



Sun, Planets and Transitions

The Sun transits from Aries, the Ram (*Mesha*) to Taurus, the Bull (*Vrushabha*) on 15 May. Its angular diameter will increase from 0°31'45.45" on 1 May to 0°31'33.38" on 31 May.

Mercury traverses Aries this month. It reappears above the eastern horizon at dawn. It climbs rapidly and is stationary on 14 May. On 17 May the thin lunar crescent, Jupiter and Mercury will be nearly in a line. The next day on 18 May, the almost 3% barely illuminated lunar crescent will be north of Mercury, whose magnitude will be 1.7.

Venus transits from Taurus to Gemini on 7 May. On 1 May it is less than 3° south of Elnath (*Agni*). It continues to climb above the western horizon but will now move southwards. On 23 May the Moon will be to its north. Venus will enter the Gateway of Heaven on 27 May and exit on 30 May.

Date	Mag	Phase	Phase angle	Elongation	Diameter	Light time
01	-4.1	0.666	70.6°	42.3°	16.96	8.18
10	-4.2	0.627	75.3°	43.6°	18.24"	7.61
20	-4.2	0.581	80.7°	44.6°	19.95"	6.95
30	-4.3	0.529	86.6°	45.3°	22.08"	6.28

Mars moves from Gemini, the Twins (*Mithuna*) to Cancer, the Crab (*Karka*) on 17 May. It enters the Gateway of Heaven on 5 May and exits on 10 May.

Jupiter transits from Pisces, the Fishes (*Meena*) to Aries, the Ram (*Mesha*) on 19 May. It will now be visible above the eastern horizon at dawn. It rises about 40 minutes before the Sun in the first week of May and

List of Events in May 2023

Dt	Dy	Time	Event
02	Tu	04:49	Mercury inferior conjunction
04	Th	09:48	Spica 2.9° S of Moon
05	Fr	03:27	Moon descending node
05	Fr	19:19	Eta Aquarid shower: ZHR = 60
05	Fr	22:53	Penumbral lunar eclipse
05	Fr	23:04	Full Moon
07	Su	18:05	Moon-Antares: 1.6° S
08	Mo	16:53	Mars-Pollux: 5° S
09	Tu	14:31	Moon south declination: 27.9° S
10	We	02:56	Uranus Conjunction
11	Th	10:27	Moon perigee: 369300 km
12	Fr	19:58	Last quarter
13	Sa	18:34	Moon-Saturn: 3.3° N
14	Su	12:12	Mercury stationary
15	Mo	08:40	Neptune 1.9° N of Moon
17	We	18:14	Mercury-Jupiter: 6.2° N
17	We	18:45	Moon-Jupiter: 0.8° S
18	Th	01:06	Moon ascending node
18	Th	07:04	Moon-Mercury: 3.8° S
18	Th	04:41	Uranus 1.7° S of Moon
19	Fr	21:23	New Moon, solar eclipse
22	Mo	19:38	Moon north declination: 27.9° N
23	Tu	17:38	Moon-Venus: 2.4° S
24	We	07:06	Moon-Pollux: 1.7° N
24	We	23:02	Moon-Mars: 4.2° S
26	Fr	07:09	Moon apogee: 404500 km
27	Sa	09:13	Regulus 4.2° S of Moon
27	Sa	20:52	First quarter
29	Mo	10:29	Mercury elongation: 24.9° W
29	Mo	18:34	Venus-Pollux: 4° S
31	We	18:56	Spica 2.9° S of Moon

will gradually rise earlier as the month progresses. By the month's end, it will rise nearly two hours before the Sun.

Saturn travels in Aquarius, the Water Bearer (*Kumbha*). It will be well above the eastern horizon at dawn.

(Disclaimer: we categorically mention here that we do not believe in astrology and believe that the only influence a planet has on us is to give us the viewing pleasure of its beauty. The sole purpose of giving the transition of planets and the Sun is to acquaint the reader with the Indian nomenclature of planets and constellations and also to show that the actual positions of the Sun and planets, which are based on modern computing, are very different from those given in astrology tables.)

March of the Moon

The month begins with a nearly 82% illuminated Moon halfway between Regulus (Magha) and Spica (Chitra), closer to the eastern horizon. Then on 3 May, the Moon is a bit southeast of Spica; and the next day it can be seen southwest of Spica. Early morning walkers can see the Moon right over Antares (Jyestha).

On 9 May, the Moon will be very close to the direction of the centre of the Milky Way. It is at the spout of the teapot asterism in Sagittarius (Dhanu). The next day it is in the handle of the asterism.

From 13 to 14 May the Moon passes north of Saturn. On 17 May the lunar crescent can be seen above Jupiter. On 18 May it will be just to the south of Mercury. Both of them will rise about two hrs before sunrise.

Another beautiful pairing of Venus and the lunar crescent will take place on 23 May. The Moon will be about 15% illuminated and Venus will be two and a half degrees south of it. On 24 May the Moon will be seen northwest of Mars. Then between the 26 and 27 of May, it passes north of Regulus. On the last day of May, the Moon will be seen northeast of Spica.

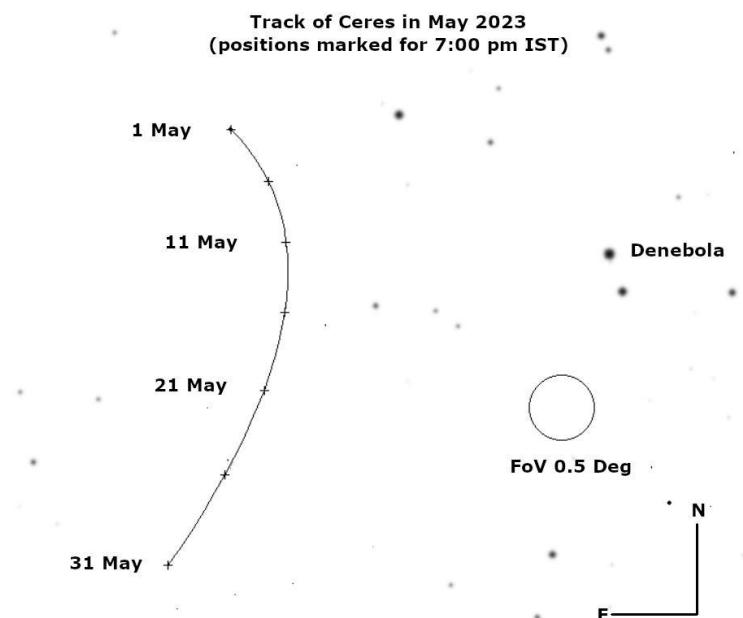
Finding Ceres

Asteroid (1) Ceres is well placed for observations with a small telescope. Ceres transits about five hours after sunset at the beginning of the month and by the month's end it transits about an hour after sunset. It is therefore well placed for observations. On 13 May it is closest to Denebola. It will be $2^{\circ}27.5'$ from it at 11:25 pm (IST).

Magnitude of Ceres

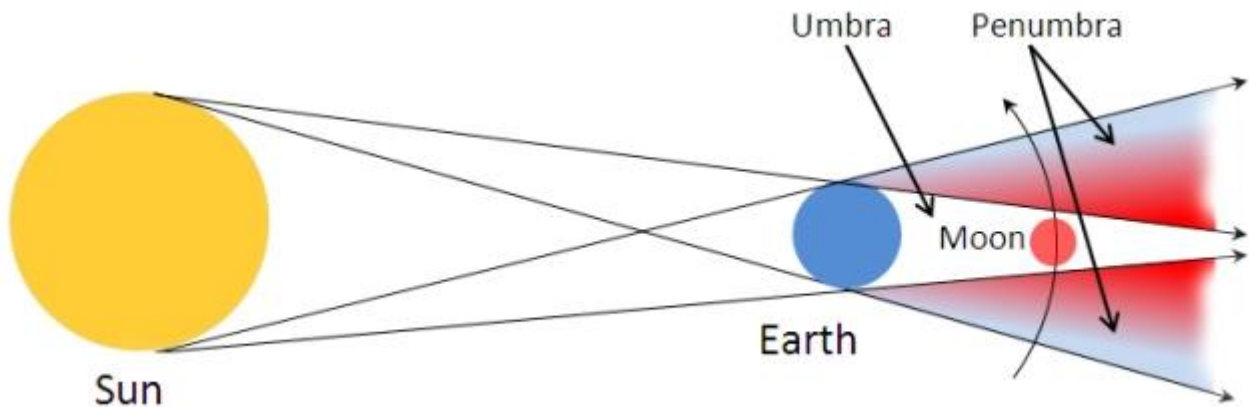
Date	Mag
01 May 2023	7.6
06 May 2023	7.7
11 May 2023	7.8
16 May 2023	7.9
21 May 2023	8.0
26 May 2023	8.1
31 May 2023	8.2

Finding Map



Lunar Eclipses

A lunar eclipse takes place when the Moon enters the shadow of the Earth. On such a night, the Earth comes directly between the Moon and the Sun, blocking the Sun's light from reaching the Moon, and casting its shadow on the Moon. A lunar eclipse can only take place on a Full Moon night, since



You can see the umbra and penumbra by looking at a shadow of a disk (say a one rupee coin) kept diffused and lighter towards the edge of the shadow.

What happens during a lunar eclipse: As the Moon enters the penumbral shadow of the Earth, for the first half hour or so nothing much is noticeable to the untrained eye. After that, one might notice a gradual change in the brightness of the lunar disk. The umbral shadow of the Earth on the Moon is quite noticeable. This dark shadow can be seen covering the Moon gradually.

If a lunar eclipse is total, then in about one hour's time the Moon will be completely inside the shadow of the Earth. At this time the colour of the lunar disk will be red with its many hues – crimson, brick red etc. This is because the only sunlight that reaches the Moon travels through the Earth's atmosphere and is scattered as a result, with the blue wavelength being scattered more than the red.

the Moon and the Sun are on diametrically opposite sides of the Earth.

The diagram below shows the geometry of the total lunar eclipse. In this case the Sun, the Earth and the Moon are nearly in one straight line. The Moon is in the total shadow of the Earth, also known as the umbra.

Penumbral Lunar Eclipse

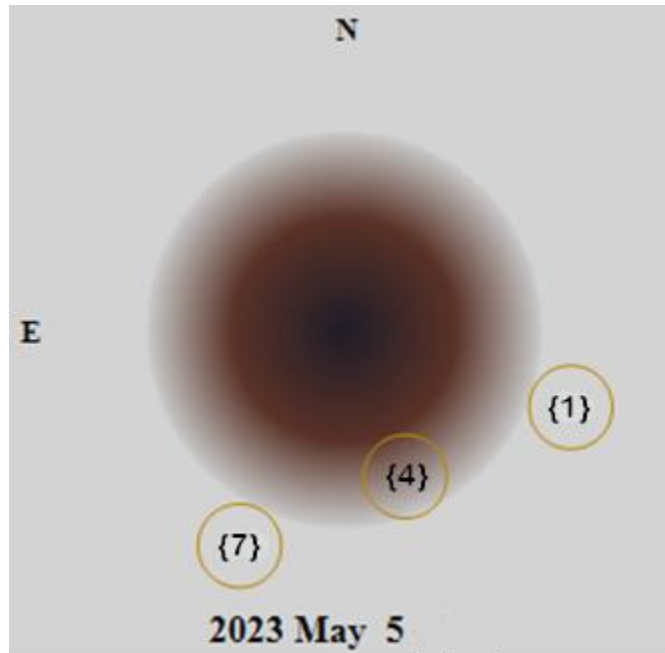
There will be a penumbral lunar eclipse on **5 May 2023**. This eclipse will be visible in India. However, some northwestern states will miss the beginning of the eclipse.

The eclipse will begin with Moon entering the penumbral shadow of the Earth at 8:43 pm. The maximum eclipse will be at 10:53 pm. The eclipse will end after midnight when the Moon leaves the Earth's penumbra at 1:02 am on 6 May.

Eclipse timings in IST

- {1} Moon enters penumbra 20h43m41s
- {4} Maximum eclipse 22h52m55s
- {7} Moon leaves penumbra 01h01m56s

The diagram below shows the umbral and penumbral shadow of the Earth and the positions of the Moon with respect to it.



The diagram below is a graphic display of the Earth showing the hemisphere that is facing the moon at the time of each event. The events are identified against the display with the numeric identifiers given above.



Happy skywatching!

Acknowledgements:

<http://www.lunar-occultations.com/iota/occult4.htm>

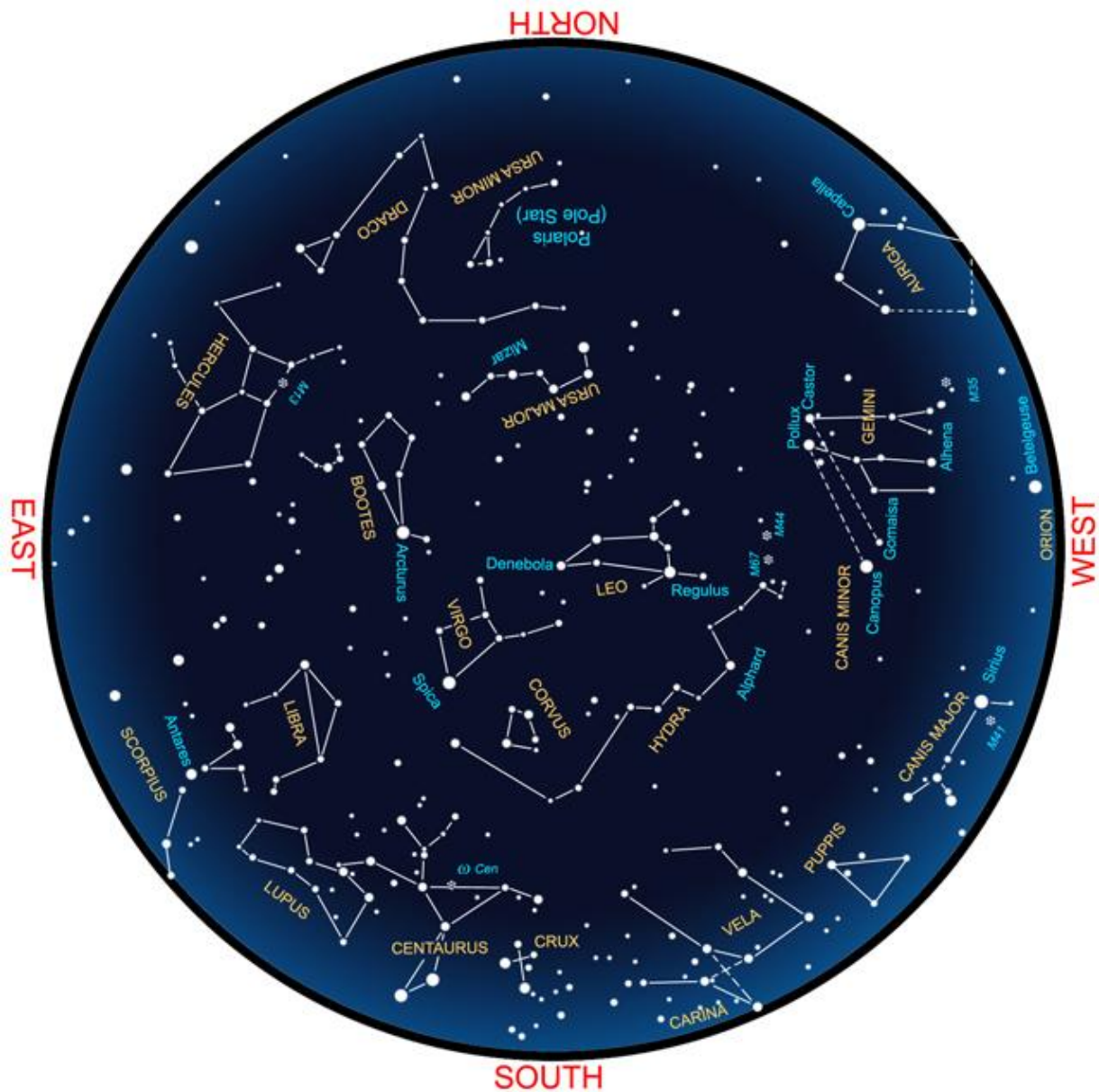
by Dave Herald for International Occultation Timing Association.

<https://eclipse.gsfc.nasa.gov/SKYCAL/SKYCAL.html> by Fred Espenak and Sumit Dutta.

Graphics using GNU Image Manipulation Program (GIMP) a cross-platform image editor.

<https://www.gimp.org/>

This sky map for May is drawn for mid-northern latitudes,
to be used around 9:30 p.m. local time



For star maps of other months please visit <http://astron-soc.in/outreach/resources/sky-maps/>
For notes on stargazing [click here](#).
Or visit <https://skytonight.wordpress.com/monthly-sky-notes-and-links/>

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