

Planet Earth

Part 2



(image by
NASA/NOAA)

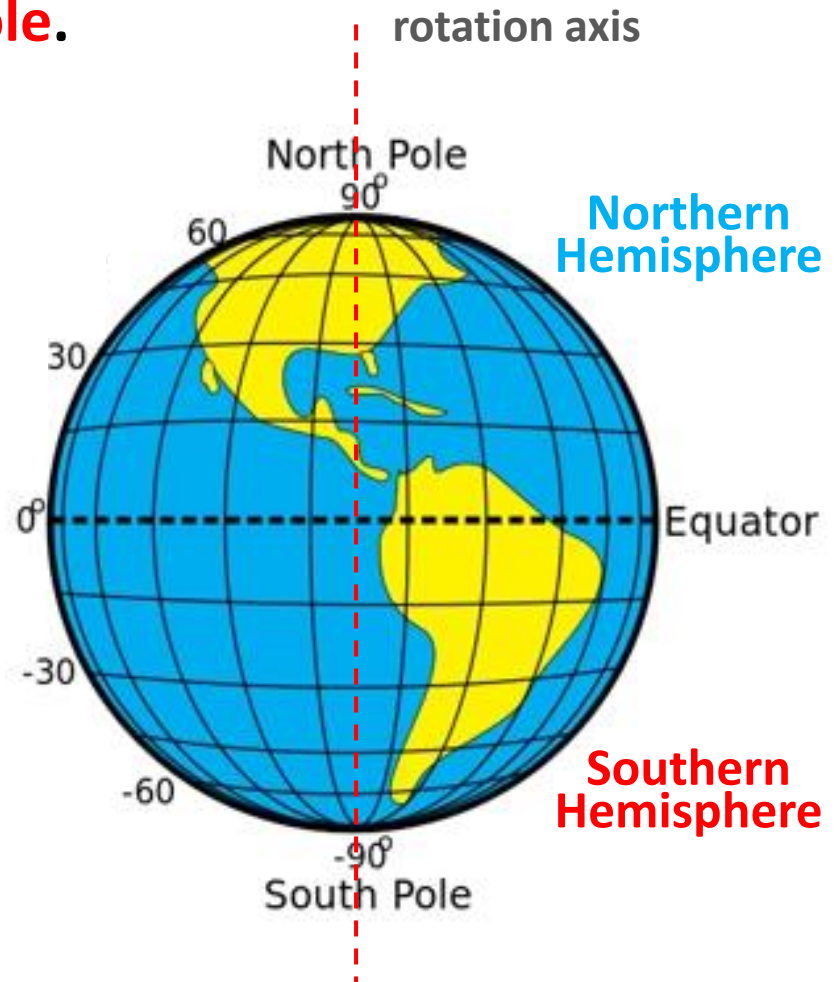
Earth and Moon from a million miles out

Captured by Deep Space Climate Observatory (DSCOVR) satellite

Earth's Axis, Poles and Equator

Our planet Earth spins around on an imaginary line running through it. This line is called the Earth's axis. The two points where axis meets the surface are called the **Geographic North Pole** and the **Geographic South Pole**.

- The area around the North Pole is called the **Arctic**, while the area around the South Pole is called the **Antarctic**.
- The **Equator** is an imaginary line on the Earth's surface which is at equal distance from the North Pole and South Pole. It is about 40,075 km (24,901 mi) long; 78.7% is across water and 21.3% is over land.
- The Equator divides Earth into the **Northern Hemisphere** and **Southern Hemisphere**.



North Pole vs South Pole

Arctic	Antarctic
What kind	of surface?
How much ice	does it have?
How much oil	does it store?
How	cold?
Unique	fauna?

?



?

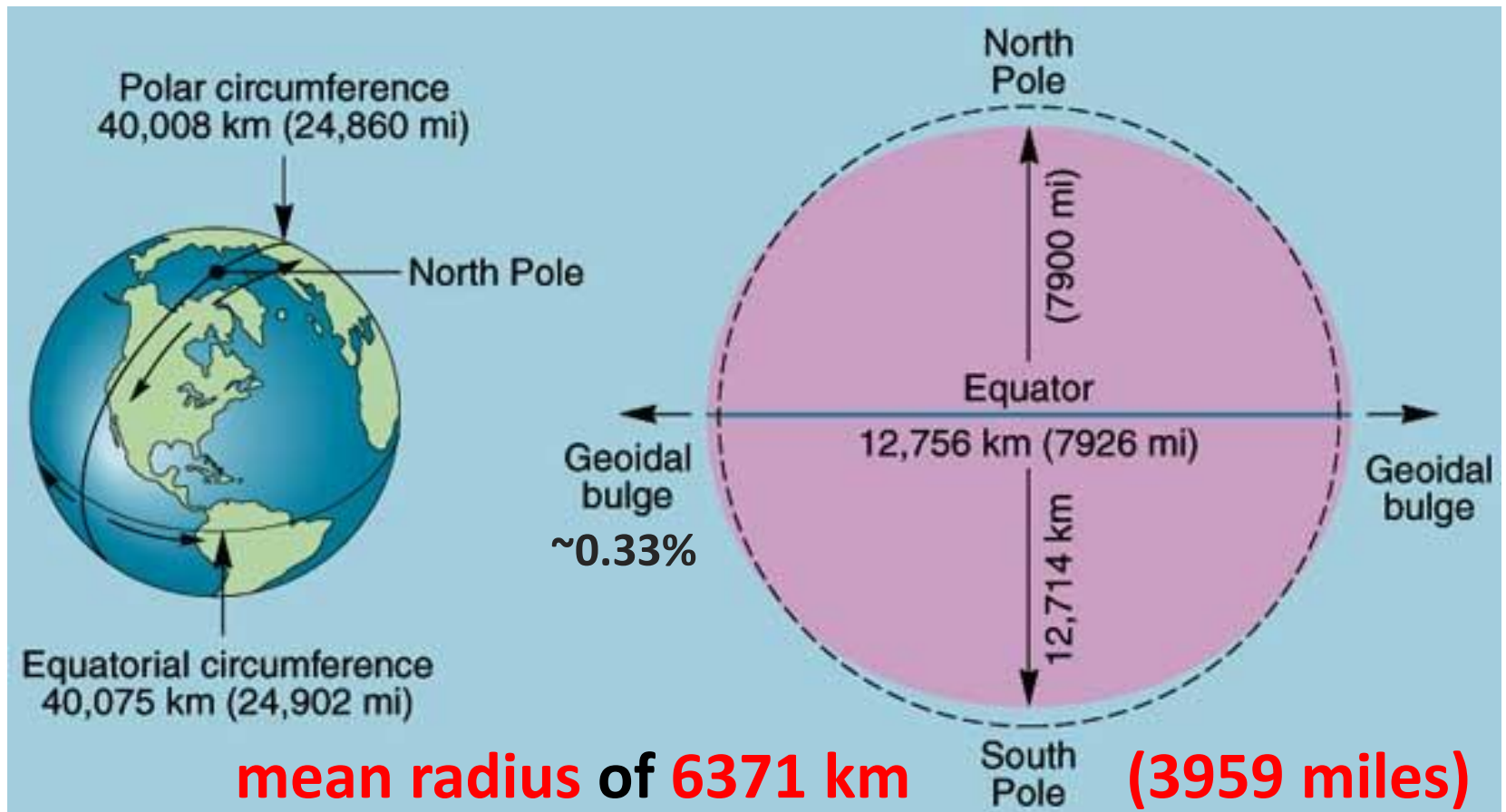
North Pole vs South Pole

Arctic	Antarctic
Basically is a frozen ocean	Continent
<i>A little bit</i> of ice	90% of all ice on Earth!
Half of the world's remaining oil deposits	No (confirmed) oil deposits; drilling/mining banned
Temperature from 0°C to -49°C	Temperature from -25°C to -72°C
Polar bears	Penguins



Earth Shape: Oblate Spheroid

which is a sphere (very) slightly flattened along the axis from pole to pole such that there is a *bulge* around the middle resulting from the planet's rotation.



Can YOU see the Curve?

All aboard the **International Space Station!**



254 miles orbit height

<https://apod.nasa.gov/apod/ap130331.html>

View of the Earth from the Moon

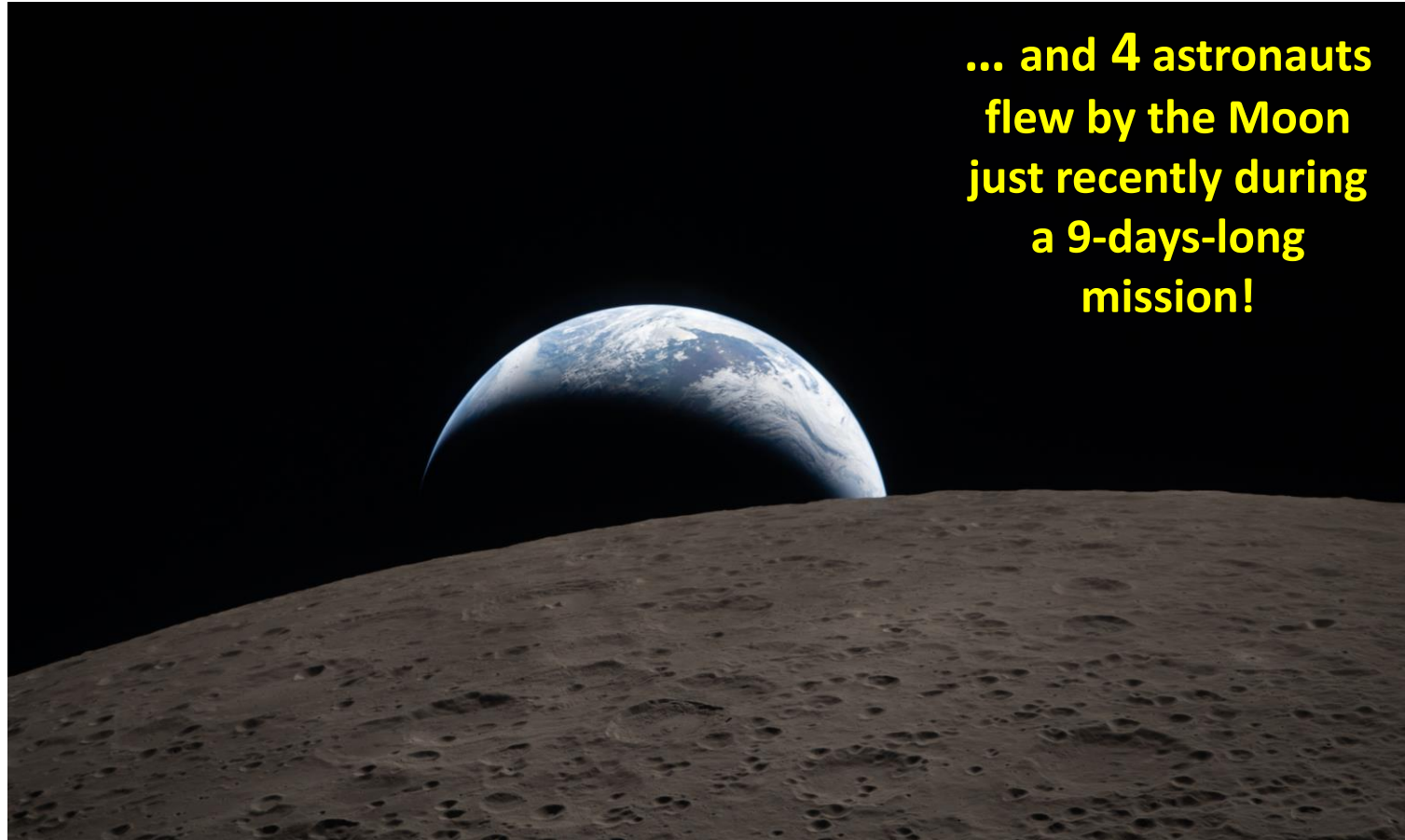
(distance: 238,900 miles)



View from the Apollo 11 spacecraft, captured on July 20, 1969

(A newer) View of the Earth

Artemis II mission - Flyby of the Moon

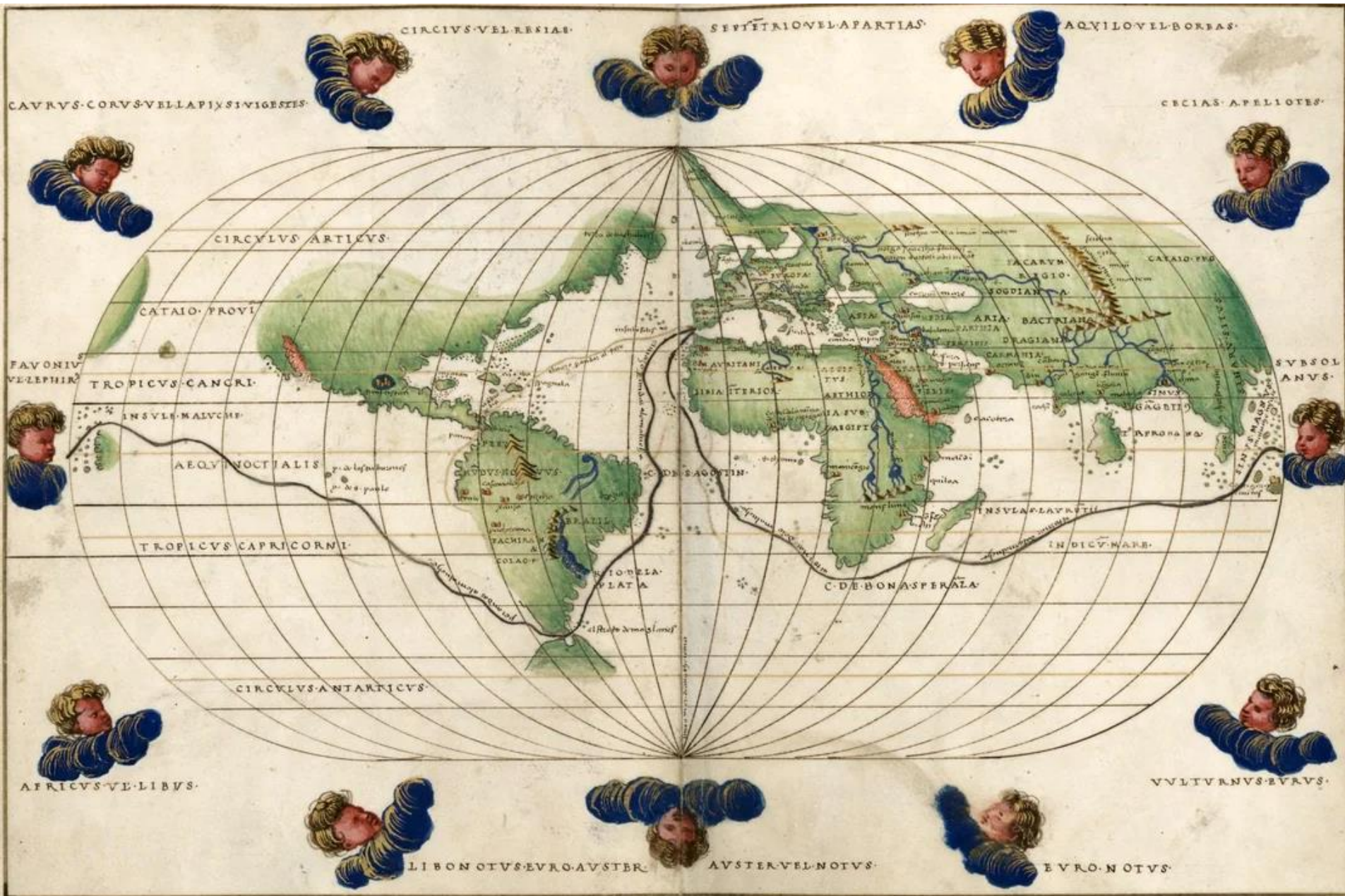


View from the Orion spacecraft, captured on April 6, 2026

Ferdinand Magellan (1480-1521)

led the 1st expedition around the world that **proved** that Earth can be *circumnavigated*.

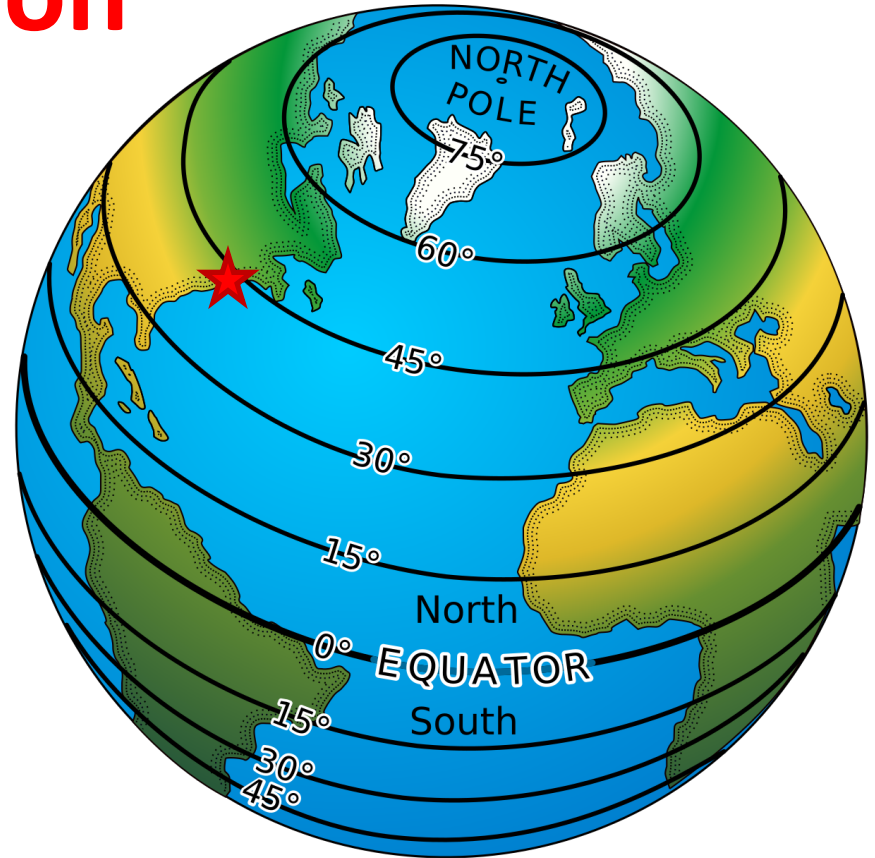




Portolan Atlas by Battista Agnese, c. 1544

Homework Solution

- One degree of latitude corresponds to 69 miles (or 111 km)
- **Stony Brook** latitude is approximately 41°N



Therefore, Stony Brook is located

$41 \times 69 = 2829$ miles or $41 \times 111 = 4551$ km

North of the Equator