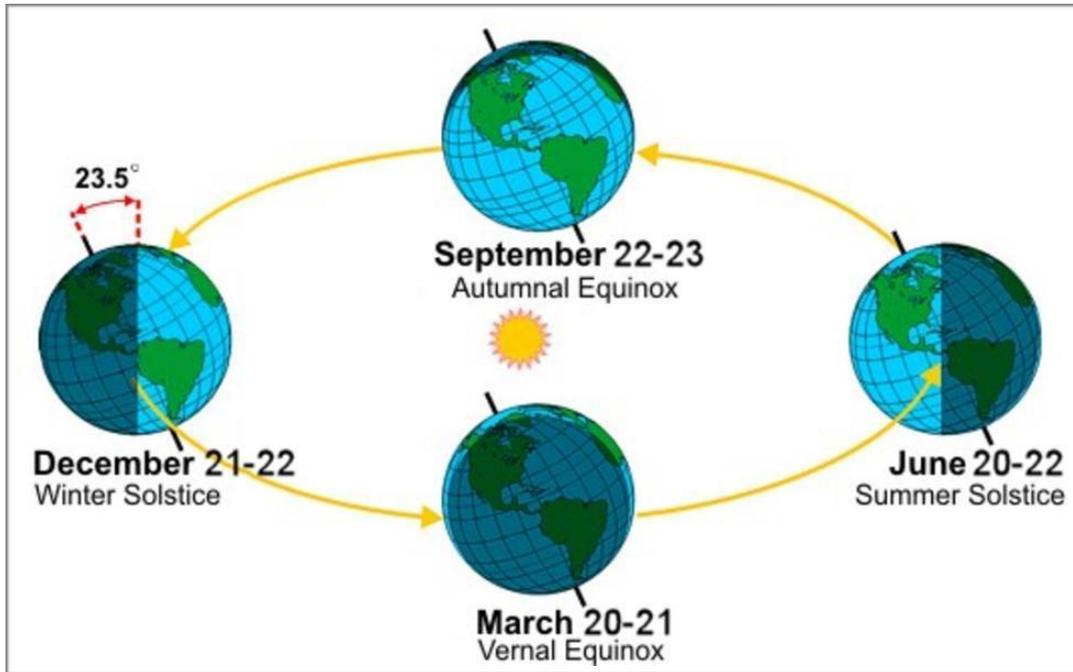




The Astrophile Newsletter

One Fond of Starlore: An Amateur Astronomer

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Winter Solstice on December 22 at 9:49 AM

The winter solstice is that day of the year when the Sun is exactly overhead on Tropic of Capricorn.

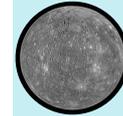
On December 22 at 9:49 AM IST, the Sun will be at it shining exactly overhead on at Latitude 23.5 degree south. This is referred as Winter Solstice in Northern Hemisphere while Summer Solstice in Southern Hemisphere. This also marks the shortest day of the year for northern while longest day in the southern hemisphere. Also the latitude 66.5 degree north will see NO SUN for just one day.

This day also marks the northward motion of Sun which signifies ending of winters in the northern hemisphere while beginning of winters in southern hemisphere as the temperatures likely to roll back. The change is caused due to the tilt of the Earth's axis combined with its revolution around the Sun. This also signifies the change of season on Earth.

Moon phases and dates

Important phases and dates for Moon to plan your observation

04/12/19	First Quarter	12:28
12/12/19	Full Moon	10:42
19/12/19	Third Quarter	10:27
26/12/19	New Moon	10:43



Mercury

Mercury will be visible about an hour before the sunrise this month. The planet will be rising closer with the Sun and hence time for observation will be reduced. The planet is not advised to be seen with telescopes.



Venus

Venus is shining bright in the evening skies this month and will be setting late as the month progresses. Venus will be resolved in a small telescope and the phases can be seen just like the Moon..



Jupiter

Jupiter will not be visible in December. The planet will re appear in the morning skies in the month of February when we can enjoy the views.



Saturn

Saturn will be visible in the early part of the night, setting 1-2 hours after sunset and visible in South west in the evening hours. The rings of planet are visible and one can enjoy the soothing blue colour of the planet in an amateur telescope.

Geminid Meteor Shower with 93% Moon



The Geminids are a prolific meteor shower caused by the object 3200 Phaethon, which is thought to be a Palladian asteroid with a "rock comet" orbit. This would make the Geminids, together with the Quadrantids, the only major meteor showers not originating from a comet.

The night between 14-15 will be the best night to observe and one can expect a good turn out of fireballs in the sky. Although the meteors are very bright but the 93% bright Moon shall hinder your viewing of some faint meteors. Still 20-30 meteors per hour can be spotted starting from 10 PM on Dec. 14 with its peak around 2 am on Dec. 15th. Geminids will be originating from the constellation Gemini - the twins with its radiant located precisely South East of the second bright Star Castor in the sky.

ISRO launches Castrosat-3 and 13 other satellites



Indian Space Research Organisation, India's space agency launched the most complex and advanced Earth Observation Satellite Castrosat-3 onboard PSLV-C47 from Sriharikota on Nov. 27th, 2019 at 9:28 AM.

Cartosat-3 satellite is a third generation agile advanced satellite having high resolution imaging capability. Cartosat-3 will address the increased user's demands for large scale urban planning, rural resource and infrastructure development, coastal land use and land cover etc.

In this launch, ISRO also placed 13 commercial nano satellites and put them in their designated orbits successfully.

ANNULAR SOLAR ECLIPSE 2019

While the world is preparing for the transit of Mercury, India itself is gearing up for the next "Solar Eclipse". The second central eclipse of 2019 will be visible from the South Indian states of Karnataka, Kerala and Tamil Nadu. The eclipse will be starting about an hour after the Sunrise which offers surreal views of the eclipsing duo of Sun and Moon. The eclipse, annular in nature will show a larger Sun and smaller Moon which does not cover the entire Sun but will cover the central part of the Sun as it appears a "Ring of Fire" (more details: <https://astro-phile.com/2019/06/26/annular-solar-eclipse-of-2019/>).

An Annular Eclipse is caused when the Sun is closer to Earth or at Perihelion while the Moon is far away or at Apogee. The Sun appears slightly larger than its size while the moon appears smaller than usual. When the positions are reversed, we see Total Solar Eclipse where the Sun is smaller and the larger Moon covers the entire disk. Astrophile is conducting special workshops in few of the schools in certain schools where the annularity will be observed.

To find out if your school falls in the zone, visit: <https://astrophilecom.files.wordpress.com/2019/06/central-contact-timings-for-ase2019.pdf>

If not, find your location at <https://astrophilecom.files.wordpress.com/2019/06/contact-times-for-ase2019.pdf>

Feel free to contact us to organise the observation event in your school.

