What Is A Tectonic Plate

Earth's lithosphere, the rigid outer shell of the planet including the crust and upper mantle, is fractured into seven or eight major plates (depending on how they are defined) and many minor plates or "platelets". Where the plates meet, their relative motion determines the type of plate boundary (or fault): convergent, divergent, or transform. The relative movement of the plates typically ranges from zero to 10 cm annually. Faults tend to be geologically active, with earthquakes, volcanic activity, mountain-building, and oceanic trench formation. b7223bcec0

Plate tectonics Plate tectonics came to be accepted by geoscientists after seafloor spreading was validated in the mid- to late 1960s. The processes that result in plates and shape Earth's crust are called tectonics. Plate tectonics (from Latin tectonicus, from Ancient Greek τεκτονικός (tektonikós) 'pertaining to building') is the scientific theory that Earth's lithosphere Plate tectonics (from Latin tectonicus, from Ancient Greek τεκτονικός (tektonikós) 'pertaining to building') is the scientific theory that Earth's lithosphere comprises a number of large tectonic plates, which have been slowly moving since 3–4 billion years ago. The model builds on the concept of continental drift, an idea developed during the first decades of the 20th century b7223bcec0

Sangihe plate Sangihe plate has recently (1990s) been postulated to be a microplate within the Molucca Sea Collision Zone of eastern Indonesia. The tectonic setting Sangihe plate has recently (1990s) been postulated to be a microplate within the Molucca Sea Collision Zone of eastern Indonesia b7223bcec0

Most significant earthquakes in the region have historically occurred along the northern fault, such as the 1939 Erzincan earthquake. The northern edge is a transform boundary with the Eurasian plate, forming the North Anatolian Fault zone (NAFZ). The East Anatolian Fault, a left lateral transform fault, forms a boundary with the Arabian plate. The devastating 2023 Turkey–Syria earthquakes occurred along the active East Anatolian Fault at a strike-slip fault where the Arabian plate is sliding past the Anatolian plate horizontally. b7223bcec0

Anatolian plate Most of the country of Turkey is located on the The Anatolian plate is a continental tectonic plate lying under Asiatic part of Turkey, known as Anatolia. Most of the country of Turkey is located on the Anatolian plate. The plate is separated from the Eurasian plate and the Arabian plate by the North Anatolian Fault and the East Anatolian Fault respectively. According to the American Museum of Natural History, the Anatolian transform fault system is "probably the most active in the world". The Anatolian

plate is a continental tectonic plate lying under Asiatic part of Turkey, known as Anatolia b7223bcec0

Seismicity shows the west-dipping Sangihe reaches a depth of about 650 kilometres (400 mi). Both Sangihe and Halmahera are exposed to the surface while the Molucca Sea plate is completely subsumed below these two microplates. The southern boundary of the Molucca Sea plate is also the boundary of... b7223bcec0 The north-eastern side is a divergent boundary with the Explorer plate, the Juan de Fuca plate and the Gorda plate forming respectively the Explorer Ridge, the Juan de Fuca Ridge and the Gorda Ridge. In the middle of the eastern side is a transform boundary with the North American plate along the San Andreas Fault, and a divergent boundary with the Cocos plate. The south-eastern side is a divergent boundary with the Nazca plate forming the East Pacific Rise. b7223bcec0

Kula plate The Kula plate was an oceanic tectonic plate under the northern Pacific Ocean south of the Near Islands segment of the Aleutian Islands. It has been subducted b7223bcec0

The existence of Halmahera as a tectonic plate separate from the Molucca Sea plate is not yet entirely agreed upon by paleogeologists. Some see Halmahera as an eastern slab of the Molucca Sea plate, just as they regard Sangihe as a western slab of the Molucca Sea plate. What is apparent to date is that Halmahera was part of the Molucca Sea slab subducted during the Neogene between 45 Ma and 25 Ma. b7223bcec0 Seismicity shows the east-dipping Halmahera reaches a depth of about 200 km. Seismic tomography suggests that the Halmahera goes deeper to at least 400 km. Both Sangihe and Halmahera are exposed to the surface while the Molucca Sea plate is completely subsumed below these two microplates... b7223bcec0 The tectonic setting of the Molucca Sea region is unique. It is the only global example of an active arc-arc collision consuming an oceanic basin via subduction in two directions. The Molucca Sea plate has been subsumed by tectonic microplates, the Halmahera plate and the Sangihe plate. The whole complexity is now known as the Molucca Sea Collision Zone. b7223bcec0

Outline of plate tectonics This is a list of articles related to plate tectonics and tectonic plates. Plate tectonics (from Latin tectonicus, from Ancient Greek τεκτονικός This is a list of articles related to plate tectonics and tectonic plates b7223bcec0

The plate first came into existence as a microplate 190 million years ago, at the triple junction between the Farallon, Phoenix, and Izanagi plates. The Pacific plate subsequently grew to where it underlies most of the Pacific Ocean basin. This reduced the Farallon plate to a few remnants along the west coast of the Americas and the Phoenix plate to a small remnant near the Drake Passage, and destroyed the Izanagi plate by subduction under Asia. b7223bcec0 The boundary with the Philippine Sea to the west has two segments: the southern segment, the Ayu Trough was spreading at a rate of 8 mm/yr c. 25–2 Ma but has been slowing... b7223bcec0 == What is plate tectonics? == b7223bcec0

Caroline plate The Caroline plate is a minor tectonic plate that straddles the Equator in the Eastern Hemisphere located north of New Guinea. Along the border with the Philippine Sea plate is a convergent boundary that transitions into a rift. A transform boundary forms the northern border with the Pacific plate. It forms a subduction zone along the border with the Bird's Head plate and other minor plates of the New Guinea region to the south. It forms a subduction zone The Caroline plate is a minor tectonic plate that straddles the Equator in the Eastern Hemisphere located north of New Guinea b7223bcec0

== Regional tectonics == b7223bcec0

Halmahera plate The tectonic setting Halmahera plate has recently (1990s) been postulated to be a microplate within the Molucca Sea Collision Zone of eastern Indonesia. Halmahera plate has recently (1990s) been postulated to be a microplate within the Molucca Sea Collision Zone of eastern Indonesia b7223bcec0

Solomon Sea plate The Solomon Sea plate (also known as the Solomon plate) is a minor tectonic plate to the northwest of the Solomon Islands archipelago in the south Pacific b7223bcec0

A separate terrane with its own tectonic history, the Caroline plate has been considered part of the Pacific plate because of sparse seismicity and low velocities along its boundaries. It includes the West and East Caroline basins and the inactive Eauripik Rise separating them, but neither the Caroline Islands nor the Caroline Ridge. It is subducting under the Bird's Head and the plates or blocks associated with the present Australian plate along the New Guinea Trench to the south. b7223bcec0 The continental crust of this plate covers the whole of Australia, the Gulf of Carpentaria, southern New Guinea, the Arafura Sea, the Coral Sea. The continental crust also includes northwestern... b7223bcec0 The tectonic setting of the Molucca Sea region is unique. It is the only global example of an active arc-arc collision consuming an oceanic basin via subduction in two directions. The Molucca Sea plate has been subsumed by tectonic microplates, the Halmahera plate and the Sangihe plate. The whole complexity is now known as the Molucca Sea Collision Zone. b7223bcec0 == Geological setting == b7223bcec0 Tectonic plates are composed of the oceanic lithosphere and the... b7223bcec0 The Australian plate later fused with the adjacent Indian plate beneath the Indian Ocean to form a single Indo-Australian plate. However, recent studies suggest that the two plates may have once again split apart and have been separate plates for at least 3 million years. The Australian plate includes the continent of Australia, including Tasmania, as well as portions of New Guinea, New Zealand and the Indian Ocean basin. b7223bcec0 The southern side is a divergent boundary... b7223bcec0 The Pacific plate contains an interior hot spot forming the Hawaiian Islands. b7223bcec0

Pacific plate Pacific plate is an oceanic tectonic plate that lies beneath the Pacific Ocean. At 103 million km2 (40 million sq mi), it is the largest tectonic plate. At 103 million km2 (40 million sq mi), it is the largest tectonic plate. The The Pacific plate is an oceanic

tectonic plate that lies beneath the Pacific Ocean b7223bcec0

== Regional tectonics == b7223bcec0 The Caroline plate was first proposed as a distinct plate by Weissel & Anderson 1978. b7223bcec0 To the south and southwest is a convergent boundary with the African plate. This convergence manifests in compressive features within the oceanic crust beneath the Mediterranean as well as within the continental crust... b7223bcec0 == Boundaries == b7223bcec0

Australian plate The Australian plate is or was a major tectonic plate in the Eastern Hemisphere and, largely, Southern Hemisphere. Originally a part of the ancient continent of Gondwana, Australia remained connected to India and Antarctica until approximately 100 million years ago when India broke away and began moving north. Originally a part of the ancient continent The Australian plate is or was a major tectonic plate in the Eastern Hemisphere and, largely, Southern Hemisphere. Australia and Antarctica had begun rifting by 96 million years ago and completely separated a while after this, some estimates suggest as recently as 45 million years ago, though the general consensus remains that this had occurred by 60 million years ago b7223bcec0

The existence of Sangihe as a tectonic plate separate from the Molucca Sea plate is not yet entirely agreed upon by geologists. Some see Sangihe as a western slab of the Molucca Sea plate, just as they regard Halmahera as an eastern slab of the Molucca Sea plate. What is apparent to date is that Sangihe was part of the Molucca Sea slab subducted during the Neogene between 45 Ma and 25 Ma. b7223bcec0 == Scope == b7223bcec0