, L., K.P. Becker, W. Kramer & P.M. Herzig (2002)- Metasomatic mantle xenoliths from the Bismarck Microplate (Papua New Guinea)- thermal evolution, geochemistry and extent of slab-induced metasomatism. J. Petrology 43, 2, p. 315-343.
(online at: http://petrology.oxfordjournals.org/content/43/2/315.full.pdf+html)
(On ultramafic mantle xenoliths from Tubaf and Edison seamounts in the Bismarck Archipelago, NE of PNG, transported to sea floor by rift-related Quaternary trachybasalts)

Galewsky, J. & E.A. Silver (1997)- Tectonic controls on facies transitions in an oblique collision: the western Solomon Sea, Papua New Guinea. Geol. Soc. America (GSA) Bull. 109, 10, p. 1266-1278.
(W Solomon Sea is closing ocean basin and incipient arc-continent collision between Bismarck arc and Australian continental margin in PNG. Seismic profiles and sidescan sonar data indicate sedimentation controlled by topographic gradients generated by flexure of Solomon Sea plate)

Gardien, V., C. Lecuyer & J.F. Moyen (2008)- Dolerites of the Woodlark Basin (Papuan Peninsula, New Guinea): a geochemical record of the influence of a neighbouring subduction zone. J. Asian Earth Sci. 33, p. 139-154.
(Moresby Seamount in Woodlark Basin is fragment of oceanic crust (dolerites and gabbros) generated at ~65-68 Ma before being obducted on Australian margin in Eocene. Since 8 Ma, normal faulting related to opening of Woodlark Basin responsible for unroofing of Moresby seamount. Dolerite source was depleted oceanic mantle influenced by arc-related magmas, suggesting seamount created near subduction zone)

Gill, J.B., J.D. Morris & R.W. Johnson (1993)- Time scale for producing the geochemical signature of island arc magmas: U-Th-Po and Be-B systematics in recent Papua New Guinea lavas. Geochimica Cosmochimica Acta 57, 17, p. 4269-4283.
(Geochemistry of Holocene volcanic rocks from Bismarck/ New Britain volcanic arc)

Glikson, M. (1988)- Petroleum source rock study, Miocene rocks of New Ireland, Papua New Guinea. In: M.S. Marlow et al. (eds.) Geology and offshore resources of Pacific island arcs- New Ireland and Manus region, Papua New Guinea, Circum-Pacific Council Energy and Mineral Resources, Houston, Earth Sci. Ser. 9, p. 161-183.
(Source rock analyses of Miocene marine and lagoonal sediments and volcanoclastics of New Ireland island)

Goodliffe, A.M., J. Kington & B. Taylor (2008)- Reconciling extension from brittle faulting, subsidence, and kinematic reconstructions: lessons from the Woodlark Basin. AAPG Int. Conf. Exhib., Cape Town 2008, 29p.
(Abstract) (Online at: www.searchanddiscovery.net/documents/2009/30089goodliffe/ndx_goodliffe.pdf)

(Woodlark Basin, PNG, actively rifting since 8.4 Ma. Near rifting-to-seafloor spreading transition asymmetric rift system comprises large tilted fault blocks on S margin and unfaulted N margin that has subsided >3 km. Estimated extension from faulting ~111 km. Extension estimated by fitting Euler poles to fracture zones and magnetic chrons in oceanic lithosphere gives >200 km since 6 Ma. Metamorphic core complexes (MCC), where upper crust has been removed may account for discrepancy)

Goodliffe, A.M. & B. Taylor (2007)- The boundary between continental rifting and sea-floor spreading in the Woodlark Basin, Papua New Guinea. In: G.D. Karner et al. (eds.) Imaging, mapping and modelling continental lithosphere extension and breakup, Geol. Soc., London, Spec. Publ. 282, p. 217-238.
(Progression from rifting of SE Papuan continent to W-ward propagating seafloor spreading in Woodlark Basin characterized by decrease in sedimentation as margins are thinned, subside below sea level and trap sediments in proximal basins. Post-rift sedimentation near continent- ocean boundary hemipelagic and drapes breakup topography without distinct breakup unconformity. Synrift sediments, deposited above 8.4 Ma rift onset unconformity and prior to breakup characterized by rotated sections)

Goodliffe, A M., B. Taylor, F. Martinez, R.N. Hey, K. Maeda & K. Ohno (1997)- Synchronous reorientation of the Woodlark Basin spreading center. Earth Planetary Sci. Letters 146, p. 233-242.
(Seafloor spreading in Woodlark Basin began at ~6 Ma, following period of continental rifting, and propagated W-ward. New multibeam bathymetry and magnetic data shows present spreading axis oblique to older seafloor fabric and Brunhes/Matuyama (0.78 Ma) crustal boundary, indicating 22° CCW re-orientation of 500km long Woodlark Basin spreading system at ~80 ka)

Gordon, S.M., T.A. Little, B.R. Hacker, S.A. Bowring, M. Korchinski, S.L. Baldwin & A.R.C. Kylander-Clark (2012)- Multi-stage exhumation of young UHP-HP rocks: timescales of melt crystallization in the DôEntrecasteaux Islands, southeastern Papua New Guinea. Earth Planetary Sci. Letters 351-352, p. 237-246.
(online at: http://www.geol.ucsb.edu/faculty/hacker/viz/Gordon12_PNG_eclogite_UPb.pdf)
(D'Entrecasteaux Islands outcrops of youngest known ultrahigh-pressure (UHP)- high-pressure eclogites and gneisses. Zircons ages suggests eclogites may have undergone UHP metamorphism from ~7.2- 4.6 Ma; TIMS dates suggest 5.6-4.6 Ma. Eclogite and gneisses exhumed to lower crustal depths by ~3.5-3.0 Ma)

Gregoire, M., B.I.A. McInnes & S.Z. O'Reilly (2001)- Hydrous metasomatism of oceanic sub-arc mantle, Lihir, Papua New Guinea. Part 2. Trace element characteristics of slab-derived fluids. Lithos 59, p. 91-108.
(See also companion paper by McInnes et al. 2001. On spinel peridotite mantle xenoliths from Tubaf and Edison volcanoes, S of Lihir Island in Tabar-Lihir-Tanga-Feni island arc in PNG)

Haig, D.W. (1985)- Micropalaeontological report on samples from Yule Island. CCOP Techn. Bull. 17, p. 47-59.

Haig, D.W. (1987)- Tertiary foraminiferal rock samples from the western Solomon Sea. Geo-Marine Letters 6, 4, p. 219-228.
(Rock fragments dredged from four stations in W Solomon Sea: (1) E Eocene upper bathyal biomicrite from Trobriand Platform with (Acarinina spp., Pseudohastigerina, Morozovella, etc.); (2) Late Oligocene-E Miocene neritic limestones off Trobriand Platform and inner wall New Britain Trench; (3) Miocene bathyal sediments from Trobriand Platform; (4) similar Pliocene from inner wall New Britain Trench and central part Solomon Sea Basin. No reworked pre-Tertiary foraminifera)

Haig, D.W. & P.J. Coleman (1988)- Neogene foraminifera as time space indicators in New Ireland, Papua New Guinea. In: M.S. Marlow et al. (eds.) Geology and offshore resources of Pacific island arcs- New Ireland and Manus region, Papua New Guinea, Circum-Pacific Council Energy and Mineral Resources, Houston, Earth Science Ser. 9, p. 91-111.
(Oldest known foram assemblage (E Oligocene with abundant Nummulites fichteli) in pebbles from Jaulu Volcanics in New Ireland, PNG. Assemblages from Lelet Lst range from latest Oligocene (Te with Miogypsinoides dehaartii, Miogypsina)- Late Miocene. During M Miocene bathyal sedimentation in N and S

New Ireland. Latest Pliocene- E Pleistocene assemblages indicate shallowing from middle bathyal and date final emergence of New Ireland landmass from ~2.0 Ma)

Hammarstrom, J.M., D. Saroa, B.T. Setiabudi, D.N. Sunuhadi, G.R. Robinson, C.L. Dicken, S. Ludington, A.A. Bookstrom & M.L. Zientek (2013)- Porphyry copper assessment for Tract 009pCu7209, Inner Melanesian Arc-New Britain, Papua New Guinea. In: J.M. Hammarstrom et al., Porphyry copper assessment of Southeast Asia and Melanesia, U.S. Geol. Survey, Scient. Invest. Rept. 2010-5090-D, Appendix T, p. 275-286.
(online at: http://pubs.usgs.gov/sir/2010/5090/d/sir2010-5090d_text.pdf)
(Assessment of porphyry copper deposits in Late Eocene - E Miocene Inner Melanesian Arc on New Britain Island, part of 1000km-long calc-alkaline Inner Melanesian Arc that developed from SW-ward subduction of Pacific Plate along New Britain Trench. Porphyry and high-sulfidation epithermal systems formed during plate reorganization at ~24-25 Ma, when New Britain was at intersection of S Caroline and Melanesian Arcs (Uasilau-Yau Yau intrusive complex, Pleysumi (24.5 Ma), Kulu (22.6 Ma), Esis, Simuku, Sinivit, Andewa, etc))

Hammarstrom, J.M., D. Saroa, B.T. Setiabudi, D.N. Sunuhadi, G.R. Robinson, C.L. Dicken, S. Ludington, A.A. Bookstrom & M.L. Zientek (2013)- Porphyry copper assessment for Tract 009pCu7207, Outer Melanesian Arc I- Papua New Guinea. In: J.M. Hammarstrom et al., Porphyry copper assessment of Southeast Asia and Melanesia, U.S. Geol. Survey, Scient. Invest. Rept. 2010-5090-D, Appendix U, p. 287-302.
(online at: http://pubs.usgs.gov/sir/2010/5090/d/sir2010-5090d_text.pdf)
(Assessment of Eocene and younger porphyry copper deposits in Outer Melanesian Arc (Manus, New Ireland, Bougainvolle, Bismarck Archipelago ((Tabar, Lihir, Tanga and Feni Islands). Arc is N extension of Solomon Arc, tied to SW subduction of Pacific Plate. Manus (Arie deposit) and New Ireland with E-M Miocene porphyry copper prospects. Bougainville hosts Pliocene porphyry copper deposits (Panguna; 3.4 Ma; closed 1989))

Hanzawa, S. (1947)- Note on an Eocene foraminiferal limestone from New Britain. In: Recent Progress of Natural Sciences in Japan, Nihon Shizen Kagaku Shuho (Japanese J. Geology Geography), 20, 2-4, p. 59-61.
(Foraminiferal assemblage of limestone block in river near Nakanai, New Britain, includes two new species, Pellatispira reticularis and Acervulina linearis and resembles Eocene fauna of Palau island)

Harlow, G.E., G.R. Summerhayes, H.L. Davies & L. Matisoo-Smith (2012)- Jade gouge from Emirau Island, Papua New Guinea (Early Lapita context, 3300 BP): a unique jadeitite. European J. Mineralogy 24, p. 391-399.
(Small stone artifact from Emirau Island, Bismarck Archipelago consists of jadeitite- jadeite jade of unusual composition. Possible source along Torare River in NE W Papua, Indonesia, where 'chloromelanite' (= jadeitite) was collected by Wichmann in 1903 near Humboldt Bay, with stone adzes made from same material)

Haschke, M. & Z. Ben-Avraham (2005)- Adakites from collision-modified lithosphere. Geophysical Research Letters 32, 15, L15302, p. 1-4.
(online at: http://onlinelibrary.wiley.com/doi/10.1029/2005GL023468/pdf)
(Quaternary hornblende-bearing dacites and trachytes from Lusancay Islands and Aird Hills (~150 km N of Woodlark Rift, SE of PNG) show adakitic geochemical signatures. Adakites may be linked to rifting of collision-modified lithosphere)

Hedervadi, P. & Z. Papp (1977)- Seismicity maps of the New Guinea Solomon Islands region. Tectonophysics 42, p, 261-281.

Hill, E.J. (1994)- Geometry and kinematics of shear zones formed during continental extension in eastern Papua New Guinea. J. Structural Geol. 16, 8, p. 1093-1105.
(D'Entrecasteaux Islands (Goodenough, Fergusson islands) of E PNG in area of continental extension, active since M Miocene. During last 4 Ma metamorphic basement domes uplifted and exhumed from depths of ~35 km. Tectonic exhumation by deformation in broad mylonitic shear zones. Progressive evolution in shear zones from dominantly ductile to brittle processes and decreasing metamorphic grade (retrograde metamorphism), result of uplift and cooling)

Hill, E.J. & S.L. Baldwin (1993)- Exhumation of high-pressure metamorphic rocks during crustal extension in the D'Entrecasteaux region, Papua New Guinea. J. Metamorphic Geol. 11, 2, p. 261-277.
(D'Entrecasteaux Islands of E PNG consist of number of active metamorphic core complexes, formed under extensional tectonic setting related to sea-floor spreading in west Woodlark Basin. Complexes are mountainous domes of fault-bounded, high-grade metamorphics (including eclogite facies) intruded by 2-4 Ma granodiorite plutons. Two major episodes of granodiorite intrusion during uplift and exhumation of core complexes. Both closely coincide spatially with high-T metamorphic rocks)

Hill, E.J., S.L. Baldwin & G.S. Lister (1992)- Unroofing of active metamorphic core complexes in the D'Entrecasteaux Islands, Papua New Guinea. Geology 20, 10, p. 907-910.
(Metamorphic core complexes formed as result of active extension at W end of Woodlark Basin. High grade metamorphism followed by rapid cooling between 1-2 Ma)

Hill, E.J., S.L. Baldwin & G.S. Lister (1995)- Magmatism as an essential driving force for formation of active metamorphic core complexes in eastern Papua New Guinea. J. Geophysical Research 100, p. 10441-10451.
(Metamorphic core complexes of D'Entrecasteaux Islands intruded by granodiorite plutons during formation. Granodiorite magmatism and development metamorphic core complexes in linear zone coinciding with zone of thick crust and rugged topography. Plutonism facilitated deformation in ductile extensional shear zones, resulting in tectonic exhumation of deep crustal rocks. Source of plutons may be related to linear zone of mantle upwelling related to propagation of Woodlark seafloor spreading center into continental crust)

Hilyard, D. & R. Rogerson (1989)- Revised stratigraphy of Bougainville and Buka Islands, Papua New Guinea. In: J.G. Vedder & T.R. Bruns (eds.) Geology and offshore resources of Pacific Island arcs; Solomon Islands and Bougainville, Papua New Guinea regions, Circum-Pacific Council Energy and Mineral Resources, Houston, Earth Sci. Ser. 12, p. 87-92.
(Oldest exposed rocks on Bougainville Island Late Eocene- E Oligocene Atamo Volcanics. Miocene (Tf) Keriaka limestone, etc.)

Hine, R., S.M. Bye, F.W. Cook, J.F. Leckie & G.L. Torr (1978)- The Esis porphyry copper deposit, East New Britain, Papua New Guinea. Economic Geology 73, p. 761-767.
(Esis porphyry copper deposit in E New Britain typical island-arc setting, at margin of Late Oligocene composite pluton, intruding Eocene basic volcanics)

Hine, R. & D.R. Mason (1978)- Intrusive rocks associated with porphyry copper mineralization, New Britain, Papua New Guinea. Economic Geology 73, p. 749-760.
(U Oligocene- M Miocene I-type granitic-dioritic intrusive complexes of New Britain intrude basic Eocene volcanics that form part of basement of New Britain island arc. With small centers of porphyry copper mineralization)

Hoffmann, G.D. (2010)- Tectonic processes and submarine flows in the Bismarck Volcanic Arc, Papua New Guinea. Ph.D. Thesis, University of California, Santa Cruz, p. 1-264.
(online at: https://media.proquest.com/media/pq/classic/doc/2142289031/)
(Study of four fields of undulating sediments from sidescan and multibeam sonar imagery in Bismarck Sea, N of NewBritain island)

Hoffmann, G., E. Silver, S. Day, N. Driscoll & D. Orange (2011)- Deformation versus deposition of sediment waves in the Bismarck Sea, Papua New Guinea. In: R.C. Shipp et al. (eds.) Mass-transport deposits in deepwater settings, Soc. Sedimentary Geology (SEPM) Spec. Publ. 96, p. 455-474.
(Four fields of undulating sediment in Bismarck volcanic arc N of New Britain island associated with downslope scour features and other evidence of turbidity-current activity, probably formed by combination of extensional deformation and repeated turbidity currents)

Hoffmann, G., E. Silver, S. Day, E. Morgan, N. Driscoll & B. Appelgate (2010)- Drowned carbonate platforms in the Bismarck Sea, Papua New Guinea. J. Marine Geophysical Res. 30, 4, p. 229-236.

(online at: www.springerlink.com/content/1172968x20u86n38/fulltext.pdf)
(Extinct volcanic islands in Bismarck volcanic arc fringed by well-developed coral reefs, with drowned platforms down to 1100m BSL, providing evidence for subsidence in C section of arc, N of Finisterre Terrane-Australia collision. Adjacent mainland coast has raised terraces indicating long-term uplift. Volcanic and sedimentary loading can explain inferred relative subsidence)

Hoffmann, G., E. Silver, S. Day, E. Morgan, N. Driscoll & D. Orange (2008)- Sediment waves in the Bismarck Volcanic Arc, Papua New Guinea. In: A.E. Draut et al. (eds.) Formation and applications of the sedimentary secord in arc collision zones, Geol. Soc. America (GSA), Spec. Paper 436, p. 91-126.
(Six fields of sediment waves imaged in Bismarck Volcanic Arc. Sediment structures not unique and can result from predominantly continuous currents or episodic (turbidity) current, or from deformation of sediment)

Hohnen, P.D. (1978)- Geology of New Ireland, Papua New Guinea. Bull. Bureau Mineral Res., Geol. Geoph. 194 (PNG 12), p. 1-39.
(online at: https://d28rz98at9flks.cloudfront.net/69/Bull_194.pdf)
(New Ireland is E-M Oligocene volcanic island arc deposits. Overlain by Late Oligocene- earliest Miocene erosional surface, ~500m of E Miocene (Te5)- early Late Miocene limestones. Late Miocene faulting, latest Miocene- E Pliocene volcanoclastics in graben, Late Pliocene and younger uplift)

Holm, R.J. & S.W. Richards (2013)- A re-evaluation of arc-continent collision and along-arc variation in the Bismarck Sea region, Papua New Guinea. Australian J. Earth Sci. 60, p. 605-619.
(Bismarck Sea region of NE PNG marked by recent arc-continent collision. Australian continental crust extends as underthrust block beneath accreted Finisterre Terrane. Subducting continental crust and slab stagnation resulted in complex arc-related geochemical signatures along Bismarck arc. In E Solomon Sea plate is subducting beneath New Britain and sedimentary component is low, whereas in W arc volcanics exhibit greater sedimentary component, consistent with subduction of Australian crustal sediments)

Holm, R.J., S.W. Richards, G. Rosenbaum & C. Spandler (2015)- Disparate tectonic settings for mineralisation in an active arc, Eastern Papua New Guinea and the Solomon Islands. In: Proc. PACRIM 2015 Congress, Hongkong, Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, Publ. Ser. 2/2015, p. 165-170.
(Majority of mineral systems in active magmatic arcs of E PNG and Solomon Islands (Ladolam, Panguna, Solwara) are younger than 4 Ma. With new plate reconstructions for 3.5Ma- Recent)

Holm, R.J., C. Spandler & S.W. Richards (2013)- Melanesian arc far-field response to collision of the Ontong Java Plateau: geochronology and petrogenesis of the Simuku Igneous Complex, New Britain, Papua New Guinea. Tectonophysics 603, p. 189-212.
(Mid-Cenozoic Melanesian arc studied at Simuku Igneous Complex of W New Britain, PNG. Development of embryonic island arc from at least 40 Ma, progressive arc growth and subduction terminated by distant collision of Ontong Java Plateau at 26 Ma. Simuku Porphyry Complex emplaced between 24-20 Ma)

Holm, R.J., C. Spandler & S.W. Richards (2013)- Adakitic magmatism during subduction cessation: Melanesian arc far-field response to arrival of the Ontong Java Plateau. Proc. SSGMP 2013, Mission Beach, QLD, p. *(Poster presentation)*
(Melanesian Arc Baining Volcanics (43-37 Ma; M-L Eocene) and Kupluk Volcanics (32-27 Ma; E Oligocene) represent 'normal' island arc volcanicsm that forms New Britain Basement. Collision of Ontong Java Plateau with Solomon Islands at 26 Ma ended subduction and led to post-collision adakitic Simuku Porphyry Complex (24-20 Ma; E Miocene). Origin of adakites probably from melting of subducted slab)

Honza, E., H.L. Davies, J.B. Keene & D.L. Tiffin (1987)- Plate boundaries and evolution of the Solomon Sea region. Geo-Marine Letters 7, 3, p. 161-168.
(Solomon Sea Plate widely developed N of PNG in Late Oligocene, separating proto-West Melanesian Arc from proto-Trobriand Arc. Spreading in Bismarck Sea and Woodlark Basin resulted from collision of proto-West Melanesian Arc with N New Guinea, after arc reversal. This model explains extensive Miocene, Pliocene and Quaternary volcanism of PNG mainland as it related to S-ward subduction of Trobriand Trough)

Honza, E., T. Miyazaki & J. Lock (1989)- Subduction erosion and accretion in the Solomon Sea region. Tectonophysics 160, p. 49-62.

Jaques, A.L. & A.W. Webb (1975)-, Geochronology of porphyry copper intrusives from Manus Island, Papua New Guinea. Geol. Survey Papua New Guinea, Report 75/5, 10p.
(Incl. Arie porphyry copper deposit, ~15 Ma, Mount Kren prosect, ~14 Ma)

Johnson, D., P. Maillet & R. Price (1993)- Regional setting of a complex backarc: New Hebrides Arc, northern Vanatu- eastern Solomon Islands. Geo-Marine Letters 13, 2, p. 82-89.
(Complex backarc area of N New Hebrides Arc with deeply faulted Jean Charcot Troughs, 2400-3000m deep and not magmatically active. They appear to be fragmented older crust and not usual backarc basins)

Jakes, P. & A.J.R. White (1969)- Structure of the Melanesian arcs and correlation with distribution of magma types. Tectonophysics 8, 3, p. 223-236.
(Chemical data on Cenozoic lavas from Melanesia indicate zonal arrangement in New Guinea-New Britain arc: (1) tholeiitic on ocean side of New Guinea (Manam, Karkar), and N of New Britain; (2) calc-alkaline on East Papuan coast (Mt. Lamington, Mt. Victory); (3) shoshonitic association of New Guinea highlands (Mt. Hagen, Mt. Giluwe) and East Papua. Zonation not distinct in Solomon Island Arc. Lavas of the New Georgia Group tholeiiticand calc-alkaline affinities; rocks from Bougainville and Guadalcanal calc-alkaline)

Johnson, R.W. (1976)- Late Cainozoic volcanism and plate tectonics at the southern margin of the Bismarck Sea, Papua New Guinea. In: R.W. Johnson (ed.) Volcanism in Australasia, Elsevier Scient. Publ. Co., Amsterdam, p. 101-116.
(Late Cenozoic South Bismarck volcanic arc at S margin of Bismarck Sea, off NE PNG, 1000km long and two segments: (1) W arc at boundary between S Bismarck and Indo-Australian plates and (2) E arc with zig-zag volcano distribution associated with boundary between S Bismarck plate and Solomon Sea plates at N coast of New Britain. Volcanism tied to steeply N-dipping subduction of Solomon Sea plate)

Johnson, R.W. (1976)- Potassium variation across the New Britain volcanic arc. Earth Planetary Sci. Letters 31, p. 184-191.
(Late Cenozoic volcanoes of NewBritain island arc overlie N-dipping Benioff zone that extends to depth of 580 km. Unlike other island arcs K2O contents in rocks with same SiO2 content do not increase with depth)

Johnson, R.W. (1977)- Distribution and major-element chemistry of late Cainozoic volcanoes at the southern margin of the Bismarck Sea, Papua New Guinea. Bureau Mineral Res., Geol. Geoph., Canberra, Report 188, p. 1-323.
(online at: www.ga.gov.au/corporate_data/15102/Rep_188.pdf)

Johnson, R.W. & R.J. Arculus (1978)- Volcanic rocks of the Witu Islands, Papua New Guinea: the origin of magmas above the deepest part of the New Britain Benioff zone. Bull. Volcanologique 41, 4, p. 609-655.
(Witu Islands are Quaternary volcanoes overlie deepest (~300-580 km) part of New Britain Benioff zone. Rocks are olivine- and quartz-normative tholeiitic basalts, low- and high-SiO2 andesites, dacites and rhyolites. Alkaline rocks that overlie deep (>300 km) parts of other Benioff zones not found in Witu Islands)

Johnson, R.W., J.C. Mutter & R.J. Arculus (1979)- Origin of the Willaumez-Manus Rise, Papua New Guinea. Earth Planetary Sci. Letters 44, p. 247-260.
(Asymmetrical rise, 450 km long, on Bismarck Sea floor between Manus Island and Willaumez Peninsula on N-C coast of New Britain. Separates Manus Basin from New Guinea Basin. Rise may be result of excess magmatism possibly related to inferred mantle hot spot beneath St. Andrew Strait)

Johnson, R.W., M.R. Perfit, B.W. Chappell, A.L. Jaques, R.D. Shuster & W.I. Ridley (1988)- Volcanism in the New Ireland Basin and Manus Island region: notes on the geochemistry and petrology of some dredged volcanic rocks from a rifted-arc region. In: M.S. Marlow et al. (eds.) Geology and offshore resources of Pacific island

arcs- New Ireland and Manus region, Papua New Guinea, Circum-Pacific Council Energy and Mineral Resources, Houston, Earth Science Ser. 9, p. 113-130.
(Volcanic rocks dredged from Manus- New Ireland rifted arc system high compositional diversity)

Johnson, R.W., D.A. Wallace and D.J. Ellis (1976)- Feldspathoid-bearing potassic rocks and associated types from volcanic islands off the coast of New Ireland, Papua New Guinea: a preliminary account of geology and petrology. In: R.W. Johnson (ed.) Volcanism in Australasia, Elsevier Scient. Publ. Co., Amsterdam, p. 297-316.
(M Miocene- Pleistocene volcanic rocks of Tabar, Lihir, Tanga and Feni islands wide range of compositions)

Joseph, L.E. & E.J. Finlayson (1991)- A revised stratigraphy of Muyua (Woodlark Island). Geol. Survey Papua New Guinea, Rept. 91/3, p. 1-56.
(also summary in Proc. Papua New Guinea Geology, Exploration and Mining Conference 1991, p. 26-33)

Joshima, M. & E. Honza (1986)- Age estimation of the Solomon Sea based on heat flow data. Geo-Marine Letters 6, 4, p. 211-217.
(Heatflow average of 87 mW/m2 (2.08 HFU) indicates age of Solomon Sea Basin ranges from 24-44 Ma. Supported by water depth of ~4500m)

Joshima, M., Y. Okuda, F. Murakami, K. Kishimoto & E. Honza (1987)- Age of the Solomon Sea Basin from magnetic lineations. Geo-Marine Letters 6, 4, p. 229-234.
(Magnetic anomalies in central to W half of Solomon Sea best fit age of 34-28 Ma and 5.8 cm/yr half-rate spreading speed. Heat flow and bathymetry data support this model)

Kamenov, G.D. (2004)- Magmatism and ore deposit formation in SW Pacific islands. Ph.D. Thesis University of Florida, Miami, p. 1-138.
(online at: http://ufdc.ufl.edu/UFE0008250/00001/pdf)
(Model of ore formation and magmatism in Tabar-LihirTanga-Feni island arc: injection of volatile-rich magma into evolving magma body near surface is triggering event that results in ore mineralization. Subducted oceanic slabs control composition of island-arc magmas. Once contribution from subducting slab decreases, incorporation of mantle component with Indian affinity in isotopic composition of lavas)

Kamenov, G.D., M.R. Perfit, I.R. Jonasson & P.A. Mueller (2005)- High-precision Pb isotope measurements reveal magma recharge as a mechanism for ore deposit formation: examples from Lihir Island and Conical seamount, Papua New Guinea. Chemical Geology 219, p. 131-148.

Kamenov, G.D., M.R. Perfit, P.A. Mueller & I.R. Jonasson (2008)- Controls on magmatism in an island arc environment: study of lavas and sub-arc xenoliths from the Tabar-Lihir-Tanga-Feni island chain, Papua New Guinea. Contrib. Mineralogy Petrology 155, p. 635-656.
(TLTF islands with mainly high-K alkaline and silica-undersaturated alkaline rocks with geochemical features typical of subduction-related magmatism. Sedimentary, mafic and ultramafic xenoliths from Tubaf seamount show underlying crust composed of sediments and oceanic crust of Pacific affinity)

Katz, H.R. (1984)- Southwest Pacific island arcs: sedimentary basins and petroleum prospects in the New Hebrides and Solomon Islands. In: S.T. Watson (ed.) Trans. Third Circum-Pacific Energy and Mineral Resources Conference, Honolulu 1982, American Assoc. Petrol. Geol. (AAPG), p. 181-189.
(New Hebrides and Solomon Islands have sedimentary basins with several 1000's m of Miocene- Pliocene sediments, predominantly volcanoclastics deposited in shelf to deep marine environments. Original basins 600-700km wide, but margins strongly deformed, uplifted and eroded. Little is known of source potential)

Kennedy, A.K., S.R. Hart & F.A. Frey (1990)- Composition and isotopic constraints on the petrogenesis of alkaline arc lavas; Lihir Island, Papua New Guinea. J. Geophysical Research 95, B5, p. 6929-6942.
(SiO2-undersaturated lavas from Lihir island, like most arc lavas, enriched in Sr, Ba, K, Rb and Cs and depleted in Hf, Ta, Nb and Ti relative to oceanic basalts, but not product of present-day subduction. Alkaline

lavas reflect generation, in tensional tectonic environment, from 'fossil' arc mantle region enriched in alkali and alkaline earth elements during two earlier subduction episodes)

Kicinski, F.M. (1956)- Note on the occurrence of some Tertiary larger foraminifera on Bougainville Island (Solomon Islands). In: Papers on Tertiary micropalaeontology, Bureau Mineral Res. Geol. Geoph., Canberra, Rept. 25, p. 76-77.
(online at: www.ga.gov.au/products-services/legacy-publications/reports.html)
(Brief note on limestone samples from Bougainville: Wakuai River with Te Spiroclypeus, Miogypsinoides; Sisivi area with Tf2 Lepidocyclina verrucosa)

Kicinski, F.M. & D.J. Belford (1956)- Notes on the Tertiary succession and foraminifera of Manus Island. In: Papers on Tertiary micropalaeontology, Bureau Mineral Res. Geol. Geoph., Canberra, Report 25, p. 71-75.
(online at: https://d28rz98at9flks.cloudfront.net/14939/Rep_025.pdf))
('Hinterland Limestone' of Manus Island NE of PNG with Lower Tf (=Burdigalian) larger foraminifera Miogypsina kotoi and Lepidocyclina, overlain by M-U Miocene? rel. deep marine tuffaceous siltstone and volcanics with rich smaller benthic and pelagic forams)

Kidd, R.P. & J.R. Robinson (2004)- A review of the Kapit Orebody, Lihir Island Group, Papua New Guinea. In: Proc. PACRIM 2004 Conf., Adelaide, Australasian Inst. of Mining and Metallurgy, Melbourne, 9p.

Kington, J.D. & A.M. Goodliffe (2008)- Plate motions and continental extension at the rifting to spreading transition in Woodlark Basin, Papua New Guinea: can oceanic plate kinematics be extended into continental rifts? Tectonophysics 458, p. 82-95.
(online at: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.725.6203&rep=rep1&type=pdf)
(Woodlark Basin comparison of brittle extension, subsidence and extension predicted from long-term plate motions at rifting to spreading transition of a non-volcanic margin. Seismic data near rifting to spreading transition yields 111km of brittle extension, subsidence predicts about same. Long term plate motions derived from seafloor spreading predict 220km of extension)

Knight, C.L., R.B. Fraser & A. Baumer (1973)- Geology of the Bougainville copper orebody, New Guinea. In: Metallogenic provinces and mineral deposits in the southwestern Pacific, 12th Pacific Science Congress Symposium, Canberra 1971, Bureau Mineral Res. (BMR) Geol. Geoph. Bull. 141, p. 123-133.
(online at: www.ga.gov.au/corporate_data/108/Bull_141.pdf)
(Bougainville island porphyry copper deposit intrusive into Miocene volcanics and associated sediments)

Korchinski, M., T.A. Little, E. Smith & M.A. Millet (2012)- Variation of Ti-in-quartz in gneiss domes exposing the world's youngest ultrahigh-pressure rocks, D'Entrecasteaux Islands, Papua New Guinea. Geochem. Geophys. Geosystems 13, 10, p. 1-27.
(online at: http://onlinelibrary.wiley.com/doi/10.1029/2012GC004230/epdf)
(D'Entrecasteaux Island gneiss domes, PNG, expose world's youngest UHP rocks (5-8 Ma). Ti-in-quartz used as tool to infer domains of differing cooling rates across 4 domes.Fastest cooled rocks exhumed near center of domes Data reinforces structurally based arguments that domes were emplaced vertically into crust as diapirs, not laterally exhumed as result of large-magnitude slip on dome-bounding detachment faults)

Kulig, C., R. McCaffrey, G.A. Abers & H. Letz (1993)- Shallow seismicity of arc-continent collision near Lae, Papua New Guinea. Tectonophysics 27, p. 81-93.
(Ramu-Markham Valley separates island arc rocks to N from continental rocks in S and appears to be W, onland extension of New Britain trench. Narrow, near-vertical belt of seismicity between 10-30 km depth. Huon Peninsula is being emplaced onto Australian plate along gently (~25°) N-dipping thrust fault that is 20 km deep beneath Lae. Ramu-Markhan FZ may be steeply dipping thrust fault that connects with this thrust)

Kvenvolden, K.A. (1988)- Hydrocarbon gas in botton sediment from offshore the northern islands of Papua New Guinea. In: M.S. Marlow et al. (eds.) Geology and offshore resources of Pacific island arcs- New Ireland

and Manus region, Papua New Guinea, Circum-Pacific Council Energy and Mineral Resources, Houston, Earth Science Ser. 9, p. 157-160.
(Small concentrations of hydrocarbon gases in 11 samples from 6 gravity cores in New Ireland basin. No evidence for petroleum-related hydrocarbons)

Kvenvolden, K. A. & A. Niem (1989)- Hydrocarbon gases in sediments of the Solomon Islands area. In J.G. Vedder & T.R. Bruns (eds.) Geology and Offshore Resources of Pacific Island arcs-Solomon Islands and Bougainville, Papua New Guinea Regions, Texas, Circum-Pacific Council Energy and Mineral Resources, Earth Science Ser. 12, Houston, p. 283-286.
(Small concentrations of microbial-origin hydrocarbon gases in C Solomons Trough)

Lackschewitz, K.S., D.F. Mertz, , C.W. Devey & C.D. Garbe-Schonberg (2003)- Late Cenozoic volcanism in the western Woodlark Basin area, SW Pacific: the sources of marine volcanic ash layers based on their elemental and Sr-Nd isotope compositions. Bull. Volcanology 65, p. 182-200.
(Tephra fallout layers and volcaniclastics from volcanic sources around/ on Papuan Peninsula form substantial part of Plio-Pleistocene Woodlark Basin marine sediment. Mainly rhyolitic compositions, with subordinate basaltic andesites, etc. Volcanogenic layers indicate much calc-alkaline rhyolitic volcanism in E Papua since 3.8 Ma, but at 135 ka peralkaline tephras appear, reflecting change from crustal subduction to spreading)

Lee, S.M. & E. Ruellan (2006)- Tectonic and magmatic evolution of the Bismarck Sea, Papua New Guinea: review and new synthesis. In: D.M. Christie et al. (eds.) Back-arc spreading systems: geological, biological, chemical and physical interactions, AGU Geophys. Monogr. Ser. 166, p. 263-286.
(Bismarck Sea N of PNG went through back-arc development beginning in M Pliocene. Around 3.5 Ma N tip of New Guinea came into contact with Finisterre-Huon Range, triggering back-arc opening that eventually divided Bismarck seafloor into N and S Bismarck Plates. Docking of Finisterre- Huon Range with New Guinea Highlands allowed S Bismarck Plate to open faster to E in Manus Basin. Seafloor spreading commenced in Manus Spreading Center <0.78 Ma. Anomalously large distance (>400 km) between arc and spreading axis)

Lewis, R.W. & G.I. Wilson (1990)- Misima gold deposit. In: F.E. Hughes (ed.) Geology of mineral deposits of Australia and Papua New Guinea, Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, p. 1741-1745.
(Misima Island in Milne Bay, Solomon Sea with Umuna epithermal gold-silver deposit in host rocks of metamorphosed Cretaceous-Paleogene volcano-sedimentary sequence, intruded by Neogene granodioritic bodies)

Lindley, I.D. (1988)- Early Cainozoic stratigraphy and structure of the Gazelle Peninsula, East New Britain; an example of extensional tectonics in the New Britain arc trench complex. Australian J. Earth Sci. 35, 2, p. 231-244.
(Early Cenozoic sedimentation and volcanism in Gazelle Peninsula three distinct volcanic episodes: Late Eocene, Late Oligocene and Mio-Pliocene. Pre-Miocene andesitic volcanism typical of early island arc. At Oligocene-Miocene boundary major orogeny. Sedimentation resumed in E Miocene with development of extensive carbonate platform. Post-E Miocene history dominated by extensional tectonic regime)

Lindley, I.D. (1994)- A physical volcanology of the mid-Miocene Okiduse Volcanics, Woodlark Island, Papua New Guinea. In: R. Rogerson (ed.) Proc. Papua New Guinea geology, exploration and mining Conf., Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, p. 2-15.

Lindley, I.D. (1998)- Mount Sinivit Gold deposits. In: D.A. Berkman & D.H. Mackenzie (eds.) Geology of Australian and Papua New Guinean mineral deposits, Australasian Inst. Mining Metallurgy (AusIMM), Melbourne, Monogr. 22, p. 821-826.
(Porphyry copper-gold and epithermal gold mineralization on Gazella Peninsula, E New Britain, associated with Late Oligocene- E Miocene igneous activity. Mt Sinivit veins with chalcopyrite, pyrite, bornite, etc.. K-Ar age of sericitic wallrock alteration indicate formation at 22-23 Ma)

Lindley, I.D. (2006)- Extensional and vertical tectonics in the New Guinea islands: implications for island arc evolution. Annals Geophysics 49, Suppl. 1, p. 403-426.
(online at: www.annalsofgeophysics.eu/index.php/annals/article/viewFile/4406/4486)
(Tectonic evolution of islands E of PNG. Disposition of slabs of formerly extensive Miocene platform carbonate suggests New Ireland and New Britain have undergone little more than gentle tilting and uniform uplift, despite location in tectonically dynamic areas)

Lindley, I.D. (2006)- New Britain Trench, Papua New Guinea: an extensional element in a regional sinistral strike-slip system. New concepts in global tectonics Newsletter 41, p. 15-27.
(New Britain Trench SE of New Britain island often viewd as subduction trench, but here reinterpreted as extensional jog-like element of left-stepping sinistral strike-slip zone that extends from Solomon Islands through to W New Guinea)

Lindley, I.D. (2015)- Late Quaternary geology of Ambitle Volcano, Feni Island Group, Papua New Guinea. Australian J. Earth Sci. 62, 5, p. 529-545.
(Ambitle Volcano part of Pliocene-Pleistocene Tabar-Lihir-Tanga-Feni (TLTF) alkalic volcanic province in New Ireland Basin. Volcano rises 2500m above surrounding sea floor, with elevation up to 479 m above sea level. Volcanic deposits rest unconformably on Oligocene basement rocks of New Ireland Basin)

Lindley, I.D. (2016)- Volcanological study of the middle Miocene Okiduse Volcanic Group, Woodlark Island (Muyuw), eastern Papua. Australian J. Earth Sci. 63, 6, p. 731-754.
(Woodlark Island (Muyuw) rifting started in Late Miocene (8.8-6 Ma), associated with W-ward-propagating Woodlark Basin seafloor spreading centre. Island underlain by M Miocene calc-alkaline to shoshonitic Okiduse Volcanic Gp., with two major M Miocene volcanic centres (14-12 Ma))

Lindley, I.D. (2016)- Plate flexure and volcanism: Late Cenozoic tectonics of the Tabar-Lihir-Tanga-Feni alkalic province, New Ireland Basin, Papua New Guinea. Tectonophysics 677, p. 312-323.
(Pliocene-Pleistocene Tabar-Lihir-Tanga-Feni (TLTF) alkaline volcanism, New Ireland Basin, associated with extensional cracks along crests of flexed ridges developed on New Ireland Microplate. The tectonic alignment of the TLTF volcanic arc perpendicular to flexed ridges, suggesting fractures parallel to direction of compression facilitated rapid ascent of alkaline magmas from mantle, perhaps 60-70 km depth)

Little, T.A., S.L. Baldwin, P.G. Fitzgerald & B. Monteleone (2007)- Continental rifting and metamorphic core complex formation ahead of the Woodlark spreading ridge, D'Entrecasteaux Islands, Papua New Guinea, Tectonics, 26, TC1002, doi:10.1029/2005TC001911, 26p.
(Metamorphic core complex (MCC) on Normanby Island in Woodlark rift. Over1 km thick blueschist-derived mylonites formed in mid-crustal shear zone in Pliocene at ~400-500°C. This top-to-N zone reactivated gently dipping base of Papuan ophiolite (PUB). Mylonites in MCC lower plate exhumed along detachment as result of >50km of slip, at >12 mm/yr. Inactive detachment preserves fault surface lineations parallel to Plio-Pleistocene plate motion. Extreme crustal thinning near MCC preconditioned later continental breakup. Lower crust weak, thickening beneath unloaded footwalls to uplift MCCs above sea level, and flowing laterally to even out regional crustal thickness contrasts on 1-6 M.y. timescale)

Little, T.A., B.R. Hacker, S.M. Gordon, S.L. Baldwin, P.G. Fitzgerald, S. Ellis & M. Korchinski (2011)- Diapiric exhumation of Earth's youngest (UHP) eclogites in the gneiss domes of the D'Entrecasteaux Islands, Papua New Guinea. Tectonophysics 510, p. 39-68.
(Woodlark rift, E PNG, hosts world's youngest (2-8 Ma) eclogites. Derived from Australian Plate-derived continental rocks, subducted to UHP depths during Eocene Papuan arc-continent collision. Exhumation processes buoyancy-driven (uplift of previously subducted continental fragment))

Llanes, P., E. Silver, S. Day & G. Hoffman (2009)- Interactions between a transform fault and arc volcanism in the Bismarck Sea, Papua New Guinea Geochem. Geophys. Geosyst., 10, 6, Q06013, 13p.
(online at: http://onlinelibrary.wiley.com/doi/10.1029/2009GC002430/epdf)

(Geological evolution ofW branch of Bismarck Sea Seismic Lineationregion, offshore NW PNG. At present, the Schouten Islands now parallel to PNG coast, but originally N-S and underwent left-lateral displacement of Bismarck Sea Seismic Lineation. Wei Island on large submarine volcano, possibly formed as part of leaky transform. Subsequent to formation Wei Island bisected, and pieces displaced 45 km)

Lloyd, A.R. (1963)- Foraminifera and other fossils from the Tertiary of the Gazelle Peninsula, New Britain. Bureau Mineral Res. Geol. Geoph., Record 1963/91, p. 1-8.
(online at: www.ga.gov.au/corporate_data/11174/Rec1963_091.pdf)
(Foraminifera from outcrop samples, incl. E Miocene limestones with Miogypsina, Miogypsinoides, Austrotrillina)

Lock, J., H.L. Davies, D.L. Tiffin, F. Murakami & K. Kisimoto (1987)- The Trobriand subduction system in the Western Solomon Sea. Geo-Marine Letters 7, 3, p. 129-134.
(S-dipping subduction system under Trobriand Trough and 149° Embayment, on S margin of Solomon Sea, is active or was recently active. Oceanic basement overlain by 2.5 sec TWT of sediment showing two deformation stages: early thrusts (inner wall) and normal faults (outer wall), and later normal faults that elevated outer trench margin. Thrust anticlines and slope basins on inner wall)

Luyendyk, B.P., K.C. MacDonald & W.B. Bryan (1973)- Rifting history of the Woodlark Basin in the Southwest Pacific. Geol. Soc. America (GSA) Bull. 84, 4, p. 1125-1133.
(E part of Woodlark Basin, at SE tip of PNG. presently separating from Australian Plate at >4 cm/yr; W part of basin not presently spreading. Basin began opening as sphenochasm, with pole near tip of E Papua ~20 Ma, caused by left-lateral shear from change in relative motions of Australia - Pacific Plates. Basin opened only few degrees, then stopped. Rifting in entire basin resumed at ~3 Ma, based on magnetic anomaly data)

Ma, Y., Z. Zeng, S. Chen, X. Yin & X. Wang (2017)- Origin of the volcanic rocks erupted in the eastern Manus Basin: basaltic andesite-andesite-dacite associations. J. Ocean University of China 16, 3, p. 389-402.

Macnab, R.P. (1970)- Geology of the Gazelle Peninsula, T.P.N.G.. Bureau Mineral Res. Geol. Geoph., Record No. 1970 /63, p. 1-127.
(online at: https://d28rz98at9flks.cloudfront.net/12476/Rec1970_063.pdf)
(Gazelle Peninsula in NE part of New Britain composed of volcanic rocks with associated sediments and limestone. Oldest rocks Eocene submarine, andesitic Baining Volcanics, intruded by contemporary and Oligocene hypabyssal and plutonic rocks, and partially overlain by U Oligocene- Lw Miocene Merai Volcanics in SE, M Miocene (lower Tf) Yalam Lst in centre W, and U Miocene- Pliocene volcanics in centre and E)

Macnamara, P.M. (1968)- Rock types and mineralization at Panguna porphyry copper prospect, upper Kaverong valley, Bougainville Island. Proc. Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, 228, p. 71-79.

Macpherson, C.G., D.R. Hilton, D.P. Mattey & J.M. Sinton (2000)- Evidence for an 18O-depleted mantle plume from contrasting 18O/16O ratios of back-arc lavas from the Manus Basin and Mariana Trough. Earth Planetary Sci. Letters 176, p. 171-183.
(Back-arc basin glasses from Mariana Trough and Manus Basin contrasting oxygen isotope characteristics that require differences in their mantle sources)

Macpherson, C.G., D.R. Hilton, J.M. Sinton, R.J. Poreda & H. Craig (1998)- High 3He/4He ratios in the Manus backarc basin: implications for mantle mixing and the origin of plumes in the western Pacific Ocean. Geology 26, 11, p. 1007-1010.
(Glasses from lavas in central Manus backarc basin in W Pacific typical plume (or hotspot) 3He/4He ratios)

Madsen, J.A. & I.D. Lindley (1994)- Large-scale structures on Gazelle Peninsula, New Britain: implications for the evolution of the New Britain arc. Australian J. Earth Sci. 41, 6, p. 561-569.

(Structure on Gazelle Peninsula dominated by Mediva Fault and Wide Bay Fault System, both NNW trending, deep-seated features. Mediva Fault extensional structure which focused M Miocene intrusive activity and displaced Quaternary volcanic deposits. Wide Bay Fault System active since at least Late Oligocene, with likely 100km of sinistral strike-slip motion since at least late M Miocene)

Manwaring, E.A. (1971)- Palaeomagnetism of some Recent basalts from New Guinea. Bureau Mineral Res. Geol. Geophys., Record 1971/45, p. 1-26.
(online at: https://d28rz98at9flks.cloudfront.net/12582/Rec1971_045.pdf)
(Paleomagnetic work on 22 sites of young basalts on Baluan, Karar, Lolobau and Rabaul Islands)

Marlow, M.S., N.F. Exon & S.V. Dadisman (1992)- Hydrocarbon potential and gold mineralization in the New Ireland Basin, Papua New Guinea. In: J.S. Watkins et al. (eds.) Geology and geophysics of continental margins, American Assoc. Petrol. Geol. (AAPG), Mem. 53, p. 119-137.

Marlow, M.S., N.F. Exon, H.F. Ryan & S.V. Dadisman (1988)- Offshore structure and stratigraphy of New Ireland basin in northern Papua New Guinea. In: M.S. Marlow et al. (eds.) Geology and offshore resources of Pacific island arcs- New Ireland and Manus region, Papua New Guinea, Circum-Pacific Council Energy and Mineral Resources, Houston, Earth Science Ser. 9, p. 137-155.
(NW trending New Ireland Basin NE of New Hanover- New Ireland islands formed as forearc basin NE of Eocene- E Miocene island arc and adjacent to Manus Trench. Up to 7km of sediment fill)

Martinez, F., A.M. Goodliffe & B. Taylor (2001)- Metamorphic core complex formation by density inversion and lower-crust extrusion. Nature 411, p. 930-934.
(D'Entrecasteaux Islands actively forming metamorphic core complexes in continental rift that laterally evolves to seafloor spreading. Continental rifting since 6 Ma, seismogenic and rapid (~25mm/yr). D'Entrecasteaux core complexes accommodate extension through vertical extrusion of ductile lower crust material, driven by crustal density inversion (thermal expansion lowers crustal density with depth). Buoyant extrusion accentuated in this region by geological structure (dense ophiolite over less-dense continental crust))

Martinez, F. & B. Taylor (1996)- Backarc spreading, rifting, and microplate rotation, between transform faults in the Manus Basin. Marine Geophysical Res. 18, 2, p. 203-224.
(Manus Basin in E Bismarck Sea fast opening backarc basin behind New Britain arc-trench system)

Martinez, F. & B. Taylor (2003)- Controls on back-arc crustal accretion; insights from the Lau, Manus and Mariana Basins. In: R.D. Larter & P.T. Leat (eds.) Intra-oceanic subduction systems: tectonic and magmatic processes, Geol. Soc., London, Spec. Publ. 219, p. 19-54.
(Lau, Manus and Mariana basins broad range of conditions of back-arc basin development. In each basin magmatism enhanced in spreading centres near arc volcanic front, but decreases in axes further from arc. Lau and Manus basin axes far behind arc and typical mid-ocean ridge characteristics. Spreading centres near arc advect hydrated mantle material, enhancing melt production. Spreading centres further from arc advect partly depleted mantle and produce thinner than normal crust. Spreading centres far from arc advect essentially mid-ocean ridge basalt-source mantle)

Martinez, F., B. Taylor & A. Goodliffe (1999)- Contrasting styles of seafloor spreading in the Woodlark Basin: indications of rift-induced secondary mantle convection. J. Geophysical Research, 104, B6, p. 12909-12926.
(online at: http://onlinelibrary.wiley.com/doi/10.1029/1999JB900068/pdf)
(Woodlark Basin in SW Pacific is young ocean basin which began forming by ~6 Ma, following rifting of continental and arc lithosphere. N-S striking Moresby Transform divides oceanic basin. Seafloor spreading W of Moresby Transform began after ~2 Ma. Etc.)

Masato, J., Y. Okuda, F. Murakami, K. Kishimoto & E. Honza (1986)- Age of the Solomon Sea Basin from magnetic lineations. Geo-Marine Letters 6, 4, p. 229-234.

Maung, T.U.& F.I. Coulson (1983)- Assessment of petroleum potential of the Central Solomon Basin. CCOP/SOPAC Techn. Report 26, p. 1-68.
(online at: http://ict.sopac.org/VirLib/TR0026.pdf)

Mawson, D. (1905)- The geology of the New Hebrides. Proc. Linnean Soc. New South Wales 30, p. 400-485.
(online at: http://biostor.org/reference/54467)
(Oldest rocks folded Miocene volcanoclastics with Miocene Lepidocyclina- Lithothamnium limestone (Chapman 1905), active volcanoes, etc.)

McInnes, B.I.A., M. Gregoire, R.A. Binns, P.M. Herzig & M.D. Hannington (2001)- Hydrous metasomatism of oceanic sub-arc mantle, Lihir, Papua New Guinea: petrology and geochemistry of fluid-metasomatised mantle wedge xenoliths. Earth Planetary Sci. Letters 188, p. 169-183.
(Ultramafic, mafic and sedimentary xenoliths from Recent shoshonitic submarine cinder cones (Tubaf and Edison volcanoes) from Tabar-Lihir-Tanga-Feni island arc, New Ireland, PNG. Gabbroic and depleted mantle xenoliths indicate New Ireland fore-arc lithosphere is fragment of ancient Pacific Plate, generated at mid-ocean ridge spreading centre and transported to Pacific-Australian Plate margin)

McKee, C.& R. Duncan (2016)- Early volcanic history of the Rabaul area. Bull. Volcanology 78, 4, p. 1-28.
(Oldest systems in Rabaul area (>1 Ma to~300 ka) are in S)

Milsom, J.S. (1970)- Woodlark Basin, a minor center of sea-floor spreading in Melanesia. J. Geophysical Research 75, p. 7335-7339.
(First author to recognize Woodlark Basin at E tip of PNG is site of active sea floor spreading, based on rugged bathymetry, with most lineations paralleling its long axis, seismicity, upper mantle P-wave velocity, and petrology of rocks exposed on surrounding islands)

Meschede, M. & B. Pelletier (1994)- Structural style of the accretionary wedge in front of the North d'Entrecasteaux Ridge (ODP Leg 134). Proc. Ocean Drilling Program (ODP), Scientific Results 134, p. 417-429.
(online at: www-odp.tamu.edu/publications/134_sr/volume/chapters/sr134_23.pdf)
(ODP Leg 134 drilling and seismic in accretionary wedge at W side of New Hebrides Island Arc, where it collides with aseismic North d'Entrecasteaux Ridge. Imbrication of thrust sheets in accretionary wedge shown by shear zones with tectono-sedimentary breccia, horizons of scaly fabric, cataclasites and decreasing dip angle and foliation planes from top to bottom. Nine major and four minor thrust zones identified)

Mitchell, A.H.G. & A.J. Warden (1971)- Geological evolution of the New Hebrides island arc. J. Geol. Soc., London, 127, p. 501-529.
(New Hebrides islands segment of Melanesian Ridge, overlie E-ward-dipping Benioff zone, bordered by submarine trench. They consist of volcanic and volcaniclastic rocks, intrusions, mudstones and limestones. Oldest rocks probaly pre-Early Miocene pelagic mudstones in W and pebbles with Late Eocene larger forams in E. E and W Belts of islands contain Neogene rocks, bisected by Central Chain of active and recently extinct volcanoes. W Belt was site of E Miocene volcanic arc)

Monteleone, B.D., S.L. Baldwin, T.R. Ireland & P.G. Fitzgerald (2001)- Thermochronologic constraints for the tectonic evolution of the Woodlark Basin, Papua New Guinea. In: P. Huchon et al. (eds.) Proc. Ocean Dilling Program (ODP), Scient. Results, 180, p. 1-34.
(ODP Leg 180 drilled near Moresby Seamount. Igneous rocks mainly diabase-metadiabase, with minor basalt and gabbro. Zircon age of 66.4 ± 1.5 Ma dates diabase crystallization, plagioclase isochron age of 59 ± 6 Ma, interpreted to represent cooling following intrusion. Diabase not thermally affected by Miocene-Pliocene rift events. Crustal extension in area of Moresby Seamount accommodated by normal faulting in latest Cretaceous-E Paleocene oceanic crust. Felsic clasts additional evidence for M Miocene- Pliocene magmatic events in region. Rhyolitic clasts zircon ages of ~16 Ma evidence for Miocene volcanism in region).

Monteleone, B.D., S.L. Baldwin, L.E. Webb, P.G. Fitzgerald et al. (2007)- Late Miocene-Pliocene eclogite facies metamorphism, D'Entrecasteaux Islands, SE Papua New Guinea. J. Metamorphic Geol. 25, 2, p. 245-265.
(SE PNG active metamorphic core complexes formed in region where tectonic regime transitioned from subduction to rifting. At least one of eclogite bodies formed in Pliocene. Samples from Fergusson and Goodenough Islands document Late Miocene-Pliocene (8-2 Ma) eclogite formation. W-ward younging of eclogite facies metamorphism from Fergusson to Goodenough Island. Present-day exposure of Late Miocene-Pliocene eclogites requires exhumation rates >2.5cm/yr)

Moss, R., S.D. Scott & R. Binns (2001)- Gold content of eastern Manus basin volcanic rocks: implications for enrichment in associated hydrothermal precipitates. Economic Geology 96, 1, p. 91-107.
(Rel. gold-rich hydrothermal precipitates associated with active seafloor vents in E Manus back-arc basin)

Moyle A.J., B.J. Doyle, H. Hoogvliet & A.R. Ware (1990)- Ladolam gold deposit, Lihir Island. In F.E. Hughes (ed.) Geology of the mineral deposits of Australia and Papua New Guinea, Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, Monogr. 14, 2, p. 1793-1805.

Moyle A.J., B.J. Doyle, H. Hoogvliet & A.R. Ware (1991)- The geology and mineralisation of the Ladolam gold deposit, Lihir Island, Papua New Guinea. In: PNG Geology, exploration and mining Conference, Rabaul 1991, Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, p. 101-111.

Muller, D., L. Franz, P.M. Herzig & S. Hunt (2001)- Potassic igneous rocks from the vicinity of epithermal gold mineralization, Lihir Island, Papua New Guinea. Lithos 57, p. 163-186.
(Lihir Island, NE of New Ireland, PNG, consists of five Pliocene-Pleistocene stratovolcanoes, one of which hosts Ladolam largest epithermal gold deposit)

Muller, D., L. Franz, S. Petersen, P.M. Herzig & M.D. Hannington (2003)- Comparison between magmatic activity and gold mineralization at Conical Seamount and Lihir Island, Papua New Guinea. Mineralogy Petrology 79, p. 259-283.
(Grab samples from submarine Conical Seamount, ~10 km S of giant Ladolam gold deposit on Lihir, with highest gold concentrations yet reported from modern seafloor. Lavas from Conical Seamount high-K igneous rocks of oceanic (island) arc-setting)

Muller, D. & D.I. Groves (1993)- Direct and indirect associations between potassic igneous rocks, shoshonites and gold-copper deposits. Ore Geology Reviews 8, p. 383-406.
(Many epithermal -mesothermal and porphyry-style Au- Cu deposits associated with or hosted by potassic igneous rocks and shoshonites. Examples include PNG Pleistocene Ladolam gold deposit on Lihir island (late oceanic arc) and Miocene Porgera gold deposit (postcollisional-arc))

Muller, D., L., P.M. Herzig, J.C. Scholten & S. Hunt (2002)- Ladolam gold deposit, Lihir Island, Papua New Guinea; gold mineralization hosted by alkaline rocks. In: R.J. Goldfarb & R.L. Nielsen (eds.) Integrated methods for discovery; global exploration in the twenty-first century, Soc. Econ. Geol. (SEG), Spec. Publ. 9, p. 367-382.
(Large gold deposit at Ladolam, Lihir Island, transitional between early-stage, low-grade porphyry gold system to low-sulfidation epithermal gold event)

Muller, D., K. Kaminski, S. Uhlig, T. Graupner, P.M. Herzig & S. Hunt (2002)- The transition from porphyry- to epithermal-style gold mineralization at Ladolam, Lihir Island, Papua New Guinea: a reconnaissance study. Mineralium Deposita 37, 1, p. 61-74.
(Exceptionally large gold resource at Ladolam, E side of Lihir Island, resulted from transition of early-stage, uneconomic low-grade porphyry gold system to low-sulfidation epithermal gold event, probably triggered by rapid decompression during partial slope failure of Luise stratovolcano/caldera at 0.34 Ma)

Nairn, I.A., C.O. Mckee, B. Talai & C.P. Wood (1995)- Geology and eruptive history of the Rabaul Caldera area, Papua New Guinea. J. Volcanology Geothermal Res. 69, 3-4, p. 255-284.

(Rabaul Caldera most active of four N-S aligned volcanic centres in NE New Britain. Oldest exposed basaltic lavas dated at 0.5 Ma. Dacitic lavas in caldera wall 0.19 Ma, overlain by dacitic and andesitic pyroclastic flow and fall deposits. Holocene ignimbrites of latest caldera-forming eruptions ~3500 or 7000 yr B.P.)

Nedachi, M., M. Enjoji, Y. Urashima & W. Manser (1985)- On the paleomagnetism of the intrusives from the Panguna porphyry copper deposit, Bougainville, Papua New Guinea. Kagoshima University Research Center South Pacific, Occasional Papers 5, p. 13-26.
(online at: http://ir.kagoshima-u.ac.jp/bitstream/10232/15869/1/AN10030752_v5_p13-26.pdf)
(Kaverong Quartz Diorite of Panguna, Bougainville Island, intruded at reversed geomagnetic period within 4.0- 5.0 Ma range, into Late Oligocene- E Miocene Panguna Andesite, without significant mineralization. After magnetic polarity change Biotite Granodiorite intruded during normal geomagnetic period, and surrounding rocks were first mineralized (~3.8- 4.3 Ma range). Second mineralization in and around Leucocratic Quartz Diorite at reversed geomagnetic period (3.8-3.4 Ma), when Feldspar Porphyry and Biuro Granodiorite possibly also intruded)

Ollier, C.D. & C.F. Pain (1978)- Geomorphology and tectonics of Woodlark Island, Papua New Guinea. Zeitschrift Geomorphologie 22, 1, p. 1-20.
(Woodlark Island E of PNG mainland, composed of central part of Miocene volcanics, surrounded by Quaternary coral reefs. Deformed by two fault systems)

Page, R.W. & I. McDougall (1972)- Geochronology of the Panguna porphyry copper deposit, Bougainville Island, New Guinea. Economic Geology 67, 8, p. 1065-1074.
(K/Ar ages of major intrusive and subvolcanic bodies associated with Panguna copper deposit on Bougainville. Earliest pre-mineralization intrusive age 4-5 Ma. Mineralized, strongly altered, intrusive bodies 3.4- 0.3 Ma old. The 3.4 Ma age interpreted as age of mineralization of Panguna rocks. Clear time interval of about 0.5- 1.5 Myrs between initial magmatic emplacement and subsequent mineralization)

Page, R.W. & R.J. Ryburn (1977)- K-Ar ages and geological relations of intrusive rocks in New Britain. Pacific Geology 12, p. 99-105.
(also as BMR Record 1973/191; online at: https://d28rz98at9flks.cloudfront.net/13014/Rec1973_191.pdf)
(New Britain volcanic arc system with intermediate- basic intrusives complexes emplaced into Eocene-Oligocene volcanics, overlain by E-M Miocene limestones. K-Ar ages two groups of ages: 27-29 Ma (M Oligocene) and 22 Ma (E Miocene). Gazelle Peninsula tonalite body 14 Ma)

Petersen, S., P.M. Herzig, M.D. Hannington, I.R. Jonasson & A. Arribas (2002)- Submarine gold mineralization near Lihir Island, New Ireland fore-arc, Papua New Guinea. Economic Geology 97, 8, p. 1795-1813.
(Gold-rich, siliceous veins with disseminated polymetallic sulfides recovered from top of Conical seamount, a shallow (1050-m water depth) submarine volcano, ~10 km S of Lihir island, PNG)

Robertson, A.H.F., S.A.M. Awadallah, S. Gerbaudo, K.S. Lackschewitz, B.D. Monteleone et al. (2001)- Evolution of the Miocene-Recent Woodlark Rift Basin, SW Pacific, inferred from sediments drilled during Ocean Drilling Program Leg 180. In: R.C.L. Wilson et al. (eds.) Non-volcanic rifting of continental margins: a comparison of evidence from land and sea, Geol. Soc., London, Spec. Publ. 187, p. 335-372.
(Woodlark Rift E of papuan Peninsula W-ward propagating spreading centre into continental crust. ODP leg 180 wells document history of Paleogene ophiolite emplacement, Miocene arc-related sedimentation and Late Miocene uplift and emergence of forearc area. Submergence to form Woodlark Rift began in latest Miocene, marked by marine transgression and input of tuffs and volcaniclastic sediments. Pliocene deposition dominated by deep-water turbidites. Pleistocene strong extension along N-dipping, low-angle Moresby Detachment Fault, associated with uplift of Moresby Seamount and shedding of fault-derived talus of meta-ophiolitic origin. Switch to pelagic-hemipelagic deposition in basin in Pleistocene related to W-ward propagation of Woodlark oceanic spreading centre at ~2 Ma)

Rogerson, R., D. Hilyard, E.J. Finlayson, R.W. Johnson & C.O. Mckee (1989)- The geology and mineral resources of Bougainville and Buka Islands, Papua New Guinea. Papua New Guinea Geol. Survey, Port Moresby, Mem. 16, p. 1-217.

Russell, P.J. & E.J. Finlayson (1987)- Volcanic-hosted epithermal mineralisation on Woodlark Island, Papua New Guinea. In: H.K. Herbert (ed.) Proc. Pacific Rim Congress 87, Australasian Inst. of Mining and Metallurgy (AusIMM), Melbourne, p. 381-385.
(Epithermal gold hosted by late M Miocene Okiduse Volcanics on Woodlark Island. Mineralisation contemporaneous with volcanism (12.2 - 12.5 Ma) and tied to subduction of Solomon Sea plate along Trobriand Trench. Pyrite, sphalerite, galena and minor chalcopyrite occur in steeply dipping fracture zones)

Ryburn, R.J. (1973)- Geologic map of Pomio, New Britain, Geol. Ser. SB56-6, 1:250,000. Bureau Mineral Res. Geol. Geoph., 17p.

Ryburn, R.J. (1975)- Geologic map of Cape Raoult-Arawe, New Britain, Geol. Ser. SB55-8, SB55-12, 1:250,000. Bureau Mineral Res. Geol. Geoph., 21p.

Ryburn, R.J. (1975)- Geologic map of Talasea-Gasmata, New Britain, Geol.Ser. SB56-5, SB56-9, 1:250,000. Bureau Mineral Res. Geol. Geoph., 26p.

Rytuba, J.J., E.H. McKee & D. Cox (1993)- Geochronology and geochemistry of the Ladolam gold deposit, Lihir island, and gold deposits and volcanoes of Tabar and Tatau, Papua New Guinea. US Geol. Survey Bull. 2039, p. 119-126.

Schmidt, M., R. Botz, K. Winn, P. Stoffers, O. Thiessen & P. Herzig (2002)- Seeping hydrocarbons and related carbonate mineralisations in sediments south of Lihir Island (New Ireland fore arc basin, Papua New Guinea). Chemical Geology 186, p. 249-264.
(Hydrocarbon gases sampled from cold-seeping and heat-venting areas in New Ireland fore arc basin near Lihir Island. Highest concentrations in deep narrow deep sea basin between Edison Seamount and 'Mussel Cliff' uplift. Seep area covered with chemoautotrophic deep sea fauna (Calyptogena, tube worms). Authigenic calcite concretions in sediments between 50- 200cm sediment depth. Hot hydrothermal vent of Lihir Harbour abiogenic methane formation related to magmatism of Lihir Volcano)

Schubert, R.J. (1910)- Uber das Vorkommen von *Miogypsina* und *Lepidocyclina* in pliocanenen Globigerinengesteinen des Bismarckarchipels. Verhandlungen Kon. kaiserl. Geol. Reichsanstalt, Vienna, 1910, p. 395-398.
(online at: www.landesmuseum.at/pdf_frei_remote/VerhGeolBundesanstalt_1910_0395-0398.pdf)
('On the occurrence of Miogypsina and Lepidocyclina in Pliocene marls from the Bismarck Archipelago'. New species of Miogypsina M. epigona and M. laganiensis (These shallow marine larger forams look like M Miocene age, but are associated with younger deep water fauna; JTvG))

Schubert, R.J. (1911)- Die fossilen Foraminiferen des Bismarckarchipels und einiger angrenzender Inseln. Abhandl. Kon. kaiserl. Geol. Reichsanstalt, Vienna, 20, 4, p. 1-130.
(online at: www.landesmuseum.at/pdf_frei_remote/AbhGeolBA_20_0001-0130.pdf)
('Fossil foraminifera from the Bismarck Archipelago and some adjacent islands' Oligocene- M Miocene limestones with larger foraminifera (incl. Flosculinella n.gen. and Lepidocyclina) and Late Miocene- Pliocene Globigerina-rich pelagic sediments)

Simmons, S.F. & K.L. Brown (2006)- Gold in magmatic hydrothermal solutions and the rapid formation of a giant ore deposit. Science 314, 5797, p. 288-291.
(Ladolam on Lihir Island, N of PNG, hosts one of youngest and largest gold deposits in world. Deep brine of magmatic origin contains 15 parts per billion gold. Combination of sustained metal flux and efficient metal precipitation led to formation of a giant hydrothermal gold deposit in short period)

Sinton, J.M., L.L. Ford, B. Chappell & M.T. McCulloch (2003)- Magma genesis and mantle heterogeneity in the Manus back-arc basin, Papua New Guinea. J. Petrology 44, 1, p. 159-195.
(online at: http://petrology.oxfordjournals.org/content/44/1/159.full.pdf+html)
(Manus Basin backarc basin N of New Britain arc. Five magma types in dredge samples from ~1400-2700m water. Closest to New Britain medium-K island arc lavas and back-arc basin basalts. Along Manus Spreading Center and Extensional Transform Zone mid-ocean ridge basalts and extreme back-arc basin basalts (with least contribution from subduction-related components). Compared with normal MORB, Manus MORB more depleted in high field strength elements and enriched in fluid-mobile elements, indicating slight prior enrichment of source with subduction-related components)

Smith, I.E. (1973)- The geology of the Calvados Chain, Southeastern Papua. In: Geological Papers 1970-71, Bureau Mineral Res. Geol. Geoph. Bull. 139, p. 59-65.
(online at: www.ga.gov.au/corporate_data/106/Bull_139.pdf)
(Calvados Island chain in W part of Louisiade Archipelago, SE PNG, composed mainly of low-grade schists, thought to represent Mesozoic sediments metamorphosed in Eocene. Schists intruded by upper Tertiary basic and intermediate dykes. E Miocene reef limestone and volcanics form W-most islands in chain)

Smith, I.E.M. (1976)- Peralkaline rhyolites from the D'Entrecasteaux Islands, Papua New Guinea. In: R.W. Johnson (ed.) Volcanism in Australasia. Elsevier, New York, p. 275-286.

Smith, I.E.M., B.W. Chappell, G.K. Ward & R.S. Freeman (1977)- Peralkaline rhyolites associated with andesitic arcs of the Southwest Pacific. Earth Planetary Sci. Letters 37, p. 230-236.
(Peralkaline rhyolites associated with andesitic volcanic arcs in D'Entrecasteaux Islands (SE PNG), Mayor Island and Kaeo area, Northland, New Zealand. Peralkaline rhyolites related to extensional environments)

Smith, I.E. & W. Compston (1982)- Strontium isotopes in Cenozoic volcanic rocks from southeastern Papua New Guinea. Lithos 15, p. 199-206.
(Volcanic rocks from SE PNG islands suggest four episodes of late Cenozoic volcanism. Eocene tholeiitic basalts have rel. high initial 87Sr/86Sr ratios (0.7037). Late Cenozoic arc trench type volcanoes in Papuan islands initial 87Sr/86Sr ratios with little variation (~0.7041), unlike contiguous PNG mainland (0.7036-0.7054))

Speckbacher, R., J.H. Behrmann, T.J. Nagel, M. Stipp & C.W. Devey (2011)- Splitting a continent: insights from submarine high-resolution mapping of the Moresby Seamount detachment, offshore Papua New Guinea. Geology 39, 7, p. 651-654.
(Top of Moresby Seamount in Woodlark Basin E of PNG exposes submerged extensional fault detachment, with 30° N dip and ~8 km post-Pliocene displacement. Km-scale slickensides indicate downdip direction of movement. Detachment transected by major sinistral strike-slip fault)

Stewart, W.D., G. Francis & D.H. Deibert (1986)- Cape Vogel Basin hydrocarbon potential. Oil and Gas J., Nov. 17, p. 67-71.

Stewart, W.D., G. Francis & S.L. Pederson (1987)- Hydrocarbon potential of Papua New Guinea's Bougainville, Southeastern New Ireland basins. Oil and Gas J. 85, 47, p. 83-87.

Stewart, W.D. & M.J. Sandy (1988)- Geology of New Ireland and Djaul Islands, Northeastern Papua New Guinea. In: M.S. Marlow et al. (eds.) Geology and offshore resources of Pacific island arcs- New Ireland and Manus region, Papua New Guinea, Circum-Pacific Council Energy and Mineral Resources, Houston, Earth Sci. Ser. 9, p. 13-30.
(New Ireland basement formed by ?Eocene- Oligocene Jaulu island arc volcanics and associated Oligocene- M Miocene Lemau Intrusive complex, response to S-ward subduction at Manus- Kilinailau Trench. Unconformably overlain by E Miocene (upper Te and younger) Lelet Lst, with locally common Halimeda and rel. little coral, and lateral equivalents. Followed by M-L Miocene Lumis River volcanics. In C and S New

Ireland continued carbonate sedimentation until Late Miocene. Volcanism restarted in E Pliocene , response to N-ward subduction along New Britain Trench)

Stolz, A., G. Davies, A. Crawford & I. Smith (1993)- Sr, Nd and Pb isotopic compositions of calc-alkaline and peralkaline silicic volcanics from the D'Entrecasteaux Islands, Papua New Guinea and their tectonic significance. Mineralogy and Petrology 47, 2, p. 103-126.
(Transitional basalt-peralkaline and associated calc-alkaline rhyolites from D'Entrecasteaux Islands with typical convergent margin geochemical signatures. Calc-alkaline rhyolites produced by partial melting of young arc protocrust; calc-alkaline basic and intermediate magmas derived from depleted mantle source previously modified by subduction along Trobriand Trough. Change from calc-alkaline to alkaline magmatism occured following change from compressional to extensional tectonics)

Stracke, A. & E. Hegner (1998)- Rifting-related volcanism in an oceanic post-collisional setting: the Tabar-Lihir-Tanga-Feni (TLTF) island chain, Papua New Guinea. Lithos 45, p. 545-560.
(Geochemistry of volcanic rocks from Tabar-Lihir-Tanga-Feni volcanic island chain in zone of lithospheric extension superimposed on post-collisonal tectonic setting along Pacific and Indo-Australian plates NE of PNG. Alkalic affinity, with trachybasalts as predominant rock type. Chemical composition of igneous rocks from post-collisional tectonic settings strongly influenced by previous plate tectonics)

Taylor, B. (1979)- Bismarck Sea: evolution of a back-arc basin. Geology 7, 4, p. 171-174.
(Bismarck Sea backarc basin N of New Britain. Boundary with Pacific plate composed of at least four segments: two transform faults, one spreading segment and one leaky transform. Magnetic anomalies indicate Manus Basin (part of the Bismarck Sea basin) formed during past 3.5 My by asymmetric sea-floor spreading. Spreading direction N60°W, opening rate 13.2 cm/yr)

Sykora, S., D.R. Cooke, S. Meffre, A.S. Stephanov, K. Gardner, R. Scott, D. Selley & A.C. Harris (2018)- Evolution of pyrite trace element compositions from porphyry-style and epithermal conditions at the Lihir gold deposit: implications for ore genesis and mineral processing. Economic Geology 113, 1, p. 193-208.
(Lihir (also known as Ladolam) Au deposit in PNG telescoped ore deposit, in which volcanic sector collapse led to superimposition of shallow-level Au-rich epithermal mineralization on genetically related, porphyry-style alteration. Au concentrated only along rims of pyrite grains, creating complications for ore processing)

Sykora, S., D. Selley, D.R. Cooke & A.C. Harris (2018)- The structure and significance of anhydrite-bearing vein arrays, Lienetz orebody, Lihir gold deposit, Papua New Guinea. Economic Geology 113, 1, p. 237-270.
(Lihir (Ladolam) is world's largest alkalic Au deposit gold deposit with 56-Moz Au resource and. Deposit in amphitheater, inferred to be remnant of original ~1.1-km-high volcanic cone with NE-directed sector collapse(s) and prolonged weathering. Late-stage Au-rich low-sulfidation epithermal mineralization superimposed on early-stage porphyry-style alteration)

Taylor, B. (1982)- On the tectonic evolution of marginal basins in Northern Melanesia and the South China Sea. Ph.D. Thesis, Columbia University, New York, p. 1-190.
(Study of two marginal marginal basins of N Melanesia: Manus Basin in Bismarck Sea behind New Britain arc-trench system, and non back-arc Woodlark Basin. S China Basin is 'Atlantic-type' marginal basin.N-S opening of basin moved microcontinental blocks including SW Mindoro, N Palawan, and Reed Bank, from Paleogene position adjacent to China mainland. Majority of opening of W half of basin by crustal stretching of microcontinental blocks. Margins of S China Sea record regional M Oligocene unconformity, interpreted as caused by superposition of breakup and sealevel effects. Seafloor spreading in basin ended slightly before late M Miocene cessation of subduction at Palawan subduction zone to S)

Taylor, B. & N.F. Exon (eds.) (1987)- Marine geology, geophysics and geochemistry of the Woodlark Basin, Solomon Islands. Circum-Pacific Council Energy and Mineral Resources, Houston, Earth Sci. Ser. 7, p. 1-363.
(Collection of papers on Woodlark- Solomon Islands region)

Taylor, B., A.M. Goodliffe & F. Martinez (1999)- How continents break up: insights from Papua New Guinea. J. Geophysical Research 104, B4, p. 7497-7512.
(Woodlark Basin in SW Pacific present-day continuous system of active continental rifting in W, evolving to seafloor spreading in E. Rifting started at ~6 Ma)

Taylor, B., A. Goodliffe, F. Martinez & R. Hey (1995)- Continental rifting and initial seafloor spreading in the Woodlark Basin. Nature 374, p. 534-537.
(Marine geophysical survey of W Woodlark basin/ Papuan peninsula region of PNG. Example of continental rifting and spreading initiation, and spreading centre reorienting by synchronous jumping rather than propagation in last 6 Myr)

Taylor, B. & P. Huchon (2002)- Active continental extension in the Western Woodlark Basin, PNG: a synthesis of leg 180 results. In: P. Huchon et al. (eds.) Proc. Ocean Drilling Program (ODP), Scient. Results, 180, p. 1-36.
(online at: www-odp.tamu.edu/publications/180_SR/VOLUME/SYNTH/SYNTH.PDF)
(Upper crust of onshore and offshore Papuan region composed of variety of basement types (dominantly mid-ocean-ridge basalts but also island arc rocks) and ages (Late Maastrichtian, Paleocene, M Eocene). E Miocene- Holocene arc magmatism related to S-ward subduction at Trobriand Trough. Regional unconformity at 8.4 Ma marks onset of Woodlark Basin rifting)

Terpstra, G.R.J. (1964)- Age determinations of limestone samples of Woodlark Island, Papua. Bureau Mineral Res. Geol. Geoph., Record 1964/006, p. 1-6.
(online at: www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=11263)
(Larger forams from two limestone formations of Woodlark Island: Nasai Lst from Nasai Island and Suloga Lst from Suloga Peninsula. Both have same larger foram assemblages with Spiroclypeus, Austrotrillina, Borelis, Eulepidina and Miogypsinoides (interpreted as Te- Lower Miocene, but may be Te4, latest Oligocene; JTvG))

Terpstra, G.R.J. (1965)- Outcrop samples, Bougainville Island, Territory of Papua and New Guinea. Bureau Mineral Res. Geol. Geoph., Record 1965/110, p. 1-2.
(online at: www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=11563)
(Ages of limestones from across Bougainville Island appear to mainly be of Lower Miocene age)

Terpstra, G.R.J. (1966)- Micropalaeontological examination of outcrop samples of Bougainville Island, Territory of Papua and New Guinea. Bureau Mineral Res. Geol. Geoph., Record 1966/66, p.
(online at: www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=117800
Limestone samples from Bougainville include mainly Keriaka Lst with Te/ Lower Miocene larger foraminifera: Lepidocyclina (Eulepidina), Spiroclypeus, Miogypsinoides and Miogypsina (may include Te4, latest Oligocene; JTvG))

Tiffin, D.L., H.L.Davies, E. Honza, J. Lock & Y. Okuda (1987)- The New Britain Trench and 149° embayment, western Solomon Sea. Geo-Marine Letters 7, 3, p. 135-142.
(W New Britain Trench relatively thin sediments in E, thick turbidites in W. Trench heads toward Huon Gulf, but ends abruptly at 149° Embayment, where it meets Trobriand Trench at acute angle. Collision melange present farther W, where trenches have disappeared under upper plates colliding in N Huon Gulf. Collision suture marked by Markham Canyon, continuous with Ramu-Markham fault zone onshore. Age of collision young in E, but possibly older in W New Guinea)

Titley, S.R. (1975)- Geological characteristics and environments of some porphyry copper occurrences in the southwestern Pacific. Economic Geology 70, p. 499-514.
(Review of discoveries since mid-1960's of Neogene porphyry copper mineralizations from New Guinea to SW Pacific Islands. Close genetic tie with volcanic arc activity and copper-bearing intrusions)

Titley, S.R. (1978)- Geologic history, hypogene features and process of secondary sulphide enrichment at Plesiyumi copper prospect, New Britain, Papua New Guinea. Economic Geology 73, p. 768-784.

(Porphyry copper prospect at Plesyumi, near center of New Britain island in a complex of U Oligocene intrusions and volcanics. Large copper-bearing sulfide system with several styles of mineralization)

Titley, S.R. (1978)- Copper, molybdenum and gold content of some·porphyry copper systems of the southwestern and western Pacific. Economic Geology 73, p. 977-981.
(Brief discussion of metals contents in New Guinea-SW Pacific porphyry copper deposits)

Titley, S.R. & T.L. Heidrick (1978)- Intrusion and fracture styles of some mineralized porphyry systems of the southwestern Pacific and their relationship to plate interactions. Economic Geology 73, p. 891-903.
(Older (Oligo-Miocene) porphyry systems in mobile belt of PNG, Admiralty Islands and New Britain show intrusion and fracture styles indicative of porphyry bodies emplaced into settings dominated by strike-slip stress regimes. Younger (Plio-Pleistocene) porphyry systems on mainland New Guinea and earby islands, with fracture patterns suggestive of forceful emplacement of intrusions into tectonically relaxed crustal blocks)

Tjhin, K.T. (1976)- Trobriand Basin exploration, Papua New Guinea. J. Australian. Petrol. Explor. Assoc. (APEA) 16, p. 81-90.

Trail, D.S. (1967)- Geology of Woodlark Island. Bureau Mineral Res. Geol. Geoph., Canberra, Report 115, p. 1-33.
(online at: www.ga.gov.au/products-services/legacy-publications/reports.html)
(Woodlark island ~170 mi NE of E point of Papua, composed of raised and slightly tilted Quaternary coral platform around eroded and locally mineralized, mainly Lower Micene volcanic pile with some Te limestone)

Tregoning, P., J.J. Jackson, H. McQueen, K. Lambeck, C. Stevens, R.P. Little, R. Curley & R. Rosa (1999)- Motion of the South Bismarck plate, Papua New Guinea. Geophysical Research Letters 26, 23, p. 3517-3520.
(GPS velocities of Madang, Witu, Jacquinot Bay and Finschafen can be modelled to single pole of rotation, with CW rotation rate of 8.11°/My. Tectonic features surrounding S Bismarck Plate also explained by rotation of S Bismarck Plate about this pole)

Tregoning, P., K. Lambeck, A. Stolz, P. Morgan, S.C. McClusky, P. van der Beek, H. McQueen et al. (1998)- Estimation of current plate motions in Papua New Guinea from Global Positioning System observations. J. Geophysical Research 103, B6, p. 12181-12203.
(online at: http://rses.anu.edu.au/geodynamics/gps/papers/png_jgr.pdf)
(On PNG tectonic plates and relative motions from 20 station GPS network)

Tregoning, P. & H. McQueen (2001)- Resolving slip-vector azimuths and plate motion along the southern boundary of the South Bismarck Plate, Papua New Guinea. Australian J. Earth Sci. 48, 5, p. 745-750.

Tregoning, P., H. McQueen, K. Lambeck, R. Jackson, R. Little, S. Saunders & R. Rosa (2000)- Present-day crustal motion in Papua New Guinea. Earth Planets and Space 52, p. 727-730.
(online at: www.terrapub.co.jp/journals/EPS/pdf/5210/52100727.pdf)
(PNG one of most active tectonic regions in world, comprising several microplates and deforming zones in Australian- Pacific Plates collision zone. New data from North New Guinea, and strain accumulation region between S Bismarck and Pacific Plates in New Ireland/ New Britain region)

Vedder, J.G. & T.R. Bruns (eds.) (1989)- Geology and offshore resources of Pacific island arcs; Solomon Islands and Bougainville, Papua New Guinea regions. Circum-Pacific Council Energy and Mineral Resources, Houston, Earth Sci. Ser. 12, p. 1-329.
(Collection of papers on SW Pacific Bougainville- E PNG- Solomon Islands region)

Vedder, J.G. & T.R. Bruns (1989)- Geologic setting and petroleum prospects of basin sequences, offshore Solomon Islands and eastern Papua New Guinea. In: J.G. Vedder & T.R. Bruns (eds.) Circum-Pacific Council for Energy and Mineral Resources, Houston, Earth Science Ser. 12, p. 287-322.
(Multiple undrilled Late Cenozoic intra-arc basins in New Ireland- Guadalcanal segment of Melanesian Arc,

Solomon Islands. Seismic profiles suggest up to 5-8km of probably mostly volcanogenic sediment fill. Soure rocks not positively identified and thermal histories of basins uncertain)

Vedder, J.G., T.R. Bruns & A.K. Cooper (1989)- Geologic framework of Queen Emma Basin, eastern Papua New Guinea. In: J.G. Vedder & T.R. Bruns (eds.) Geology and offshore resources of Pacific Island arcs; Solomon Islands and Bougainville, Papua New Guinea regions, Circum-Pacific Council Energy and Mineral Resources, Earth Sci. Ser. 12, p. 59-86.
(Seismic survey across Queen Emma Basin, a NW trending intra-arc basin between New Ireland and Bougainville Islands)

Von der Borch, C.C. (1972)- Marine geology of the Huon Gulf region, Papua New Guinea. Bureau Mineral Res. Geol. Geoph. Bull. 127, p. 1-49.
(online at: www.ga.gov.au/corporate_data/126/Bull_127.pdf)
(Huon Gulf at W side Solomon Sea oceanic basin, which is bordered by tectonically active land masses and contains >8000m deep New Britain Trench on N side. Large scale left-lateral displacement near W end of New Britain Trench appears to be continuation of onshore Markham-Ramu Lineamentand controls position of Markham submarine canyon. N o continental shelf is developed along N margin of Huon Gulf, due to strong and continuing uplift of Huon Peninsula in N New Guinea Arc structural province. Several submarine canyons, each related to large river onshore)

Wallace, D.A., R.W. Johnson, B.W. Chappell, R J. Arculus, M.R. Perfit & I.H. Crick (1983)- Cainozoic Volcanism of the Tabar, Lihir, Tanga, and Feni Islands, Papua New Guinea: geology, whole-rock analyses, and rock-forming mineral compositions. Bureau Mineral Res. Geol. Geoph., Report 243, p. 1-62.
(online at: https://d28rz98at9flks.cloudfront.net/15154/Rep_243.pdf)
(Tabar, Lihir, Tanga and Feni island groups form alkaline volcanic chain NE of Tertiary New Ireland island arc. Mainly Pliocene-Pleistocene lavas and volcanoclastics. Alkaline rocks mainly phonolitic tephrite and trachybasalt, but also more mafic types. Raised Pleistocene coral reef terraces fringe many islands. E-M Miocene reef limestone on Simberi Island in Tabar Island group)

Wallace, L.M. (2002)- Tectonics and arc-continent collision in Papua New Guinea; insights from geodetic, geophysical, and geologic data. Doct. Thesis University of California Santa Cruz, p. 1-244. *(Unpublished)*

Wallace, L.M., S. Ellis, T. Little, P. Tregoning, N. Palmer, R. Rosa, R. Stanaway, J. Oa, E. Nidkombu & J. Kwazi (2014)- Continental breakup and UHP rock exhumation in action: GPS results from the Woodlark Rift, Papua New Guinea. Geochem. Geophys. Geosystems 15, p. 4267-4290.
(GPS velocities at Woodlark Rift, SE PNG indicate anticlockwise rotation (at 2-2.7°/Myr relative to Australia) of crustal blocks N of rift, producing 10-15 mm/yr of extension in continental rift, increasing to 20-40 mm/yr of seafloor spreading at Woodlark Spreading Center)

Wallace, L.M., R. McCaffrey, J. Beavan & S. Ellis (2005)- Rapid microplate rotations and backarc rifting at the transition between collision and subduction. Geology 33, 11, p. 857-860.
(GPS velocities from PNG, New Zealand, etc., show correlation between rapid tectonic block rotations and transition from subduction to collision, often leading to backarc rifting)

Wallace, L.M., C. Stevens, E. Silver, R. McCaffrey, R. Stanaway, W. Loratung, S. Hasiata et al. (2004)- GPS and seismological constraints on active tectonics and arc-continent collision in Papua New Guinea: implications for mechanics of microplate rotations in a plate boundary zone. J. Geophysical Research 109, B05404, 16p.
(New Guinea complex array of microplates between Pacific- Australian plates, converging obliquely at ~110 mm/yr. Velocities from 38 GPS sites in PNG explained by six tectonic blocks: Australian, Pacific, S Bismarck, N Bismarck, Woodlark and New Guinea Highlands. Highlands and Woodlark Plates rotate anticlockwise relative to Australia, consistent with left-lateral shear between Australian- Pacific Plates. Birds Head Block in W New Guinea also rotates CCW. Portions of Ramu-Markham Fault appear locked. Clockwise rotation of S Bismarck plate controlled by edge forces initiated by Finisterre arc- New Guinea Highlands collision)

Webb, L.E., S.L. Baldwin, T.A. Little & P.G. Fitzgerald (2008)- Can microplate rotation drive subduction inversion? Geology 36, 10, p. 823-826.
(Model for exhumation of Late Miocene coesite eclogite in Woodlark Rift of E PNG. Reorganization in obliquely convergent Australian-Pacific plate boundary zone led to formation of Woodlark microplate. CCW rotation of microplate relative to Australian plate resulted in extensional reactivation of subduction thrust and exhumation of high- and ultrahigh-pressure (HP-UHP) rocks in Australian-Woodlark plate boundary zone)

Webber, S., K.P. Norton, T.A. Little, L.M. Wallace & S. Ellis (2018)- How fast can low-angle normal faults slip? Insights from cosmogenic exposure dating of the active Maiõiu fault, Papua New Guinea. Geology 46, 3, p. 227-230.
(Mai'iu fault in rapidly extending Woodlark Rift is one of few active continental low-angle normal faults globally. Such faults may slip at >10-20 mm/yr faster than high-angle normal faults. Cosmogenic nuclide exposure dating (10Be in quartz) of Mai'iu fault scarp indicates slip at 11.7 ± 3.5 mm/yr over past ~5.5 k.y.)

Weissel, J.K., B. Taylor & G.D. Karner (1982)- The opening of the Woodlark Basin, subduction of the Woodlark spreading system, and the evolution of northern Melanesia since mid-Pliocene time. Tectonophysics 87, p. 253- 277.
(Woodlark Basin spreading rates diminish by >10% from E to W. Start of seafloor spreading in basin prior to 3.5 Ma in E, successively later to W. Land areas bounding W end of Woodlark Basin undergoing tensional deformation, and Woodlark Basin plate boundary will propagate W into Papuan peninsula)

Westaway, R. (2005)- Active low-angle normal faulting in the Woodlark extensional province, Papua New Guinea: a physical model. Tectonics 24, TC6003, p. 1-25.
(online at: https://agupubs.onlinelibrary.wiley.com/doi/epdf/10.1029/2004TC001744)
(Correction published 1/2007)

Whalen, J.B. (1985)- Geochemistry of an island-arc plutonic suite: the Uasilau-Yau Yau Intrusive Complex, New Britain, P.N.G.. J. Petrology 26, 3, p. 603-632.
(Late Oligocene Uasilau-Yau Yau intrusive complex of C New Britain compositional continuum from gabbro to granodiorite, dated at ~28-29 Ma. Tonalite porphyry that led to porphyry copper mineralization is younger intrusive event at 24 Ma. Granites probably formed by partial melting of subducted oceanic crust or overlying mantle, and may be termed mantle or M-type granites)

Whalen, J.B. & I. McDougall (1980)- Geochronology of the Uasilau-Yau Yau porphyry copper prospect, New Britain, Papua New Guinea. Economic Geology 75, 4, p. 566-571.
(K-Ar ages for three major intrusive episodes of Uasilau-Yau Yau intrusive complex: Group 1 (gabbro and quartz diorite) >30 Ma; Group 2 (quartz diorite, tonalite, and granodiorite; main volume of complex) ~28.4 Ma; Group 3 tonalite ~23.5 Ma, followed closely by hydrothermal alteration and copper mineralization. All porphyry copper mineralization in New Britain may be result of late Oligocene igneous event)

Whitmore, G.P., K.A.W. Crook & D.P. Johnson (1999)- Sedimentation in a complex convergent margin: the Papua New Guinea collision zone of the western Solomon Sea. Marine Geology 157, p. 19-45.
(Tectono-sedimentary model for sedimentation along W Solomon Sea region of N PNG collision zone. S underthrust plate (Morobe and Trobriand tectono-sedimentary provinces) and N overriding plate (Huon, Finsch, Siassi and New Britain provinces). Most sediment supplied to W end of trench delivered axially down collisional suture, much of it apparently derived from emergent PNG landmasses to W)

Whitmore, G.P., D.P. Johnson, K.A.W. Crook, J. Galewsky & E.A. Silver (1997)- Convergent margin extension associated with arc-continent collision; the Finsch Deep, Papua New Guinea. Tectonics. 16, p. 77-87.
(Finsch Deep asymmetric rhomboidal basin, up to 5400m deep, N of Solomon Sea Triple Junction, E side of PNG. Developed due to N-S extension in transition zone from continental collision W of Solomon Sea Triple Junction to oceanic subduction to E)

Wiebenga, W.A. (1973)- Crustal structure of the New Britain- New Ireland region. In: P.J. Coleman (ed.) The Western Pacific: island arcs, marginal seas, geochemistry, University of Western Australia Press, p. 163-177.

Willcox, J.B. (1976)- Structure of the Bismarck Sea. Bureau Mineral Res. Geol. Geoph., Canberra, Record 1976/59, p. 1-46.
(online at: https://d28rz98at9flks.cloudfront.net/13479/Rec1976_059.pdf)
(Geophysical survey of Gulf of Papua and Bismarck Sea by CGG. Bismarck Sea marginal basin partly enclosed by New Guinea and New Britain, and W Melanesian Arc)

Williamson, A. & R. Rogerson (1983)- Geology and mineralization of Misima Island. PNG Geol. Survey Report 83/12, p. 1-136.

Woodhead, J.D., S.M. Eggins & R.W. Johnson (1998)- Magma genesis in the New Britain island arc; further insights into the melting and mass transfer processes. J. Petrology 39, 9, p. 1641-1668.
(online at: http://petrology.oxfordjournals.org/content/39/9/1641.full.pdf+html)
(Quaternary volcanic rocks from New Britain wide range in chemical compositions. Share isotopic characteristics with Indian Ocean type mid-ocean ridge basalt, but high field strength elements extremely depleted compared with MORB. May result from previous melt-extraction event)

Woodhead, J.D., J. Hergt, M. Sandiford & W. Johnson (2010)- The big crunch: physical and chemical expressions of arc/continent collision in the Western Bismarck arc. J. Volcanology Geothermal Res. 190, p. 11-24.
(Earthquake distribution study where W Bismarck arc off NE PNG is undergoing progressive W to E collision with mainland Papua, currently centred around ~148°E (see also Holm & Richards 2013))

Woodhead, J. & R. Johnson (1993)- Isotopic and trace-element profiles across the New Britain island arc, Papua New Guinea. Contrib. Mineralogy Petrology 113, 4, p. 479-491.
(New Pb-, Sr-, and Nd-isotopic data volcanics 100–580 km above Wadati-Benioff Zonein New Britain island arc. Well-defined trends suggest two-component mixing (slab contribution dominated by subducted, altered, oceanic crust and smaller degrees of partial melting of mantle wedge as WBZ depths increase)

Yeats, C.J., J.M. Parr, R.A. Binns, J.B. Gemmell & S.D. Scott (2014)- The SuSu Knolls hydrothermal field, Eastern Manus Basin, Papua New Guinea: an active submarine high-sulfidation copper-gold system. Economic Geology 109, 8, p. 2207-2226.
(SuSu Knolls three steep-sided conical porphyritic andesite-to-dacite domes on N-NW-trending ridge in E Manus basin, with crests 1150-1520 m below sea level. Intense hydrothermal plumes, with Cu-Au sulfide mineralization. Good example of modern, high sulfidation, Cu-Au submarine hydrothermal system)

Yoneshima, S., K. Mochizuki, E. Araki, R. Hino, M. Shinohara & K. Suyehiro (2005)- Subduction of the Woodlark Basin at New Britain Trench, Solomon Islands region. Tectonophysics 397, p. 225-239.
(Woodlark Basin, S of Solomon Islands arc young (~5 Ma) oceanic basin subducting under New Britain Trench. Image of subducting slab at W side of basin from micro-seismicity, which is concentrated at 10-60 km depth along plate boundary. Dip angle of plate 30°)

Zirakparvar, N.A. (2015)- Cathodoluminescence guided zircon Hf isotope depth profiling: mobilization of the Lu-Hf system during (U)HP rock exhumation in the Woodlark Rift, Papua New Guinea. Lithos 220-223, p. 81-96.
(Hf isotope profile within zircons from quartzo-feldspathic host gneisses in Woodlark Rift)

Zirakparvar, N.A., S.L. Baldwin & A.K. Schmitt (2014)- Zircon growth in (U)HP quartzofeldspathic host gneisses exhumed in the Woodlark Rift of Papua New Guinea. Geochem. Geophys. Geosystems 15, 4, p. 1258-1282.
(online at: http://onlinelibrary.wiley.com/doi/10.1002/2013GC004964/epdf)

(Zircons from two gneisses in D'Entrecasteaux Islands contain Cretaceous inherited cores, with metamorphic rims yielding 206Pb/ 238U ages of 2.9 ± 0.3 Ma and 2.8 ± 1.0 Ma. Older age similar to previously reported 206Pb/238U ages on zircons from mafic eclogite within gneiss. At (U)HP locality zircons from gneiss lack inheritance and yield age of 3.7 ± 0.1 Ma. Zircon recrystallization occurred during eclogite metamorphism, zircon rims during subsequent retrogression, but not at (U)HP conditions. PNG (U)HP terrane evolved rapidly)

Zirakparvar, N.A., S.L. Baldwin & J.D. Vervoort (2011)- Lu-Hf garnet geochronology applied to plate boundary zones: insights from the (U)HP terrane exhumed within the Woodlark Rift. Earth Planetary Sci. Letters 309, p. 56-66.
(High-P- UHP metamorphic rocks in many orogenic belts suggest common subduction of continental lithosphere. Late Miocene (U)HP metamorphics in core complexes in Woodlark Rift of SE PNG not tectonically overprinted. Garnet Lu-Hf isotopic ages: 7.1 Ma for garnets in Late Miocene coesite eclogite; ~68 Ma for garnet porphyroblasts (= age of Papuan ophiolite obduction?) from Pleistocene amphibolite facies shear zone in D'Entrecasteaux Island, ~11.2 Ma for recrystallized garnet from SE margin of rift)

Zirakparvar, N.A., S.L. Baldwin & J.D. Vervoort (2013)- The origin and geochemical evolution of the Woodlark Rift of Papua New Guinea. Gondwana Research 23, 3, p. 931-943.
(Protoliths of exhumed metamorphic rocks in Woodlark Rift tied to volcanoclastics of Whitsunday Volcanic Province of NE Australia, produced during M Cretaceous rifting event (similar Nd isotopic compositions, zircons with 90-100 Ma U-Pb ages, no Hf- Nd isotopic compositions expected of ancient continental crust). Some mafic metamorphic rocks in W Woodlark Rift (eclogites and amphibolites) not related to WVP)

IX.13. Papua New Guinea (Gulf of Papua, Coral Sea)

Bailey, B. & G. Salem (2015)- Testing the Tertiary basin floor fan play in the Gulf of Papua, Papua New Guinea. In: Proc. Eastern Australian Basins Symposium (EABS), Petroleum Expl. Soc. Australia (PESA), p. 237-247.
(see also Bailey et al. 2015)

Bailey, B., G. Salem & P. Haltmeier (2015)- Testing the Tertiary basin floor fan play in the Gulf of Papua, PNG. AAPG/SEG Int. Conf. Exhibition, Melbourne, Search and Discovery Art. 10802, 15p.
(online at: www.searchanddiscovery.com/documents/2015/10802bailey/ndx_bailey.pdf)
(Previous oil-gas exploration in Gulf of Papua in Mesozoic clastic and Miocene carbonate buildup (several small gas discoveries). Extensions of Mesozoic Toro- Digimu Fm reservoirs limited as they sub-crop at base-Tertiary unconformity, caused by uplift/rifting at N end of Coral Sea. Plio-Pleistocene deltas prograde across Gulf from W to E. Three-wells drilled in 2013 to test seismic amplitude anomalies in new Plio-Pleistocene deepwater clastics play found good, quartz-rich, sandstone turbidites, but limited gas)

Botsford, A., L. Endebrock & A. Harrington (2012)- Structural and stratigraphic evolution of the Gulf of Papua, Papua New Guinea: new insights from a modern 3D seismic survey. AAPG Int. Conv. Exhib., Singapore 2012, Search and Discovery Art. 10456, p. 1-12. *(Presentation Abstract)*
(online at: www.searchanddiscovery.com/documents/2012/10456botsford/ndx_botsford.pdf)
(Gulf of Papua complex structural and stratigraphic evolution on NE edge of Australian plate. Current basin setting is NW-SE-trending foreland basin SW of uplifted Papuan fold belt. Over 3.5km of siliciclastic sediments deposited from Pliocene - present. Extensive carbonate system developed throughout Oligocene-Miocene. Well and seismic data show erosion of up to 1.8km of Mesozoic sediment between ~63-38 Ma. Three significant gas discoveries in Lower Miocene Darai Lst: Uramu and Pasca in 1968, Pandora in 1988)

Botsford, A., L. Endebrock & A. Harrington (2012)- Structural and stratigraphic evolution of the Gulf of Papua, Papua New Guinea: new insights from a modern 3D seismic survey. Proc. Eastern Australasian Basins Symposium IV, Brisbane 2012, Petroleum Expl. Soc. Australia (PESA), 6p.
(Same as Botsford et al. 2015)

Bulois, C., M. Pubellier, N. Chamot-Rooke & M. Delescluse (2018)- Successive rifting events in marginal basins: the example of the Coral Sea Region (Papua New Guinea). Tectonics, p. *(in press)*
(Three successive rifting events in Coral Sea region: (1) poorly documented Triassic event, along N-S Permian structural fabric; (2) Jurassic reactivation forming small) basins bounded by N-S, NE-SW, and E-W listric faults. Extension continued in E Cretaceous with seafloor spreading in Owen Stanley Oceanic Basin, now incorporated in Papuan fold and thrust belts; (3) Late Cretaceous extension, followed by Coral Sea seafloor spreading from Danian-Ypresian. Coral Sea propagator cuts through rifted margin and is controlled by subduction complex tied to Tasman Sea opening)

Carroll, A.R. & E. Webb (1996)- Pandora gas development. In: P.G. Buchanan (ed.) Petroleum exploration, development and production in Papua New Guinea, Proc. 3rd PNG Petroleum Convention, Port Moresby, p. 685-689.

Carson, B.E., J.M. Francis, R.M. Leckie, A.W. Droxler, G.R. Dickens, S.J. Jorry et al. (2008)- Benthic foraminiferal response to sea level change in the mixed siliciclastic-carbonate system of southern Ashmore Trough (Gulf of Papua). J. Geophysical Research 113, F01S20, doi:10.1029/2006JF000629, p. 1-18.
(online at: http://onlinelibrary.wiley.com/doi/10.1029/2006JF000629/epdf)
(Three foraminifera assemblages in deepwater Gulf of Papua Pleistocene-Holocene: (1) high Uvigerina peregrina- Bolivina robusta (higher organic carbon flux or lower oxygen water at maximum siliciclastic fluxes to slope with falling sea level); (2) high Globocassidulina subglobosa (lowered organic carbon flux or elevated oxygen, corresponding to lowered siliciclastic fluxes to slope due to sediment bypass during sea level lowstand); (3) high % neritic benthic species like Planorbulina mediterranensis (increased off-shelf delivery of neritic carbonates, when carbonate productivity on outer shelf increased significantly when reflooded)

Crockett, J.S. (2006)- Unraveling the 3-D character of clinoforms: Gulf of Papua, Papua New Guinea. Ph.D. Thesis, University of Washington, Seattle, p. 1-162.
(Study of modern clinoform development on Fly River shelf, Gulf of Papua, PNG)

Crockett, J.S., C.A. Nittrouer, A.S. Ogston, D.F. Naar & B.T. Donahue (2008)- Morphology and filling of incised submarine valleys on the continental shelf near the mouth of the Fly River, Gulf of Papua. J. Geophysical Research, Earth Surface, 113, F1S12, p. 1-16.
(Three incised valleys on continental shelf near mouth of Fly River, formed during sea level lowstands, which were not extensively modified or filled during Holocene Transgression. Valley relief 10-50m and most conspicuous at present-day shelf depths of 30-70m. Some filling of valleys during alluvial and transgressive phases in 3 stages: (1) hemipelagic sedimentation at distal sites, (2) gravity-driven flow spreading down valley, and (3) subsequent clinoform progradation that completely fills the valley)

Davies, A., C. Reiser, B. Burmaz & R. Reed (2012)- AVO Screening in frontier basins: an example from the Gulf of Papua, Papua New Guinea. AAPG Ann. Conv. Exhib., Long Beach 2012, Search and Discovery Art. 40910, p. . *(Extended Abstract)*
(online at: www.searchanddiscovery.com/documents/2012/40910davies/ndx_davies.pdf)

Drummond, B.J., C.D.N. Collins & G. Gibson (1979)- The crustal structure of the Gulf of Papua and Northwest Coral Sea. BMR J. Australian Geol. Geophysics 4, 4, p. 341-351.
(online at: www.ga.gov.au/corporate_data/81012/Jou1979_v4_n4_p341.pdf)
(BMR seismic refraction data from SW coast of Papuan Peninsula and NW Coral Sea show sediments thickness of 5km over Papuan Plateau, up to 10 km along axes of Moresby and S Aure Troughs, 1-2 km in Coral Sea, over Eastern Plateau. Crust continental under Papuan Peninsula and E Plateau, oceanic under Moresby Trough. N Australia, E and Papuan Plateaus and Papuan Peninsula once formed continuous continental crust. Opening of Coral Sea Basin extended N-ward along axis of Moresby Trough, into Aure Trough)

Durkee, E.F. (1990)- Pasca-Pandora reef exploration in the Gulf of Papua. In: G.J. & Z. Carman (eds.) Petroleum Exploration in Papua New Guinea, Proc. First PNG Petroleum Convention, Port Moresby, p. 567-579.
(Miocene reef exploration with >3 TCF of probable biogenic dry gas in 1988 Pandora discovery and thermogenic wet gas in Pasca (~0.2- 0.4 TCF ?))

Ewing, M., L.V. Hawkins & W.L. Ludwig (1970)- Crustal structure of the Coral Sea. J. Geophysical Research 75, 1953-1962.

Falvey, D.A. & L.W.H. Taylor (1974)- Queensland plateau and Coral Sea Basin: structural and time-stratigraphic patterns. Bull. Australian Soc. Exploration Geophysicists 5, p. 123-126.
(W Coral Sea region one major and three minor marginal plateaux, partly surrounding deep abyssal plain. Abyssal Plain underlain by ~1km sediment and oceanic crust generated by E Eocene seafloor spreading phase. Queensland Plateau subsided continental crust with Paleozoic basement rocks, originally part of onshore Tasman Geosyncline. Rift features beneath Queensland Trough, and plateau margin, with 1-3 kms of probable U Cretaceous 'rift valley' sediments on basement. Residual plateau highs along old Paleozoic trends subsided in E Miocene and locally capped by coral reefs)

Febo, L.A. (2007)- Paleoceanography of the Gulf of Papua using multiple geophysical and micropaleontological proxies. Ph.D. Thesis Louisiana State University, Baton Rouge, p. 1-155. *(Unpublished)*
(Surface sediments spanning ~15-33 ky- Recent)

Febo, L.A., S.J. Bentley, J.H. Wrenn, A.W. Droxler, G.R. Dickens, L.C. Peterson & B.N. Opdyke (2008)- Late Pleistocene and Holocene sedimentation, organic carbon delivery, and paleoclimatic inferences on the continental slope of the northern Pandora Trough, Gulf of Papua, J. Geophysical Research 113, F01S18, doi:10.1029/2006JF000677, p. 1-21.

(Two periods of Pleistocene rapid sediment accumulation, likely corresponding to early transgression when rivers delivered sediments much closer to shelf edge)

Francis, J.M., J.J. Daniell, A.W. Droxler, G.R. Dickens, S.J. Bentley, L.C. Peterson, B. Opdyke & L. Beaufort (2008)- Deep-water geomorphology and sediment pathways of the mixed siliciclastic-carbonate system, Gulf of Papua. J. Geophysical Research 113, F01S16, doi:10.1029/2007JF000851, p. 1-22.
(Modern deep water sedimentation Gulf of Papua)

Goni, M.A., N. Monacci, R. Gisewhite, J. Crockett, C. Nittrouer, A. Ogston, S.R. Alin & R. Aalto (2008)- Terrigenous organic matter in sediments from the Fly River delta-clinoform system (Papua New Guinea). J. Geophysical Research, Earth Surface, 113, F1S10, p. 1-27.
(online at: http://onlinelibrary.wiley.com/doi/10.1029/2006JF000653/epdf)
(Organic matter in Fly River prodelta clinoform sediments predominantly of terrigenous origin (modern plant detritus, aged soil organic matter, and very old or fossil organic matter))

Gordon, S.A., B.J. Huizinga & V. Sublette (2000)- Petroleum potential of the Southern Gulf of Papua. In: P.G. Buchanan et al. (eds.) Papua New Guineaȏs petroleum industry in the 21st century, Proc. 4th PNG Petroleum Convention, Port Moresby, p. 205-218.
(Thick N-S trending ?Triassic- Jurassic rift basin under W part of Gulf of Papua, with 2-3km of sediment (thicker than NW Shelf). Earliest Tertiary uplift stripped most of Cretaceous sediment)

Harris, P.T. (1994)- Incised valleys and backstepping deltaic deposits in a foreland-basin setting, Torres Strait and Gulf of Papua, Australia. In: R.W. Dalrymple et al. (eds.) Incised-valley systems, Soc. Sedimentary Geology (SEPM) Spec. Publ. 51, p. 97-108
(On incised valleys in front of Fly River delta, cut during Pleistocene lowstands)

Howell, A.L., S.J. Bentley, K. Xu, R.E Ferrell, Z. Muhammad & E. Septama (2014)- Fine sediment mineralogy as a tracer of latest Quaternary sediment delivery to a dynamic continental margin: Pandora Trough, Gulf of Papua, Papua New Guinea. Marine Geology 357, p. 108-122.

Harris, P.T., C.B. Pattiaratchi, J.B. Keene, R.W. Dalrymple, J.V. Gardner, E.K. Baker et al. (1996)- Late Quaternary deltaic and carbonate sedimentation in the Gulf of Papua foreland basin: response to sea level change. J. Sedimentary Res. 66, 4, p. 801-819.

Huuse, J.D., C. Palmer & V. Cole (2014)- Deepwater Papua New Guinea - Evidence for a working petroleum system. 76th EAGE Conf. Exhib., Amsterdam 2014, Th D203 10, 5p.
(Seismic survey in Palmer Petroleum Block offshore Port Moresby, Gulf of Papua With large NW-SE trending Late Miocene- E Pliocene nappes (2 km vertical throw), with hydrocarbon indicators like pockmarks, pipes, gas chimneys and Bottom Simulating Reflectors. Distribution strong correlation with steep limbs of deeper nappes)

Jablonski, D., S. Pono & O.A. Larsen (2006)- Prospectivity of the deepwater Gulf of Papua and surrounds in Papua New Guinea (PNG)- a new look at a frontier region. Australian Petrol. Prod. Explor. Assoc. (APPEA) J. 46, 1, p. 179-200.
(Deepwater Gulf of Papua large basement involved, extensional structures, overprinted by compression. New seismic indicates 11 plays: (1) extensional Paleozoic rift fault blocks; (2) U Jurassic- Lw Cretaceous turbidites (Iagifu-Hedina-Toro sst equivalents); (3) Campanian- M Paleocene Coral Sea synrift sst and basin floor fan equivalents (Pale/ Barune Fms); (4) M Paleocene break-up unconformity fault blocks and intra-basinal highs; (5) U Paleocene- Lw Eocene Pima Sst equivalent associated with M Paleocene uplift and erosion; (6) Oligocene- Lw Miocene lowstand deltas and turbidites; (7) Miocene- Recent biohermal build-ups; (8) Karstified Darai Lst equivalent sealed by Aure Beds claystones; (9) Miocene- Recent lowstand deltas and turbidites; (10) Eocene- Pliocene onlaps onto structural highs; and (11) Compressional plays associated with Pliocene- Recent collision of PNG and Pacific plates)

Jorry, S.J., A.W. Droxler & J.M. Francis (2010)- Deepwater carbonate deposition in response to re-flooding of carbonate bank and atoll-tops at glacial terminations. Quaternary Science Rev. 29, 17-18, p. 2010-2026.
(Incl. Gulf of Papua examples, adjacent to carbonate platform)

Jorry, S.J., A.W. Droxler, G. Mallarino, G.R. Dickens, S.J. Bentley, L. Beaufort, L.C. Peterson & B.N. Opdyke (2008)- Bundled turbidite deposition in the central Pandora Trough (Gulf of Papua) since Last Glacial Maximum: Linking sediment nature and accumulation to sea level fluctuations a millennial timescale, J. Geophysical Research 113, doi:10.1029/2006JF000649, p. 1-15.
(Siliciclastic turbidites numerous during Last Glacial Maximum (23-19 ka), and did not occur during warming/ deglaciation times. Timing of calciturbidite coincides with first reflooding of Eastern Fields Reef)

Keen, T.R., D.S. Ko, R.L. Slingerland, S. Reidlinger & P. Flynn (2006)- Potential transport pathways of terrestrial material in the Gulf of Papua. Geophysical Research Letters 33, 4, L04608, doi:10.1029/2005GL025416.

Landmesser, C.W., J.E. Andrews & G.H. Packham (1974)- Aspects of the geology of the eastern Coral sea and the western New Hebrides basin. Initial Reports Deep Sea Drilling Project (DSDP) 30, p. 647-661.
(online at: www.deepseadrilling.org/30/volume/dsdp30_21.pdf)

Mutter, J.C. (1975)- East Australian margin and the western marginal basins: basin evolution and marginal plateau subsidence in the Coral Sea. Exploration Geophysics 6, 2/3, p. 35-37.

Mutter, J.C. (1975)- Structural analysis of the Gulf of Papua and Northwest Coral Sea region. Bureau Mineral Res. Geol. Geoph., Canberra, Report 179, p. 1-52.
(online at: www.ga.gov.au/products-services/legacy-publications/reports.html)
(New interpretation of structure and tectonic history of Gulf of Papua and NW Coral Sea from 1970 seismic, gravity, and magnetic survey. Opening of Coral Sea formed Aure-Moresby Trough system in M Eocene?. Moresby Trough folding very similar to that in onshore Aure Trough, and probably continuous feature. Crust thins considerably under Moresby Trough, where sediment is thickest)

Sarg J.F., L.J. Weber, J.R. Markello, J.K. Southwell, J.M. Thomson et al. (1996)- Carbonate sequence stratigraphy; a summary and perspective with case history, Neogene, Papua New Guinea. In: C.A. Caughey et al. (eds.) Proc. Int. Symp. Sequence stratigraphy in SE Asia, Jakarta, Indon. Petroleum Assoc. (IPA), Jakarta 1995, p. 137-179.
(Carbonate sequence stratigraphy basics, with data on gas-bearing Gulf of Papua Miocene reefs (Pasca, Pandora). Initial foreland basin subsidence in latest Oligocene- earliest Miocene leads to start of carbonate platform growth. SB at 21 Ma (=Bur1?) extensive subaerial exposure. Sequence 13.8 Ma major platform outbuilding, 10.5 Ma exposure surface. Thrust loading from N initiated peripheral forebulge by middle of M Miocene, with regional uplift and exposure of carbonates area. Platform highs subaerially exposed in Latest Miocene and onlapped by 5.5 Ma first siliciclastics from uplifted Papuan fold and thrust belt to N and NE. Renewed thrust sheet emplacement in latest Miocene-Pliocene drowned remaining platforms. Hydrocarbon columns relatively small, probably due to poor seal)

Septama, E. (2015)- The Late Quaternary deep-sea depositional system in the Gulf of Papua: linking source, dynamic sedimentation processes and depositional architecture. Ph.D. Thesis, Memorial University of Newfoundland, St. Johnﾕs, p. 1-158.

Septama, E. & S.J. Bentley (2010)- Late Quaternary deepwater fan depositional cycles in the Gulf of Papua: linking sources, dynamic sedimentation processes, and depositional architecture. AAPG Ann. Conv. Exh., New Orleans 2010, Search and Discovery Art. 50283, 31p. *(Abstract+ Presentation)*
(online at: www.searchanddiscovery.com/documents/2010/50283septama/ndx_septama.pdf)
(Seismic and piston core study of Late Quaternary deepwater channel-fan system in Gulf of Papua, focused on Pandora and Moresby Troughs)

Septama, E. & S.J. Bentley (2016)- Late Quaternary geomorphology, seabed evolution, and terrigenous sediment delivery to the Pandora and Moresby Troughs, Gulf of Papua, Papua New Guinea. Marine Geol. 379, p. 208-223.
(Peak depositional period in late Quaternary deepwater Pandora Trough during Marine Isotope Stage 2, when large deep-sea channel network linked Pandora and Moresby Troughs, allowing long-distance sediment transport by large turbidity currents from Papuan mainland to Coral Sea Basin)

Septama, E. & S.J. Bentley (2017)- Source-to-sink sediment delivery in the Gulf of Papua from scanning electron microscopy and mineral liberation analysis-aided provenance analysis of deep-sea turbidite sands. AAPG Bull. 101, 6, p. 907-936.
(Provenance of Pleistocene- Holocene deepwater sediments in Gulf of Papua. Multiple terrestrial sediment sources along~500 km basin margin converged to form continuous deep-sea system in two basins before 30 ka. During sea level fall of Last Glacial Maximum (18-22 ka) distinct depocenters, due to incision of individual rivers across newly exposed coastal plain, followed by compositional similarity near end of LGM. Holocene deepwater sand transport shut down, except one locality with narrow shelf-slope setting and additional volcanic supply)

Septama, E., S.J. Bentley & A.W. Droxler (2016)- Conduits, timing and processes of sediment delivery across a high relief continental margin, continental shelf to basin in the late Quaternary, Gulf of Papua. Marine Petroleum Geol. 72, p. 447-462.

Septama, E., S.J. Bentley & M. Shaffer (2011)- Source-to-sink sediment delivery in the Gulf of Papua from SEM-MLA-aided provenance and textural analysis of turbidite sands. American Assoc. Petrol. Geol. (AAPG) Ann. Conv., Houston 2011, Search and Discovery Art. 30181, 28p. *(Abstract + Presentation)*
(online at: www.searchanddiscovery.com/documents/2011/30181septama/ndx_septama.pdf)
(Provenance study of Pleistocene-Holocene deepwater sands in Gulf of Papua shows three major pathways: (1) long-distance NW-SE sediment transport of quartzo-feldspathic sand from the Papuan Mainland; (2) short-distance transport of felsic-mafic volcanic sand from collision margin of Papuan Peninsula; (3) intermediate-distance delivery from Fly-Strickland and Papuan Peninsula along coastal pathways toe Moresby Trough)

Symonds, P.A., J. Fritsch & H.U. Schluter (1984)- Continental margin around the western Coral Sea Basin: structural elements, seismic sequences and petroleum geological aspects. In: S.T. Watson (ed.) Trans. Third Circum-Pacific Energy and Mineral Resources Conference, Honolulu 1982, American Assoc. Petrol. Geol. (AAPG), p. 243-252.
(German- Australian surveys across W Coral Sea Basin in 1978/1981 suggest opposing margins of Queensland and Papuan Plateaus underlain by parts of complex rift zone which would have been up to 80 km wide prior to continental break up. "Outer" basement highs" with low angle contacts with oceanic crust in oceanward part of rift zone on both sides of Coral Sea Basin. N Queensland Trough and W margin of Eastern Plateau considered to have best petroleum potential: underlain by grabens with up to 5 km of sediments, part of which may be Mesozoic deltaic sequence similar to that intersected in Anchor Cay 1 well)

Symonds, P.A., P.J. Davies, C.J. Pigram, D.A. Feary & G.C.H. Chaproniere (1991)- Northeast Australia: Torres Shelf- Pandora Trough. Bureau Mineral Res. Geol. Geoph., Australia, Canberra, Continental margins program Folio 4, p. 1-74.
(With seismic profiles from BMR Survey 50, 1985)

Taylor, L.W.H. (1975)- Depositional and tectonic patterns in the western Coral Sea. Bull. Australian Soc. Exploration Geophysicists 6, p. 33-35.
(Preliminary results of DSDP Legs 21 and 30 in Coral Sea. Lower Eocene ocean floor age established at Site 287. Uplift of PNG Owen Stanley Range in latest Oligocene- E Miocene reflected in shedding of detritus into Coral Sea, etc. Fly River of PNG not major sediment source for Coral Sea. U Cretaceous- Paleocene rift valley sequence interpreted for edge of Queensland Plateau, less definitive at SE edge of Papuan Plateau and W part of Louisiade Platform)

Taylor, L. & D.A. Falvey (1977)- Queensland Plateau and Coral Sea basin: stratigraphy, structure and tectonics. Australian Petrol. Explor. Assoc. (APEA) J. 17, 1, p. 13-29.
(Seafloor spreading in Coral Sea dated by DSDP as E Eocene (51 Ma). This requires rifting-breakup of extended NE Australian continent, incl. Queensland, Papuan and Louisiade Plateaus and Cretaceous portions of East Papua. After initial sprading widespread Late Eocene- Mid-Oligocene unconformity on all plateaus. Coral reef development started in Late Oligocene- E Miocene. Up to 3km rift sequences beneath Queensland and Townsville troughs, possibly of U Cretaceous- Paleocene age. With tectonic reconstruction and Paleocene-Eocene paleogeographic maps)

Tcherepanov, E.N., A.W. Droxler, P. Lapointe, G.R. Dickens, S.J. Bentley, L. Beaufort et al. (2008)- Neogene evolution of the mixed carbonate-siliciclastic system in the Gulf of Papua, Papua New Guinea. J. Geophysical Research 113, F01S21, doi:10.1029/2006JF000684, 15p.
(Cenozoic mixed system in Gulf of Papua four phases: (1) Late Cretaceous-Paleocene: rift grabens and uplifted structural blocks which served later as pedestals for carbonate edifices (2) Eocene-M Miocene neritic carbonates, controlled mostly by eustatic fluctuations; (3) Late Miocene- E Pliocene: extensive demise of carbonate platforms in central part of study area; (4) Late Pliocene-Holocene: siliciclastics-dominated, resulting in burial of drowned and active carbonate platforms, although some platforms still alive today)

Tcherepanov, E.N., A.W. Droxler, P. Lapointe & K. Mohn (2008)- Carbonate seismic stratigraphy of the Gulf of Papua mixed depositional system: Neogene stratigraphic signature and eustatic control. Basin Research 20, 2, p. 185-209.
(In Gulf of Papua major carbonate system initiated in Eocene. Subsequent to E Oligocene hiatus, carbonate system expanded and aggraded, then backstepped and partly drowned in Late Oligocene- earliest Miocene. During late E Miocene- early M Miocene carbonate system continued vertical growth in most platform areas. In M Miocene (Langhian-Serravallian boundary) carbonate deposition shifted downward during sea-level regression, exposing most of early M Miocene platform tops. After downward shift, active carbonate production only in NE part of study area. At start of LateMiocene platform tops re-flooded. Overall pattern, often referred to as Oligocene-Neogene stratigraphic signature, similar to patterns such as in Maldives, Bahamas, etc.)

Tcherepanov, E.N., A.W. Droxler, P. Lapointe, K. Mohn & O.A. Larsen (2010)- Siliciclastic influx and burial of the Cenozoic carbonate system in the Gulf of Papua. Marine Petroleum Geol. 27, 2, p. 533-554.
(Extensive Late Oligocene- M Miocene carbonate system in Gulf of Papua buried by huge influx of siliciclastics from PNG. Major episodes of siliciclastic influx in carbonate system related to tectonic activity in fold- thrust belt during Oligocene Peninsular Orogeny, Late Miocene Central Range Orogeny and Late Pliocene renewed uplift and exhumation of peninsular region. Beautiful seismic examples)

Wang, Z. & C.A. Stein (1992)- Subsidence of the Gulf of Papua in the Cenozoic. Tectonophysics 205, p. 409-426.
(Two subsidence episodes in W Gulf of Papua (1) E Cenozoic-Oligocene, minor stretching with opening of Coral Sea; (2) E Miocene- Present higher subsidence rate which cannot be explained by Paleocene rifting. Late Oligocene- Late Miocene episode of rapid subsidence in Aure Trough to E affects subsidence of W Gulf of Papua. Computed expected deflection from flexure due to load of Aure Trough strata similar to that observed. Model used had effective elastic thickness of rifted continental margins, implying relatively weak lithosphere. Predicted position of forebulge in western Gulf where Oligocene strata absent, suggesting post-depositional uplift, facilitating growth of E Miocene reefs)

Weissel, J.K. & A.B. Watts (1979)- Tectonic evolution of the Coral Sea Basin. J. Geophysical Research 84, B9, p. 4572-4582.
(Coral Sea basin magnetic lineations strike N70°W, parallel to N margin Queensland Plateau. Opening began at ~62 Ma, spreading ceased before 50 Ma (~56 Ma?), at same time as Tasman Sea, but finite rotations from two basins different. We infer at least one additional active plate boundary in Paleocene, which met Coral Sea and Tasman Sea plate boundaries at triple junction near E end of Coral Sea basin)