SkyNews Astronomical events for Indian observers

An initiative supported by
The Public Outreach and Education Committee
Of the Astronomical Society of India

Volume 8 Issue 11
November 2026

Sun, Planets and Transitions

The **Sun** will in Libra, the Scales (*Tula*) on 1 November. Its angular diameter will be 32'13". It moves to Scorpius, the Scorpion (*Vrushchika*) on 23 November. On 30 November, its angular diameter will be 32'25".

Mercury and **Venus** reappear above the eastern horizon at dawn.

Mercury will be Libra on 1 November. It has been in retrograde motion. Its inferior conjunction takes place on 4 November. On 8 November it moves to Virgo, the Virgin (*Kanya*). It stationary in RA on 13 November. After that it resumes its prograde or normal motion. On 19 November it is back in Libra.

Mercury makes a rather shy reappearance above the eastern horizon at dawn. It reaches barely 11° above the horizon at the beginning of civil twilight. But at this time of the year, the ecliptic is nearly vertical to the horizon. It reaches its maximum western elongation on 21 November, shining brilliantly at magnitude -0.5.

Ephemeris of Mercury:

Date	Alt*	Diam"	Mag	El°
10 Nov	+04°22'	9.2	1.8	11 W
20 Nov	+11°20'	6.9	-0.5	20 W
30 Nov	+07°48'	5.6	-0.6	17 W

Mars and **Jupiter** are well above the horizon at daybreak and can be seen almost overhead. The planets rise close to midnight. Mars, moving faster, passes less than 1.5° north of Jupiter on 16 November.

Mars will remain in Leo, the Lion (*Simha*) in November.

List of Events in November 2026 (Time in IST)

Dt	Dy	Time	Event
01	Su	22:04	Moon passes through Beehive
02	Mo	01:58	Last quarter
02	Mo	19:53	Moon-Mars: 1.1° N
03	Tu	04:41	Moon-Jupiter: 0.5° N
03	Tu	08:32	Moon descending node
03	Tu	14:10	Moon-Regulus: 0.8° N
04	We	19:48	Mercury inferior conjunction
07	Sa	17:01	Moon-Venus: 1.1° N
07	Sa	18:10	Moon-Spica: 2.5° N
08	Su	18:02	Mercury 5.6° N of Moon
09	Mo	12:32	New Moon
10	Tu	19:01	Venus-Spica: 0.9° S
11	We	09:28	Moon-Antares: 0.3° N
11	We	20:42	Venus stationary in RA
12	Th	15:10	Moon south declination: 27.7° S
13	Th	14:50	Mercury stationary in RA
13	Fr	23:20	Moon apogee: 405600 km
16	Mo	09:52	Mars-Jupiter: 1.2° N
17	Tu	17:18	First quarter
17	Tu	17:19	Moon ascending node
18	We	05:49	Leonid Shower: ZHR = 15
21	Sa	04:29	Mercury elongation: 19.6° W
22	Su	11:30	Venus 2.1° N of Spica
24	Tu	16:48	Moon-Pleiades: 0.9° S
24	Tu	20:23	Full Moon
25	We	13:17	Mars-Regulus: 1.7° N
26	We	04:11	Uranus at opposition
26	Th	02:28	Moon perigee: 359300 km
26	Th	04:17	Uranus opposition
26	Th	07:31	Moon north declination: 27.6° N
26	Th	10:46	Mars 1.7° N of Regulus
29	Su	04:51	Moon-Beehive: 0.1° N
30	Mo	09:04	Moon descending node
30	Mo	14:48	Moon-Jupiter: 1.2° N
30	Mo	20:05	Moon-Regulus: 1.1° N
30	Mo	22:24	Moon-Mars: 3.0° N

Jupiter will remain in Leo in November.

Ephemeris of Mars:

Date	Alt*	Diam"	Mag	El°
01 Nov	+73°32'	6.5	0.9	80 W
10 Nov	+77°26'	6.9	0.8	85 W
20 Nov	+81°35'	7.3	0.6	90 W
30 Nov	+83°58'	7.9	0.5	96 W

Ephemeris of Jupiter:

Date	Alt*	Diam"	Mag	El°
01 Nov	+67°58'	35.8	-2.0	74 W
10 Nov	+75°08'	36.7	-2.1	82 W
20 Nov	+82°25'	37.8	-2.1	91 W
30 Nov	+83°21'	39.0	-2.2	101 W

Venus will remain in Virgo this month. It will reappear above the eastern horizon at dawn this month. It was in inferior conjunction on 24October. It too is in retrograde motion. It will be stationary in RA on 11 November.

Ephemeris of Venus:

Date	Alt*	Diam"	Mag	El°
01 Nov	+06°16'	59.6	-4.2	13 W
10 Nov	+17°14'	54.2	-4.5	25 W
20 Nov	+25°44'	46.6	-4.6	34 W
30 Nov	+30°39'	39.7	-4.6	40 W

Saturn having passed its opposition, is now well above the eastern horizon at sunset.

Saturn will be in Cetus, the Whale (*Timingal*) in November. As the earth is slowly moving away from Saturn, we see its angular size decreasing.

Ephemeris of Saturn:

Date	Alt*	Diam"	Ring#	Mag	El°
01 Nov	+26°42'	19.3	43.9	0.5	150 E
10 Nov	+35°19'	19.2	43.5	0.5	140 E
20 Nov	+44°37'	18.9	42.9	0.6	130 E
30 Nov	+53°28'	18.6	42.2	0.7	119 E

Angular diameter of the major axis of the ring in arcseconds.

* Altitudes of a planet are given for the beginning of civil twilight if the planet is to the west of the Sun, or for the end of civil twilight if the planet is to the east of the Sun.

(*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 the nearly half illuminated moon passing through the Beehive cluster (M44 or *Pushya Nakshtra*), occulting many of its stars. These events are not visible from India, but as the Moon rises post-midnight on 1 November, the stars of the cluster can be seen right above the darker side of the Moon.

On the night of 2 November, the Moon will occult (or eclipse) Jupiter. This event will be visible from the southern part of India.

On the morning of 7 November we can see a very thin lunar crescent right above Venus. Four days later on 11 November, a similarly thin lunar crescent will be above Antares.

If you have ever wondered where the centre of the Milky Way lies exactly, then note the position of the Moon on 12 November. It will be in the direction of the centre of the Milky Way.

The next day it will be in the Teapot asterism of Sagittarius.

The Moon passes north of Pluto on 15 November. It makes an equilateral triangle with Saturn to its south east and Neptune to its south west, on 20 November.

The Full Moon of 24 November is to the east of the Pleiades cluster (*Kruttika*).

The Moon is at the east arm of the Gateway of Heavens on 28 November.

On 29 November, close to midnight, we can see four brilliant objects of the night sky rising one after the other. First to rise will be the Moon, then Jupiter. Regulus (*Magha*) follows it after 14 minutes. And finally, Mars follows, eight minutes later.

The Moon again passes through the Beehive cluster in the early hours of 29 November.

All these will be well above the western horizon at dawn on 30 November.

Events Involving the Moons of Jupiter

In the table below, we list the events visible from India. The table gives the timings of eclipses, occultations, transits and shadow transits of the moons of Jupiter, suitable for Indian observers. The timings are given in Indian Standard Time (IST).

The output is given as per the following abbreviations and notations:

Columns: 1 = date; 2 = time; and 3 = satellite number.event type.phase.

Satellite numbers: 1 = Io; 2 = Europa; 3 = Ganymede; and 4 = Callisto.

Event type: Ec = eclipse; Oc = occultation; Tr = transit; and Sh = shadow transit.

Phase: D = disappear; R = reappear; I = ingress; and E = egress.

Example:

03	**01:16:18**	**3.Oc.D**
	01:40:18	**1.EcD**

Means that

On 3 November, at 01:16:18 hours, Ganymede will disappear behind Jupiter's disc. That same night at 01:40:18 hours, Io will disappear inside Jupiter's shadow.

Satellites of Jupiter in November 2026

1	2	3	1	2	3	1	2	3	1	2	3
03	01:16:18	3.Oc.D	10	01:22:48	1.Tr.E		03:58:24	1.Sh.I		03:28:36	3.Tr.E
	01:40:18	1.Ec.D		03:55:00	3.Tr.E	18	05:28:54	1.Tr.I		04:41:18	1.Sh.I
	04:08:48	1.Sh.I		04:15:48	2.Sh.I	19	02:48:24	1.Sh.E		05:54:36	1.Tr.I
	04:34:00	1.Tr.I	11	03:35:24	2.Oc.R		04:02:18	3.Sh.I	27	01:50:48	1.Ec.D
04	01:41:48	1.Sh.E	12	00:55:18	1.Ec.D		04:13:36	1.Oc.R		05:25:12	1.Oc.R
	05:15:18	1.Oc.R		01:40:12	1.Tr.I		05:05:00	4.Oc.D	28	00:22:24	1.Tr.I
05	01:19:00	4.Tr.E		02:09:06	1.Sh.E		23:57:12	3.Oc.R		01:15:00	2.Tr.E
	02:31:42	2.Tr.I		03:12:06	1.Tr.E	20	03:32:30	2.Ec.D		01:26:12	1.Sh.E
08	00:25:54	2.Sh.E		04:25:48	3.Sh.E	21	00:47:06	1.Tr.E		02:39:00	1.Tr.E
	00:54:06	3.Ec.D	13	01:38:48	3.Tr.I	22	04:42:06	3.Ec.D		23:53:18	1.Oc.R
	01:50:42	1.Sh.I	15	00:44:12	2.Ec.D	24	46350.99	4.Sh.E	--	--	--
	05:30:48	1.Tr.I		04:23:48	1.Ec.D	25	23:52:36	3.Tr.I	--	--	--
	05:40:54	1.Oc.R	17	01:11:48	2.Tr.E	26	01:25:36	2.Ec.D	--	--	--

Mutual Events of Jupiter's Moons

SkyNews regularly brings to you events involving Jupiter and its Moons, such as eclipses, occultations, transits and shadow transits. In addition to these, there is another fascinating class of events that occurs approximately every six years: the **mutual events of Jupiter's moons**, where one moon passes in front of another or casts its shadow upon the other.

Jupiter takes 11.862 Earth years to complete one revolution around the Sun. Like the Earth, it experiences two equinoxes, when the Sun lies in the plane of its equator. Jupiter's orbital plane is inclined by about 13° to that of the Earth. The planes of Jupiter's four Galilean Moons — Io, Europa, Ganymede and Callisto — are inclined by less than 0.5° to its equatorial plane.

The combined effect of all these orbital geometries is that around Jupiter's equinoxes, the Earth is in the orbital plane of its moons. During this period, one moon may pass in front of another, blocking it either partially or totally from our view. This is known as a mutual occultation. It is also possible that one moon may enter another's shadow; this is a mutual eclipse.

These events occur over a period of a few months, before and after Jupiter's equinoxes, which occur at an interval of approximately six years. The actual visibility and timing of the events depends on the relative positions of the Earth, Jupiter and its moons, and the location of the observer.

Jupiter's next equinox falls on 16 December 2026; hence the next few months will be a favourable time to observe these intriguing celestial phenomena.

Mutual Events of Galilean Moons for November

Meaning of column heads in the table

Date: The date of the event in November.

Time: The time of the mid-event.

Event: The event description. The first-mentioned moon either eclipses (ecl) or occults (occ) the second-mentioned moon.

In the first example, Europa (II) eclipses Io (I).

Ph: The kind of event.

E = penumbral eclipse

P = partial eclipse/occultation

A = annular eclipse/occultation

(See figure below).

Dur: Duration of the event in seconds.

dMag: Magnitude drop; a value of 9.99 indicates a total eclipse.

%Ill: Illumination at maximum eclipse or occultation, as a percentage of the full illumination of the moon alone in the case of an eclipse, or of both moons in the case of an occultation.

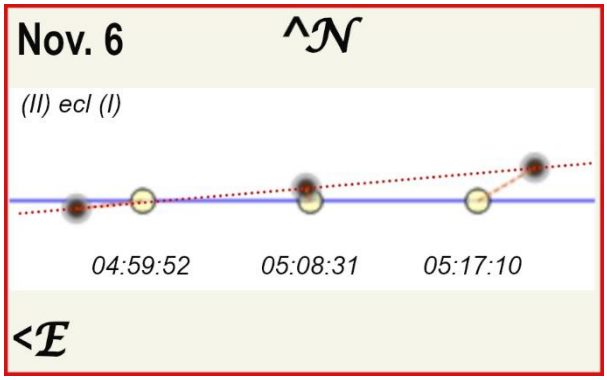
Sep: Distance in arcseconds of the eclipsed/occulted satellite from the centre of the planet.

MinD: Minimum separation of the centres of the satellites, or the satellite and its shadow, in arcseconds.

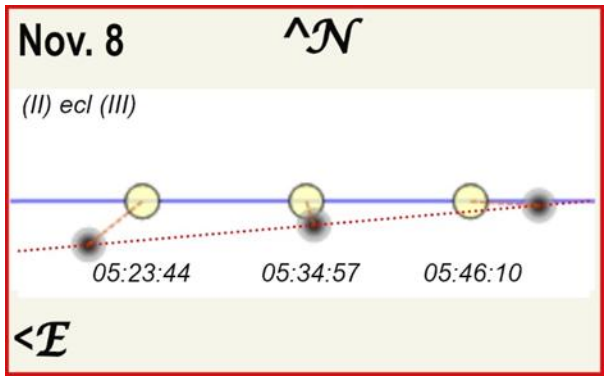
Alt: Altitude of Jupiter around the horizon.

Date	Time IST	Event	Ph	Dur	dMag	%Ill	Sep	MinD	Alt
6	05:08:31	(II) ecl (I)	P	363	0.3	77.2	88.2	0.53	65
8	05:34:57	(II) ecl (III)	E	471	0.0	97.5	196.7	1.00	71
25	04:45:33	(IV) ecl (I)	A	518	1.7	21.9	76.9	0.11	75
26	00:07:08	(III) ecl (II)	P	444	2.5	10.0	68.5	0.22	11

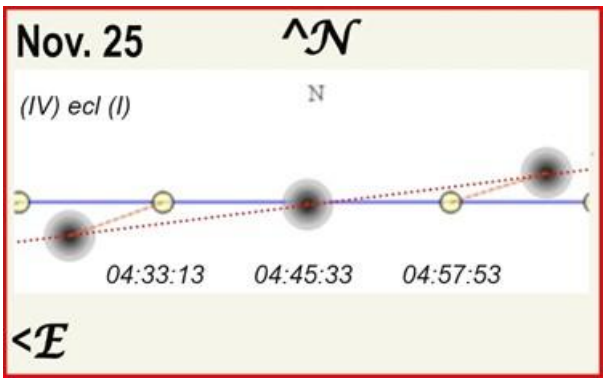
The events are presented graphically below. The red dotted line is the path of the shadow of the eclipsing body.



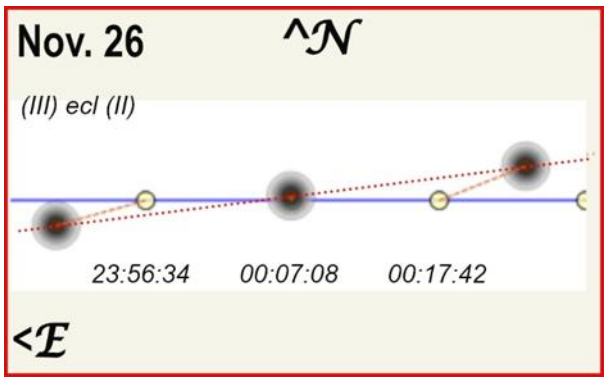
Event date: Nov 6, (night of Nov 5)
Shadow of Europa (II) falls on Io (I).
It will be a partial eclipse.
The magnitude drop of Io will be 0.3 mag.
Duration of the event will be 6 m and 3 sec.
Centre of Io will be 1’16.9” from Jupiter.



Event date Nov 8, (night of Nov 7)
Shadow of Europa (II) falls on Ganymede (III),
It will be a Penumbral eclipse.
The magnitude drop is negligible.
Not worthwhile for novices.

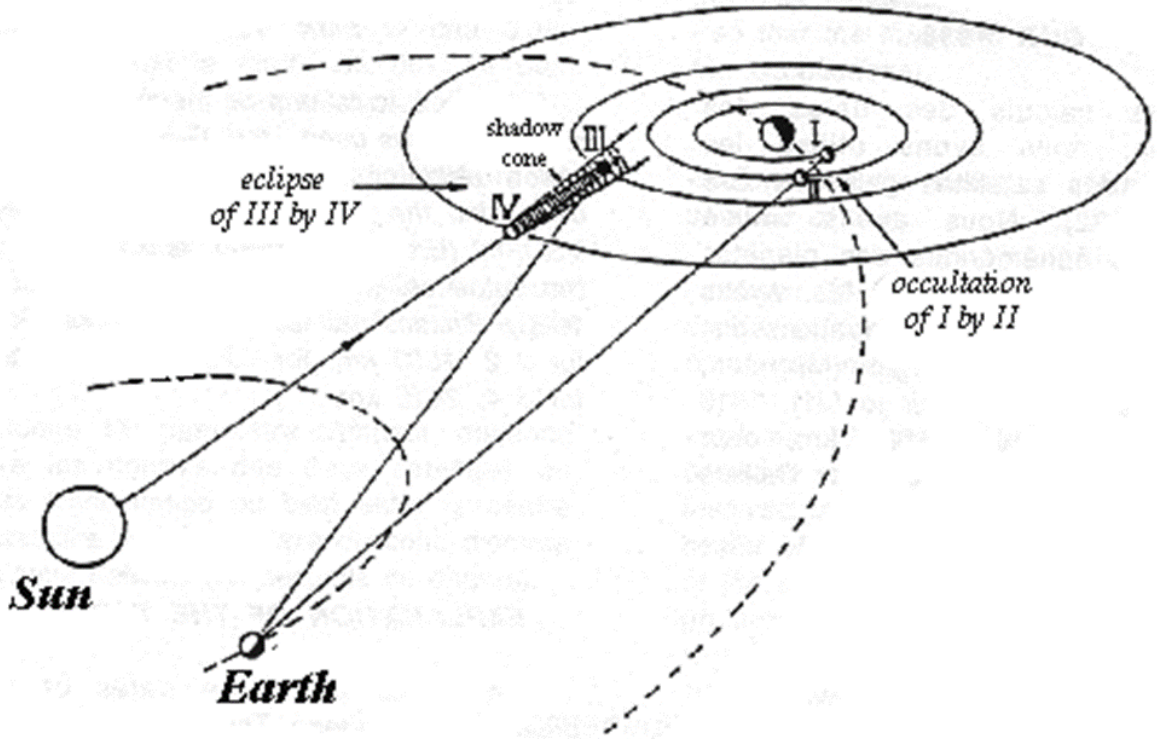


Event date Nov 25, (night of Nov 24)
Shadow of Callisto (IV) falls on Io (I).
It will be an umbral eclipse.
The magnitude drop of Io will be 1.7 mag.
Duration of the event will be 8 m and 38 sec.
Centre of Io will be 1’28.2” from Jupiter.
This will be an event worth observing.



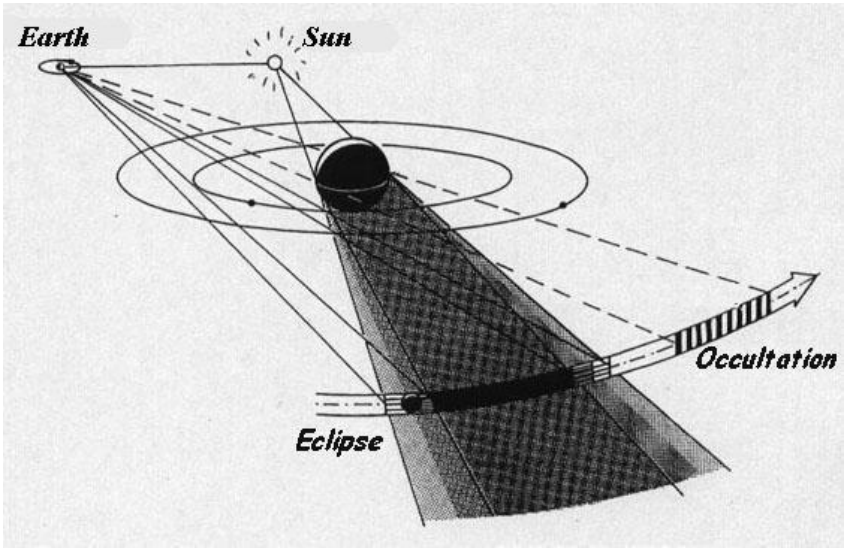
Event date Nov 26, (night of Nov 25)
Shadow of Ganymede (IV) falls on Europa (II).
It is listed as a partial eclipse.
The magnitude drop of Europa will be 2.5 mag.
Duration of the event will be 1m and 8.5 sec.
Centre of Europa will be 1’1.8” from Jupiter.
This will be worth observing event.
Ganymede will transit Jupiter prior to the event.

If you wish to make a simple device to record these events, please visit
https://diyastronomy.wordpress.com/diy-electronic-eyepiece/



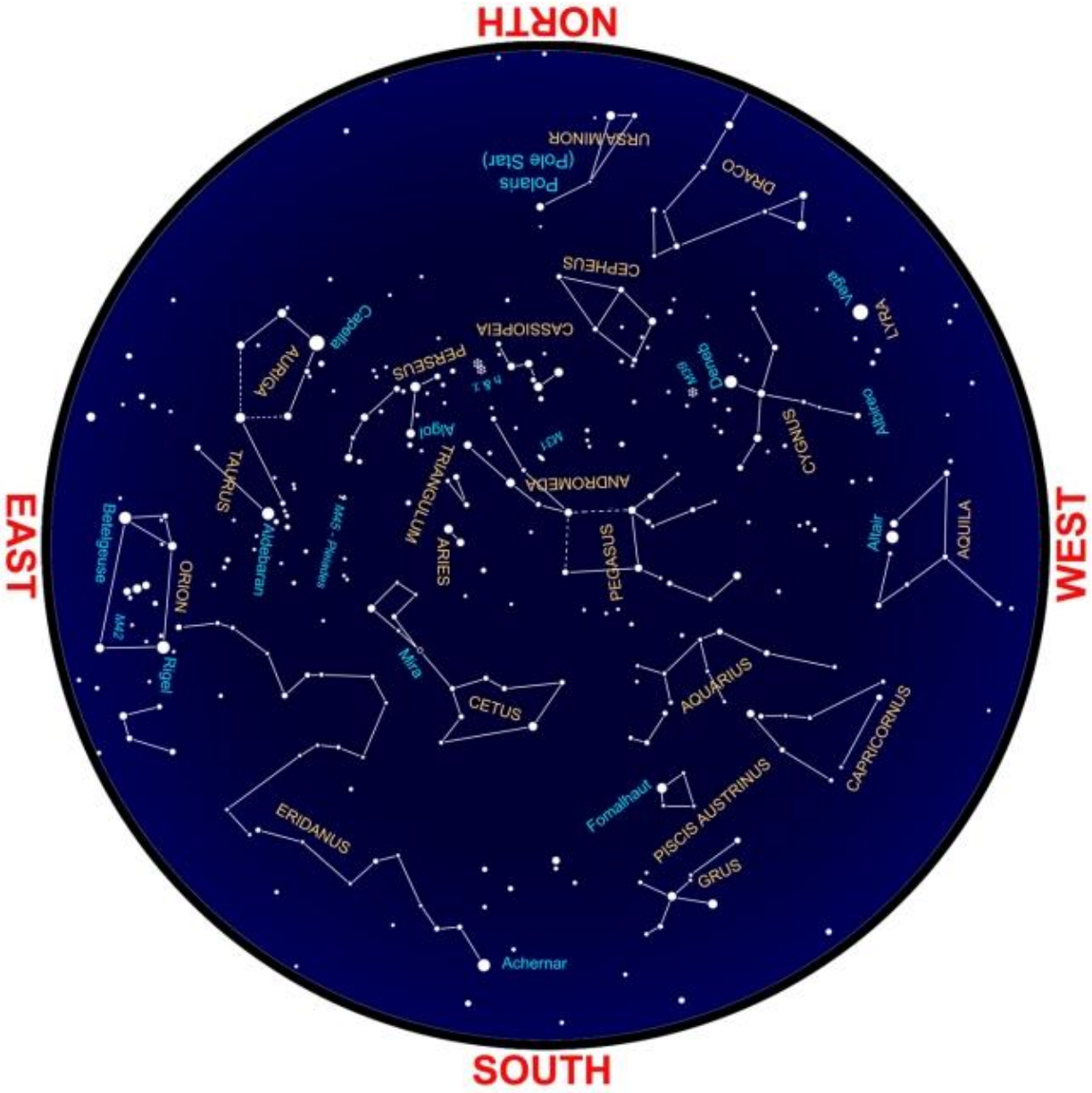
Crédit : D.T. Vu/IMCCE
The Jovian system during the mutual events occurrence
https://promenade.imcce.fr/en/pages3/365.html

Difference between **eclipses** and **occultations** of Jupiter's moons



Eclipses occur when the satellites pass in the shadow of Jupiter. Occultations occur when the satellites pass behind Jupiter for a terrestrial observer. (Picture courtesy: https://promenade.imcce.fr/en/pages3/365.html)

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



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