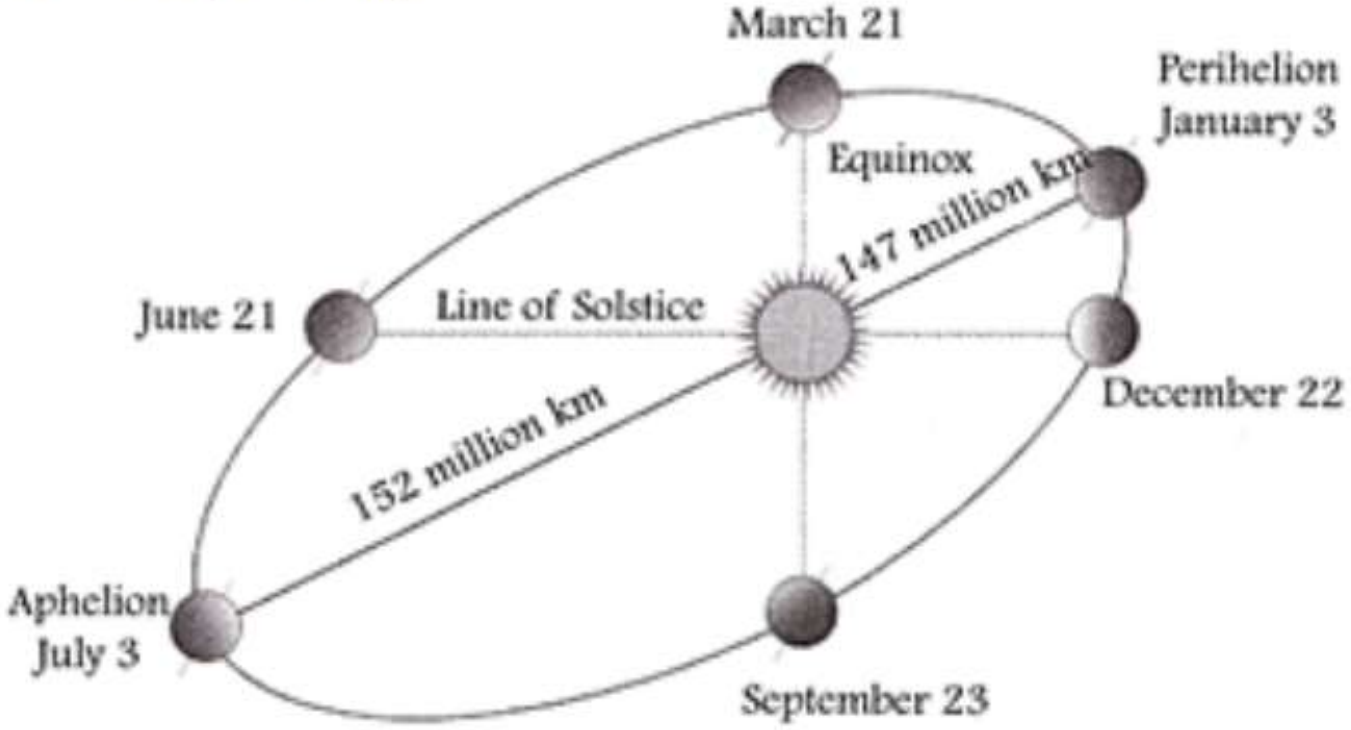
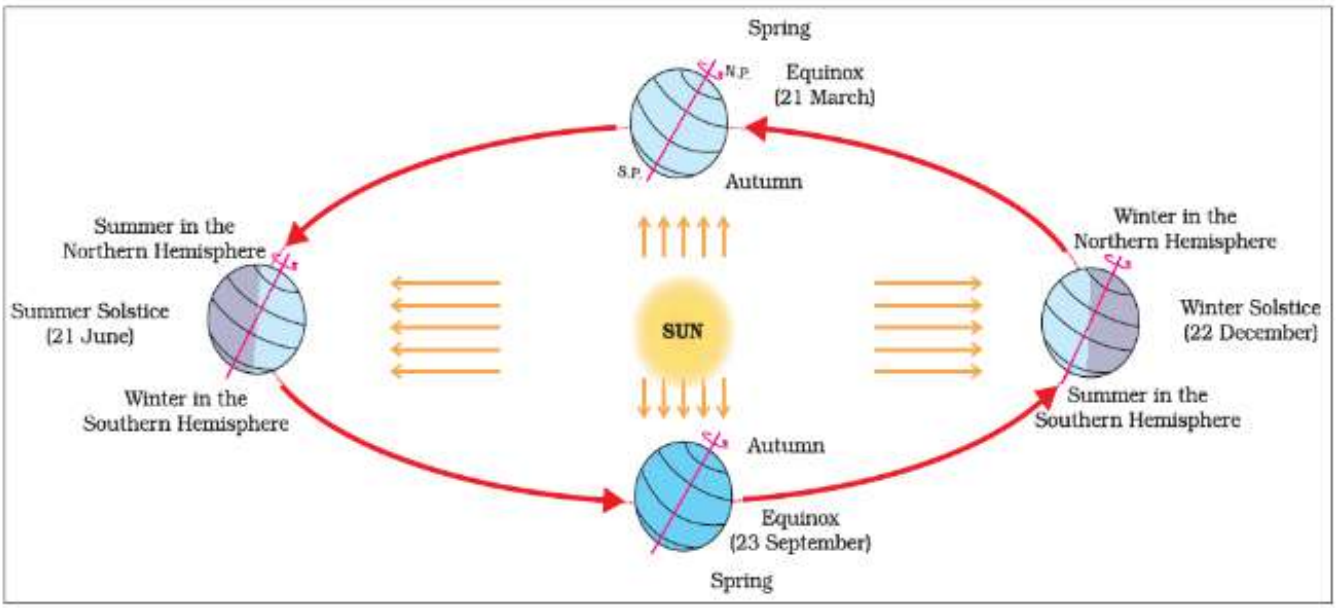
Geography Class 03

A BRIEF RECAP OF THE TOPICS DISCUSSED IN THE PREVIOUS CLASS. (09:07 AM)

SEASONS (09:22 AM)



The elliptical orbit of the earth causes Aphelion and Perihelion



- Seasons are the distinct period of the year characterized by specific weather patterns.
- There are four seasons **Spring, Summer, Autumn, and Winter**.
- Seasons are observed on the Earth because the Earth revolves around the Sun with a **tilted axis of rotation** whose **angle of inclination with respect to the Orbital plane** is always constant.
- The change in seasons is mainly due to **variation in the length of the day**, and **variation in the intensity of sunlight due to changing angle of incidence of Sunlight**.
- The regions receiving higher intensity of sunlight for longer duration experience summer and those receiving lower intensity of sunlight for the shorter duration experience winter.

Solstice

SUMMER SOLSTICE (10:18 AM)

- **June 21st** is the summer solstice.
- The sun's rays **fall vertically at the tropics of cancer**.
- **Northern Hemisphere** receives **higher intensity of sunlight**.
- The length of the day increases from the equator to the north pole.

WINTER SOLSTICE (10:21 AM)

- On the **22nd of December**, Sun Rays fall **vertically at the tropic of Capricorn** (23.5° South).
- The Sun rays fall **vertically at the tropic of Capricorn**.
- Northern Hemisphere receives lower intensity of sunlight.
- The length of the day decreases from the equator to the north pole.

EQUINOX (10:23 AM)

- 21st **March** Spring and **23rd September** Autumn.
- The sun's rays fall **vertically at the equator.**
- Both the Northern and Southern hemispheres receive moderate intensity of sunlight.
- The length of the day is the same across all the latitudes.

- **Circle of Illumination**

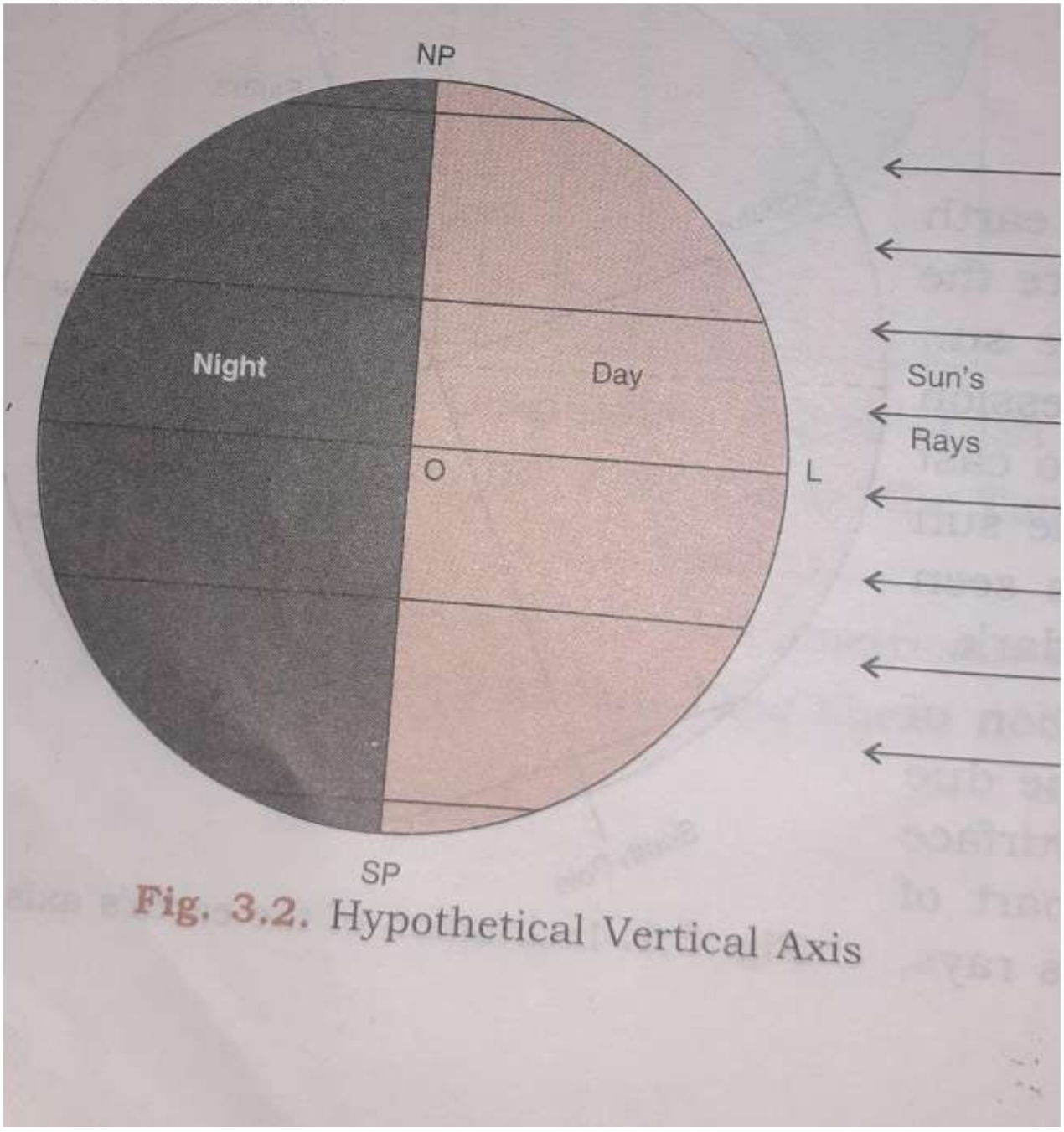
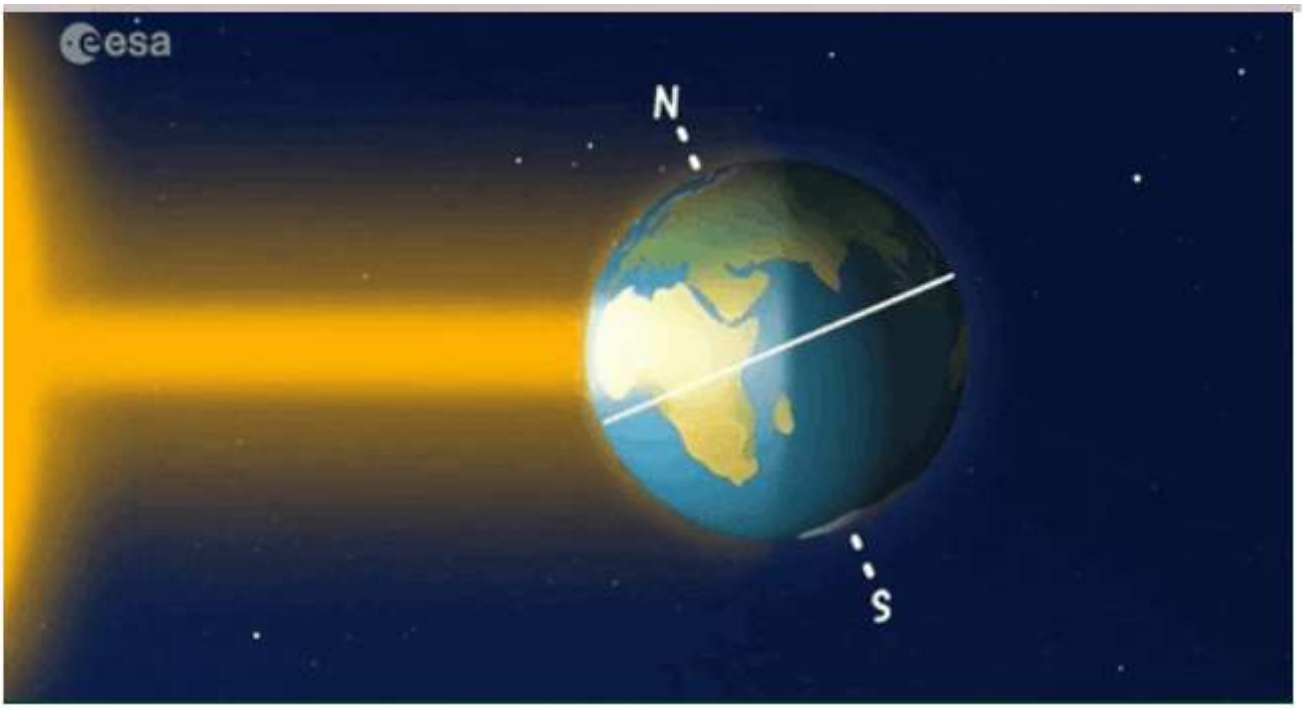


Fig. 3.2. Hypothetical Vertical Axis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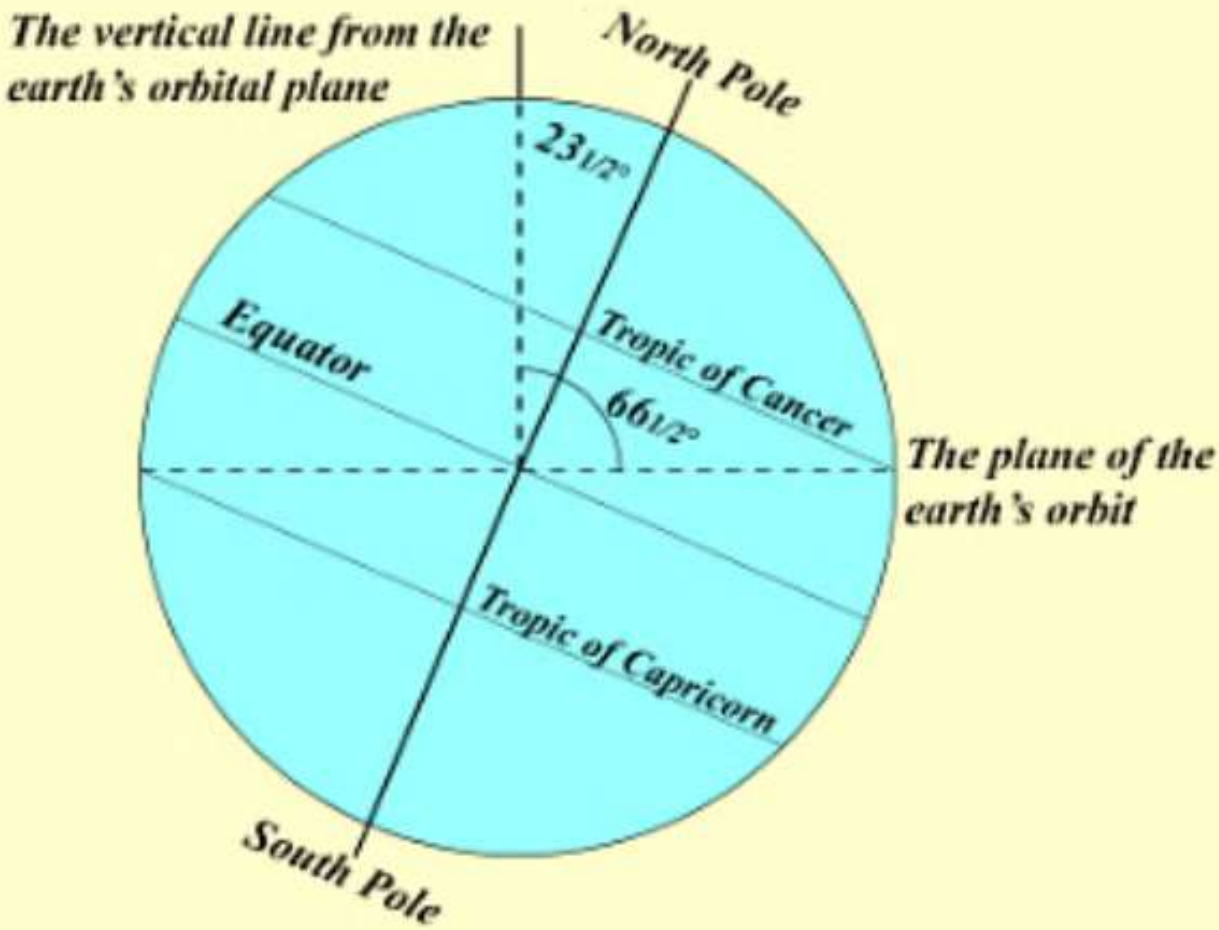

Inclination of the earth's Axis

EARTH SUN RELATION (10:26 AM)

		Intensity (Angle of Incidence of sun rays)	**Length of the day**	**Circle of illuminati circle of r**
Case 1	No Rotation No Tilt No Revolution	90° at equator to 0° at pole	24 hours days in a half sphere 24 hours a night in half sphere	The circle illuminatio circle of ro the same.
Case 2	Rotation	90° at equator to 0° at pole	12 hours Days 12 hours Night	

Dashboard
Live Class
Classes
Ancient and Medieval History
Answer Writing
Basic Sciences
Disaster Management
Ecology and Environment
Economics
Ethics
Geography
History of Modern India
How to read newspaper
Indian Art and Culture
International Relation (IR)
Interview
Introduction to the course
Miscellaneous

VIDEO SELF TEST ASSIGNMENT TALK TO EXPERT FEEDBACK

Inclination of the earth's Axis

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		Intensity (Angle of Incidence of sun rays)	Length of the day	Circle of illuminati circle of r
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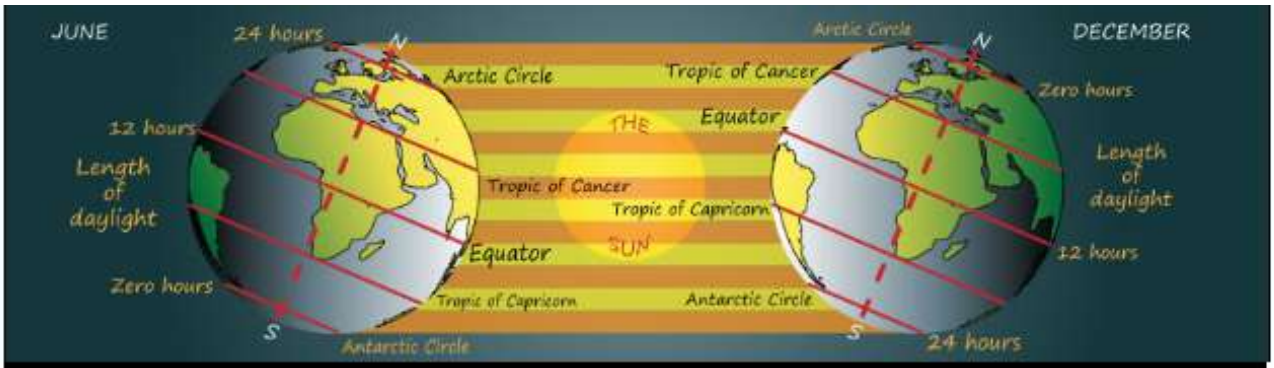
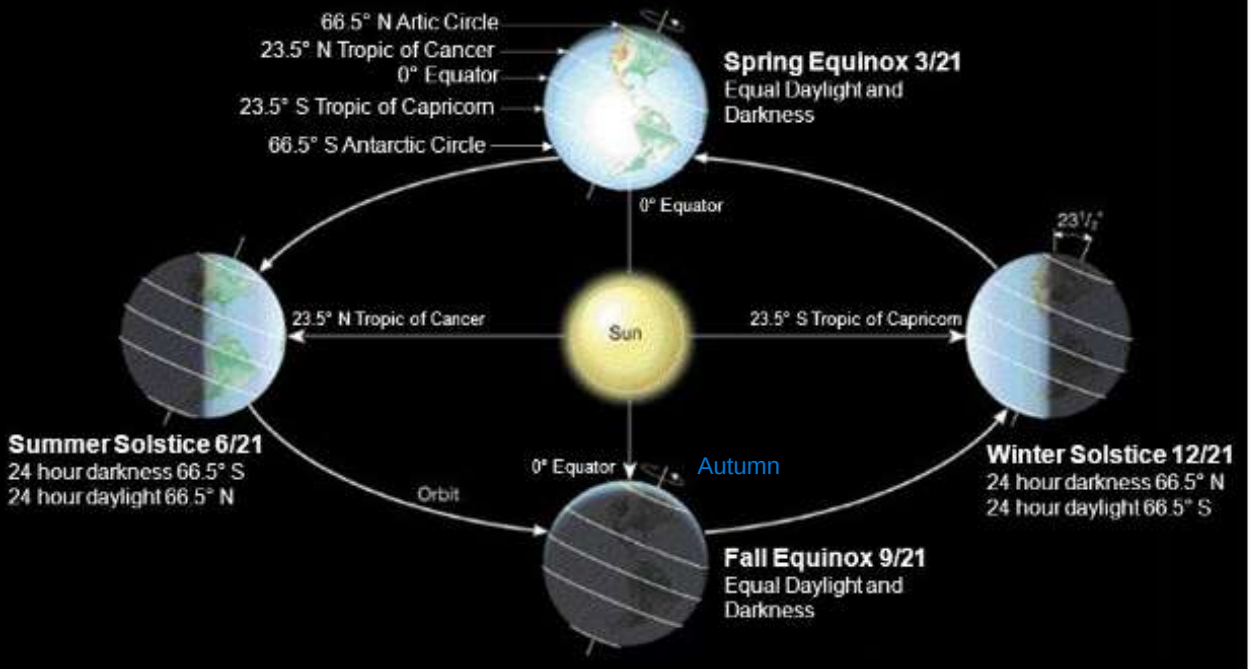
Case 2	Rotation	90° at equator to 0° at pole	12 hours Days 12 hours Night	

Case 3	Rotation Tilt	The intensity of light will be maximum at 23.5° North. 90° at the tropic of the cancer and intensity decreases in the northern part. The southern hemisphere gets low intensity.	12 hours days and nights at the equator. The length of the day increases from the equator to the pole in the northern Sphere. The length of days decreases from the equator to the southern hemisphere of the Earth.	The circle illuminatio circle of ro differs.
Case 4	Rotation Tilt Revolution	Opposite position after 6 months.	Opposite after 6 months.	

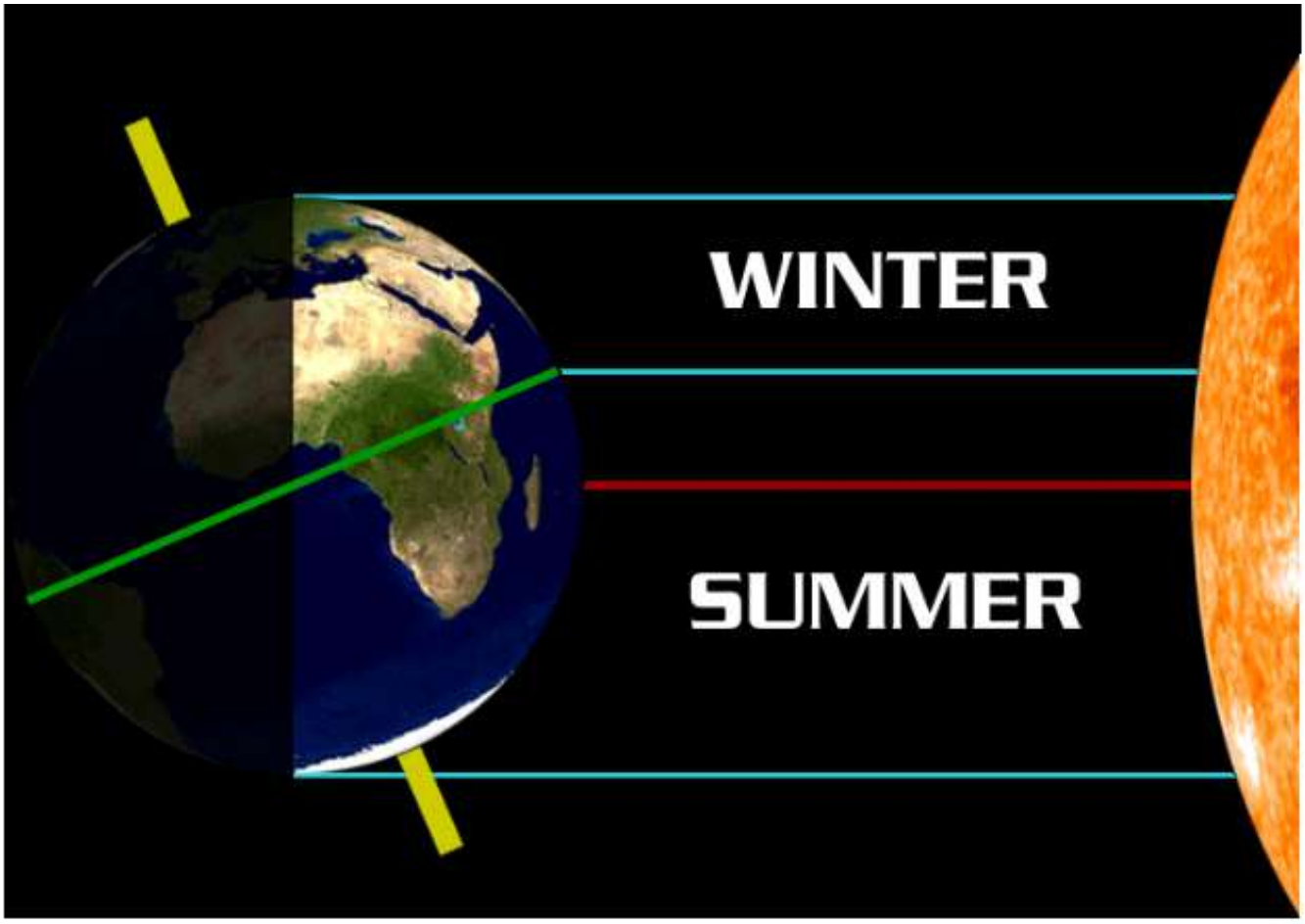


Earth Sun Relations

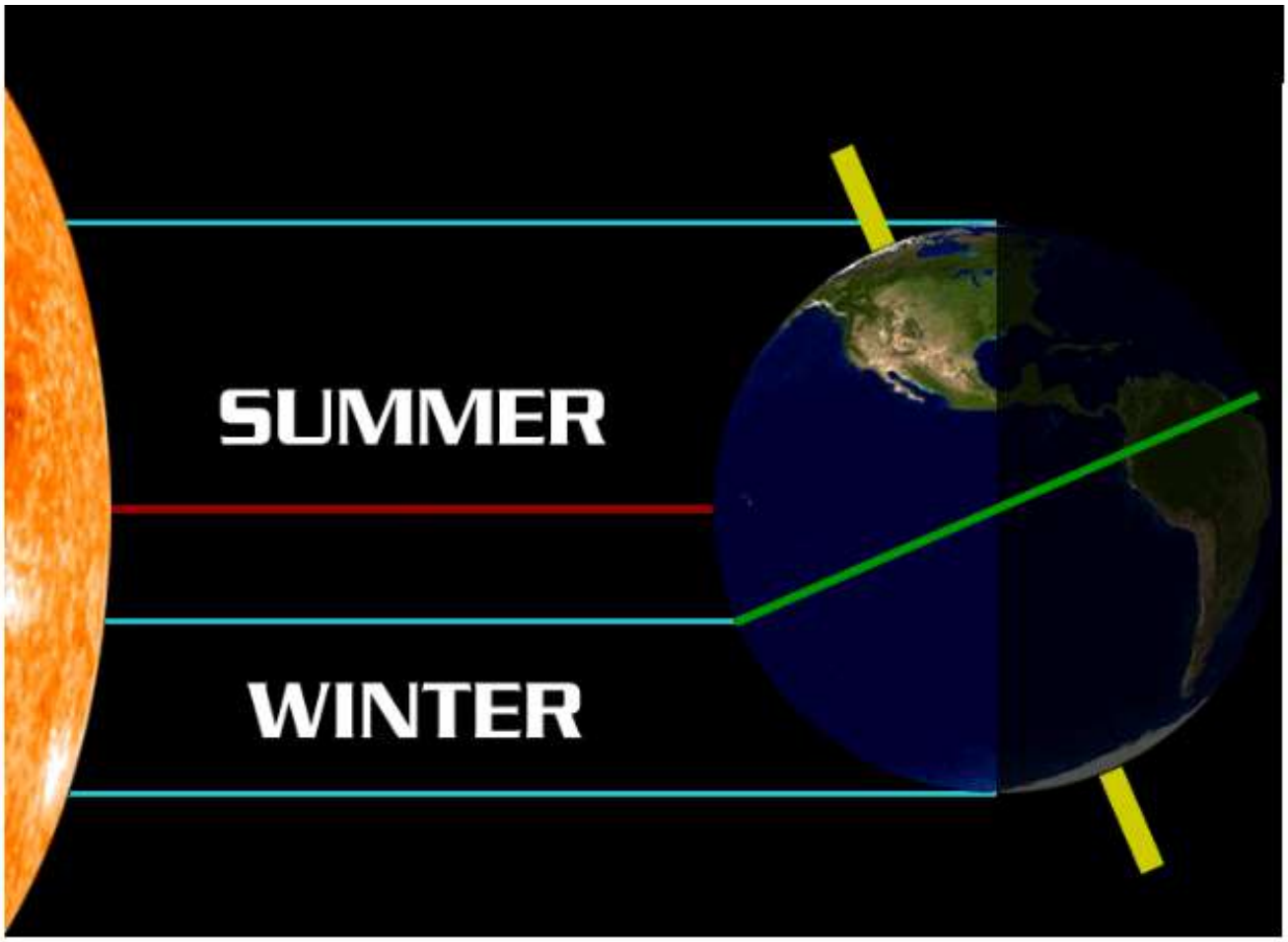
Here 12hrs of day and 12hrs of night



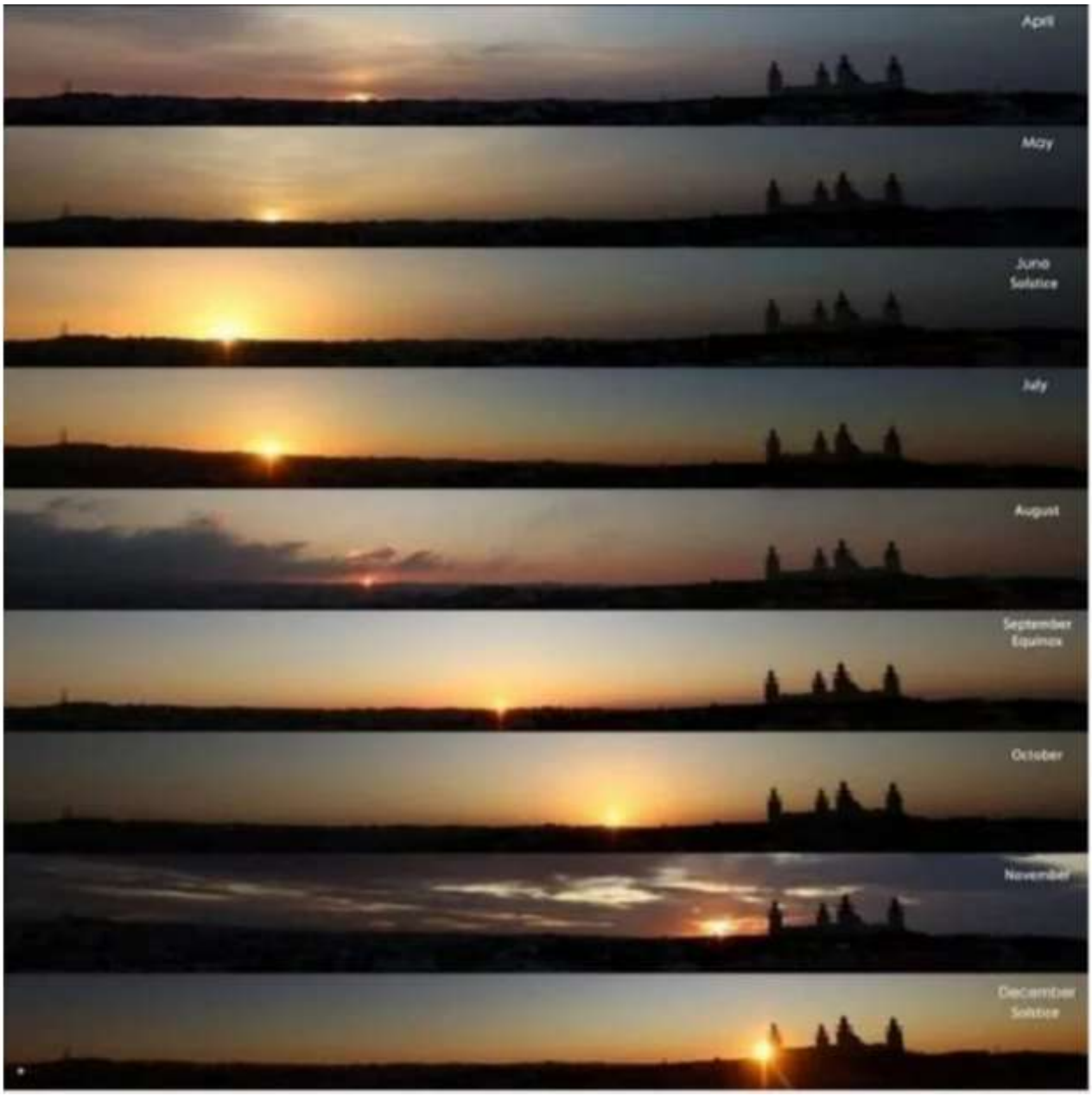
Here 12hrs of day and 12hrs of night



6 Months Later.....

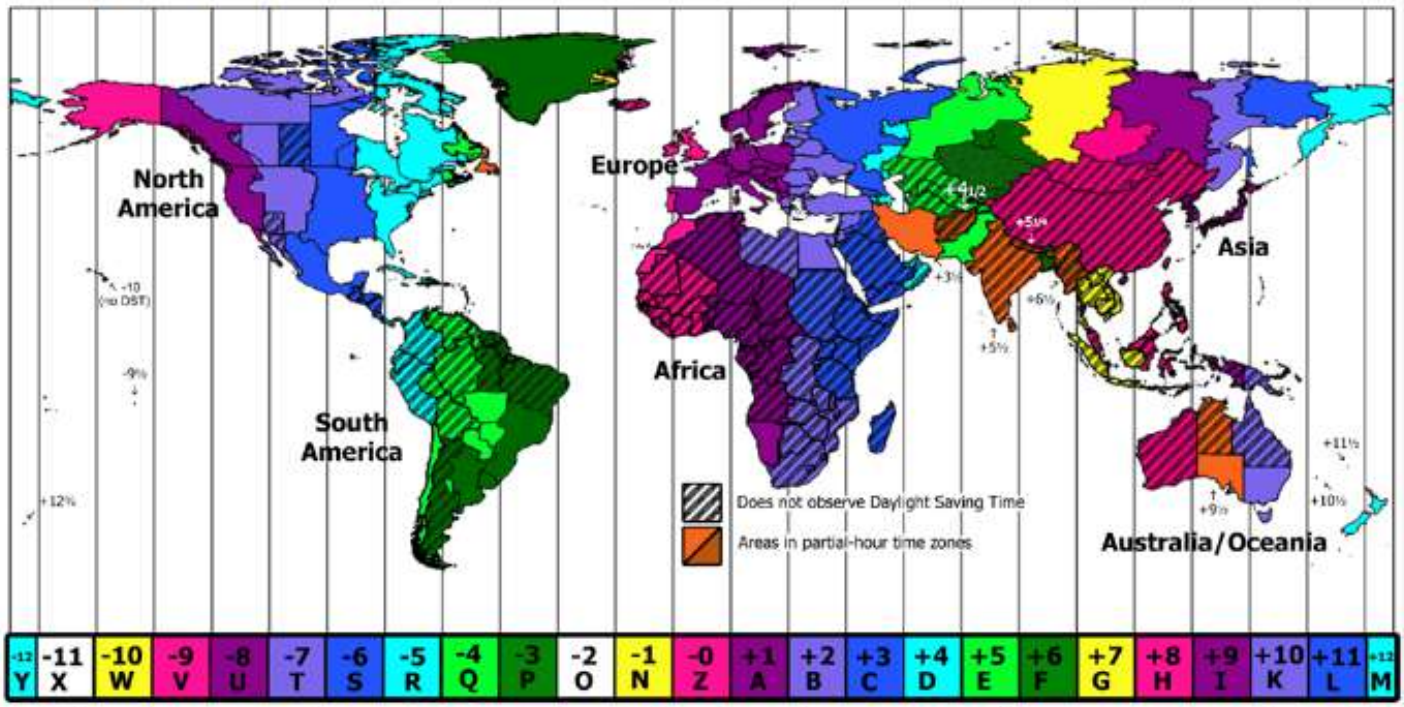

SUMMER
WINTER

THE POSITION OF THE OVERHEAD SUN (11:28 AM)


April
May
June
Solstice
July
August
September
Equinox
October
November
December
Solstice

- **Position of Overhead Sun:** The overhead sun is always observed between 23.5° North and South.
- Every location between the tropic of Cancer and Capricorn experiences **two days of overhead sun in a year**.
- Those beyond the tropics never receive overhead sun.
- **Polar Days and Polar Night**
- The regions **receiving 24 hours of daylight** extend from 90° North and South to an optimum of 66.5° North and South.
- These regions experience **mid-Night sun**.
- They are tilted towards the sun.

TIME ZONE (11:49 AM)



- The time zone is a region of the globe that observes uniform standard time. The entire is divided into **24 time zones** (which means it rotates 15 degrees per hour) with **Greenwich Meridian** as the **standard reference**.

- **The time along a particular longitude always remains constant.**
- From the Greenwich meridian towards the east time increases (**East Gain Addition** (EGA)), and towards the west time decreases (W**est Lose Subtraction** (WLS)).
- With a change of every 15° time changes by 60 minutes.
- India follows **82.5° East Meridian** as the standard time zone.

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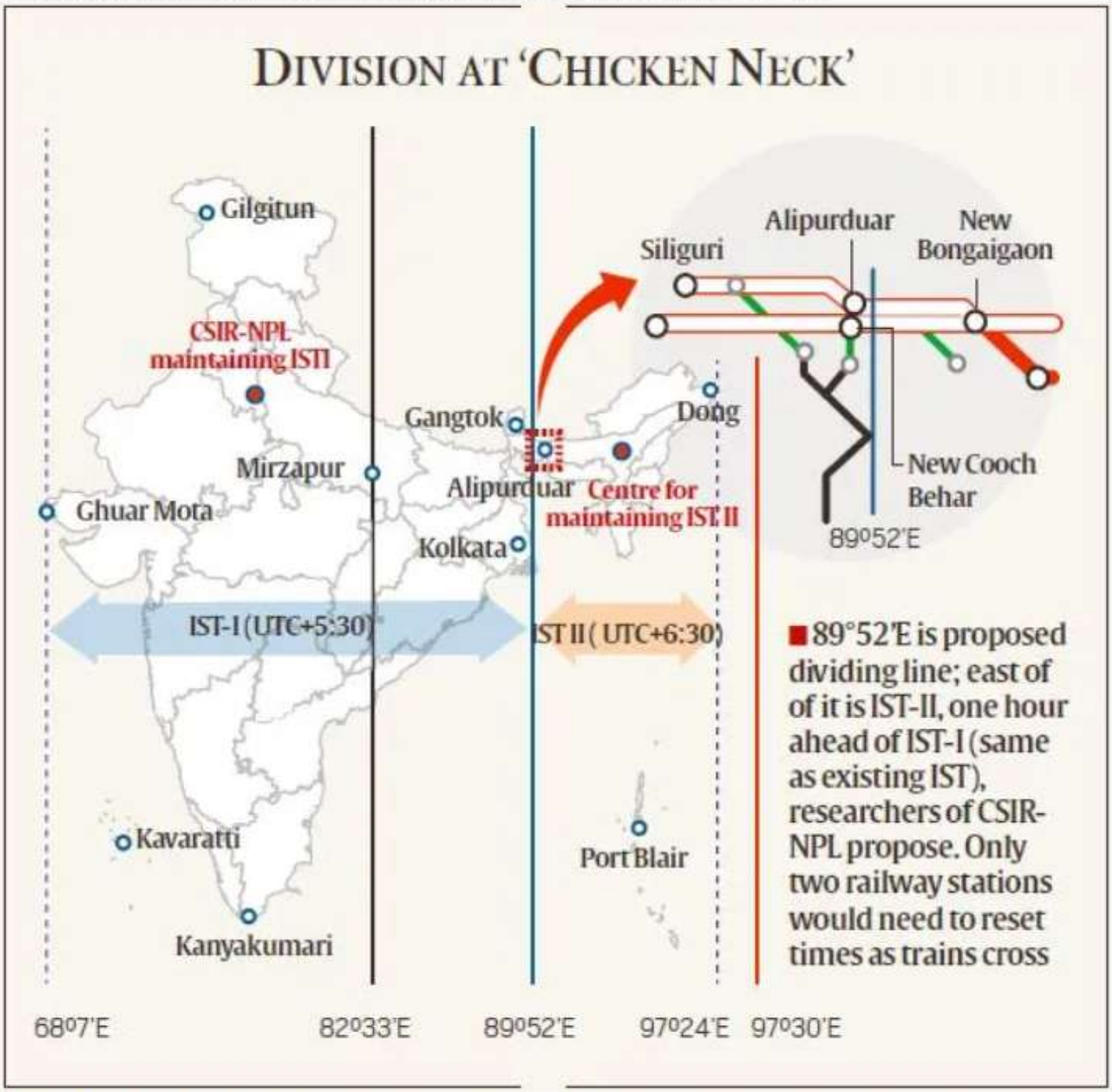

The topic for the next class discussion: Time zone system in India and the International Dateline, The origin of the Universe.