

POLE POSITIONS

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Four corresponding poles may be distinguished in the Arctic and in the Antarctic. The geographic pair are fixed and conjugate by definition; those of inaccessibility are also defined by geography and thus invariable; the geomagnetic ones wander slightly, depending on solar influences; and the magnetic ones are in comparatively rapid movement and may migrate through many kilometres during a brief period.

ARCTIC

North Geographic Pole 90°N

A fixed location on the surface of the Arctic Ocean (690 km from the nearest land) which is the northern axis of rotation of the Earth. First seen by Roald Amundsen's expedition on 12 May 1926 from the airship *Norge*.

North Magnetic Pole 82°18'N, 113°24'W (January 2004)

A wandering location on the Earth's surface where conventional lines of magnetic force exit. The direction of the magnetic field is vertical, its strength is very variable. The north-seeking end of a compass needle, or any other magnet, is attracted towards this pole. It was first reached and determined by Captain James Ross on 1 June 1831 when it was on the Boothia Peninsula, a region with Eskimo inhabitants. Subsequently it has migrated north, currently it is in the Arctic Ocean to the north-west of Ellef Ringnes Island and moving about 40 km annually on a course of 340°.

North Geomagnetic Pole 78°30'N, 69°00'W

The north end of the axis of the geomagnetic field which surrounds the Earth and extends into space as the magnetosphere. This is where the electron flux from the sun is concentrated and thus the focus for an auroral arc, a stratospheric torus where the Aurora Borealis are concentrated approximately 23° around this pole. It was determined in 1956 during the International Geophysical Year; it is over north-west Greenland, a region with Eskimo inhabitants.

Northern Pole of Inaccessibility 84°03'N, 174°51'W

The location on the surface of the Arctic Ocean, which is most distant from, land; the most difficult location to attain, about 1100 km from any coast. First attained on 8 April 1941 by Ivan Cherevichnyy with aircraft from the Soviet Union.

ANTARCTIC

South Geographic Pole 90°S

A fixed location on the surface of the Antarctic ice sheet (elevation 2835 m, and 1270 km from the nearest coast) which is the southern axis of rotation of the Earth. First attained on 14 December 1911 by Roald Amundsen's expedition from Norway. Occupied by 'Amundsen-Scott', a United States scientific station, from 1956.

South Magnetic Pole 64°30'S, 138°14'E (January 2004)

A wandering location on the Earth's surface where conventional lines of magnetic force enter. The direction of the magnetic field is vertical its strength is very variable. The south-seeking end of a compass needle, or any other magnet, is attracted towards this pole. First attained during Ernest Shackleton's British Antarctic Expedition on 16 January 1909 when it was at 72°25'S, 155°16'E, well inland beyond the Transantarctic Mountains. Subsequently it has migrated north, currently it is in the Southern Ocean, off Terre Adélie, and is moving about 4 km annually on a course of 310°.

South Geomagnetic Pole 78°30'S, 111°00'E

The south end of the axis of the geomagnetic field, which surrounds the Earth and extends into space as the magnetosphere. This is where the electron flux from the sun is concentrated and thus the focus for an auroral arc, a stratospheric torus where the Aurora Australis are concentrated approximately 23° around this pole. First attained by a Soviet Antarctic expedition, led by Vyacheslav Averyanov, on 16 January 1957 when 'Vostok', a scientific station, was established.

Southern Pole of Inaccessibility 85°50'S, 65°47'E

The location on the surface of the Antarctic ice-sheet which is most distant from the ocean; the most difficult location to attain, about 1300 km from any coast. First attained on 13 December 1958 by a Soviet Antarctic Expedition, led by Yevgeniy Tolstikov, which established a temporary scientific station occupied during the 1958-59 austral summer.

Mutual Distances

Arctic Poles	Geographic	Magnetic	Geomagnetic	Inaccessibility
Geographic	-	856 km	1278 km	662 km
Magnetic	856 km	-	893 km	901 km
Geomagnetic	1278 km	893 km	-	1589 km
Inaccessibility	662 km	901 km	1589 km	-
Antarctic Poles				
Geographic	-	2834 km	1278 km	467 km
Magnetic	2834 km	-	1788 km	2997 km
Geomagnetic	1278 km	1788 km	-	1006 km
Inaccessibility	467 km	2997 km	1006 km	-