U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

TO ACCOMPANY MAP CP-37

Explanatory Notes for the Tectonic Map of the Circum-Pacific Region Southwest Quadrant

1:10,000,000

CIRCUM-PACIFIC COUNCIL
FOR
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1991

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EXPLANATORY NOTES FOR THE TECTONIC MAP OF THE CIRCUM-PACIFIC REGION SOUTHWEST QUADRANT

1:10,000,000

By

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1991

Explanatory Notes to Supplement the

TECTONIC MAP OF THE CIRCUM-PACIFIC REGION SOUTHWEST QUADRANT

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INTRODUCTION

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Circum-Pacific Map Project

The Circum-Pacific Map Project is a cooperative international effort designed to show the relationship of known energy and mineral resources to the major geologic features of the Pacific basin and surrounding continental areas. Available geologic, mineral, and energy-resource data are being complemented by new, project-developed data sets such as magnetic lineations, seafloor mineral deposits, and seafloor sediment. Earth scientists representing some 180 organizations from more than 40 Pacific-region countries are involved in this work.

Six overlapping equal-area regional maps at a scale of 1:10,000,000 form the cartographic base for the project: the four Circum-Pacific Quadrants (Northwest, Southwest, Southeast, and Northeast), and the Antarctic and Arctic Sheets. There is also a Pacific Basin Sheet at a scale of 1:17,000,000. The Base Map Series and the Geographic Series (published from 1977 to 1990), the Plate-Tectonic Series (published in 1981 and 1982), the Geodynamic Series (published in 1984 and 1985), and the Geologic Series (published from 1984 to 1989) all include six map sheets. Other thematic map series in preparation include Mineral-Resources and Energy-Resources Maps. Altogether, 60 map sheets are planned. The maps are prepared cooperatively by the Circum-Pacific Council for Energy and Mineral Resources and the U.S. Geological Survey and are available from the Branch of Distribution, USGS, Box 25286, Federal Center, Denver, Colorado 80225, U.S.A.

The Circum-Pacific Map Project is organized under six panels of geoscientists representing national earth-science organizations, universities, and natural-resource companies. The six panels correspond to the basic map areas. Current panel chairmen are Tomoyuki Moritani (Northwest Quadrant), R. Wally Johnson (Southwest Quadrant), Ian W. D. Dalziel (Antarctic Region), José Corvalán D. (Southeast Quadrant), Kenneth J. Drummond (Northeast Quadrant), and George W. Moore (Arctic Region).

Project coordination and final cartography are being carried out through the cooperation of the Office of International Geology of the U.S. Geological Survey, under the direction of General Chairman George Gryc of Menlo Park, California, with the assistance of Warren O. Addicott, consultant. Project headquarters are located at 345 Middlefield Road, MS 952, Menlo Park, California 94025, U.S.A.

The framework for the Circum-Pacific Map Project was developed in 1973 by a specially convened group of 12 North American geoscientists meeting in California. The project was officially launched at the First Circum-Pacific Conference on Energy and Mineral Resources, which met in Honolulu, Hawaii, in August 1974. Sponsors of the conference were the AAPG, Pacific Science Association (PSA), and the Coordinating Committee for Offshore Prospecting for Mineral Resources in Offshore Asian Areas (CCOP).

The Circum-Pacific Map Project operates as an activity of the Circum-Pacific Council for Energy and Mineral Resources, a nonprofit organization that promotes cooperation among Circum-Pacific countries in the study of energy and mineral resources of the Pacific basin. Founded by Michel T. Halbouty in 1972, the Council also sponsors quadrennial conferences, topical symposia, scientific training seminars, and the Earth Science Series books.

Tectonic Map Series

The tectonic maps distinguish areas of oceanic and continental crust. Symbols in red mark active plate boundaries, and colored patterns show tectonic units (volcanic or magmatic arcs, arc-trench gaps, and interarc basins) associated with active plate margins. Well documented inactive plate boundaries are shown by symbols in black. The tectonic development of oceanic crust is shown by episodes of seafloor spreading. These correlate with the rift and drift sequences at passive continental margins and episodes of tectonic activity at active plate margins. The recognized episodes of seafloor spreading seem to reflect major changes in plate kinematics. Oceanic plateaus and other prominences of greater than normal oceanic crustal thickness such as hotspot traces are also shown. Colored areas on the continents show the ages of deformation and metamorphism of basement rocks and the emplacement of igneous rocks. Transitional tectonic (molassic) and reactivation basins are shown by a colored boundary, and if they are deformed, a colored horizontal line pattern indicates the age of deformation. Colored bands along basin boundaries indicate age of inception, and isopachs indicate thickness of platform strata on continental crust and cover on oceanic crust. Colored patterns at separated continental margins show the age of inception of rift and drift (breakup) sequences. Symbols mark folds and faults, and special symbols show volcanoes and other structural features.

INTRODUCTION TO THE TECTONIC DEVELOPMENT OF THE SOUTHWEST QUADRANT

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The Southwest Quadrant map sheet covers about one-eighth of the earth's surface, and obviously we cannot attempt to describe the tectonic development of this vast region in the limited space available in these explanatory notes; however, necessary data are provided in the description of map units (see p. 11). What we have done is to try to point out the main sources of information as a form of introduction.

This publication of the Southwest Quadrant Tectonic Map has been in the making for over six years, and early compilations (mainly proofs) have been exhibited at various earth-science gatherings (Circum-Pacific Energy and Mineral Resources conferences; American Association of Petroleum Geologists meetings; American Geophysical Union and Geological Society of America yearly meetings; 3rd Circum-Pacific Terrane Conference; and at various Circum-Pacific regional meetings), and of course the compilation and proofs were discussed in great detail during the yearly meetings of the Circum-Pacific Map Project. A considerable amount of information shown on the map was received at these meetings as personal communications and also from personal exchange of information with many scientists during the compilation stage. We wish to acknowledge the help of all those credited on the introductory pages, as well as those who are not mentioned specifically. During the compilation of the map the compilers have tried to convey the prevailing concensus. However, the advancement in the knowledge of tectonics is so rapid that it was soon realized that a cutoff point had to be made and this was set at about mid 1985; very few amendments were made after the Singapore Circum-Pacific Energy and Mineral Resources Conference held in August 1986.

Early in the history of the Circum-Pacific Map Project it was decided that the Geologic Map series, in contrast to classic geologic maps, would show boundaries of stratotectonic units, that is, major unconformities which reflect the tectonic development of continental crust. Thus it follows that onshore boundaries are identical on the Geologic and Tectonic Series maps. Moreover, the tectonic maps, besides age, also show the tectonic interpretation of stratotectonic units and of course also more structural data. The oceanic crustal domain has been divided into tectonic units as discussed on p. 6).

For the successful interpretation and utilization of this map, it is necessary also to peruse the Geologic Map, and to supplement the data on the Tectonic and Geologic Maps with additional information drawn from the other series (especially Plate-Tectonic) of the earth-science maps of the Circum-Pacific Map Project. The Geologic Map Explanatory Notes quote the basic sources of information with respect to geologic maps, and the reader is referred to them (Palfreyman, 1988).

This compilation was strongly influenced by the "Tectonic Map of Australia and New Guinea" (at a scale of 1:5,000,000 - Geological Society of Australia, 1971) and the "Tectonic Map of New South Wales" (at a scale of 1:1,000,000, Scheibner, 1974, 1976). Besides these two, there exists for Australia the "Tectonic Map of South Australia" (at a scale of 1:2,000,000, Flint and Parker, 1982), the "Geologic Map of Western Australia" (Gee et al, 1979), and "Queensland Geology" (Day et al, 1975, 1983), both at a scale of 1:2,500,000, each of which contains tectonic and structural geologic data. Tectonic and structural map data for Tasmania were published by Williams (1978) and for Victoria by VandenBerg (1978). The "Earth Science Atlas of Australia" (at 1:10,000,000 scale - Australia Bureau of Mineral Resources, 1979-1981) contains several maps displaying tectonic and structural geologic data.

H. R. Katz provided the draft compilation of the geologic and tectonic maps for New Zealand, and further relevant data are contained in Suggate et al (1978) and in Katz (1980a).

D. B. Dow (pers. comm., 1985) provided unpublished data which were based on the results of the cooperative joint mapping between Geological Research and Development Centre and the Australian Bureau of Mineral Resources in Irian Jaya. These data are contained in standard 1:250,000-scale maps of this region and in the summary map "Geological Map of Irian Jaya" (at 1:1,000,000 scale, Dow et al, 1986).

Practically one-fourth of the Southwest Quadrant map has already been depicted in plate-tectonic terms on the classic "Tectonic Map of the Indonesian Region" (at 1:5,000,000 scale) by Hamilton (1978).

Data for the northern part of the quadrant map have been published at 1:5,000,000 scale by the Commission for the Geologic Map of the World, Subcommission for the Tectonic Map (Ray et al, 1982).

L. W. Kroenke is compiling a tectonic map for the Southwest Pacific region, and the draft was made available to the compilers; this is here gratefully acknowledged.

The tectonic divisions of the oceanic crustal domain are based on published and unpublished magnetic-lineation data. The reader is referred to the Plate-Tectonic Map series maps (Doutch et al, 1981) for which the magnetic lineations were compiled by X. Golovchenko, R. Larsen, W. Pitman, and N. Isezaki. Updating of these data is based on Auzende et al (1986a, b), Cande and Mutter (1982), F. J. Davey (pers. comm., 1986), Hilde and Lee (1984), Johnson and Veevers (1984), Lee (1982), Malahoff et al (1982), Pautot et al (1986), Shaw (1978; pers. comm., 1984), Tamaki and Larson (1988), Tamaki (pers. comm., 1986), Taylor (pers. comm., 1985), Taylor and Hayes (1980), Veevers (pers. comm., 1985, 1988), Vogt et al (1983), and F. F. H. Wang (pers. comm., 1985).

The selected list of references (p. 46) provides most of the sources considered during this compilation, and in the brief description of map units, selected specific references are quoted.

For Australia, Papua-New Guinea, and Irian Jaya the reader is referred to the monograph edited by Veevers (1984), which contains further references. Besides this, the brief syntheses by Rutland (1976) and Plumb (1979b) are useful. From regional syntheses, Branson (1978), Brown et al (1979-1980), Cas (1983), Collins and Williams (1986), Crook (1980), Davies (1971), Day et al (1978, 1983), Doutch and Nicholas (1978), Dow (1977), Falvey and Mutter (1981), Gee (1979), Geological Society of Australia (1971), Henderson and Stephenson (1980), Johnson (1979), Leitch (1974), Leitch and Scheibner (1987), Murray (1986), Packham (1969), Plumb (1979a), Powell (1983, and in Veevers, 1984), Preiss (1987), Ramsay and VandenBerg (1986), Scheibner (1987), Stevens (1980), Sutherland (1978), and Williams (1978) are informative.

For New Zealand, the monograph edited by Suggate et al (1978) is essential, and important tectonic data are contained in Bishop et al (1976), Carter et al (1977), Cole (1982), Cooper (1979), Cooper and Grindley (1982), Davey and Christofell (1978), Ewart et al (1977), Kamp (1980), Katz (1980a, 1982), Norris and Carter (1980), Sporli (1980, 1987), Stern (1985), Walcott (1978), as well as references in the above papers.

A modern tectonic synthesis for the island arcs and intervening features in the Southwest Pacific was published by Kroenke (1984); this gives further extensive references. Subsequent papers which were considered during this compilation include Auzende et al (1986a, b), Brocher (1985), Daniel et al (1986), Falvey and Pritchard (1984), Greene and Wong (1988), Hawkins et al (1984), Houza and Keene (1984), Katz (1984), Monzier et al (1984), Scholl and Vallier (1985), and Vedder et al (1986).

The active margin of the Eurasia Plate and the wider region of the interaction between the Eurasia, Australia-India, and Pacific Plates is concisely treated in the monograph by Hamilton (1979), and more data are contained in the CCOP (1981) synthesis: "Studies in East Asian Tectonics and Resources" and in the synthesis of Tertiary basins by ASCOPE (1981). Further important tectonic data and references are to be found in Audley-Charles (1974, 1978), Audley-Charles et al (1979), Barber (1981), Barber et al (1981), Beady and Moore (1981), Ben-Avraham and Emery (1973), Bollinger and de Ruiter (1975), Bowin et al (1980), Burton (1973, 1974), Cameron et al (1980), Choi (1983), Curray et al (1979), De Boer et al (1980), Eguchi et al (1979), Fontaine and Workman (1978), Fornari et al (1974), Haile (1974), Hayes and Lewis (1983), Hinz and Schluter (1985), Holloway (1981), Hutchison (1981), Jacobson et al (1980), Johnston (1981), Johnston and Bowin (1981), Kadar (1979), Karig (1971), Karig et al (1980), Katili (1974, 1978), Lewis and Hayes (1983), Ludwig et al (1979), Mascle and Biscarrat (1979), Parke et al (1971), Pautot et al (1986), Pigram and Panggabean (1983, 1984), Pulunggono (1974), Ray et al (1982), Robinson (1984), Rodolfo (1969), Sato (1981), Silver (1981), Silver et al (1983), Silver and Moore (1978), Silver and Smith (1983), Suensilpong et al (1978), Sukamto and Simandjuk (1983), Tan and Khoo (1978), Taylor and Hayes (1980, 1983), Tjokrosapoetro and Budhitrisna (1982), Untung (1985), and Workman (1977).

PRINCIPLES OF THE CIRCUM-PACIFIC TECTONIC MAP COMPILATION

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The principles of the Circum-Pacific Tectonic Map compilation have been derived during lengthy discussions with the panel chairmen and technical advisers to the Circum-Pacific Map Project. The final guidelines were adopted in December 1982 (see U.S. Geological Survey Open-File Report 83-64).

The Tectonic Map series has been designed with the intention of aiding the exploration for energy and mineral resources. The aim has been to produce maps as objective as possible. Each of the quadrant maps gives a complete tectonic synopsis of one-eighth of the Earth's surface. At the same time enough detail has been retained to illustrate the specific differences of individual regions. The data contained on these maps, combined with the data on other Circum-Pacific map series, can be used to test the existing conceptual models which we use to explain the origin and distribution of energy and mineral resources. It is expected that such studies may lead to improved conceptual models and help in practical exploration for nonrenewable resources.

The principal subdivisions on the maps show the contrasting *oceanic* and *continental crustal domains*, and the *active plate margins*, which represent the transition between the two types and the location where the continental crust is formed. With the search for fluid and gas hydrocarbons in mind, a further subdivision of the oceanic and continental crustal domains was made into *basement complexes* (those generally deemed to be too deformed to contain fluid hydrocarbons) and *cover rocks.*

Oceanic Crustal Domain

Oceanic crustal rocks in present oceanic areas. The oceanic crust has been divided into successive episodes of seafloor spreading and these are color coded. These episodes of seafloor spreading appear to correlate not only between distant oceanic regions, but also with the tectonic development of passive and active plate margins. The spreading episodes possibly reflect changes in the plate kinematics and plate interactions. Undifferentiated, or more precisely, oceanic crust of unknown age, is shown in gray.

Oceanic plateaus. Oceanic plateaus are characterised by anomalous crustal thicknesses in contrast to the surrounding oceanic crust. Some plateaus represent anomalous oceanic crust, others are epiliths formed by intraplate igneous activity, a few are microcontinents, and some are of unknown origin. Plateaus are shown by a black overprint pattern.

Oceanic island and seamount volcanics. Oceanic volcanic islands and seamounts represent traces of hotspots and other intraplate igneous activity. The rock type, which is mostly basic volcanic, is shown by overprint symbol, and the age by color, with gray for unknown age. These complexes represent cover of the oceanic crust.

Sedimentary cover on oceanic crust. Isopachs indicate the thickness of the cover strata.

Active Plate Margins

At the active plate margins the basement/cover classification is only locally applied, with the allochthonous microcontinents representing older basement complexes. The basement complexes are in the making here. Three main categories are differentiated.

Magmatic arcs or chains. Included here are volcanic-island arcs, continental-margin arcs or chains, volcanic rifts, and other forms of magmatic chains related to plate interactions at plate margins. The composition of the volcanics and plutonics is shown by overprint symbols (patterns) and the color of these symbols indicates the age.

Forearc sediments. Areas of forearc sedimentation are shown by pattern, and the background color of pattern indicates the age of onset of sedimentation. Isopachs indicate thickness of strata.

Accretionary-prism rocks, including mélanges. Distribution of these rocks is shown by pattern, and the background color indicates the time of onset of subduction.

Continental Crustal Domain

Basement Rocks

Metamorphic rocks. Metamorphic rocks of orogenic belts and metamorphic belts formed from sedimentary or igneous protoliths are shown in the same way as in the Geologic Map Series. Solid color shows the age of major metamorphism, with black overprints.

Igneous rocks. Igneous rocks, mostly intrusive, of orogenic belts, igneous belts, and mobile belts are shown by solid colors that indicate the age of intrusion or emplacement. Ultramafic rocks are shown in black, and ophiolites in purple.

Deformed sedimentary and volcanic rocks (those generally deemed to be too deformed to contain hydrocarbons). Sedimentary and volcanic rocks of orogenic belts, mobile belts, and other fold belts are shown in solid colors, which indicate the age of major deformation, with black overprints for volcanic lithologies as in the Geologic Map Series.

Rocks of Transitional and Reactivation Basins

Transitional sequences. These sequences are defined as deposits immediately succeeding major deformation in orogenic regions and immediately preceding platform-strata deposition. These complexes are often referred to as "late orogenic." The igneous rocks in these sequences include mostly felsic volcanic rocks, bimodal volcanic rocks in rifts, and postkinematic granites (including some intermediate to basic intrusives) and associated volcanic rocks. Sedimentary rocks include molasse-like deposits, red beds, and other continental sedimentary rocks that commonly accumulated in foreland basins, fore-, back-, or intradeeps, and grabens.

Colored dot-and-dash bands follow the boundaries, and if the complexes are deformed, horizontal colored lines indicate the age of deformation. Broken lines or colored dashes indicate concealed areas.

Reactivation sequences. These sequences comprise deposits which are unrelated to preceding tectonism, except for inherited structural control. These sequences seem to be related to plate collisions as exemplified by the China-type basins related to collision of the India with the Asian plate or to oblique plate convergence. Rocks include some foredeep, graben and molasse-like deposits, and rift-related volcanic rocks.

Covering Rocks

Continental-platform strata. This unit includes remains of sedimentary basins and also blanket deposits not related to tectonic downwarps and basins. Boundaries in black indicate limits of preservation, and parallel colored bands indicate the age range, usually the age of inception. Within boundaries, pastel tints show age of the basement where this is known. Thickness of strata is shown by isopachs, with gray for unknown age.

Continental-margin deposits. Rift sequences are shown in areas of thick deposition formed either in the rift valleys or grabens at continental margins preceding continental breakup and seafloor spreading. A colored pattern indicates the age of onset of sedimentation.

Drift or breakup sequences are comprised of sediment that accumulated over the rift sequences and the rest of the contemporaneous affected shelf after the breakup. A colored pattern indicates the age of the onset of sedimentation. Isopachs indicate thickness of strata.

Intraplate igneous rocks. Intraplate igneous rocks include plateau basalt and other anorogenic extrusive and intrusive rocks. Rock type is indicated by patterns as in the Geologic Map Series, and the color of the patterns indicates the age.

Structural Framework

As an additional set of data important for the description of the tectonics, the names of structural units (morphotectonic elements) are printed on the map. Only the major entities are shown due to limitations imposed by the scale of the map.

OCEANIC TECTONIC UNITS

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At the 1985 Annual Meeting of the Circum-Pacific Map Project, the Panel Chairmen reaffirmed a proposal to use tectonic divisions for the color-tinted oceanic crustal age units on the Tectonic Map of the Circum-Pacific Region, rather than periods and epochs, the standard divisions of the geologic time scale. The proposed tectonic divisions better illustrate the relationship at passive continental margins between oceanic crustal age and rift and drift sequences on the one hand, and episodes of tectonic activity at converging plates on the other hand. They avoid boundaries based on biotic breaks, such as the Cretaceous-Tertiary boundary, which might not be related to tectonic events within the Earth. Continental collisions recorded by onshore geologic structures tend to extend over considerable intervals of time, whereas seafloor-spreading changes, although in places related to the collisions, tend to be abrupt turning points at least in local Earth history.

The geomagnetic-polarity and tectonic events that mark the boundaries of the oceanic tectonic units on the Tectonic Map of the Circum-Pacific Region are given in Table 1. Also included are other events that occur within the units.

The Pacific tectonic events are based mainly on breaks in magnetic lineations compiled by Xenia Golovchenko, Roger Larson, Walter Pitman, and Nobuhiro Isezaki, as printed on the Plate-Tectonic Map of the Circum-Pacific Region, Pacific Basin Sheet, 3rd printing, 1985. The events are identified by anomaly numbers and letters, and the ages come from the Geomagnetic Polarity Time Scale on the same map by Larson, Golovchenko, and Pitman (1985).

Events within the magnetic quiet zones (Cretaceous = KMQZ, Jurassic = JMQZ) are identified by their age in million years before present (Ma). Boundaries for the color-tinted units on the Tectonic Map quadrants within the magnetic quiet zones are intended to be plotted proportionately, interpolating within the local widths of the zones or extrapolating from adjacent lineations. The magnetic lineations between the color-tinted boundaries also are printed on the map. Because the oceanic tectonic units are bounded by specific magnetic lineations, their mapped positions have a measure of universality, but the ages of the boundaries will evolve as the polarity time scale is refined. Table 2 shows the ages of the boundaries of the oceanic tectonic units with respect to several other recently published time scales. Table 3 shows the variations in time scales.

Although important tectonic events included on the map occur within the Cretaceous magnetic quiet zone, their details in the middle of the ocean will be poorly known until seafloor imaging by systems such as *Gloria* has been completed, but that will not take place until after publication of at least the first quadrants in the Tectonic Map series. At this stage, therefore, tectonic-age subdivision in the quiet zone is tentative.

The 180 million years of tectonic events recorded on the seafloor of the Circum-Pacific Region, which is the tectonically most active half of the Earth, may be compared with the events of the same ages on the fringing continents. One of the earliest such seafloor events, during the time of the Jurassic magnetic quiet zone, was the continental breakup through the north-central Atlantic, which extended through the Gulf of Mexico and Caribbean Sea, grazed the edge of Gondwana at then attached New Zealand and Australia, and joined with the Tethys Sea to the west. This carried many fragments of Gondwana northward so that by the time the next major reorganization came, when Australia, New Zealand, and Antarctica began to disperse (95 Ma), the fragments at the north side of the Pacific Jurassic magnetic quiet zone were more than 8000 km north of their starting points. Some were destined to continue still farther northward to build northeastern Asia, but the field of fragments had been split by the north-trending forerunner of the East Pacific Rise that cut off the east end of the Phoenix lineations (118 Ma). This began the building of the 4,000-km-wide belt of Cretaceous and Tertiary seafloor (now about half subducted below the Americas) that dominates the present Pacific Ocean. It swept the eastern part of the dispersed fragments of Gondwana toward the west coast of North America and destroyed the last vestiges of Panthalassa, the great ocean that had shared the Earth with the supercontinent of Pangea at the beginning of the Mesozoic.

The Jurassic to present patterns of seafloor growth and destruction shown on the oceanic parts of the Tectonic Map of the Circum-Pacific Region provide clues to the processes that caused the pre-Jurassic tectonic patterns shown on the continental parts of the map. Plutonic arcs delineate former subduction zones, and ultramafic belts mark lines of continental and volcanic-arc collision. Each of these, however, may have moved after their formation during later episodes of dispersion and accretion. In sum, the seafloor and continental data on the Tectonic Map of the Circum-Pacific Region provide the resources, on a nearly distortion-free geographic base, for future investigations into the complex processes that have affected this half of the planet.

Table 1. Oceanic tectonic units and events within the units.

QTpl

Anomaly 0 (0 Ma, Holocene) to Anomaly 3 (4 Ma, early Pliocene)

A 3, 4 Ma, early Pliocene: Gulf of California started opening; Lau Basin started opening; Drake Passage stopped opening

Tn

Anomaly 3 (4 Ma, early Pliocene) to Anomaly 5 (20 Ma, early Miocene)

A 4A, 8 Ma, late Miocene: Scotia Sea stopped opening
A 5B, 15 Ma, middle Miocene: Japan Sea stopped opening
A 5C, 17 Ma, middle Miocene: South China Sea stopped opening; West Mariana Basin stopped opening

TmTo--To

Anomaly 6 (20 Ma, early Miocene, close to Miocene-Oligocene boundary) to Anomaly 13 (37 Ma, early Oligocene)

A 6, 20 Ma, close to Miocene-Oligocene boundary: South Fiji Basin stopped opening; East Pacific Rise at Nazca plate jumped west
A 6C, 25 Ma, Miocene-Oligocene boundary: Galapagos Rift was established; Red Sea started opening
A 9, 29 Ma, middle Oligocene: Caroline Basin stopped opening

ToTe

Anomaly 13 (37 Ma, early Oligocene) to Anomaly 18 (43 Ma, late middle Eocene)

A 13, 37 Ma, early Oligocene: South Fiji Basin started opening; South China Sea started opening; Japan Sea probably started opening; Baffin Bay and Labrador Sea stopped opening
A 16, 40 Ma, late Eocene: Philippine Sea stopped opening

Te

Anomaly 18 (43 Ma, late Eocene) to Anomaly 24 (54 Ma, earliest Eocene)

A 18, 43 Ma, late Eocene: Emperor bend indicates that the local motion of the Pacific plate changed from north to northwest; Laramide Orogeny ended; Mendocino Fracture Zone changed trend; subduction began at New Caledonia and Tonga

Tpa

Anomaly 24 (54 Ma, earliest Eocene) to Anomaly 27 (62 Ma, early Paleocene)

A 24, 54 Ma, earliest Eocene: Tasman Sea stopped opening; major reorientation in Gulf of Alaska; Kula Plate believed to have expired; Aleutian subduction believed to have begun; Norwegian Sea started opening

TpaKu

Anomaly 27 (62 Ma, early Paleocene) to within Cretaceous magnetic quiet zone (about 95 Ma, Cenomanian)

A 27, 62 Ma, early Paleocene: Coral Sea began to open
A 29, 65 Ma, Tertiary-Cretaceous boundary: Chile Rift established
A 33, 80 Ma, Cenomanian: Sierra Nevada Batholith stopped forming

Ku
(abbreviated for convenience, includes part of Early Cretaceous)

Within KMQZ (about 95 Ma, Cenomanian) to Anomaly M0 (113 Ma, Aptian)

KMQZ, 95 Ma, Cenomanian: Australia began to separate from Antarctica; Tasman Sea began to open; seafloor spreading realigned east of Ninetyeast Ridge; Canada Basin, Alaska, stopped opening approximately at this time; Greenland began to separate from North America

K

Anomaly M0 (113 Ma, Aptian) to Anomaly M10N (124 Ma, early Hauterivian)

A M0, 113 Ma, Aptian: Reorganization of seafloor spreading in the région of Manihiki and Ontong-Java Plateaus; emplacement of the Sierra Nevada batholith began
A M10N, 124 Ma, early Hauterivian:
change in velocity of seafloor spreading in western Pacific

KJ

Anomaly M10N (124 Ma, early Hauterivian) to within the Jurassic magnetic quiet zone (170 Ma, Bathonian)

A M10N, 124 Ma, Hauterivian: Cuvier Basin west of Australia began to open;
Canada Basin north of Alaska began to open; South Atlantic began to open
A M26, 161 Ma, Oxfordian: Seafloor spreading north of Australia began
JMQZ, 170 Ma, Bathonian: North-central Atlantic began to open (the rifting is inferred to have passed west between North and South America, and originally to have extended through Tethys on the west side of the Cretaceous Pacific lineations); spreading may have begun on the north side of Chatham Rise

Table 2. Oceanic tectonic units and bounding magnetic anomalies on several time scales in Ma.

Letter symbol	Magnetic anomaly	Larson et al (1985)	Palmer (1983)	Harland et al (1982)
	0	0	0	0
QTpl				
	3	4	4	4
Tn				
	6	20	20	20
To				
	13	37	36	37
ToTe				
	18	43	42	42
Te				
	24	54	56	53
Tpa				
	27	62	63	62
TpaKu				
	KMQZ	95	95	95
Ku				
	M0	118	119	118
K				
	M10N	124	131	133
KJ				
	JMQZ	170	170	170

Table 3. Development of time scale during the Circum-Pacific Map Project.

	Geologic Map SW Quadrant	Energy Map NE Quadrant	Plate-Tectonic Map SW Quadrant	Plate-Tectonic Map NW Quadrant	Range	Harland et al 1982	Tectonic Map SW Quadrant old scale 1983	Tectonic Map SW Quadrant new scale adopted in 1986
Quaternary								
	2	2	2	2	2	2	2	2
Pliocene								
	5	5	5	5	5	5.1	5	5
Miocene								
	24	24	24	24	24	24.6	23	24
Oligocene								
	38	38	38-39	38	38	38	43	38
Eocene								
	55	55	55-56	56	55-56	54.9	58	55
Paleocene								
	63	63	66	66	63-66	65	65	65
Late Cretaceous								
	96	96	100	100	96-100	97.5	82	96
Early Cretaceous								
	138	138	123-5	135	134-8	144	135	138
Jurassic								
	205	205	-	-	-	213	212	205
Triassic								
	240	240	-	-	-	248	250	240
Permian								
	290	290	-	-	-	286	300	290
Late Carboniferous								
	330	330	-	-	-	320?	-	330
Early Carboniferous								
	360	360	-	-	-	360	360	360
Devonian								
	410	410	-	-	-	408	410	410
Silurian								
	435	435	-	-	-	438	436	435
Ordovician								
	500	500	-	-	-	505	500	500
Cambrian								
	570	570	-	-	-	570	575	570
Precambrian 3								
	900	900	-	-	-	800	900	900
Precambrian 2								
	1600	1600	-	-	-	1650	1600	1600
Precambrian 1								
	2500	2500	-	-	-	2500	2500	2500
Archaean								

TECTONIC MAP UNITS FOR THE SOUTHWEST QUADRANT TECTONIC MAP OF THE CIRCUM-PACIFIC MAP PROJECT—DESCRIPTION

(these units are shown on the time/space plot and the map)

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AUSTRALIA, ANTARCTICA, AND PACIFIC PLATES

compiled by Erwin Scheibner

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
A	ARCHAEAN (3500-2500 Ma)		
A^1	Pilbara Block 3500-2900 Ma	*Granitoid-greenstone terrane,* Archaean orogenic setting	Geol. Surv. West. Aust. 1974; Gee 1979; Gee et al 1979
A^2	Yilgarn Block 3700-2500 Ma	*Protocontinental high-grade gneiss terrane* (in the west 3700-3000 Ma) and *granitoid-greenstone terrane* (in the east, about 2700 Ma); Ᵽ$_1$ dolerite dikes	Geol. Surv. West. Aust. 1974; Fletcher et al 1983; Gee 1979; Gee et al 1979
ᵽA	PROTEROZOIC-ARCHAEAN		
ᵽA^1	Rum Jungle Block (complex) 2500 Ma	*Granitoid and gneiss-dome terrane* (2500 Ma) younger metasedimentary rocks, metadolerite and banded iron formation	Geol. Soc. Aust. 1971; Plumb 1979a
ᵽA^2	Nanambu Complex (not on T/S plot) 2500-1800 Ma	*Granitoid and gneiss-dome terrane* (2500-2400 Ma), gneisses mantled by leucogneisses and schists	Geol. Soc. Aust. 1971; Plumb 1979a
ᵽA^3	Hamersley Basin 2700-2100 Ma	*Cratonic cover—platform basin* over Pilbara Block; cratonic flood basalt overlain by sedimentary rocks, including banded iron formation	Geol. Surv. West. Aust. 1974; Gee 1979; Gee et al 1979
ᵽ	UNDIFFERENTIATED PROTEROZOIC		
ᵽ	Antarctica, undifferentiated basement	*Orogenic domain,* metamorphic rocks	Craddock 1989
ᵽ$_1$	EARLY PROTEROZOIC (2500-1700 Ma)		
ᵽ$_1^1$	Litchfield Complex (not on T/S plot)	*Granitoid and gneiss terrane* (about 2500-2400 Ma) deformed and metamorphosed 1800 Ma	Geol. Soc. Aust. 1971; Plumb 1979b

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
Ꝑ$_1^2$	Halls Creek Province (inlier) 2800-1960 Ma	*Orogenic domain* (mobile zone), sedimentation and igneous activity 2800 to 2200 Ma, deformation and metamorphism 1960 Ma	Geol. Surv. West. Aust. 1974; Plumb 1979a
Ꝑ$_1^3$	Post-Halls Creek Province rocks 1900-1750 Ma	*Late orogenic domain* (transitional), felsic volcanic rocks, granite and sedimentary rocks about 1900 Ma; final deformation before 1750 Ma	Geol. Soc. Aust. 1971; Plumb 1979a
Ꝑ$_1^4$	Kimberley Basin 1815-1760 Ma	*Cratonic cover—platform basin* over Halls Creek Province (inlier) rocks; marine sedimentary rocks and cratonic extrusive and intrusive rocks; dolerite sills about 1760 Ma	Geol. Soc. Aust. 1971; Geol. Surv. West. Aust. 1974; Plumb 1979a, b
Ꝑ$_1^5$	Pine Creek Inlier (Palmerston Province) 2400-1690 Ma	*Orogenic domain* sedimentation and igneous activity 2400-1940 Ma; metamorphism about 1870-1800 Ma; granite 1890 and 1760 Ma; dolerite lopolith 1690 Ma	Geol. Soc. Aust. 1971; Geol. Surv. West. Aust. 1974; Plumb 1979a
Ꝑ$_1^6$	Arnhem Inlier (Block)	*Orogenic domain,* metamorphism 1945 Ma	Geol. Soc. Aust. 1971; Plumb 1979a, b
Ꝑ$_1^7$	Murphy Inlier	*Orogenic domain,* metamorphism 1945 Ma, late orogenic granite and volcanic rocks 1770 Ma	Geol. Soc. Aust. 1971; Plumb 1979a, b
Ꝑ$_1^8$	Kalkadoon-Leichhardt Block	*Late orogenic domain* (transitional), felsic volcanic rocks and granite 1860 Ma; granite and metamorphism 1740-1700 Ma	Geol. Soc. Aust. 1971; Plumb 1979b; Day et al 1983 (1975)
Ꝑ$_1^9$	The Granites-Tanami Inlier (Block)	*Orogenic domain* (?mobile belt), metamorphism of sedimentary rocks and volcanic rocks 1910 Ma, overlain by sandstone and volcanic rocks of *late orogenic* character; granite 1770-1680 Ma	Geol. Soc. Aust. 1971; Plumb 1979a, b
Ꝑ$_1^{10}$	Tennant Creek Inlier (Block)	*Orogenic domain,* marine sedimentary rocks, felsic and mafic volcanic rocks, metamorphosed 1920 and 1810 Ma; *late orogenic domain* represented by rocks 1790-1660	Geol. Soc. Aust. 1971; Plumb 1979a, b
Ꝑ$_1^{11}$	Arunta Block 1810-1770 Ma	*Orogenic domain* (mobile belt), some older orogenic rocks correlated with Halls Creek Inlier, followed by beds and volcanic rocks 1800 Ma; metamorphism and granite 1810-1770 Ma	Geol. Soc. Aust. 1971; Plumb 1979a, b; Rutland 1976
Ꝑ$_1^{12}$	Ashburton Fold Belt Gascoyne Province, Glengarry Subbasin (Capricorn Orogen) 2200-1600 Ma	*Orogenic domain,* sedimentary rocks and volcanic rocks metamorphosed and deformed before 1600 Ma; granitoids 1900-1600 Ma	Gee 1979; Gee et al 1979; Fletcher et al 1983; Richards and Gee 1985

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
Ꝑ$^{13}_{1}$	Gawler Block (Craton) 2600-2300 Ma 2000-1555 Ma (also inliers in the Adelaide Fold Belt)	*Orogenic domain*; older complex of sedimentary rocks, including banded iron formation, basic volcanic rocks 2600 Ma; metamorphism and granite 2400-2300 Ma; sedimentary rocks, including banded iron formation, metamorphosed 1814 and 1700 Ma; granite 1650 Ma	Flint and Parker 1982; Geol. Soc. Aust.1971; Plumb 1979b; Rutland et al 1981; Rutland 1976
Ꝑ$^{14}_{1}$	Willyama Inlier (not on T/S plot) 1820-1700 Ma	*Orogenic domain*, sedimentary rocks, including banded iron formation, volcanic rocks 1820 Ma; metamorphism about 1700 Ma; not shown on map is *late orogenic* granite 1665-1520 Ma	Geol. Soc. Aust. 1971; Pogson 1972; Scheibner 1974; Stevens 1980: Stevens and Stroud 1983
Ꝑ$^{15}_{1}$	Antarctica, basement rocks	*Orogenic domain*, metamorphic rocks	Craddock 1989
Ꝑ$_{2}$	MIDDLE PROTEROZOIC (1700-1000 Ma)		
Ꝑ$^{1}_{2}$	McArthur Basin 1700-1400 Ma	*Cratonic cover—platformal basin*, marine and continental sedimentary rocks, basic and felsic volcanic rocks, dolerite 1370 and 1280 Ma	Geol. Soc. Aust. 1971; Plumb 1979a, b; Wilford et al 1981
Ꝑ$^{2}_{2}$	South Nicholson Basin 1480-1300 Ma Lawn Hill Platform 1700-1500 Ma	*Cratonic cover*, marine and continental sedimentary rocks, about 1480 Ma and 1700-1500 Ma	Geol. Soc. Aust. 1971; Plumb 1979a, b
Ꝑ$^{3}_{2}$	Mount Isa Orogenic Belt	*Orogenic domain*, basement 1780 Ma, sedimentary rocks and volcanic rocks deformed 1670-1620 Ma, and syntectonic granites emplaced; sedimentation followed by final deformation 1490-1460 Ma	Geol. Soc. Aust. 1971; Plumb 1979a, b
Ꝑ$^{4}_{2}$	Victoria River Basin 1125-820 Ma	*Cratonic cover* in part over Birrindudu Basin and within Halls Creek Inlier; marine and continental sedimentary rocks	Geol. Soc. Aust. 1971; Plumb 1979 a, b; Wilford et al 1981
Ꝑ$^{5}_{2}$	Birrindudu Basin	*Cratonic cover* on the Granites-Tanami Inlier (Block), marine sedimentary rocks over 1560 Ma	Geol. Soc. Aust. 1971; Plumb 1979a, b
Ꝑ$^{6}_{2}$	Arunta Block 2000-1900 Ma 1800-1500 Ma 1185, 1050 Ma	*Orogenic domain*, high grade metamorphism and granite 1800-1750 Ma; granite about 1800, 1700 and 1500 Ma; mafic intrusives 1185 Ma; metamorphism 1050 Ma; *late orogenic* granite 1000-900 Ma; mafic volcanic rocks about 900 Ma	Geol. Soc. Aust. 1971; Plumb 1979a, b Rutland 1976

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
P_2^7	Nabberu Basin (Earaheedy Subbasin) 1700(1610)-1550 Ma	*Cratonic cover*—over Capricorn Orogen and Yilgarn Block; marine sedimentary rocks include banded iron formation and basic volcanic rocks	Gee 1979; Gee et al 1979; Geol. Soc. Aust. 1971; Geol. Soc. West. Aust. 1974; Richards and Gee 1985
P_2^8	Paterson Province ?2400-1330 Ma and 1130 Ma	*Orogenic domain* was probably connected with the Musgrave Block; Archaean to Early Proterozoic protolith metamorphism; 1330 Ma; unconformed marine to continental sedimentary rocks, metamorphism 1130 Ma, overlain by sedimentary rocks of ?P_3 age; postkinematic granite 595 Ma	Chin and de Laeter 1980
P_2^9 incl. P_1 basement	Albany-Fraser Province 1900-1250 Ma, 1076 Ma	*Metamorphic belt (mobile belt)* formed due to metamorphism and granite emplacement events about 1690-1560 and 1300-1250 Ma; *late orogenic* granite 1076 Ma. P_1 metamorphic basement in the west	Fletcher et al 1983; Gee 1979; Gee et al 1979; Geol. Surv. West. Aust. 1974
P_2^{10}	Northampton Block 1040 Ma	*Orogenic domain*, granulites about 1040 Ma intruded by granite with migmatites; all cut by dolerite dykes	Geol. Soc. Aust. 1971; Geol. Surv. West. Aust. 1974; Gee et al 1979
P_2^{11}	Bangemall Basin 1075-1030 Ma	*Cratonic cover* over Nabberu Basin and Capricorn Orogen; marine sediments and basic volcanic rocks	Geol. Soc. Aust. 1971; Geol. Surv. West. Aust. 1974; Gee 1979; Gee et al 1979
P_2^{12}	Musgrave Block 1608-1000 Ma	*Orogenic domain*, sedimentary rocks 1608 Ma, felsic and intermediate volcanic and plutonic rocks 1330 Ma, high grade metamorphism and granite 1327-1100 Ma; *late orogenic* felsic volcanic rocks, granite, basic-ultrabasic dykes 1100-1000 Ma	Flint and Parker 1982; Geol. Soc. Aust. 1971
P_2^{13}	Gawler Block 1820-1580 Ma, 1542-1457 Ma (also inliers in the Adelaide Fold Belt)	*Orogenic domain*; Early Proterozoic metasedimentary and metavolcanic rocks 1580 Ma granite; *late orogenic domain*, granite 1542 Ma, felsic volcanic rocks and granite 1520-1457 Ma	Flint and Parker 1982; Geol. Soc. Aust. 1971; Rutland et al 1981; Rutland 1976
P_2^{14}	Broken Hill Block (Willyama Inlier)	*Late orogenic domain*, granite	Pogson 1972; Scheibner 1974; Stevens and Stroud 1983
P_2^{15}	Georgetown, Yambo, and Coen Inliers (Blocks) 1600-1400 Ma (970 Ma)	*Orogenic domain*, marine sedimentary rocks and mafic volcanic rocks, metamorphism and granites 1570 Ma; more sediments metamorphosed and granite 1470 Ma; felsic volcanic rocks and granite 1400-1300 Ma; (local metamorphism 970 Ma)	Day et al 1983; Geol. Soc. Aust. 1971; Henderson and Stephenson 1980

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
Ꝑ_2^{16}	Antarctica	*Orogenic domain*, basement rocks	Craddock 1989
$\text{Ꝑ}_2^{16}(A^3)$	Antarctica	High-grade terrane	R.J. Tingey, pers. comm.
Ꝑ_3	LATE PROTEROZOIC (1000-575 Ma)		
Ꝑ_3^1	Amadeus, Ngalia, Officer, and Georgina Basins; Stuart Shelf 900-570 Ma	*Cratonic cover*, platform basins, some possible aulacogens; marine and continental sediments including tillites; basic volcanic rocks common during rifting event and basin formation	Geol. Soc. Aust. 1971; Plumb 1979b, Rutland 1976; Wilford et al 1981
Ꝑ_3^2	Naturaliste Block (Leeuwin Block) 900-640 Ma	*Orogenic domain*, granulite-grade metamorphism about 650 Ma	Geol. Soc. Aust. 1971; Geol. Surv. West. Aust. 1974; Gee et al 1979
Ꝑ_3^3	Rocky Cape and Tyenna Blocks 1100-700 Ma	*Orogenic domains*, inliers in the Kanmantoo Fold Belt, metasedimentary rocks intruded by granite 817 and 735 Ma; mafic volcanic rocks 700 Ma, younger sediments	Geol. Soc. Aust. 1971; Williams 1978
Ꝑ_3^4	Wonominta Block including older complexes	*Orogenic domain*, inliers in the Kanmantoo fold belt; metasedimentary and metavolcanic rocks; includes epizonal Late Proterozoic sedimentary and mafic volcanic rocks	Scheibner 1974, 1987; Cooper and Grindley 1982; Leitch and Scheibner 1987
Ꝑ_3^5	Paterson Province (not on T/S plot)	?Late *orogenic domain*, postkinematic granite and continental sedimentary rocks	Chin and de Laeter 1980
Ꝑ_3^6	New Zealand, Constant Gneiss	*Orogenic domain*	Suggate et al 1978
Ꝑ_3^7	Antarctica	*?Cratonic cover*	Craddock 1989
$Pz_1\text{Ꝑ}_3$	LATE PROTEROZOIC-PALEOZOIC UNIT		
$Pz_1\text{Ꝑ}_3^1$	Adelaide Fold Belt	*Paratectonic belt*, developed due to intracratonic rifting and continental-margin rifting and basin formation; sedimentation of platformal character, shallow marine to continental, including glacial; deformed during the early Paleozoic Delamerian Orogeny together with the early orthotectónic, orogenic Kanmantoo Fold Belt	Flint and Parker 1982; Preiss et al 1981 Scheibner 1987
$Pz_1\text{Ꝑ}_3^2$ ($\text{Ꝑ}A^4$)	Antarctica	*?Orogenic domain*, metasedimentary rocks; Ꝑ_1A according to Tingey	R.J. Tingey, pers. comm., 1987
$Pz_1\text{Ꝑ}_3^2$ ($\text{Ꝑ}A^4$)	Antarctica	*Granitoid and metamorphic terrane*; $\text{Ꝑ}A^4$ according to Tingey	R.J. Tingey, pers. comm., 1987

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
$Pz_1P_3^2$	Antarctica	Cratonic cover	R.J. Tingey, pers. comm., 1987
$Pz_1P_3^2$	Antarctica	Ross Orogenic Belt	R.J. Tingey, pers. comm., 1987
Pz_1	EARLY PALEOZOIC UNIT (includes Cambrian to Ordovician, some earliest Silurian)		
Pz_1^1	Canning, Bonaparte Arafura, Daly River, Wiso, Georgina, Amadeus (Ngalia), Officer and other basins 575-300 Ma	*Cratonic cover*—platform basins (epicratonic), cratonic mafic volcanism during basin formation, marine and continental sedimentary rocks	Geol. Soc. Aust. 1971; Geol. Soc. West. Aust. 1974; Plumb 1979b; Wilford et al 1981
Pz_1^2	Kanmantoo Fold Belt ? pre 575-?525 Ma	*Orogenic domain*, was active plate-margin setting, possible backarc Kanmantoo Trough, volcanic arc (mafic to intermediate volcanic rocks, including boninites and MORB basalt), forearc area; deformed and metamorphosed during Delamerian Orogeny (late Middle Cambrian to Ordovician); in Tasmania possible allochthonous ?ophiolites and Mt. Read Volcanic Arc; (possible tectonostratigraphic terranes)	Cooper and Grindley 1982; Flint and Parker 1982; Foden et al 1989; Geol. Soc. Aust. 1971; Jenkins 1989; Leitch and Scheibner 1987; Scheibner 1974; VandenBerg 1978
Pz_1^3	Kanmantoo Fold Belt ?525-435 Ma in central Victoria part of ?Lachlan Fold Belt (this last not on T/S plot)	*Orogenic or late orogenic domain* (transitional tectonic), marine and continental sedimentary rocks Late Cambrian to Ordovician; in Victoria? orogenic domain deformed probably during Benambran orogeny (Late Ordovician to Early Silurian) resulting in the Stawell-Bendigo Fold and Thrust Belt	Cooper and Grindley 1982; Cox et al 1983; Scheibner 1974, 1987
Pz_1^4	Lachlan Fold Belt (early part)	*Orogenic domain*, active plate margin, backarc Wagga Marginal Basin, Molong Volcanic Arc, Monaro Slope and Basin forearc basin; Narooma accretionary-prism complex; deformed and metamorphosed during Late Ordovician to Early Silurian (Benambran Orogeny), granite mainly S-type (prolonged magmatism into subsequent tectonic episode) (possible tectonostratigraphic terranes)	Crook 1980; Leitch and Scheibner 1987; Pogson 1972; Powell 1983; Scheibner 1974, 1987; VandenBerg 1978
Pz_1^5	Thomson Fold Belt (early part) 570-436 Ma	*Orogenic domain*, (active plate margin), possible backarc basin and volcanic arc, deformed and metamorphosed in Middle to Late Ordovician (possible accreted tectonostratigraphic terranes)	Day et al 1978, 1983; Murray 1986; Leitch and Scheibner 1987
Pz_1^6	New England Fold Belt	*Orogenic domain*, slivers of Cambrian to Ordovician rocks along the Peel Fault System; possible accreted tectonostratigraphic terranes	Day et al 1978, 1983; Leitch 1974; Leitch and Scheibner 1987; Scheibner 1987

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
Pz_1^7	Tuhua Orogen	*Orogenic domain,* active plate margin, backarc basin, volcanic arc; deformed metamorphism, granite during Early Devonian Tuhua Orogeny	Cooper 1979; Cooper and Grindley 1982; Sporli 1987; Suggate et al 1978
Pz_1^8	Ross Orogen	*Orogenic domain,* active plate margin? early Paleozoic granite	Craddock 1989
Pzm	MIDDLE PALEOZOIC UNIT (Silurian to Devonian, locally Carboniferous)		
Pzm^1	Canning Basin (Fitzroy Graben) and Bonaparte Basin 410-300 Ma	*Cratonic cover*—platform basin which is related to plate-margin reorganization	Gee et al 1979; Geol. Soc. Aus. 1971; Geol. Soc. West. Aust. 1974; Wilford et al 1981
Pzm^2	Georgina, Ngalia. Amadeus, and Officer Basins 410-300 Ma	*Cratonic cover*—platformal basin, molasse-like sedimentary rocks; Amadeus Basin a possible aulocogen	Geol. Soc. Aust. 1971; Veevers 1984; Wilford et al 1981
Pzm^3	Kanmantoo Fold Belt (superimposed graben and basins)	*Late orogenic (transitional) domain,* continental to shallow marine Late Silurian to Devonian sedimentary and volcanic rocks; superimposed are Devonian to early Carboniferous continental sedimentary rocks associated with the Lambian Transitional Tectonic Province of the Lachlan Fold Belt	Cooper and Grindley 1982; Geol. Soc. Aust. 1971; Pogson 1972; Scheibner 1974; VandenBerg 1978
Pzm^4	Lachlan Fold Belt (late part) 430-380 Ma	*Orogenic domain,* active plate margin; wide backarc region with some ensimatic (ophiolite) flysch troughs, widespread felsic volcanic rocks and granite (S-, I-, and A-type), bimodal volcanic rocks in volcanic rifts; the frontal volcanic arc incorporated into younger New England Fold Belt; Ordovician to Devonian foreland basin in Victoria (Melbourne Trough) and Mathinna Beds in Tasmania (possible tectono-stratigraphic terranes)	Crawford and Keys 1978; Leitch and Scheibner 1987; Pogson 1972; Powell 1983; Ramsay and VandenBerg 1986; Scheibner 1974, 1987; VandenBerg 1978; Williams 1978
Pzm^5	Lachlan Fold Belt (Lambian Transitional Tectonic Province) (molasse) about 400-330 Ma	*Late orogenic (transitional) domain,* Devonian to Early Carboniferous marine and mainly continental sedimentary rocks and volcanic rocks (bimodal) and granite; middle Carboniferous terminal orogeny (Kanimblan); post-kinematic granite	Geol. Soc. Aust. 1971; Powell 1983; Ramsay and VandenBerg 1986; Scheibner 1974, 1976; VandenBerg 1978
Pzm^6	Thomson Fold Belt (late part) 436-330 Ma	*Orogenic domain,* active plate margin; backarc region with widespread volcanism and granite	Day et al 1978, 1983; Murray 1986

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
Pzm^7	Thomson Fold Belt (Adavale and Drummond Basins)	*Late orogenic (transitional) domain,* Devonian to early Carboniferous marine and continental sedimentary rocks and volcanic rocks and granite; middle Carboniferous terminal orogeny, post-kinematic granite	Day et al 1983
Pzm^8	Hodgkinson-Broken River Fold Belt 450-330 Ma (330-235 Ma) (including intrusives in Georgetown and Coen Inliers)	*Orogenic domain,* (active plate margin) volcaniclastic flysch and carbonates of shelf facies, granite, deformed and metamorphosed in Devonian time, including *late orogenic domain* felsic volcanic rocks and granite; these occur also in basement inliers; terminal deformation middle Carboniferous, postkinematic granite Pz_2 (330-235 Ma); (possible tectonostratigraphic terranes)	Day et al 1978, 1983; Henderson and Stephenson 1980; Murray 1986
Pzm^9	New England Fold Belt (New England and Yarrol Provinces)	*Orogenic domain,* active plate margin; volcanic-arc forearc area accretionary prism (including ophiolites); localised Devonian deformation; intensive deformation and granite emplacement late Carboniferous to earliest Permian, localised high-P metamorphism (possible tectonostratigraphic terranes)	Blake and Murchey 1988; Day et al 1978, 1983; Leitch 1974; Leitch and Scheibner 1987; Murray 1986; Scheibner 1974, 1987
Pzm^{10}	Irian-Jaya, Birds Head basement rocks	*Orogenic domain,* probably originally part of the Tasman Fold Belt System	Dow and Sukamto 1984; Pigram and Panggabean 1983
Pzm^{11}	Tuhua Orogen late part 410-395 Ma	*Orogenic domain,* cf. Pz_1^5 terminal deformation and metamorphism, Middle Devonian; granite Devonian and Carboniferous	Cooper 1979; Cooper and Grindley 1982; Sporli 1987; Suggate et al 1978
ŦP & $ŦPz^2$ Pz^2 & pP	PERMIAN TO TRIASSIC AND LATE PALEOZOIC AND TRIASSIC TO LATE PALEOZOIC UNIT		
pP	New Caledonia, basement	Orogenic pre-Permian basement rocks	Paris 1981a, b
$ŦPz_2^1$ & $ŦP^1$	Canning, Bonaparte, and Officer Basins 360-185 Ma	*Continental margin* infrarift related sequences	Gee et al 1979; Geol. Soc. Aust. 1971; Wilford et al 1981
$ŦP^2$	Perth and Carnarvon Basins	*Infrarift sequences, passive continental margin*	Doutch and Nicholas 1978; Gee et al 1979; Geol. Soc. Aust. 1971; Geol. Soc. West. Aust. 1974; Wilford et al 1981
$ŦP^3$	Pedirka, Arckaringa, Cooper, Leigh Creek, Collie Basins 300-195 Ma	*Cratonic cover*, platform basins, also small areas in the Adelaide Fold Belt	Day et al 1983; Doutch and Nicholas 1978; Geol. Soc. Aust. 1971; Wilford et al 1981

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
TRP^4	Cover basins on the Lachlan and Kanmantoo Fold Belts	*Cratonic cover*, mostly concealed sedimentary basins, marine and continental sediments, including some coal measures	Doutch and Nicholas 1978; Geol. Soc. Aust. 1971; Scheibner 1974, 1987; Wilford et al 1981
Pz_2^5 & TRP_2^5	Hodgkinson-Broken River Fold Belt and Georgetown and Coen Inliers	*Postkinematic orogenic granite* and associated volcanic rocks in the fold belt and adjacent basement inliers	Day et al 1978, 1983; Henderson and Stephenson 1980; Murray 1986
TRP^6 & TRPz_2^6	Sydney-Bowen Basin 320-195 Ma (not on T/S plot)	*Cratonic cover* on the west and *late orogenic domain* (foredeep) on the east, where the New England Fold Belt was thrust over the foredeep; bimodal volcanism, marine and continental sedimentary rocks, including some coal measures	Day et al 1983; Geol. Soc. Aust. 1971; Pogson 1972; Scheibner 1974, 1987; Wilford et al 1981
Pz_2^7 & TRPz_2^7	New England Fold Belt (New England and Yarrol Provinces)	*Orogenic domain*, active plate margin; Late Carboniferous to Early Permian magmatic arc and accretionary prism; deformation and metamorphosed in the Middle Permian (affected also the earlier part of the fold belt Pzm^9); postkinematic granite and felsic volcanic rocks	Day et al 1978, 1983; Leitch 1974; Leitch and Scheibner 1987; Murray 1986; Scheibner 1974, 1987
TRP^8	Tasmania Basin (not on T/S plot)	*Cratonic cover*, continental and marine sedimentary rocks	Doutch and Nicholas 1978; Geol. Soc. Aust. 1971; Williams 1978
TRP^9	Galilee Basin (not on T/S plot) 300-195 Ma	*Cratonic cover* to late orogenic basin	Day et al 1983; Doutch and Nicholas 1978; Geol. Soc. Aust. 1971; Wilford et al 1981
TRPz_2^{10}	Lord Howe Rise (only on T/S plot)	*Transitional tectonic and orogenic domains* forming the basement of Lord Howe Rise (microcontinent)	Coleman and Packham 1976; Jongsma and Mutter 1978; Packham and Andrews 1975
TRP^{11}	Permo-Triassic eastern belt and central chain New Caledonia 270-205 Ma	*Orogenic or late-orogenic domain*, ?bimodal volcanic rocks, felsic volcanic rocks, marine and continental sedimentary rocks	Paris 1981a, b
Pz_2^{12} (could be TRPz_2)	Kubor Anticline, Birds Head (New Guinea Mobile Belt) 300-247 Ma	*Orogenic to late-orogenic domain*, forming the local basement, originally part of Tasman Fold Belt System; granite, granodiorite intruding metamorphic rocks	Bain et al 1972; Brown et al 1979; D'Addario et al 1976; Geol. Soc. Aust. 1971
TRP^{13}	Parapara Peak area New Zealand 295-235 Ma	*Cratonic cover*, nonvolcanic shelf sequence over western foreland	Suggate et al 1978; Katz 1980a

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
₮Pz_2^{14}	New Zealand, Haast Schist (Rangitata Orogen)	*Orogenic domain*, part of Rangitata Orogen (KPz_2)	Suggate et al 1978
₮Pz_2^{15}	Antarctica	*Cratonic cover or transitional tectonic* continental sedimentary rocks (Beacon Group) intruded by intraplate basalt and dolerite (Ferrar Group)	R.J. Tingey, pers. comm., 1987
KPz_2 JPz_2	PALEOZOIC, JURASSIC TO CRETACEOUS UNIT		
KPz_2^1	Rangitata Orogen, New Zealand 300-135 Ma	*Orogenic domain*, active plate margin; deformation and metamorphism during Rangitata Orogeny (Late Jurassic to Early Cretaceous); from west to east: volcanic arc, midslope basin, frontal-arc wedge; Dun Mountain ophiolites, trench-slope break, Pelorus Zone, Haast Schist Zone (₮Pz_2^{13}), and Torlesse Zone accretionary wedges; some units are tectonostratigraphic terranes, including: orogenic granite which intruded also the western basement (Pzm and Pz_1) and Charleston metamorphic group (Ꝑ$_3^6$)	Carter et al 1977; Suggate et al 1978; Sporli 1987
TPz_2	TERTIARY (PALEOCENE) TO LATE PALEOZOIC UNIT		
TPz_2^1	Australian continent Canning, Bonaparte, Carnarvon, Perth Laura, Styx, and other basins (not on T/S plot)	*Cratonic cover* associated with *continental-margin* rifting; sedimentary and volcanic rocks forming infrarift sequences	Palfreyman 1988; Doutch and Nicholas 1978; Geol. Soc. Aust. 1971
TPz_2^2	Irian-Jaya New Guinea Mobile Belt	*Orogenic domain*, Carboniferous to Oligocene rocks involved in foreland fold and thrust belt deformation; in Papua New Guinea this unit is comprised of Pz_2^{12}, ₮^{3}, K^3J, Tm^2To, Tpl^1, QTpl, and hence includes some younger rocks	Palfreyman 1988; Dow and Sukamto 1984; Pigram and Panggabean 1983
Mz	MESOZOIC UNIT		
Mz^1	Canning Basin (not on T/S plot)	*Cratonic cover*, continental deposits of uncertain affinities and age on the eastern margin of the Canning Basin	Palfreyman 1988; Gee et al 1979; Geol. Soc. Aust. 1971; Wilford et al 1981
ToMz	MESOZOIC TO OLIGOCENE UNIT		
To^1Mz	New Caledonia (not on T/S plot)	*Orogenic domain*, active plate-margin setting; high-pressure metamorphism of Mesozoic complexes and sedimentary rocks	Paris 1981a, b; Lillie and Brothers 1970

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
To^2Mz	New Guinea Mobile Belt Irian-Jaya and Papua New Guinea	*Orogenic domain*, active plate-margin setting; high-pressure metamorphism during middle Tertiary collisional orogeny	Brown et al 1979; D'Addario et al 1976; Davies 1971; Davies and Smith 1971; Geol. Soc. Aust. 1971
TR	TRIASSIC UNIT		
TR^1	New England Fold Belt (Esk Rift [Trough], Gympie Block, and Abercorn Trough) 235-212 Ma (not on T/S plot)	*Late orogenic (transitional) domain*, continental and marine sedimentary rocks, felsic and intermediate to mafic volcanic rocks; postkinematic granite (shown by solid color)	Day et al 1978, 1983; Murray 1986
TR^2	Ipswich Basin, Tarong Basin 220-195 Ma (not on T/S plot)	*?Late orogenic (transitional) domain*, felsic volcanic and continental clastic rocks with coal in this and similar basins	Day et al 1978, 1983; Murray 1986
TR^3	Papuan Platform and Kubor Anticline	*Cratonic cover*, sedimentary and intermediate volcanic rocks	Brown et al 1979; D'Addario et al 1976; Geol. Soc. Aust. 1971
TR^4	Antarctica	*Cratonic cover*, sedimentary rocks	Craddock 1989
JTR	TRIASSIC and JURASSIC UNIT		
$J^1\text{TR}$	Rangitata Orogen (Chatham Rise and eastern North Island, New Zealand)	*Orogenic domain*, greywacke sequence	Carter et al 1977; Suggate et al 1978
$J^2\text{TR}$	New Caledonia 200-160 Ma	*?Cratonic cover*, volcano-sedimentary facies	Paris 1981a, b
$J^3\text{TR}$	Maryborough and Nambour Basins 210-150 Ma (not on T/S plot)	*?Late-orogenic domain or cratonic cover*, downwarps or intramontane depressions filled with continental sedimentary rocks	Day et al 1983; Murray 1986
J	JURASSIC UNIT		
J^1	Northwest Australian shelf rift-grabens	*Continental-margin rifting*	Falvey and Mutter 1981; Symonds et al 1984
J^2	Tasmanian dolerite and other cratonic igneous rocks in East Australia (not on T/S plot)	*Cratonic (intraplate) igneous activity*, probably associated with the Gondwanaland breakup	Sutherland 1978
J^3	Antarctica	*Cratonic (intraplate) igneous activity*, tabular intrusive, siltstone (Ferrar Group)	R.J. Tingey, pers. comm., 1987

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
KJ	JURASSIC and CRETACEOUS UNIT		
K^1J	East Indian Ocean crust M27-M11 magnetic anomalies	*Oceanic crustal domain*	Falvey 1972; Fullerton et al 1989; Powell 1978; Johnson and Veevers 1984;McKenzie and Sclater 1971; Markl 1978
K^2J	Australian shelf and Lord Howe Rise	*Continental-margin rifting*; rift grabens	Falvey and Mutter 1981; Jongsma and Mutter 1978; Doutch et al 1981;
K^3J	Canning, Browse, Bonaparte, Money Shoal, and other basins	Cratonic cover, epicontinental downwarps? related to passive margin development	Palfreyman 1988; Doutch and Nicholas 1978; Geol. Soc. Aust. 1971
K^4J	Carpentaria, Eromanga, Surat, Clarence-Moreton, Nambour, and Maryborough Basins	*Cratonic cover*, epicontinental downwarps locally started in latest Triassic; continental and marine sedimentary rocks; some intermediate volcanic rocks in Maryborough Basin ?related to passive margin or active plate margin farther east	Day et al 1983; Doutch and Nicholas 1978; Geol. Soc. Aust. 1971; Wilford et al 1981
K^5J	Granite (not on T/S plot)	*?Anorogenic or postorogenic granite* northeast Queensland and northeast New South Wales	Day et al 1983; Murray 1986
K^6J	Papuan Platform and Papuan Fold Belt (not on T/S plot)	*Cratonic cover* or *passive-margin deposits*, continental to marginal-marine sedimentary rocks on Australian continental margin	Brown et al 1979; D'Addario et al 1976; Geol. Soc. Aust. 1971
K^7J	West Pacific Ocean crust older than M11 magnetic anomaly	*Oceanic crustal domain*, includes oceanic plateaus	Doutch et al 1981; Hilde et al 1977; Cande et al 1978; Larson 1976
K^8J	New Zealand Separation Point Batholith and other intrusives (not on T/S plot)	*Orogenic domain* of the Rangitata Orogen see $KPz\frac{1}{2}$	Suggate et al 1978
K^9J	Antarctic shelf and slope	*Continental-margin rifting*. Rift grabens with thinned and "transitional" crust	Eittreim and Smith 1987; Domack et al 1980
K^{10}	Wilkes Sub-ice Basin	*Cratonic cover*, basin formation related to passive-margin riftingof K^9J	Drewry 1976; Steed and Drewry 1982
ToJ TeJ	JURASSIC TO EOCENE OR OLIGOCENE UNIT		
To^1J	New Caledonia (not on T/S plot)	*Orogenic domain*, active plate margin; peridotite nappes emplaced during latest Eocene to early Oligocene, termination of subduction west of New Caledonia	Paris 1981a, b; Lillie and Brothers 1970

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
Te^2J	New Guinea Mobile Belt 195-40 Ma	*Orogenic domain*, active plate-margin setting, which terminated in continent island-arc collision, emplacement (obduction) of the Papuan Ultramafic Belt and other ophiolites, high-P metamorphism during middle Tertiary orogeny	Brown et al 1979; D'Addario et al 1976; Davies 1971; Davies and Smith 1971; Geol. Soc. Aust. 1971
To^3J	Northland allochthon North Island of New Zealand	*Orogenic domain*, active plate-margin setting; Mesozoic seafloor volcanics and Cretaceous to Oligocene exotic sedimentary rocks, ?obducted	Sporli 1978, 1980, 1987; Suggate et al 1978
QJ_2	JURASSIC TO QUATERNARY UNIT		
Q^1J_2	Northwest and west Australia shelf (including KJ, KuK, ToTpa, QTm)	*Continental-margin setting*, drift sequence subsequent to Early Jurassic rifting	Palfreyman 1988; Falvey and Mutter 1981
Q^2J_2	Australian continent and shelf	*Cratonic cover* associated with formation of continental margin and Gondwanaland breakup including sedimentary and volcanic rocks associated with rifting and drifting	Palfreyman 1988; Wilford et al 1981
K	EARLY CRETACEOUS UNIT		
K^1	East Indian Ocean crust M11-M0 magnetic anomalies (includes southern ocean)	*Oceanic crustal domain*; including anomalous crust of oceanic plateaus	Larson 1976; Falvey 1972; Powell 1978; Doutch et al 1981; Johnson and Veevers 1984
K^2	Perth Basin (not on T/S plot) 135-70 Ma	*Continental-margin basins*, passive-margin sequence postbreakup or drift sequence; continental and marine sedimentary rocks	Palfreyman 1988; Doutch and Nicholas 1978; Falvey and Mutter 1981; Gee et al 1979; Wilford et al 1981
K^3	Canning, Carnarvon, and Officer Basins and northern Australia 135-110 Ma	*Cratonic cover*, thin sequence of epicratonic clastic rocks	Palfreyman 1988; Doutch and Nicholas 1978; Gee et al 1979; Geol. Soc. Aust. 1971; Wilford et al 1981
K^4	Gippsland, Bass, Otway, and Great Australian Bight Basins (not on T/S plot)	*Continental-margin rift grabens*, marine, marginal-marine, to continental sedimentary rocks	Etheridge et al 1984; Falvey and Mutter 1981
K^5	Styx Basin (not on T/S plot)	*Continental-margin basin*, sedimentary rocks	Day et al 1983; Palfreyman 1988
K^6	Granite in eastern Queensland (not on T/S plot)	*?Anorogenic or postorogenic* (postkinematic) *granite*	Day et al 1983; Palfreyman 1988; Murray 1986

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
?K[7]	Lord Howe Rise and other similar microcontinents	*Continental-margin setting*, uncertain age of rifting adjacent to the future New Caledonia Basin	Coleman and Packham 1976; Jongsma and Mutter 1978
K[8]	West Pacific Ocean crust M11-M0 magnetic anomalies	*Oceanic crustal domain*, including anomalous crust of oceanic plateaus	Hilde et al 1977; Cande et al 1978; Larson 1976; Tamaki et al 1979
?K[9]	Campbell Plateau and Chatham Rise (not on T/S plot)	*Continental-margin setting*, early rifting mainly around Bounty Trough	Katz 1974, 1980a; Sporli 1980; Suggate et al 1978
K[10]	?Early rift in Coral Sea area (not on T/S plot)	*Continental margin rift*	Symonds et al 1984
Ku	LATE (TO MIDDLE OR LATE EARLY) CRETACEOUS UNIT		
Ku[1]	East Indian Ocean crust M0-34 magnetic anomalies (Cretaceous magnetic quiet zone)	*Oceanic crustal domain*, including anomalous crust of oceanic plateaus	Doutch et al 1981
Ku[2]	West Pacific Ocean crust M0-34 magnetic anomalies (Cretaceous magnetic quiet zone)	*Oceanic crustal domain*, including anomalous crust of oceanic plateaus	Cande et al 1978; Hilde et al 1977; Larson 1976; Tamaki et al 1979
Ku[3]	Solomon Islands (Malaita Province)	*Oceanic crustal domain*, (mostly Ku), thrust emplaced (obducted) during Neogene collision	Coleman 1970, 1973; Coleman and Kroenke 1981; Kroenke 1984
Ku[4]	New Guinea (not on T/S plot)	*Orogenic domain*, active plate margin, ?ophiolitic basalt	Brown et al 1979; Davies 1971; Davies and Smith 1971; D'Addario et al 1976
Ku[5] (TeKu)	Solomon Islands basement	*Orogenic domain*, active plate margin, oceanic crustal basement possibly mostly Ku, regionally metamorphosed 44 Ma on Choiseul	Coleman 1970, 1973; Kroenke 1984
Ku[6]	Louisville Ridge (part of) (not on T/S plot)	*Intraplate volcanism*, oceanic-island volcanic rocks	Kroenke 1984
Ku[7](K[10])	Manihiki Plateau (not on T/S plot)	*Oceanic domain*, anomalous oceanic crust formed apparently during the Barremian to early Albian	Winterer et al 1974

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
TpaKu	LATE CRETACEOUS TO PALEOCENE UNIT		
Tpa^1Ku	Indian Ocean crust 34-27 magnetic anomalies	*Oceanic crustal domain*	McKenzie and Sclater 1971; Johnson and Veevers 1984; Cande and Mutter 1982
Tpa^2Ku	Southern Indian Ocean crust 34-27 magnetic anomalies	*Oceanic crustal domain*, condensed or slow spreading between Australia and Antarctica	Weissel and Hayes 1972; Cande and Mutter 1982
Tpa^3Ku	Tasman Sea crust 34-27 magnetic anomalies 85-64 Ma	*Oceanic crustal domain*	Hayes and Ringis 1973; Shaw 1978; Weissel et al 1977
Tpa^4Ku	New Caledonia 140-55 Ma	*Orogenic domain*, active plate-margin setting; volcanic rift (?arc) and sedimentary rocks followed by emplacement during Eocene of ophiolitic nappes which run toward east, high-P metamorphism	Paris 1981a,b; Kroenke 1984
Tpa^5Ku	Rifts around Coral Sea (not on T/S plot)	*Continental margin rifting*, in some areas volcanic rocks present	Symonds et al 1984
Tpa^6Ku	Southwest Pacific Ocean crust 34-27 magnetic anomalies 85-64 Ma (not on T/S plot)	*Oceanic crustal domain*	Cande and Mutter 1982; Talwani et al 1980; Weissel and Hayes 1972
Tpa^7Ku	New Caledonia Basin ?34-27 magnetic anomalies ?inc. Reinga Basin ?Kingston and Norfolk Basins ?South Loyalty Basin	*Oceanic crustal domain*, alternatively only extended continental crust	Sporli 1980; Weissel and Hayes 1972; Kroenke 1985
ToKu TeKu	LATE CRETACEOUS TO EOCENE OR OLIGOCENE UNIT		
Te^1Ku	Lord Howe and Mellish Rises, Bellona, and ?Louisiade Plateaus	*Continental-margin setting*, breakup or drift sequence on microcontinents; rhyolite 94 Ma on Lord Howe Rise; Te-Ku marine sedimentary rocks, To-Te erosion	Packham and Andrews 1975
Te^2Ku	Aure Trough 86-40 Ma	*Orogenic domain*, continental-margin trough with spilitic volcanism and pelagic sedimentary rocks; Oligocene deformation	Brown et al 1979; D'Addario et al 1976; Geol. Soc. Aust. 1971
Te^3Ku	New Guinea and adjacent islands	*Orogenic domain*, active plate margin; volcanic-arc volcanic and sedimentary rocks, basement of ophiolitic character	D'Addario et al 1976
To^4Ku	Campbell Plateau-Chatham Rise, Macquarie Ridge cover 120-25 Ma	*Continental-margin setting*, breakup or drift sequence associated with separation from west Antarctica	Katz 1980a; Suggate et al 1978

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
Te^5Ku	Three Kings Rise (not on T/S plot)	*Orogenic domain*, possible basement formed in active plate-margin setting	Kroenke and Eade 1982; Kroenke and Dupont 1982
TmKu TnKu	LATE CRETACEOUS TO MIOCENE UNIT		
Tm^1Ku (incl. Ku^3) (incl. TmJ) (possible J elements)	New Guinea-Irian Jaya	*Orogenic domain*, active plate margin, mafic volcanic rocks, partly ophiolites and associated sedimentary rocks	Brown et al 1979; D'Addario et al 1976
Tm^2Ku (incl. into Tp_{22})	Papuan Platform and Central Orogenic Belt Papua New Guinea and Irian-Jaya	*Cratonic cover*, reefal and platform carbonate rocks, some involved in fore-land deformation in the Papuan Fold Belt	Brown et al 1979; D'Addario et al 1976; Palfreyman 1988; Geol. Soc. Aust. 1971
QKu	LATE CRETACEOUS TO QUATERNARY UNIT		
Q^1Ku	Indian Ocean epiliths	*Intraplate igneous activity*, igneous accretions forming seamounts and plateaus	Johnson and Veevers 1984
Q^2Ku (incl. TeKu, QTo)	Australian shelf 76-0 Ma	*Continental-margin setting*, postbreakup or drift sequence, with Eocene to Oligocene erosion	Etheridge et al 1984; Falvey and Mutter 1981; Palfreyman 1988
Q^3Ku	Plateaus around the Coral Sea (including TpaKu, Te, TmTo, QTm) (not on T/S plot)	*Continental margin setting*, rift and drift sedimentary rocks on continental crustal basement; stratigraphic packets separated by erosion and other events	Symonds et al 1984
Q^4Ku	East Coast Fold Belt North Island, New Zealand (not on T/S plot)	*Orogenic domain*, active plate margin, sedimentary rocks, activity still continuing to form accretionary wedge and forearc-basin complexes	Katz 1982; Sporli 1980; Suggate et al 1978
Q^5Ku	East Cape, New Zealand	*?Oceanic domain or intraplate volcanic rocks*, Matakoa basalts	Suggate et al 1978
Q^6Ku	Campbell Plateau, Chatham Rise and South Island of New Zealand	*Passive-margin sedimentary rocks—cratonic cover* including *cratonic igneous activity*	Katz 1980a; Suggate et al 1978
Q^7Ku	Antarctic Shelf	*Continental-margin setting*, drift or post-breakup sequence, with Oligocene to recent glacial deposits	Eittreim and Smith 1987
Cz	CENOZOIC UNIT		
Cz^1	Cenozoic downwarps, Australia	*Cratonic cover*, epicratonic downwarps in the continental interior	Wilford et al 1981
Cz^2	Cratonic igneous rocks, Australia (not on T/S plot) 65-0 Ma	*Cratonic (intraplate) volcanic and intrusive rocks*, plateau basalt, shield volcanoes, etc.	Geol. Soc. Aust. 1971; Sutherland 1978

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
Cz^3 (TmToTe)	Tasman Sea seamounts	*Intraplate volcanic rocks*, oceanic-island volcanism (basalt)	Vogt and Conolly 1971; L.W. Kroenke, pers. comm., 19
Cz^4	Antarctica, Balleny Islands	*Intraplate volcanic rocks*, oceanic island	Craddock 1989
Tpa	PALEOCENE UNIT		
Tpa^1	Indian Ocean crust 24-27 magnetic anomalies	*Oceanic crustal domain*	McKenzie and Sclater 1971; Johnson and Veevers 1984
Tpa^2	Southern Ocean crust 21-27 magnetic anomalies	*Oceanic crustal domain*; condensed, slow spreading between Australia and Antarctica	Doutch et al 1981
Tpa^3	Tasman Sea crust 24-27 magnetic anomalies	*Oceanic crustal domain*	Hayes and Ringis 1973; Shaw 1978; Weissel et al 1977
Tpa^4	Coral Sea crust 27-24 magnetic anomalies	*Oceanic crustal domain*	Weissel and Watts 1975; Symonds et al 1984
Tpa^5	Louisville Ridge (part of) (not on T/S plot)	*Intraplate volcanic rocks*, oceanic-island volcanism (basalt)	L.W. Kroenke, pers. comm., 1985
Tp	PALEOGENE UNIT		
Tp^1	Island arc volcanic rocks Papua New Guinea and adjacent areas 65-25 Ma (not on T/S plot)	*Orogenic domain*, active plate margin, ?volcanic arcs	Brown et al 1979; D'Addario et al 1976
Tp^2	Campbell Island and Campbell Plateau (not on T/S plot)	*Cratonic cover and passive-margin setting* onset of sedimentation in Paleocene instead of Ku as in surrounding areas	Katz 1980a; Suggate et al 1978
T	TERTIARY UNIT		
T^1	Solomon Islands, Santa Isabel (Malaita Province) (not on T/S plot)	*Orogenic domain*, oceanic sedimentary rocks above oceanic crust emplaced by thrusting during ?Neogene	Coleman 1970, 1973; Coleman and Kroenke 1981; Kroenke 1984
QTpa	PALEOCENE TO QUATERNARY UNIT		
Q^1Tpa	Australian shelf and coastal areas	*Continental, passive-margin setting*, drift or postbreakup sequence	Palfreyman 1988

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
Te	EOCENE UNIT		
	Indian Ocean crust 18-24 magnetic anomalies	*Oceanic crustal domain*	McKenzie and Sclater 1971; Larson 1976; Johnson and Veevers 1984; Sclater and Fisher 1974
Te[1]	Southern Ocean and southwest Pacific Ocean, incl. ?Emerald Basin 18-24 magnetic anomalies	*Oceanic crustal domain*	Weissel and Hayes 1972; Molnar et al 1975
Te[2]	New Caledonia	*Orogenic domain*, active plate margin, eastward subduction of New Caledonia basin; volcanic arc on the east; on East Coast olistostromes, sedimentary rocks and granite 25 Ma; including sedimentary rocks of accretionary wedge west of the island	Kroenke 1984; Paris 1981a, b
Te[3]	Loyalty Basin, Solomon Sea 18-24 magnetic anomalies in Loyalty Basin	*Oceanic crustal domain*; Solomon Sea crust could be older	Kroenke 1984; Kroenke and Eade 1982; Watts et al 1977; Weissel et al 1982
Te[5]	Fiji (Viti Levu, Yasawas, and Beqa) 45-37 Ma	*Orogenic domain*, active plate margin, volcanic-arc volcanic rocks, mafic to felsic, intruded by tonalite of the first orogenic phase	Rodda 1974, 1976; Kroenke 1984
Te[6] (Te[7])	Eua Ridge (Tonga Ridge)	*Orogenic domain*, active plate margin; volcanic-arc volcanic and sedimentary rocks	Kroenke 1984
Te[8] (incl. To[6]Te Tm[3]To)	Aure, Moresby, and Pocklington troughs	*Orogenic domain*, active plate-margin rocks associated with the Papuan arc-trench gap	Brown et al 1979; D'Addario et al 1976; Kroenke 1984
Te[9]	New Guinea and New Britain	*Orogenic domain*, active plate margin; Papua volcanic arc, an Eocene arc, arc-volcanic and intrusive, sedimentary, some metamorphic rocks	Brown et al 1979; D'Addario et al 1976; Davies 1971; Davies and Smith 1971; Jacques and Robinson 1977; Johnson 1979; Johnson and Jacques 1980
?Te[10] (shows as Te[1]Ku)	Louisiade Plateau	?*Oceanic crustal domain* or rifted continental crust, ?a microcontinent	Kroenke 1984; Packham and Andrews 1975
Te[11]	Rennell Island and New Britain	*Orogenic domain*, active plate margin, uncertain data, ?volcanic arc, and accretionary prism	Kroenke 1984
Te[12a]	Norfolk Ridge (not on T/S plot)	*Orogenic domain*, active plate margin, Norfolk volcanic arc and arc-trench-gap rocks	Kroenke 1984; Sporli 1980
Te[12]	Norfolk Basin, Kingston Basin; incl. Kingston Plateau	?*Oceanic crustal domain*, uncertain data	Kroenke and Eade 1982; Kroenke and Dupont 1982

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
Te^{13}	Louisville Ridge (part) (not on T/S plot)	*Intraplate volcanic rocks*, oceanic-island volcanism, basalt	L.W. Kroenke, pers. comm. 1985
ToTe	EOCENE TO OLIGOCENE UNIT		
$To^{1}Te$	Southern Ocean, South Tasman Sea and southwest Pacific Ocean crust 18-13 magnetic anomalies	*Oceanic crustal domain*	Doutch et al 1981; Molnar et al 1975
$To^{2}Te$	Emerald Basin crust ?18-13 magnetic anomalies (not on T/S plot)	*Oceanic crustal domain*, uncertain	Weissel et al 1977
($To^{3}Te$)	New Guinea	*Orogenic domain*, active plate margin; rocks associated with subduction south and west of the Papuan arc	Johnson 1979; Johnson and Jacques 1980; Kroenke 1984
$To^{4}Te$ (?some older elements)	New Guinea, Papuan Arc	*Orogenic domain*, active plate margin; volcanic-arc volcanic rocks and related sedimentary rocks	Brown et al 1979; D'Addario et al 1976; Davies 1971; Davies and Smith 1971;Jacques and Robinson 1977
$To^{5}Te$	Epicratonic basins in New Zealand 55-25 Ma	*Cratonic cover*, epicratonic sequences, coal measures to carbonate-platform sedimentary rocks	Katz 1980a; Suggate et al 1978
$To^{6}Te$	Vitaz Arc (early part)	*Orogenic domain*, active plate margin; volcanic-arc volcanic and sedimentary rocks	Kroenke 1984
TplTe	EOCENE TO PLIOCENE UNIT		
$Tpl^{1}Te$	Solomon Islands	*Orogenic domain*, oceanic sedimentary rocks above oceanic crustal rocks	Coleman 1970, 1973; Coleman and Kroenke 1981; Kroenke 1984
QTe	EOCENE TO QUATERNARY UNIT		
$Q^{1}Te$	Tonga-Kermadec arc-trench gap	*Orogenic domain*, active plate margin; combined Vitaz Trench prism (ToTe) and subsequent (QTm) prism and forearc basin	Cole 1982; Coleman and Packham 1976; Katz 1982; Kroenke 1984
To	OLIGOCENE UNIT		
To^{1}	Southern Ocean crust 13-6 magnetic anomalies	*Oceanic crustal domain*	Doutch et al 1981; Vogt et al 1983
To^{2}	Emerald Basin crust ?13--? magnetic anomalies (not on T/S plot)	*Oceanic crustal domain*, uncertain data	Weissel et al 1977

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
To^3	Three Kings Rise and Loyalty Island late Miocene	*Orogenic domain*, active plate margin; possible volcanic-arc complex formed during subduction of Norfolk Basins or ?South Fiji Basin; including some arc-trench-gap rocks	Kroenke and Eade 1982; Kroenke and Dupont 1982; Launey et al 1982
To^4	Manus-Solomon-Vitaz arc (?Eua Ridge) (incl. Te^3, Te^2, To^4Te, Tm^5To, TeKu)	*Orogenic domain*, active plate margin	Coleman and Packham 1976; Falvey and Pritchard 1984; Kroenke 1984
To^5	Caroline Basin 12-10 magnetic anomalies	*Oceanic crustal domain*, includes Eauripik Rise (oceanic plateau)	Bracey and Andrews 1974; Weissel and Anderson 1978
To^6	South Fiji Basin 13-8 magnetic anomalies	*Oceanic crustal domain*	Malahoff et al 1982
To^7	Santa Cruz Basin crust (not on T/S plot)	*Oceanic crustal domain*, uncertain	Kroenke 1984
To^8	Vitaz accretionary prism (not on T/S plot)	*Orogenic domain*, active plate margin; uncertain data	Kroenke 1984
To^9	New Guinea (not on T/S plot)	*Orogenic domain*, active plate margin, island-arc volcanic and sedimentary rocks	Kroenke 1984
To^{10}	Torres Rise (not on T/S plot)	*Oceanic plateau* after anomaly 8 ?late Oligocene	Kroenke 1984
To^{11}	West Pacific	*Intraplate volcanic rocks*, oceanic-island volcanic rocks	L.W. Kroenke, pers. comm., 198
TmTo	MIOCENE TO OLIGOCENE UNIT		
Tm^1To	Vanuatu (western belt) 25-11 Ma	*Orogenic domain*, active plate margin; island-arc volcanic and sedimentary rocks, early Miocene faulting	Carney and Macfarlane 1982; Katz 1984; Kroenke 1984; Macfarlane 1984
Tm^2To	Fiji (Viti Levu, Yasawas, and Beqa) 24-10 Ma	*Orogenic domain*, active plate margin; volcanic-arc volcanic and sedimentary rocks	Rodda 1974, 1976; Kroenke 1984
Tm^3To	Papuan Platform and Papuan Fold Belt 40-15 Ma	*Cratonic cover*, marine sedimentary rocks, partly involved in deformation of the Papuan Fold Belt (foreland fold and thrust belt)	Brown et al 1979; D'Addario et al 1976; Geol. Soc. Aust. 1971
Tm^4To	Aure Trough (Papua New Guinea) 40-5 Ma	*Late orogenic setting*, foreland (deep) basin, sedimentary rocks derived from the rising New Guinea Mobile Belt; the eastern part of the trough was involved in plate convergence (subduction)	Brown et al 1979; D'Addario et al 1976; Geol. Soc. Aust. 1971; Kroenke 1984

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
Tm^5To	New Guinea and adjacent island arcs 40-5 Ma	*Orogenic domain*, active plate margin; island-arc volcanic rocks and marginal-sea sedimentary and volcanic rocks	Brown et al 1979; D'Addario et al 1976; Geol. Soc. Aust. 1971
Tm^6To	Solomon Islands 25-7 Ma	*Orogenic domain*, active plate margin; volcanic-arc volcanic and sedimentary rocks related to ?terminal activity of the Oligocene-Eocene arc; late Oligocene diorite on Guadalcanal; Miocene sedimentary rocks	Coleman 1970; Kroenke 1984
Tm^7To	Western rift basins New Zealand (Solander, Balleny, Te Anau, Wanganui, Grey River, Taranaki, Northland)	*?Late orogenic (transitional) or reactivation settings* associated with oblique subduction and formation of pull-apart basins; preceded by Late Cretaceous to Paleocene sedimentary rocks (coal measures); late Eocene reactivation	Katz 1980a; Norris and Carter 1980; Sporli 1980; Suggate et al 1978
QTo	OLIGOCENE TO QUATERNARY UNIT		
QTo	New Georgia Basin (not on T/S plot)	*Orogenic domain*, active plate margin; ?interarc basin, continuing extension	Katz 1980b, 1984
Tm (Tm_1 & Tm_2)	MIOCENE UNIT (in some areas early & late Miocene are separated)		
Tm^1	New Caledonia (west coast) 22-10 Ma	*?Late orogenic setting*, sedimentary rocks	Paris 1981a,b
Tm^2	New Caledonia, west coast	*?Cratonic cover*, sedimentary rocks unconformable on Eocene and older rocks	Paris 1981a,b
Tm^3	Fiji (Yasawas) 10-7 Ma	*Orogenic domain*, active plate margin; island-arc volcanic rocks, tholeiitic mafic to felsic; volcaniclastic rocks from Oligocene uplift; gabbro and tonalite associated with orogenic phase	Rodda 1974, 1976; Kroenke 1984
Tm^4(Tm_1^4 & Tm_2^4)	Colville-Lau Ridge	*Orogenic domain*, active plate margin; including early and late Miocene volcanic arcs and a large area of volcanic apron on the west	Kroenke 1984
Tm^5	Tonga-Kermadec Ridge	*Orogenic domain*, active plate margin; volcanic-arc volcanic and sedimentary rocks, originally contiguous with the Colville-Lau Arc	Cole 1982; Kroenke 1984
Tm^6	New Guinea	*Late orogenic setting*, molassic sedimentary rocks	Brown et al 1979; D'Addario et al 1976; Geol. Soc. Aust. 1971

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
Tm^7	North New Guinea and adjacent island arcs 22-5 Ma	*Orogenic domain*, active plate margin; post-Papuan Arc collision; sedimentary and volcaniclastic rocks, ?part of Miocene magmatic arc; volcanic activity continued into Tpl and QTpl	Brown et al 1979; D'Addario et al 1976; Davies et al 1984; Kroenke 1984
Tm^8	West Pacific	*Intraplate volcanic rocks*, ocean island volcanic rocks	L.W. Kroenke, pers. comm., 198
Tm^9	North Island, New Zealand	*Orogenic domain*, active plate margin volcanic rocks, Pliocene to Miocene age	H.R. Katz, pers. comm., 1982
Tn	NEOGENE UNIT		
Tn^1	Fiji (Viti Levu, Yasawas, Beqa, Vanua Levu, Lomaiviti, Horne Islands) 6-2 Ma	*Orogenic domain*, active plate margin; calc-alkaline to tholeiitic arc volcanic rocks, sedimentary rocks on Lomaiviti also shoshonites	Rodda 1974, 1976, 1982; Sinton et al 1983
Tn^{1a}	North Fiji Basin	*Oceanic crustal domain*	Auzende et al 1988
Tn^2	Papuan Platform 25-3 Ma	*Cratonic cover*, thin terrigenous sedimentary rocks	Brown et al 1979; D'Addario et al 1976; Geol. Soc. Aust. 1971
Tn^3	Aure Trough 25-3 Ma	*Late orogenic setting*; thick sequence of marine deposits in a foreland basin	Dow 1977
Tn^4	Maramuni Arc (New Guinea) 25-2.5 Ma	*?Orogenic domain*	Dow 1977
Tn^5	Northern New Zealand 25-2 Ma	*Orogenic domain*, active plate margin; ?volcanic-arc andesite, ?volcanic rift and interarc basin	Katz 1980a; Sporli 1980; Suggate et al 1978
Tn^6	Guadalcanal (not on T/S plot)	*Orogenic domain*, active plate margin; sedimentary rocks above ToTe volcanic arc	Arthurs 1979; Coleman 1970; Kroenke 1984
Tn^7	Southern Ocean crust magnetic anomalies, 3-6 Ma incl. Macquarie Ridge	*Oceanic crustal domain*	Weissel and Hayes 1972; Vogt et al 1983
QTn	NEOGENE TO QUATERNARY UNIT		
Q^1Tn	New Britain-South Solomon New Hebrides accretion wedge (not on T/S plot) late Miocene-Holocene	*Orogenic domain*, active plate margin	Kroenke 1984
Q^2Tn	Median basins, Vanuatu (Santa Cruz-Torres-Banks Islands, North and South Aoba basins)	*Orogenic domain*, active plate margin; ?backarc or intra-arc basins, Miocene and Pliocene sedimentary rocks	Katz 1984; Kroenke 1984

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
Q^3Tn	Island arcs adjacent to to New Guinea	*Orogenic domain*, active plate margin; volcanic, sedimentary, and thick volcaniclastic rocks in backarc-forearc basins, pelagic sedimentary rocks in marginal seas, intermediate intrusive rocks	Brown et al 1979; D'Addario et al 1976; Davies et al 1984
Q^4Tn	Irian-Jaya (not on T/S plot) (?some To elements)	*Orogenic domain* or *?late orogenic setting*, intermediate to mafic intrusive and extrusive rocks, sedimentary rocks, incl. Aru Basin, and accretionary prism south of New Guinea Trench	Palfreyman 1988; Dow and Sukamto 1984
Q^5Tn	Epicratonic basins South Island, New Zealand	*Cratonic cover or reactivation* related fault-bounded basins	Katz 1980a; Sporli 1980, 1987; Suggate et al 1978
Q^6Tn	Epicratonic basin North Island, New Zealand	*Cratonic cover*, epicratonic basin sequence in west-central and northern North Island of New Zealand	Katz 1980a; Sporli 1980; Suggate et al 1978
Q^7Tn	Taupo Rift and Ngatoro Basin (Rift), New Zealand	*Orogenic domain*, active plate margin volcanic rift or volcanotectonic depression (backarc basin) on active margin	New Zealand Geological Survey 1972; Sporli 1980; Suggate et al 1978
Q^8Tn	Cratonic volcanic rocks North Island, New Zealand	*?Cratonic (intraplate)* volcanic rocks or associated with transtensional reactivation setting; mafic to intermediate volcanic rocks	Katz 1980a; Sporli 1980; Suggate et al 1978
Q^9Tn	New Zealand prograding shelf deposits 25-0 Ma	*Cratonic cover*, prograding continental-shelf deposits	Katz 1980a; Sporli 1980, 1987; Suggate et al 1978
Tpl	PLIOCENE UNIT		
Tpl^1	Fiji 5-1.8 Ma	*Orogenic domain*, ?mature volcanic arc or rifting	Rodda 1974, 1976; Kroenke 1984
Tpl^2	Central Orogenic Belt New Guinea	*?Orogenic setting*, volcanic and sedimentary rocks represent continuation of the Miocene arc activity or associated with reactivation tectonics; sedimentary rocks involved in deformation of Papuan Fold Belt	Brown et al 1979; D'Addario et al 1976
Tpl^3	Wauraraoa-Hawke Bay Basin, New Zealand 5-1, 8 Ma (not on T/S plot)	*Orogenic to late orogenic setting*, continuous plate convergence	Katz 1982; New Zealand Geological Survey 1972; Suggate et al 1978
Tpl^4	Melanesian arc rocks (not on T/S plot)	*Orogenic domain*, volcanic-arc rocks and sedimentary rocks, some postdate earlier arc	Kroenke 1984

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
QTpl	PLIOCENE TO QUATERNARY UNIT		
Q^1Tpl	New Caledonia 5-1 Ma	*Cratonic cover, to ?late orogenic setting*	Paris 1981a,b
Q^2Tpl	Vanuatu, central chain and marginal province	*Orogenic domain*, presently active plate-margin related volcanic arc, locally intra-arc rifting shown as forearc pattern	Carney and Macfarlane 1982; Kroenke 1984
Q^3Tpl	Lau-Havre Trough magnetic lineations 2-0 lineations	*Oceanic crustal domain*	Weissel 1977
Q^4Tpl	Fiji 2-0 Ma (not on T/S plot)	*Orogenic domain?*, ?rifting in *late orogenic setting*, *intraplate* volcanism; shoshonitic volcanic rocks and alkali basalt	Rodda 1974, 1976; Kroenke 1984 Auzende et al 1988
Q^5Tpl	Tofua Ridge (arc) Tonga-Kermadec Ridge	*Orogenic domain*, presently active plate-margin related volcanic arc; included is a large volcanic apron and interarc basin	Bryan et al 1972; Cole 1982; Ewart et al 1977
Q^6Tpl	New Guinea 5-0 Ma	*Orogenic domain or reactivation* related sedimentary, volcanic, and intrusive rocks, associated with oblique plate convergence	Brown et al 1979; D'Addario et al 1976
Q^7Tpl	Papuan Platform 3-0 Ma	*Cratonic cover*, sedimentary rocks	Brown et al 1979; D'Addario et al 1976
Q^8Tpl	Papuan Fold Belt 5-1 Ma	*Orogenic to late orogenic setting*, foreland zone of thrusting, diapirism	Brown et al 1979; D'Addario et al 1976
Q^9Tpl	Aure Trough 5-1 Ma	*Late orogenic setting*, thick clastic rocks, mud volcanoes	Brown et al 1979; D'Addario et al 1976; Davies 1971; Davies and Smith 1971
$Q^{10}Tpl$	Woodlark Basin magnetic lineations 2-Present	*Oceanic crustal domain*	Brocher et al 1983; Taylor and Karner 1983 Weissel et al 1982
$Q^{11}Tpl$	Tabar-Feni Ridge, South Solomon Islands	*Orogenic domain*, presently active plate margin related arc	Coleman 1970; Kroenke 1984
$Q^{12}Tpl$	Schouten-New Britain Arc	*Orogenic domain*, active plate margin; presently active volcanic arc	Davies et al 1984; Kroenke 1984
$Q^{13}Tpl$	Bismarck or Manus Basin, rifting in St. George Channel and adjacent areas 2-0 lineations	*Oceanic crustal domain* and rifted arc crust	Taylor 1979
$Q^{14}Tpl$	Northland, Auckland, New Zealand 5-0 Ma	*Cratonic-intraplate volcanic rocks*, post-tectonic alkaline volcanic rocks	New Zealand Geological Survey 1972; Sporli 1980; Suggate et al 1978

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
$Q^{15}Tpl$	Wanganui Basin, Hauraki Gulf-Thames Graben 5-0 Ma	*?Late orogenic setting*, downwarp and rift	Katz 1980a; New Zealand Geological Survey 1972; Sporli 1980; Suggate et al 1978
$Q^{16}Tpl$	Kadavu Arc and volcanic rocks in the Hunter Fracture Zone (not on T/S plot)	*Orogenic domain*, active plate margin; including shoshonite and high-K andesite	Kroenke 1984
$Q^{17}Tpl$	Arc-trench gap related to Kadavu Arc and Hunter Fracture Zone (not on T/S plot)	*Orogenic domain*, active plate margin related sedimentary rocks	Coleman 1970; Kroenke 1984
$Q^{18}Tpl$	North Fiji basin magnetic anomalies 4 to present	*Oceanic crustal domain*, active backarc basin	Brocher et al 1983; Chase 1971; Kroenke 1984; Taylor and Karner 1983
$Q^{19}Tpl$	Southern Ocean crust 3 to 0 lineations	*Oceanic crustal domain*	Vogt et al 1983
$Q^{20}Tpl$	West Pacific	*Intraplate volcanism*, oceanic island volcanic rocks	Kroenke 1984
$Q^{21}Tpl$	Sorol Trough (not on T/S plot)	*Oceanic crustal domain*, ?leaking transform structure, limited spreading	Doutch et al 1981
$Q^{22}Tpl$	Ayu Trough	*Oceanic crustal domain*, ?young seafloor spreading	Kroenke 1984
$Q^{23}Tpl$	New Ireland Basin and Feni Deep	*Orogenic domain*, presently active interarc basins, volcanic and sedimentary rocks	Kroenke 1984
Q	QUATERNARY		
Q	On the Pacific and Australia-India Plate	Mostly *cover rocks*, dominantly sedimentary rocks, commonly coral reefs in the Pacific	Palfreyman 1988

EURASIA AND PHILIPPINE PLATES

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Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
ꝒA	ARCHAEAN AND PROTEROZOIC UNIT		
$ꝒA^{5}$	Peninsular Thailand-Malay Peninsula	*Granitoid and migmatite terrain*: undifferentiated; basement of the Burmese-Malayan Fold Belt	Suensilpong et al 1978; Fontaine and Workman 1978; Hutchison 1982
$ꝒA^{6}$	Vietnam-Laos-Kampuchea	*Continental orogenic domain*; undifferentiated gneiss and granite terrain; thermal event 530 Ma	Fontaine and Workman 1978
$ꝒA^{7}$	Sumatra	*?Continental orogenic domain*; undifferentiated basement	Ray et al 1982
Pz_1	EARLY PALEOZOIC UNIT		
Pz_1^{9}	West Thailand	*Continental orogenic domain*	Suensilpong et al 1978
Pzm	MIDDLE PALEOZOIC UNIT		
Pzm^{12}	Microcontinents in the Banda Sea with Mz^{10} drift sequence cover	*Orogenic domain*, originally probably parts of the Australian continent, part of the Tasman Fold Belt System separated during the Mesozoic breakup	Silver et al 1983; Pigram and Panggabean 1983
Pz_2 & $ŦRPz_2$	LATE PALEOZOIC UNIT AND TRIASSIC-LATE PALEOZOIC UNIT		
Pz_2^{16}	Peninsular Thailand Malay Peninsula	*Orogenic domain*; Cambrian to Permian sedimentary rocks, Carboniferous and Permian felsic intrusive rocks; possibly deformed by middle to late Paleozoic orogeny, subsequently metamorphosed by Late Triassic orogeny	Gobbett and Tjia 1973; Burton 1974; Suensilpong et al 1978; Hutchison 1982
Pz_2^{17}	Vietnam-Laos-Kampuchea	*Orogenic domain*; sedimentary and felsic intrusive rocks (398 Ma); deformed by "Variscan" Orogeny	Fontaine and Workman 1978
Pz_2^{18}	Timor	*Orogenic domain*, sedimentary rocks of allochthonous Asian element	Audley-Charles et al 1979; Barber 1981; Veevers 1984
Pz_2^{19}	Banda Arc	*Orogenic domain*, allochthonous Asian elements	Audley-Charles 1974; Barber 1981
Pz_2^{20}	Sula (Sulu)	*Continental domain*, granite, volcanic, and metamorphic rocks; detached basement, originally part of Australian continent	Sukamto 1975

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
TRPz_2^{21}	Sumatra	*Orogenic domain*, metamorphic rocks, basement complex	Katili 1974; Commission for the Geological Map of the World 1982
TRPz_2^{22}	Sunda shelf/Sunda platform	*Orogenic domain*, metamorphic and igneous rocks	Hutchison 1982; Ben-Avraham and Emery 1973; Commission for the Geological Map of the World 1982
TRPz_2^{23}	Kalimantan	*Orogenic domain*, felsic and intermediate intrusive rocks, metamorphic rocks; deformed and metamorphosed by Triassic orogeny	Direcktorat Geologi 1970; Haile 1974; Tan and Khoo 1978
TRPz_2^{24}	Banda Arc	*Orogenic domain*, allochthonous Asian element in Seram, Australian autochthonous element in Buru	Audley-Charles et al 1979; Tjokrosapoetro and Budhitrisna 1982
Mz	MESOZOIC UNIT		
Mz^2	Gorontalo Basin crust ?Cretaceous-Jurassic (not on T/S plot)	*?Oceanic crustal domain*, the ophiolites in east Sulawesi appear to root into the crust of the Gorontalo Basin	Silver et al 1983
Mz^{2a}	Halmahera surrounding ocean crust (not on T/S plot)	*?Oceanic crustal domain*, the ophiolites on the island may root into the oceanic crust toward east, and the same is possibly valid for area north of the Bird's Head	
Mz^3	Sumatra	*Orogenic domain*, sedimentary and felsic intrusive rocks, including upper Paleozoic sedimentary rocks overlying crystalline schist basement	Katili 1974; Hutchison 1982
Mz^4	Peninsular Thailand-West Malaysia-Vietnam-Laos-Kampuchea	*Platform cover*, sedimentary rocks, felsic intrusive rocks, anorogenic felsic intrusive rocks (110-135 Ma)	Burton 1974; Suensilpong et al 1978; Fontaine and Workman 1978; Hutchison 1982
Mz^5	Sunda shelf	*Orogenic domain*, acoustic basement	Parke et al 1971; Ben-Avraham and Emery 1973
Mz^6	Sunda platform	*Orogenic domain*, felsic plutonic rocks	Ben-Avraham and Emery 1973
Mz^7	Mergui Ridge	*Orogenic domain*, concealed, uncertain, continental crust setting covered with QTpa sedimentary rocks and TpaKu volcanic arc	Curray et al 1979; Rodolfo 1969
Mz^8	Kampuchea	*Transitional sequence*, sedimentary rocks	Fontaine and Workman 1978
Mz^9	Kalimantan	*Orogenic domain*, sedimentary and mafic effusive rocks	Haile 1974; Audley-Charles 1978; Tan and Khoo 1978

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
Mz^{10}	Sunda arc	*Orogenic domain*, undifferentiated metamorphic rocks	Kadar 1979
Mz^{11}	Microcontinents in the Banda Sea	*Continental-margin sequence or cratonic cover*, breakup (drift) and rift sequence sedimentary rocks	Pigram and Panggabean 1983
Mz^{12}	East and Southeast Sulawesi	*Orogenic domain*, metamorphic and sedimentary rocks	Sukamto and Simandjuntak 1983
Mz^{13}	Sula	*Cratonic cover*, sedimentary rocks	Sato et al 1978; Sukamto and Simandjuntak 1983
Mz^{14}	Halmahera	*Orogenic domain*, metamorphic rocks	Sukamto et al 1981
Mz^{15}	Mariana Ridge	*Orogenic domain*, prerifting arc	Ingle 1975
TR	TRIASSIC UNIT		
TR^{5}	East Burma-West Thailand-West Malaysia/Kalimantan	*Orogenic and late orogenic domain*, sedimentary and felsic-intermediate volcanic rocks, metamorphosed mostly in Triassic, with felsic intrusive rocks	Burton 1974; Suensilpong et al 1978; Hutchison 1982
TR^{6}	Sunda platform	*Orogenic domain*; sedimentary and felsic plutonic rocks	Ben-Avraham and Emery 1973; Hutchison 1982
TR^{7}	Vietnam-Laos-Kampuchea	*Orogenic domain*, sedimentary and felsic intermediate intrusive rocks, deformed and metamorphosed by Late Triassic orogeny	Fontaine and Workman 1978
TR^{8}	Vietnam-Laos-Kampuchea	*Transitional sequence*, sedimentary and mafic extrusive rocks	Fontaine and Workman 1978
$J\mathrm{TR}$	JURASSIC-TRIASSIC UNIT		
$J^{4}\mathrm{TR}$	West Malaysia	*Platform cover*, sedimentary rocks	Burton 1973
$J^{5}\mathrm{TR}$	East Sabah	*Orogenic domain*, metamorphic (210 Ma) and felsic intrusive rocks	Choi 1983
$J^{6}\mathrm{TR}$	Palawan	*Orogenic domain*, microcontinent, upper Paleozoic and lower Mesozoic, partly metamorphosed	Philippine Bureau of Mines and Geosciences 1982
$J^{7}\mathrm{TR}$	Philippines	*Orogenic domain*, upper Paleozoic and lower Mesozoic, partly metamorphosed	Philippine Bureau of Mines and Geosciences 1982
J	JURASSIC UNIT		
J^{4}	Palawan	*Orogenic domain*, felsic intrusive rocks	Philippine Bureau of Mines and Geosciences 1982

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
J5	Philippines	*Transitional sequence*, sedimentary rocks	Philippine Bureau of Mines and Geosciences 1982
KJ	JURASSIC AND CRETACEOUS UNIT		
K10J	Banda Sea crust older than magnetic anomaly M11	*Oceanic crustal domain*, very preliminary and uncertain data	Bowin et al 1980
K11J	Sulu plate, drift sequence	*Continental margin deposits* over older microcontinent	
ToJ	JURASSIC TO OLIGOCENE UNIT		
To4J	Andaman-Nicobar Ridge	*Orogenic domain*, ophiolite and sedimentary rocks	Curray et al 1979; Brunschweiler 1974
To5J	Timor	*Orogenic domain*, sedimentary and mafic volcanic rocks, autochthonous Australian elements	Audley-Charles et al 1979; Barber 1981; Veevers 1984
To6J	Banda Arc	*Orogenic domain*, sedimentary and mafic volcanic rocks, autochthonous Australian elements	Audley-Charles et al 1979; Barber 1981; Tjokrosapoetro and Budhitrisna 1982
K	CRETACEOUS UNIT		
K11	Banda Sea crust younger than magnetic anomaly M11	*Oceanic crustal domain*, uncertain data	Bowin et al 1980
ToK	CRETACEOUS TO OLIGOCENE UNIT		
To1K	Northwest Borneo Fold Belt (geosyncline)	*Orogenic domain*, sedimentary and mafic-intermediate intrusive and effusive rocks partly metamorphosed	Haile 1974; Tan et al 1983; Choi 1983
To2K	East and southeast Sulawesi	*Orogenic domain*, sedimentary, strong deformation at the Cretaceous-Paleogene boundary	Sukamto and Simandjuntak 1983
To3K	Philippines	*Orogenic domain*, metamorphic rocks	Philippine Bureau of Mines and Geosciences 1982
TKu	LATE CRETACEOUS TO TERTIARY UNIT		
TKu	Mergui Ridge	*Orogenic domain*, ?extinct volcanic arc or older basement covered by QTpa	

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
TpaKu	LATE CRETACEOUS TO PALEOCENE UNIT		
Tpa⁸Ku	Celebes Sea crust magnetic anomalies 30-33 and older?	*Oceanic crustal domain*	Weissel 1980
Tpa	PALEOCENE UNIT		
Tpa^6	Philippine Sea crust ?27-24 magnetic anomalies	*Oceanic crustal domain*	Hilde and Lee 1984
Tpa^7	Eurasia Plate basins	*Platform cover*, sedimentary rocks	Sukamto 1978
QTpa, Tp, TeTpa	PALEOCENE AND EOCENE, PALEOGENE, AND QUATERNARY UNIT		
Q^2Tpa, Tp TeTpa	South China Sea, microcontinents and continental margin (QKu)	*Continental-margin rifting and post-breakup sequences*, sedimentary rocks filling rifts and deposits associated with postrifting development	Taylor and Hayes 1983; Hayes 1983
Q^3Tpa	Mergui-North Sumatra Basin	*Crustal cover*, basin sedimentary rocks	Curray et al 1979; Kadar 1979
Q^4Tpa	Mariana Ridge	*Orogenic domain*, active plate-margin-related volcanic chain	Karig 1971
Tp^3	Kalimantan	*Orogenic domain*, sedimentary and intermediate effusive rocks	Geological Survey of Indonesia 1970; Academy of Geological Sciences of China 1975; Commission for the Geological Map of the World 1982
Tp^4	West Kalimantan	*Transitional sequence*, molassic sedimentary rocks	Haile 1974; Tan and Khoo 1978
Tp^5	Sunda arc (Java)	*Orogenic domain*, sedimentary and intermediate effusive rocks	Kadar 1979
Tp^6	North and South Sulawesi	*Orogenic domain*, metamorphic rocks	Sukamto and Simandjuntak 1983
Tp^7	Palawan	*Orogenic domain*, sedimentary, basic extrusive and ultramafic rocks	Philippine Bureau of Mines and Geosciences 1982
Tp^8	Philippines	*Orogenic domain*, sedimentary and mafic-intermediate-felsic extrusive rocks, with felsic intrusive rocks	Philippine Bureau of Mines and Geosciences 1982
Tp^9	Kyushu-Palau Ridge	*Orogenic domain*, pre-rifting volcanic chain	Karig 1971; Ingle 1975
Tp^{10}	Guam	*Orogenic domain*, volcanic rocks	Palfreyman 1988

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
T	TERTIARY UNIT		
T^2	Mentawai/Sumatra	*Orogenic domain*, sedimentary and felsic intrusive rocks	Rodolfo 1969; Brunschweiler 1974
T^3	Sumatra	*Transitional sequences*, sedimentary and intermediate effusive rocks	Kadar 1979; Hutchison 1982
T^4	Peninsular Thailand	*Transitional sequences*, sedimentary rocks	Suensilpong et al 1978
T^5	Sunda shelf	*Transitional sequence*, sedimentary rocks	Parke et al 1971
T^6	Sula	*Platform cover*, sedimentary rocks	Sukamto 1978 Silver et al 1989
Te	EOCENE UNIT		
Te^{14}	Eurasia Plate basins	*Platform cover*, sedimentary rocks	Sukamto 1978 Ben-Avraham and Emery 1973
Te^{15}	West Philippine Sea crust magnetic anomalies 24-18	*Oceanic crustal domain*	Hilde and Lee 1984
ToTe	EOCENE AND OLIGOCENE UNIT		
To^7Te	Philippine Sea crust, younger than anomaly 18	*Oceanic crustal domain*	Hilde and Lee 1984
To^8Te	Eurasia Plate basins	*Platform cover*, sedimentary rocks	Sukamto 1978
To^9Te	Sunda platform (not on T/S plot)	*Crustal cover*, sedimentary rocks	Ben-Avraham and Emery 1973
QTe	EOCENE TO QUATERNARY UNIT		
Q^2Te	Northern Palawan microcontinent	*Continental margin setting*, rift and drift sequences	McCabe et al 1985; Hinz and Schluter 1985
Q^3Te	Mariana arc-trench gap	*Orogenic domain*, active plate margin, forearc basin deposits covering accretionary prism	Kroenke 1984
Q^4Te	Sunda Arc-Trench gap forearc basin	*Orogenic crustal domain*, forearc basin sedimentary rocks	Kadar 1979
To	OLIGOCENE UNIT		
To^{12}	Eurasia Plate basins	*Platform cover*, sedimentary rocks	Sukamto 1978
To^{13}	South China Sea crust	Oceanic crustal domain	Taylor and Hayes 1983

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
QTo	OLIGOCENE TO QUATERNARY UNIT		
Q¹To	Malaysia Region	*Continental margin setting*, drift sequence	Taylor and Hayes 1983
TmTo	OLIGOCENE TO MIOCENE UNIT		
Tm⁹To	Cagayan Ridge	*Orogenic domain*, magmatic arc	Hamilton 1979
Tm¹⁰To	Outer Sulu Sea	*Orogenic domain*, outer-arc basin	Taylor and Hayes 1983 Silver et al 1989
Tm¹¹To	South China Sea crust	*Oceanic crustal domain*	Taylor and Hayes 1980, 1983
Tm¹²To	West Mariana Basin	*Oceanic crustal domain*	Hilde and Lee 1984
Tm	MIOCENE UNIT		
Tm⁸	Sulu arc	*Orogenic domain*, volcanic arc	Hamilton 1979
Tm⁹	Eurasia Plate basins	*Platform cover*, sedimentary rocks	Sukamto 1978
Tn	NEOGENE UNIT		
Tn⁸	Sulu accretionary wedge (not on T/S plot)	*Orogenic domain*, active plate margin, sedimentary rocks	Hamilton 1979
Tn⁹	Sulu volcanic arc	*Orogenic domain*, active plate margin, volcanic and sedimentary rocks of a volcanic arc	Hamilton 1979
Tn¹⁰	Northwest Borneo/Kalimantan	*Late orogenic domain*, sedimentary rocks	Haile 1974; Tan and Khoo 1978; Kadar 1979
Tn¹¹	Timor	*Orogenic domain*, sedimentary rocks of allochthonous Asian and autochthonous Australian elements undifferentiated	Audley-Charles et al 1979; Johnson 1981; Barber 1981
Tn¹²	North and South Sulawesi	*Orogenic domain*, volcanic zone, sedimentary and mafic-intermediate volcanic rocks, felsic intrusive rocks	Sukamto and Simandjuntak 1983
Tn¹³	Eastern and southeast Sulawesi	*Transitional sequences*, molassic sedimentary rocks	Sukamto 1978; Sukamto and Simandjuntak 1983
Tn¹⁴	Banda arc	*Orogenic domain*, sedimentary rocks of allochthonous Asian and para-autochthonous Australian elements undifferentiated	Audley-Charles et al 1979; Johnston 1981; Tjokrosapoetro and Budhitrisna 1982
Tn¹⁵	Halmahera	*Orogenic domain*, sedimentary and intermediate-mafic effusive rocks	Sukamto et al 1981
Tn¹⁶	Philippines	*Orogenic domain*, sedimentary and intermediate-mafic effusive rocks	Philippine Bureau of Mines and Geosciences 1982

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
Tn^{17}	Mariana arc, Guam	*Orogenic domain*, Neogene volcanic rocks	Palfreyman 1988
Tn^{18}	North Sulawesi accretionary prism	*Orogenic domain*, accretionary complex	E.A. Silver, pers. comm.
Tn^{19}	Accretionary prism in Sabah and Palawan troughs	*Orogenic domain*, possibly accretionary-prism complex south of thrust faults or alternatively continental-margin sequences beneath overthrusts	Hamilton 1979; K. Hinz, pers. comm. 1986
Tn^{20}	Sulu Sea crust	*Oceanic crustal domain*, revised age, Early to Middle Miocene	Silver et al 1989
Tn^{21}	South China Sea	*Oceanic crustal domain*, changed direction of spreading	Pautot et al 1986
QTn	NEOGENE TO QUATERNARY UNIT		
$Q^{10}Tn$	Andaman rift	*Oceanic crustal domain*	Curray et al 1979
$Q^{11}Tn$	Sulu arc	*Oceanic crustal domain*, volcanic and sedimentary rocks	Hamilton 1979
($Q^{12}Tn$)	South China Sea crust	*Oceanic crustal domain*, sedimentary rocks, amended to $Q^{28}Tpl$	Taylor and Hayes 1980, 1983
$Q^{13}Tn$	Mentawai/Sumatra	*Orogenic domain*, sedimentary and felsic-intermediate pyroclastic rocks	Katili 1974
$Q^{14}Tn$	Andaman-Nicobar Ridge	*Orogenic domain*, sedimentary rocks	Curray et al 1979; Brunschweiler 1974
$Q^{15}Tn$	Vietnam-Kampuchea/ Malay Peninsula	*Anorogenic effusive rocks*, basaltic lavas	Fontaine and Workman 1978
$Q^{16}Tn$	Northwest Borneo/ Kalimantan	*Platform cover*, mafic-intermediate effusive and intrusive rocks, molasse sedimentary rocks	Haile 1974; Tan and Khoo 1978
$Q^{17}Tn$	Sunda arc	*Orogenic domain*, sedimentary rocks	Kadar 1979; Commission for the Geologic Map of the World 1982
$Q^{18}Tn$	North and South Sulawesi	*Transitional sequence*, folded sedimentary and intermediate-mafic effusive rocks	Sukamto 1978; Sukamto and Simandjuntak 1983
$Q^{19}Tn$	Outer Sulu Sea	*Platform cover*	Philippine Bureau of Mines and Geosciences 1982
$Q^{20}Tn$	Palawan	*Platform cover*, sedimentary and extrusive rocks	Philippine Bureau of Mines and Geosciences 1982
$Q^{21}Tn$	Halmahera	*Transitional sequence*, folded sedimentary and volcanic rocks	Sukamto et al 1981

Letter symbol	Structural name and age span	Tectonic setting (interpretation and brief description)	References
$Q^{22}Tn$	Philippines	*Platform cover*, sedimentary and mostly intermediate effusive rocks with subordinate mafic and felsic volcanic rocks	Philippine Bureau of Mines and Geosciences 1982
$Q^{23}Tn$	Kyushu-Palau Ridge	*Orogenic domain*, postrifting sedimentary rocks of remnants	Karig 1971; Ingle 1975
$Q^{24}Tn$	West Mariana Ridge	*Orogenic domain*, remnant arc and post-rifting volcanic and sedimentary rocks	Karig 1971
$Q^{25}Tn$	Talaud-Mayu Ridge and Philippine accretionary prism	*Orogenic domain* accretionary prism complexes	Silver et al 1983
$Q^{26}Tn$	Sanghine or Sangihe arc	*Orogenic domain*, volcanic arc	E.A. Silver, pers. comm.
$Q^{27}Tn$	Sanghine forearc (continues north and west of Sulawesi)	*Orogenic domain*, forearc basin	E.A. Silver, pers. comm.
$Q^{28}Tn$	South of Mindanao	*Orogenic domain* basin between accretionary prism $Q^{25}Tn$ and volcanic arc $Q^{26}Tn$	E.A. Silver, pers. comm.
$Q^{29}Tn$	Sulawesi, west of Gorontalo	*Orogenic domain*, ?forearc basin deposits	E.A. Silver, pers. comm.
$Q^{30}Tn$	Mekong and Panjang Basins	*Platform cover*	Ray et al 1982
QTpl	PLIOCENE TO QUATERNARY UNIT		
$Q^{24}Tpl$	Sunda shelf (not on the map)	*Crustal cover*	Parke et al 1971; Ben-Avraham and Emery 1973
$Q^{25}Tpl$	Timor Trough	*Forearc basin* of active convergent plate margin, underlain by Australian shelf sedimentary rocks	Hamilton 1979; Veevers 1984
$Q^{26}Tpl$	Mariana Basin	*Oceanic crustal domain*	Hussong and Uyeda 1982
$Q^{27}Tpl$	Andaman rift	*Oceanic crustal domain*, sedimentary rocks	F.F.H. Wang, pers. comm.
$Q^{28}Tpl$	South China Sea	*Oceanic crustal domain* (see $Q^{12}Tn$), sedimentary rocks	Hamilton 1979
$Q^{29}Tpl$	around Halmahera	Shelf sedimentary rocks around Halmahera, crustal cover	
Q	QUATERNARY UNIT		
Q	On the Asian plate	Mostly *cover rocks*, dominantly sedimentary rocks	Ray et al 1982
Q^{1}	Sunda-Banda arc	*Orogenic domain*, volcanic-arc related complexes	Hamilton 1978
Q^{2}	Sunda-Banda fore- and backarc basin	*Orogenic domain* arc-related basins	Hamilton 1978

PALEOMAGNETIC DATA

The Circum-Pacific Map Project's panel chairmen, compilers, and scientific advisers have made a general decision to show selected paleomagnetic data on the Tectonic Map series, as these data are important for the tectonic interpretations. However, the problem emerged of how to show these data, as no uniform symbolization is in general use.

In the specialized papers presenting paleomagnetic data, the projections of paleopoles are usually shown in stereonets; around these are drawn circles of confidence. In some papers (e.g., Jarrard and Sasajima, 1980) the location of sample site is shown with a vector indicating declinations, and a numeral next to the vector giving the relative displacement toward north in degrees of latitude, e.g., \ 5. Even more useful information is conveyed by the symbol 44W -17 in a paper by Haile et al (1977). Here a vector with a numeral shows the mean paleomagnetic declination and a dashed line with a numeral shows paleolatitude in degrees.

The Royal Society's Working Group on the "International Plate-Tectonic Map" devised this graphic symbol, 30S /112 to show the paleolatitude with a date in million years (Ma) in exotic terranes, and another symbol ∠70 to show the net amount of rotation in degrees since the initial magnetization.

In consultation with Dr. Brian Embleton of the Commonwealth Scientific Industrial Research Organization, Division of Exploration Geoscience, Wembley, Western Australia, a new graphic symbol was devised, intended to convey clearly the paleomagnetic data important for tectonic interpretation.

The new graphic symbol 49W 10S displays paleodeclination as a radius together with the degrees of azimuth by a numeral; the sector between the true north and declination is the amount of rotation E or W and the color in this sector shows the age of rotation if this is known (grey color if unknown); dashed line normal to the declination is labeled with the value of paleolatitude, and, if known, the position of the southern or northern hemisphere is indicated (S or N).

To calculate the paleolatitude λ (lambda) from a measured inclination of magnetization (I) the following formula (B.J.J. Embleton, pers. comm., 1985) was used:

$$\tan I = 2 \tan \lambda$$
$$\tan \lambda = 1/2 \tan I$$
$$\lambda = \tan^{-1} (1/2 \tan I)$$

Large amounts of other information prevented paleomagnetic data being shown on the Australian continent. It was easier to show paleomagnetic data from islands, with the symbols placed offshore and lead lines pointing out the sample locations.

The following sources of data were used: Falvey and Pritchard (1984), Haile et al (1977), James and Falvey (1978), Jarrard and Sasajima (1980), McCabe and Uyeda (1983), McCabe et ai (1982, 1985, 1987), Otofuji et al (1981). This list is of course not comprehensive, but rather arbitrary, and interested readers should consult regional reviews like that by Jarrard and Sasajima (1980) for further references.

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