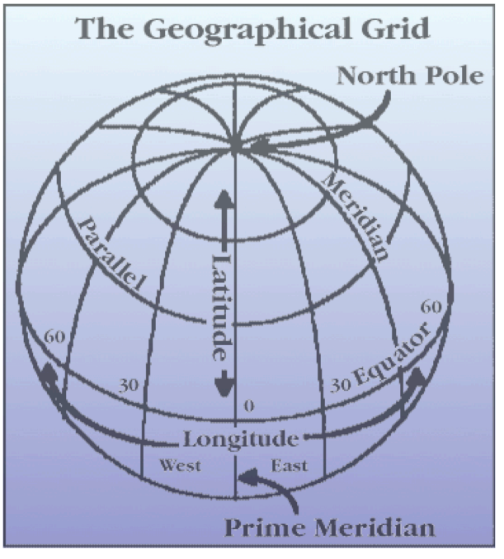
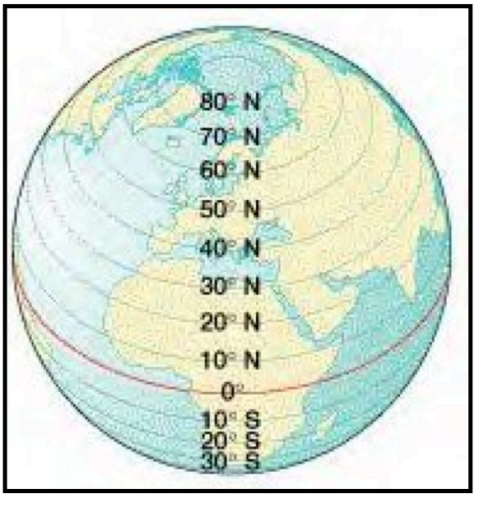
Latitude and Longitude



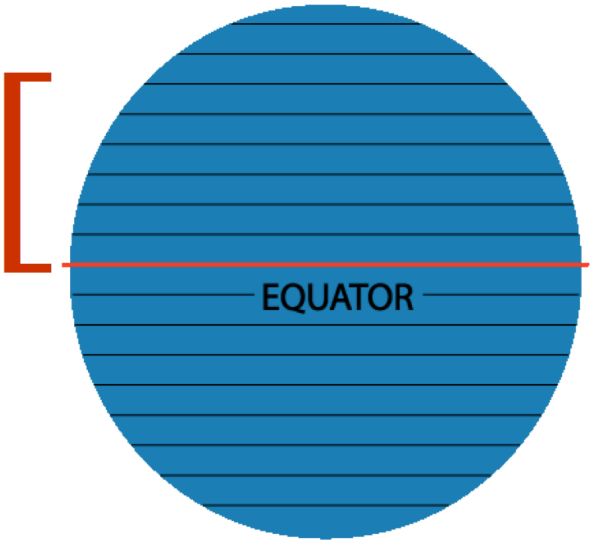
Latitude lines run east/west but they measure north or south of the equator (0°) splitting the earth into the Northern Hemisphere and Southern Hemisphere.



Latitude

North Pole

Lines of latitude are numbered from 0° at the equator to 90° N.L. at the North Pole.



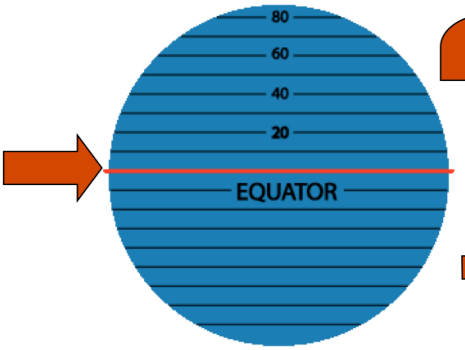
Lines of latitude are numbered from 0° at the equator to 90° S.L. at the South Pole.

South Pole

Latitude

The North Pole is at 90° N

The equator is at 0° latitude. It is neither north nor south. It is at the center between north and south.



40° N is the 40° line of latitude north of the equator.

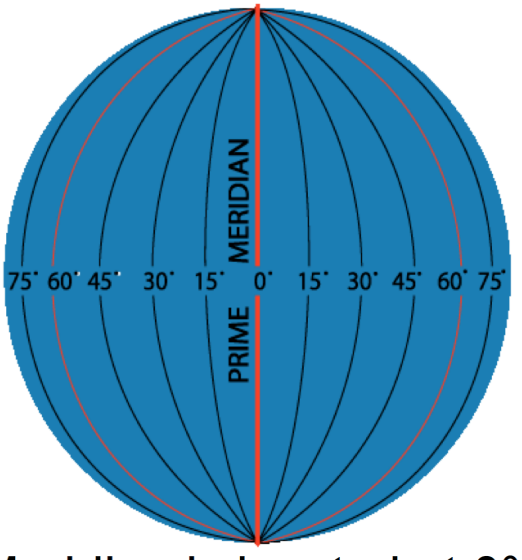
40° S is the 40° line of latitude south of the equator.

The South Pole is at 90° S

Longitude

Lines of longitude begin at the Prime Meridian.

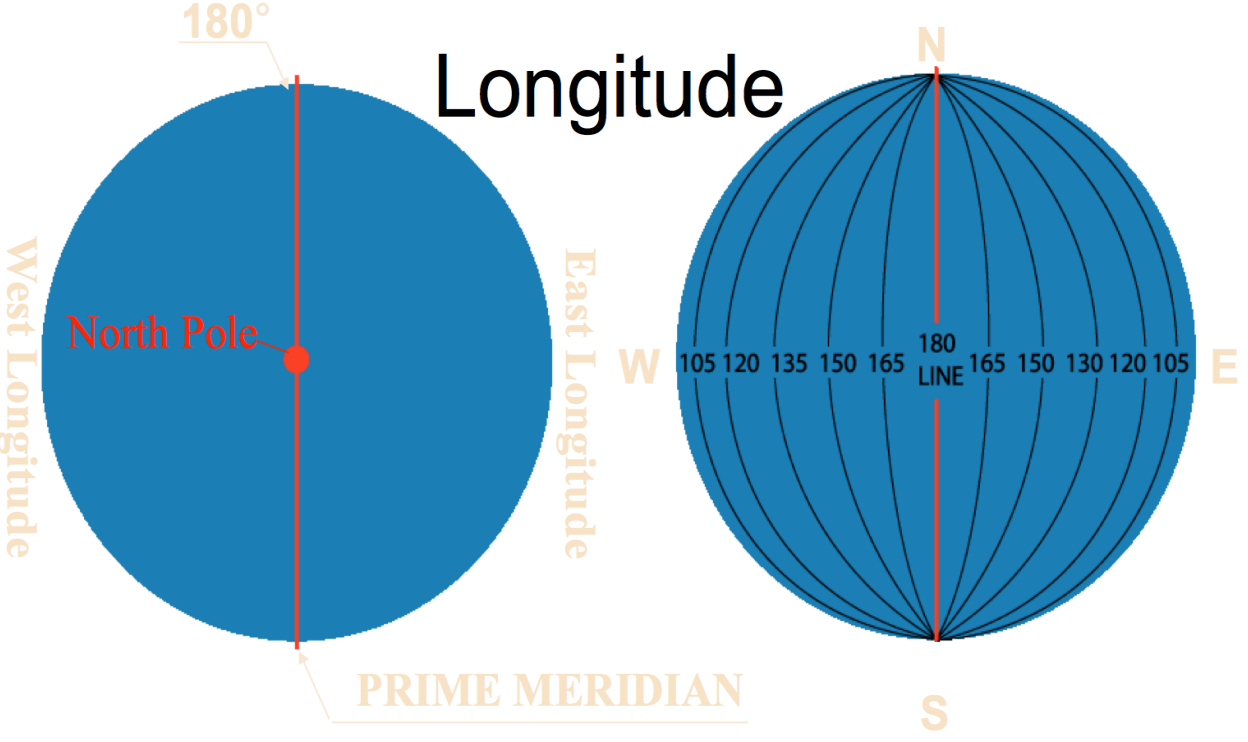
60° W is the 60° line of longitude west of the Prime Meridian.



60° E is the 60° line of longitude east of the Prime Meridian.

The Prime Meridian is located at 0°. It is neither east or west

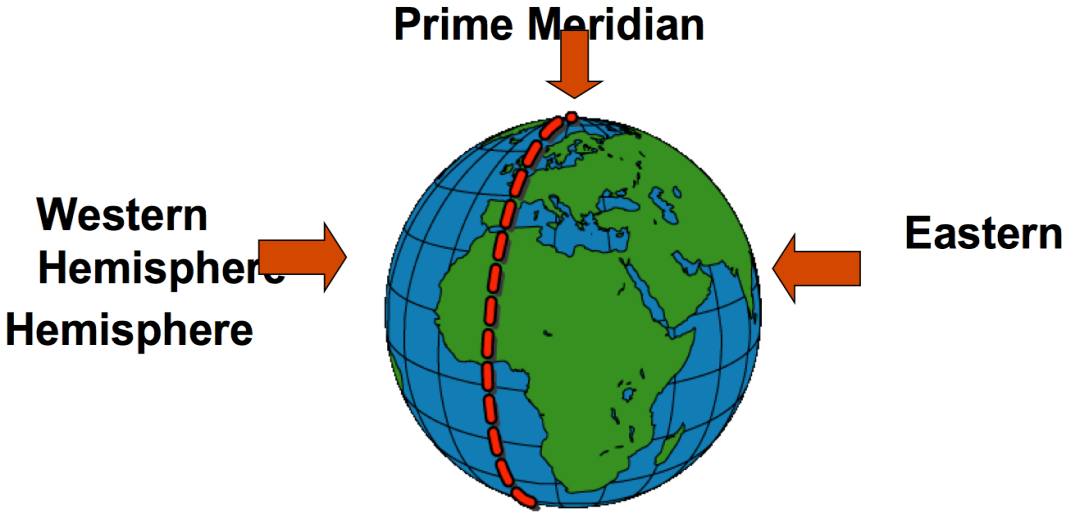
Longitude



Lines of longitude are numbered east from the Prime Meridian to the 180° line and west from the Prime Meridian to the 180° line.

Prime Meridian

The Prime Meridian (0°) and the 180° line split the earth into the Western Hemisphere and Eastern Hemisphere.

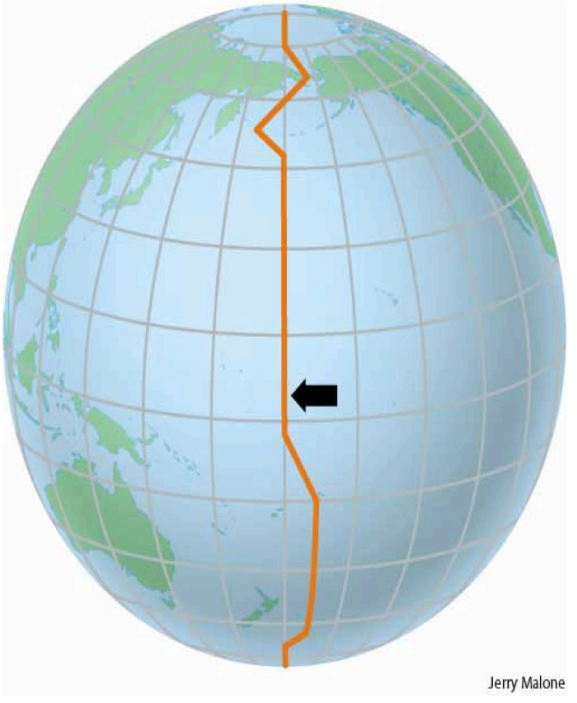


Places located east of the Prime Meridian have an east longitude (E) address. Places located west of the Prime Meridian have a west longitude (W) address.

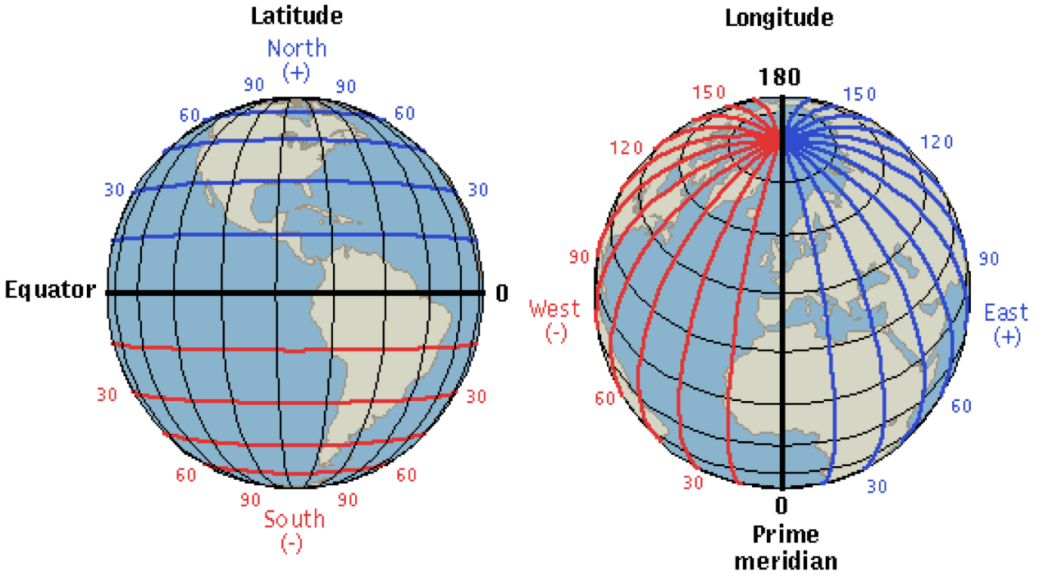
INTERNATIONAL DATE LINE 180°

- **SEPARATES 2 CALENDAR DAYS.**

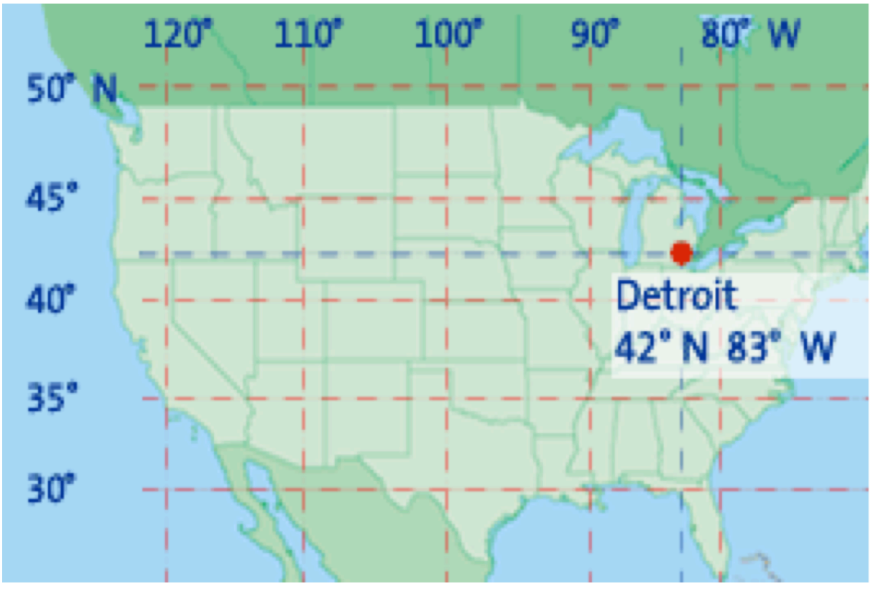
America to Asia – gain a day
Asia to America – lose a day



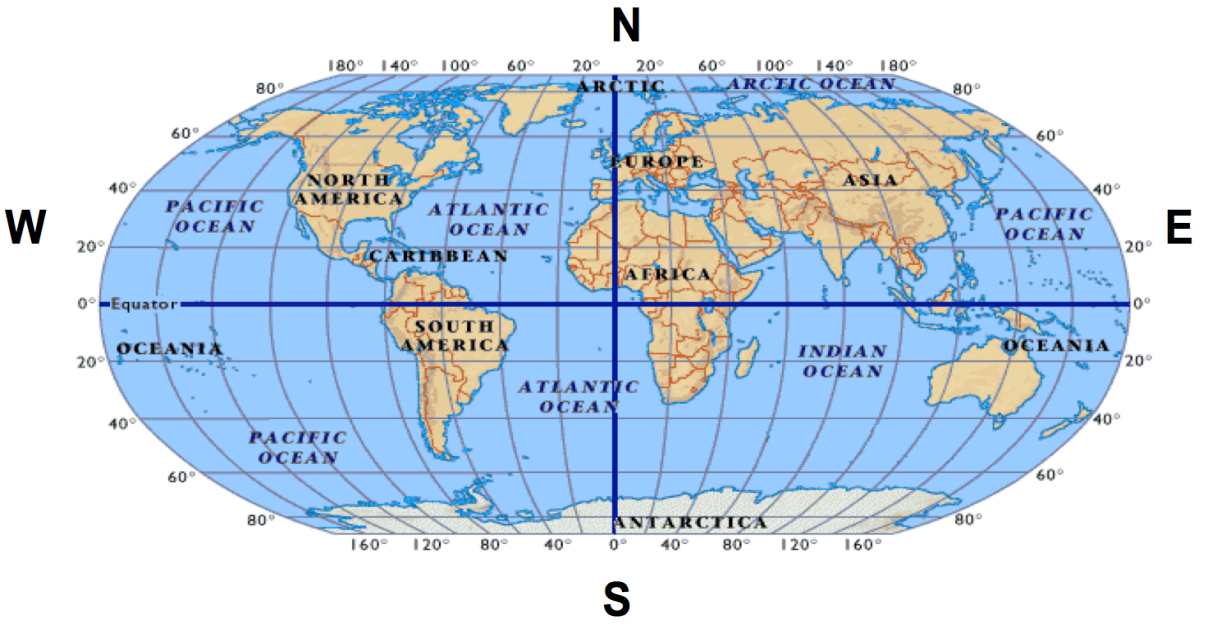
By combining latitude and longitude, any location can be pinpointed



A location's coordinates
(____° N or S, ____ ° E or W)



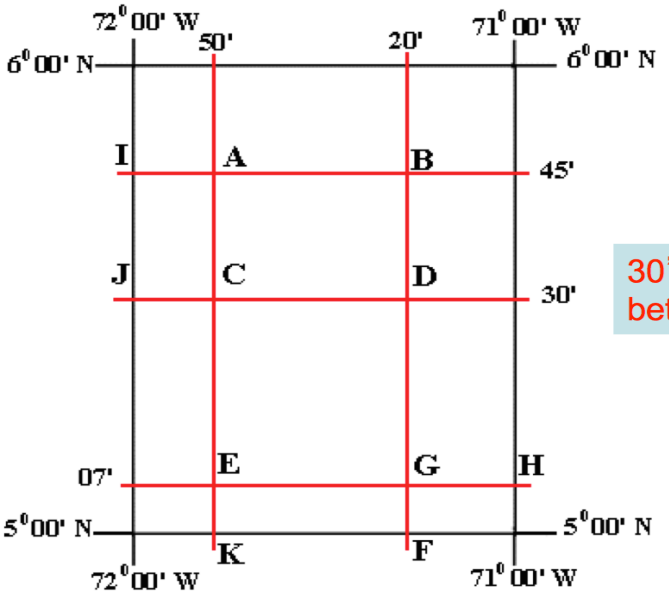
Application



North America is in the Northern Hemisphere because it is north of the Equator. North America is in the Western Hemisphere because it is west of the Prime Meridian.

Fractions of a Degree

- 1 degree = 60 minutes or 1 minute is 1/60th of a degree
- Use minutes if location is not directly on the latitude/longitude line
- Written ----- Degree/minute = XX° xx’ compass direction



30’ is half-way between degrees

LONGITUDE AND TIME

- The world rotates (spins) 360° in 24 hours.

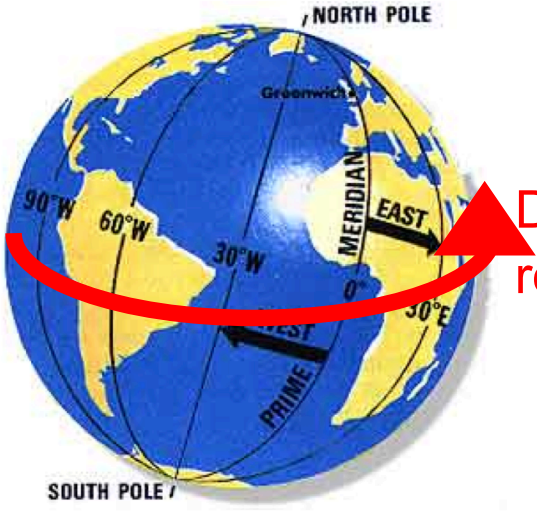
  360° / 24 hours = 15° per hour

- The world has 24 time zones, each l5° apart.

THERE IS A 1 HOUR TIME DIFFERENCE FOR EVERY 15° OF LONGITUDE

Greenwich, England is the logical starting point for time zones

- The world rotates west to east (counterclockwise), time zones to the east are ahead of the those time zones to the west



Direction of rotation/spinning

ANOTHER CHEESY SAYING

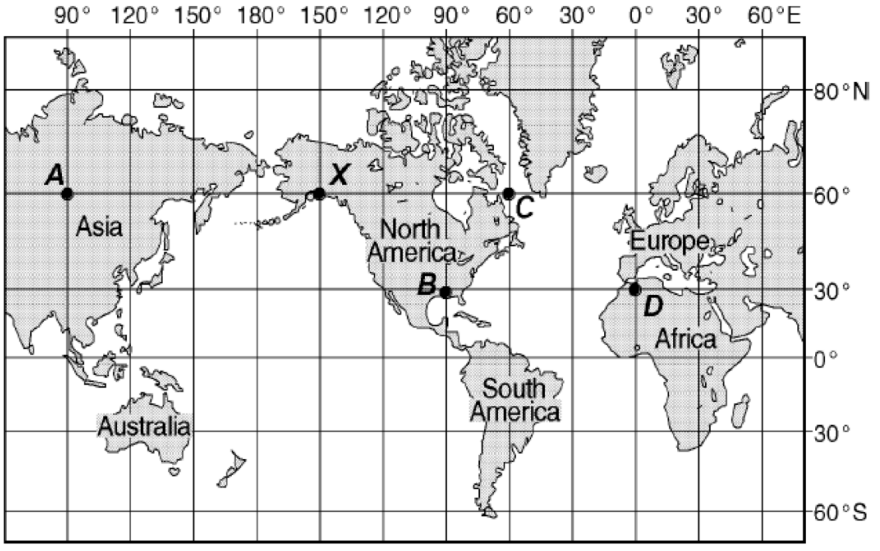
- **EAST INCREASE**

  Time is forward to all places to the east

- **WEST LESS**

  Time is backward to all places to the west

East Increase – West Less
(1 hr per l5°)

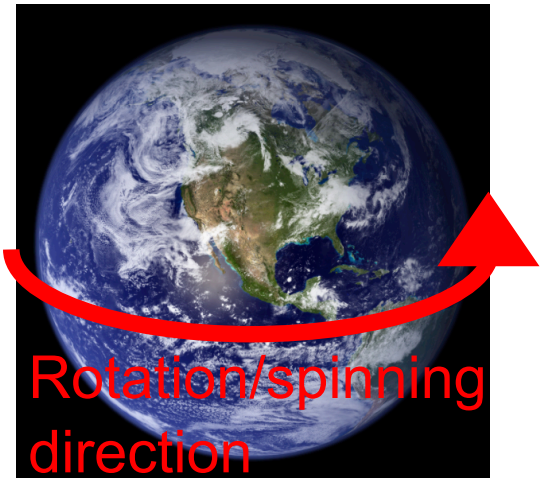


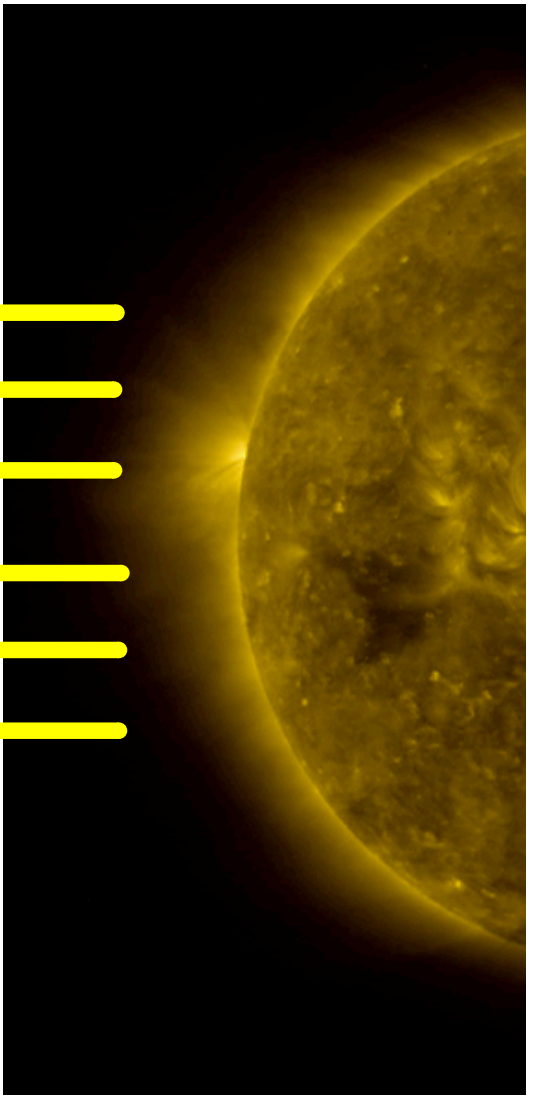
If it 9 p.m. at Position D, what time is it at position C? Position B?

If it is 1 p.m. at Position X, at which location is the time 5 p.m.

Earth rotates west to east
Solar time is based on the position of the sun

Sunlight will hit the eastern surface first





*please note that this diagram is not to scale.