



Longitude and latitude are **imaginary** lines that **circle** the Earth. They are used to **exactly pinpoint** where a person or object is **located**. These lines are on maps and **measured in degrees**. Each degree is divided into 60 minutes, and each minute has 60 seconds.

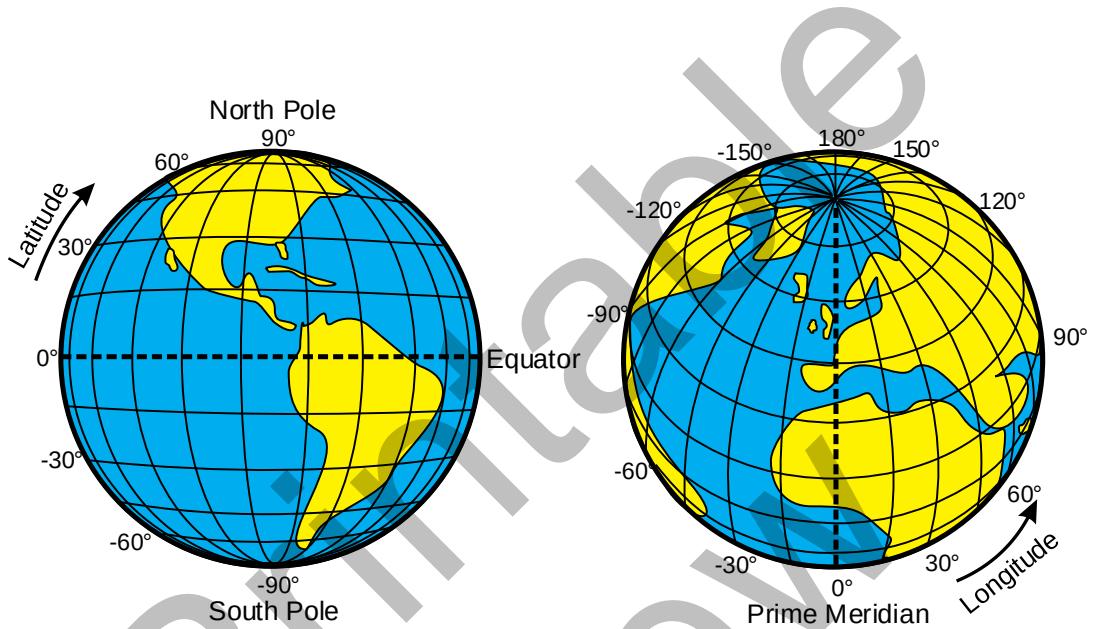


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Latitude

Latitude **describes** east-west lines that circle the Earth parallel to the equator. Any point along the equator has a latitude of 0° . While the equator is the longest of these lines, they become shorter the **farther** you move to the poles, which have a latitude of 90° . The **equator divides** the earth into a northern and southern **hemisphere**. Each degree has the same **distance, roughly 69 miles (111 km)**.

On its way around the sun, the Earth **tilts** its **axis** towards and away from it. This is the reason for special latitude lines.

- Tropic of Cancer ($23\frac{1}{2}^\circ$ north of the equator) – the sun appears directly overhead in June.
- Tropic of Capricorn ($23\frac{1}{2}^\circ$ south of the equator) – the sun appears directly overhead in December.
- Arctic Circle ($66\frac{1}{2}^\circ$ north of the equator) – the sun is constantly above the horizon in June. Daylight lasts for 24 hours .
- Antarctic Circle ($66\frac{1}{2}^\circ$ south of the equator) - the sun is constantly above the horizon in December. Daylight lasts for 24 hours.

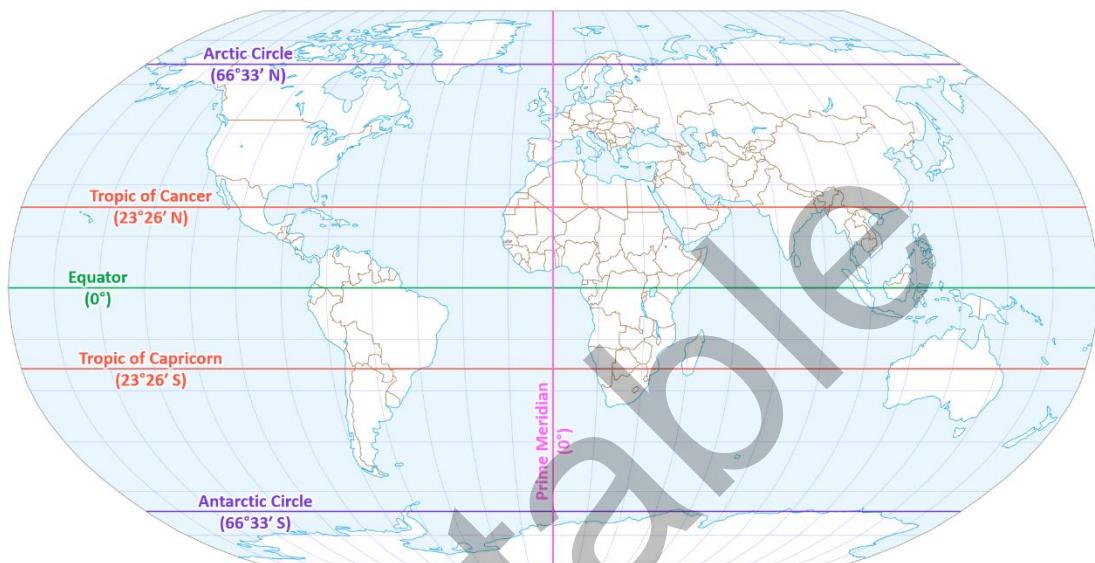


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Longitude

Longitude, or meridians, are lines that run from north to south across the **globe**. The starting point for this system (0°) is the British Royal **Observatory** at Greenwich, England. This **prime meridian** was chosen at a time when England was **dominant** in making maps and **navigating**.

Locations west of this line have a longitude of up to 179° west; those to the east have a longitude of up to 179° east. The 180th meridian is **exactly** on the **opposite** side of the globe, in the middle of the Pacific Ocean. It is also called the **International Date Line**. Travelers who travel westwards across the dateline change to the following day .

The **distance** between each **degree** of longitude **varies**. It is largest at the equator (69 miles) and shortest at the poles (0 miles), where the lines come together .

Coordinates

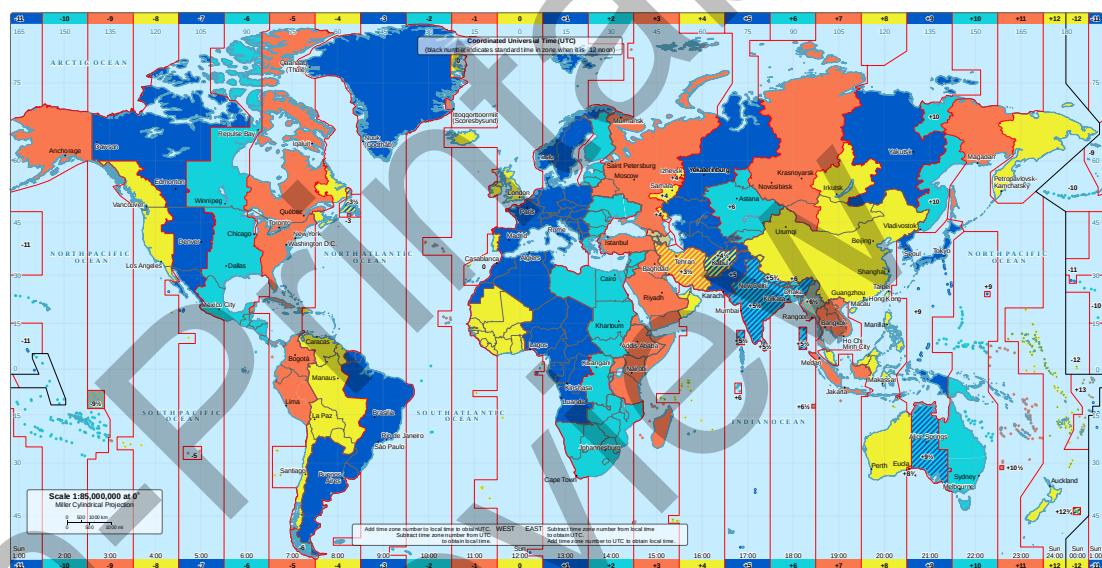
Coordinates are numbers that **locate** a certain point on this system. New York, for example, lies at 41° North and 74° West. While **navigators** in the Middle Ages and during the **Age of Exploration** used **sextants** and stars to **determine** their location, we use satellites and **GPS** to **pinpoint** our exact location anywhere on Earth.



Time Zones

Because the Earth **rotates** around its **axis** once a day, it is **divided** into 24 different time zones. UTC (*Coordinated Universal Time*) is the world's standard of time. It shows the time along the Earth's prime meridian. **Theoretically**, every 15° east or west of Greenwich means one hour more or less. **In practice, however**, time zones do not go through the middle of countries.

Larger countries that **span** thousands of km, for example Russia or the United States, have **several** time zones. On the other hand, the Chinese Communists changed to one time zone when **they took** over after World War II.



Time zones of the world

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Daylight Saving Time

Daylight saving time is the **practice** of moving clocks forward by one hour in the spring and back one hour in autumn. The main **goal** is to have more daylight in the summer months when people spend more time outdoors. It was first **introduced** by Germany and Austria during World War I, to save coal and **electricity**.

Today, daylight saving time is much discussed because energy savings seem to be very small.

Daylight saving time is **mainly** used in Europe and North America, as well as the southern parts of Australia. Most countries near the **equator** don't use daylight saving time because day and night don't change much during the year.