
Geologic Map of Antarctica

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With the Antarctic sheet of the Plate-Tectonic Map of the Circum-Pacific Map Project (CPMP) now completed and published, the Circum-Pacific Map Project Antarctic panel is at work preparing a new 1:10,000,000 Geologic Map of Antarctica. It will build on earlier geologic maps of that continent at 1:5,000,000 (1972 and 1976) and at 1:10,000,000 (1979). It is intended that all new Antarctic work, published through 1981, be incorporated into the new Circum-Pacific Map Project geologic map.

Most of Antarctica is ice covered, and rock exposures comprise only some 2 to 3% of the area of the entire continent. Antarctica is divisible into two regions with different geological characteristics. East Antarctica (lying mainly in east longitudes) is the larger region, and West Antarctica the smaller. The Transantarctic Mountains, which cross the continent and pass

near the South Pole, mark the inland border of East Antarctica.

East Antarctica is a continental shield that was a central piece of Gondwanaland in early Mesozoic time. The basement rocks are mainly of Precambrian age although lower Paleozoic rocks are also present in the Transantarctic Mountains. Archean rocks in the charnockite-enderbite terrane along the Indian Ocean coast have yielded apparent ages as great as 4 billion years. The basement complex is unconformably overlain by the subhorizontal Gondwana sequence of Devonian-Jurassic age.

West Antarctica is a younger region that makes up a segment of the Circum-Pacific mobile belt. Definite Precambrian rocks are known from only one locality, and the ice sheet-bedrock contact is below sea level throughout much of West Antarctica. Sedimentary rocks, mainly or entirely of Phanerozoic age, crop out extensively in the Antarctic Peninsula, the Ellsworth Mountains, and western Marie Byrd Land. Diverse Phanerozoic igneous and metamorphic rocks are widely distributed across West Antarctica, especially Mesozoic (Andean) intrusive bodies and Cenozoic volcanic rocks.
