SkyNews Astronomical events for Indian observers

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Sun, Planets and Transitions

The Sun will exit Scorpio and enter Ophiuchus on 1 December. Its angular diameter will be 32’26”.

Astronomically, Ophiuchus is the 13th zodiacal constellation because it lies along the ecliptic, although common folklore recognises a 12-constellation zodiac.

The Sun will move to Sagittarius on 18 December. Its angular size will increase to 32’31” on 31 December.

The Sun will reach its southernmost declination of -23°26' and will be at winter solstice (for those in the northern hemisphere) on 22 December at about 02:20 hours Indian time. After that, the Sun will start moving northward, or, as we say, *Uttarayan* will begin.

Mercury will be in Libra, the Scales (*Tula*), on 1 December. It moves to Scorpio, the Scorpion (*Vrushchika*), on 7 December and then to Ophiuchus, the Serpent Bearer (*Bhujangadhari* or *Sarpdhar*) on 11 December.

Ephemeris of Mercury:

Date	Alt*	Diam"	Mag	El °
01 Dec	+12°35'	5.5	-0.6	17 W
10 Dec	+06°51'	5.0	-0.7	12 W
20 Dec	+00°27'	4.7	-0.8	7 W

Venus will be in Virgo, the Virgin (*Kanya*), on 1 December. It moves to Libra on 13 December. This month, it maintains almost the same altitude above the eastern horizon, though its solar elongation continues to increase. As its distance from the Earth increases (it is going towards the other side of the Sun), its angular

List of Events in December 2026 (Time in IST)

Dt	Dy	Time	Event
01	Tu	01:02	Mars 3.4° N of Moon
01	Tu	08:09	Last quarter
04	Fr	22:46	Spica 2.7° S of Moon
05	Sa	10:34	Venus 6.5° N of Moon
08	Tu	01:19	Mercury 5.7° N of Moon
08	Tu	16:45	Antares 0.2 ° N of Moon
09	We	06:22	New Moon
09	We	20:57	Moon south declination: 27.6° S
11	Fr	12:16	Moon apogee: 406400 km
12	Sa	04:50	Saturn stationary in RA
12	Sa	23:11	Jupiter-Regulus: 2.8° N
13	Su	16:16	Neptune stationary in RA
13	Su	17:32	Jupiter stationary in RA
14	Mo	18:34	Moon ascending node
14	Mo	19:00	Geminid shower: ZHR = 120
17	Th	11:13	First quarter
17	Th	22:29	Neptune 4.6° S of Moon
18	Fr	10:07	Saturn 6.2° S of Moon
22	Tu	02:20	Winter solstice
22	Tu	04:07	Moon passes 1° N of Pleiades
22	Tu	06:18	Uranus 5.1° S of Moon
23	We	03:30	Ursid shower: ZHR = 10
23	We	18:03	Moon north declination: 27.6° N
24	Th	06:58	Full Moon
24	Th	13:59	Moon perigee: 356700 km
26	Sa	14:22	Moon-Beehive: 0.3° N
27	Su	13:24	Moon descending node
27	Su	21:56	Moon-Jupiter: 1.5° N
28	Mo	04:14	Moon-Regulus: 1.4° N
28	Mo	18:58	Mars 4.7° N of Moon
31	Th	00:29	Last quarter
01*	Fr	04:32	Spica 2.6° N of Moon
*	Night of 31 December and 1 January		

diameter decreases nearly by 10” of arc in this month. It still is a beautiful crescent. Only about 30% of its surface is illuminated by sunlight.

Ephemeris of Venus:

Date	Alt*	Diam"	Mag	El °
01 Dec	+36°38'	38.8	-4.6	41 W
10 Dec	+38°20'	33.8	-4.6	44 W
20 Dec	+38°30'	29.4	-4.5	46 W
30 Dec	+37°26'	26.0	-4.5	47 W

Mars remains in Leo, the Lion (*Simha*) this month. It is now moving away from Regulus (Magha). As Earth catches up, its angular size and magnitude are increasing.

Ephemeris of Mars:

Date	Alt*	Diam"	Mag	El °
01 Dec	+82°14'	7.9	0.5	97 W
10 Dec	+77°10'	8.6	0.3	103 W
20 Dec	+70°35'	9.3	0.1	111 W
30 Dec	+63°76'	10.1	-0.1	119 W

Jupiter too is in Leo in December 2026. It will be stationary on 13 December, then will go into retrograde motion until April 2027.

Ephemeris of Jupiter:

Date	Alt*	Diam"	Mag	El °
01 Dec	+77°59'	39.2	-2.2	102 W
10 Dec	+70°08'	40.3	-2.3	111 W
20 Dec	+60°51'	41.4	-2.3	121 W
30 Dec	+51°12'	42.6	-2.4	132 W

Saturn is in Cetus, the Whale (*Timingal*). It has been in retrograde motion. It will be stationary on 12 December, and then will resume its normal motion. It is well above the eastern horizon at sunset and is steadily climbing up. By the last week of December, its solar elongation will be nearly 90°.

Ephemeris of Saturn:

Date	Alt*	Diam"	Ring#	Mag	El°
01 Dec	+55°55'	18.6	42.1	0.7	118 E
10 Dec	+63°03'	18.3	41.5	0.7	109 E
20 Dec	+69°25'	18.0	40.8	0.8	99 E
30 Dec	+72°35'	17.6	40.0	0.8	89 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 last quarter of the Moon on the night of 1 December. On this night, the half Moon rises above the eastern horizon at local midnight. On 4 December, the Moon will be about 15° west of Venus, with Spica halfway between them but slightly to the south of the line joining them. On 5 December, Spica, the Moon and Venus make a nearly right-angled triangle, with the Moon at the 90° angle.

The Moon reappears above the western horizon on 10 December. At about sunset, the Moon will be about 18+ hours old. If the sky is clear, it will be a good challenge to spot it even before civil twilight ends. Then on 11 December, one can see a beautiful lunar crescent above the western horizon. You should also be able to see the dark part of the Moon that is not directly illuminated by sunlight. This phenomenon is sometimes called the 'Old Moon in New Moon’s arms'. Faint features of the lunar surface that are illuminated by the sunlight reflected from the Earth can be seen above the bright crescent.

The Moon then travels through along a sky lacking bright stars. Between 17 and 18 December, it passes north of the planets Neptune and Saturn, in that order.

On 21 December, the Moon will be due west of the Pleiades (*Kruttika*) cluster. On 22 December, the nearly Full Moon forms a nice

right-angled triangle with the Pleiades and Aldebaran (*Rohini*), sitting directly at the right-angle vertex of the triangle.

After Full Moon on 24 December, the Moon passes south of Jupiter and Mars between 27 and 29 December. On 28 December the Moon is about 1.5° south of Regulus (*Magha*).

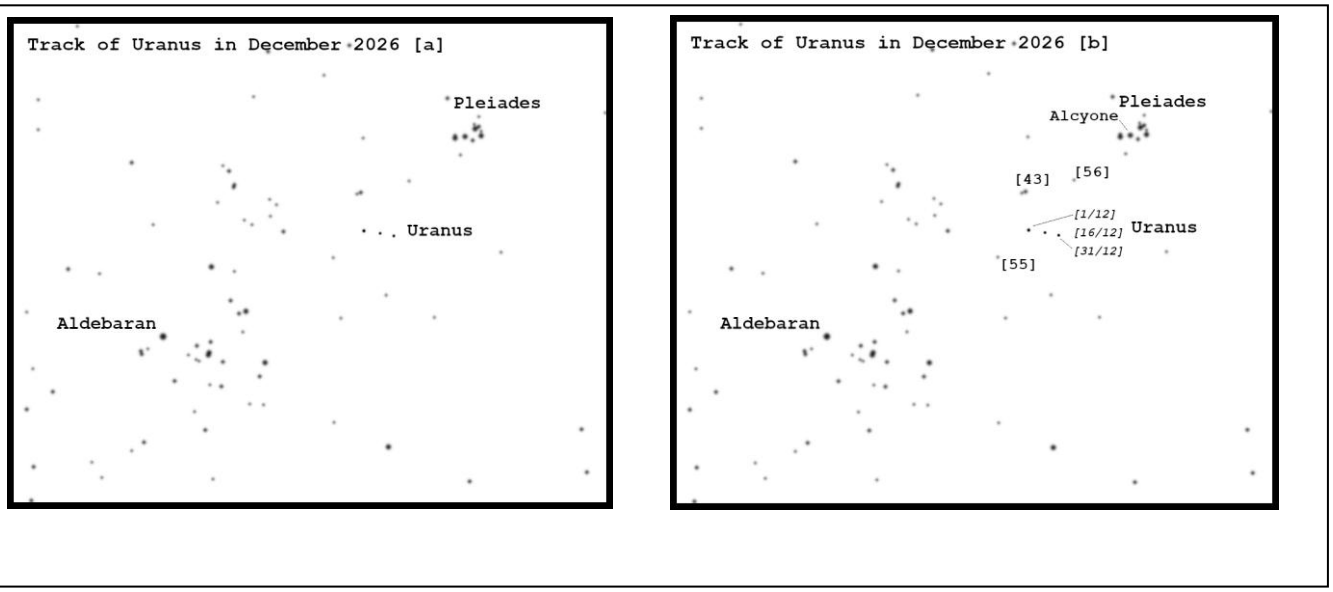
Finding Uranus *(in December)*

Although it was the first planet discovered after the advent of the telescope by William Herschel on 13 March 1781, the planet's magnitude is close to the naked-eye limit. Many observers can see it, and have seen it, with the naked eye. But use a pair of binoculars, and it is a cakewalk to find Uranus. It was at opposition on 25 November; that is, the Sun and Uranus were 180 degrees apart in the sky. In December 2026, it is already above the horizon at sunset and is visible almost all through the night.

These maps can help you to find the 'naked-eye' planet this month.

We are giving you two maps to help you star-hop to find Uranus. Map [a] shows the positions of Uranus on 1, 16 and 31 December. In the second map [b], the dates are marked along with the magnitudes of three stars: 43 Tau [5.5], 37 Tau [4.3], and 32 Tau [5.6], given in square brackets [ ]. When showing star magnitudes on star maps, the decimal point is removed so that it does not get confused with a star.

You can reach Uranus from either the Hyades or Pleiades cluster. We find it easier from the Pleiades. The angular distance between Alcyone and Uranus is about 5°. Look for 32 Tau [5.6] and 37 Tau [4.3]. Next, check the 5.9-magnitude star next to 37 Tau, about 10 arcseconds southeast of 32 Tau. In the first week of December, it will be almost due south. It will look very unlike a star, a bluish-green dot.



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	**02:16:24**	**4.Ec.D**
	02:25:42	**3.Sh.E**

Means that

On 3 December, at 02:16:24 hours, Callisto will enter Jupiter's shadow. That same night at 02:25:42 hours, Ganymede's shadow will leave Jupiter's disc.

Satellites of Jupiter in December 2026

1	2	3	1	2	3	1	2	3	1	2	3
03	02:16:24	4.Ec.D	12	01:02:54	2.Sh.I		05:51:54	1.Tr.I		00:54:06	2.Ec.D
	02:25:42	3.Sh.E		02:55:18	1.Sh.I	20	01:08:24	4.Ec.R		01:09:24	1.Sh.I
	03:42:36	3.Tr.I		03:24:06	2.Tr.I		46376.08347	1.Ec.D		02:06:12	1.Tr.I
	03:58:36	2.Ec.D		03:56:12	2.Sh.E		05:24:00	1.Oc.R		03:26:36	1.Sh.E
04	03:44:24	1.Ec.D		04:03:12	1.Tr.I		22:21:06	2.Ec.D		04:13:36	3.Ec.R
05	00:54:42	2.Tr.I		04:20:06	4.Tr.E		23:16:30	1.Sh.I		04:23:06	1.Tr.E
	01:02:30	1.Sh.I		05:12:12	1.Sh.E	21	00:15:42	3.Ec.R		04:29:18	3.Oc.D
	01:20:24	2.Sh.E	13	00:06:30	1.Ec.D		00:18:54	1.Tr.I		05:38:54	2.Oc.R
	02:13:18	1.Tr.I		03:34:54	1.Oc.R		00:55:12	3.Oc.D		22:22:18	1.Ec.D
	03:19:12	1.Sh.E		22:30:24	1.Tr.I		01:33:30	1.Sh.E	29	01:38:48	1.Oc.R
	03:46:36	2.Tr.E		23:40:24	1.Sh.E		02:35:42	1.Tr.E		21:28:00	2.Tr.I
	04:30:00	1.Tr.E	14	00:47:06	1.Tr.E		03:17:30	2.Oc.R		21:54:54	1.Sh.E
06	01:44:36	1.Oc.R		00:53:48	2.Oc.R		04:33:54	3.Oc.R		22:26:36	2.Sh.E
	22:57:36	1.Tr.E		00:55:12	3.Oc.R		23:51:06	1.Oc.R		22:49:54	1.Tr.E
10	02:46:30	3.Sh.I	19	03:38:42	2.Sh.I	22	21:56:12	2.Tr.E	30	00:19:48	2.Tr.E
11	05:38:00	1.Ec.D		04:48:18	1.Sh.I	27	03:53:54	1.Ec.D	31	21:54:12	3.Tr.E
	23:42:42	4.Tr.I		05:51:12	2.Tr.I	28	00:33:30	3.Ec.D	--	--	--

Mutual Events of Jupiter’s Moons

We regularly feature events involving Jupiter and its moons, including eclipses, occultations, transits and shadow transits. In addition to these, there is another fascinating class of events that occurs approximately every six years: **mutual events of Jupiter’s moons**, in which one moon passes in front of another or casts its shadow upon it.

Jupiter takes 11.862 Earth years to complete one revolution around the Sun. Like Earth, it experiences two equinoxes, when the Sun lies in the plane of its equator. Jupiter’s orbital plane is inclined by about 1.3° to Earth’s orbital plane, while the orbital planes of its four Galilean moons — Io, Europa, Ganymede and Callisto — are inclined by less than 0.5° to Jupiter’s equatorial plane.

The combined effect of these orbital geometries means that, around Jupiter’s equinoxes, we see its moons nearly edge-on. During this period, one moon may pass in front of another, partially or completely hiding it from our view. Alternatively, the shadow of one moon may fall

upon another. These events are known as mutual occultations and mutual eclipses, respectively.

Such events occur over a period of several months, extending both before and after Jupiter's equinoxes. Since Jupiter's equinoxes occur approximately six years apart, these opportunities to observe mutual events also recur at intervals of about six years. The actual visibility and timing of individual events depend on the relative positions of Earth, Jupiter, and its moons.

Jupiter's next equinox falls on 16 December 2026, making the coming months a particularly favourable period to observe these intriguing celestial phenomena.

We have compiled a list of favourable mutual events visible from India to help amateur astronomers and astronomy enthusiasts plan their observations. With a telescope and careful timing, these events offer a good opportunity to witness the intricate orbital dance of Jupiter's moons.

Details of abbreviations and notations of each column are given below:

Event Type: The event description. The first mentioned moon either eclipses (ecl) or occults (occ) the second mentioned moon. In this example, (III) eclipses (II).

Ph: The kind of event:

M = Miss; **E** = Penumbral eclipse; **P** = Partial eclipse/occultation; **T** = Total eclipse/occultation, where the eclipsed/occulted moon is fully obscured; **A** = Annular eclipse/occultation, where the umbral eclipse shadow, or occulting moon, fully enters the disk of the eclipsed/occulted moon.
Following the event kind, there can be an additional letter with the following meanings:

e = occultation, with the occulting satellite being in Jupiter's shadow. Event will be visible.

f = occultation, with the occulted satellite being in Jupiter's shadow. Event will not be visible.

g = occultation, with both satellites being in Jupiter's shadow. Only observable if the satellites are detectable in the shadow.

h = hidden. The eclipsed/occulted moon is either in the planet's shadow, or behind the planet.

t = transiting. The eclipsed/occulted moon is transiting the planet. The code 'h' will only appear if the checkbox for 'Include hidden events' is checked.

Dur: The duration, in seconds.

dMag: The magnitude drop. In the case of occultations, it is in comparison to the combined magnitude of the two moons. A value of 9.99 indicates a total eclipse.

%Ill: The illumination at maximum eclipse or occultation, as a percentage of the full illumination of the moon alone (eclipses) or of both moons (occultations).

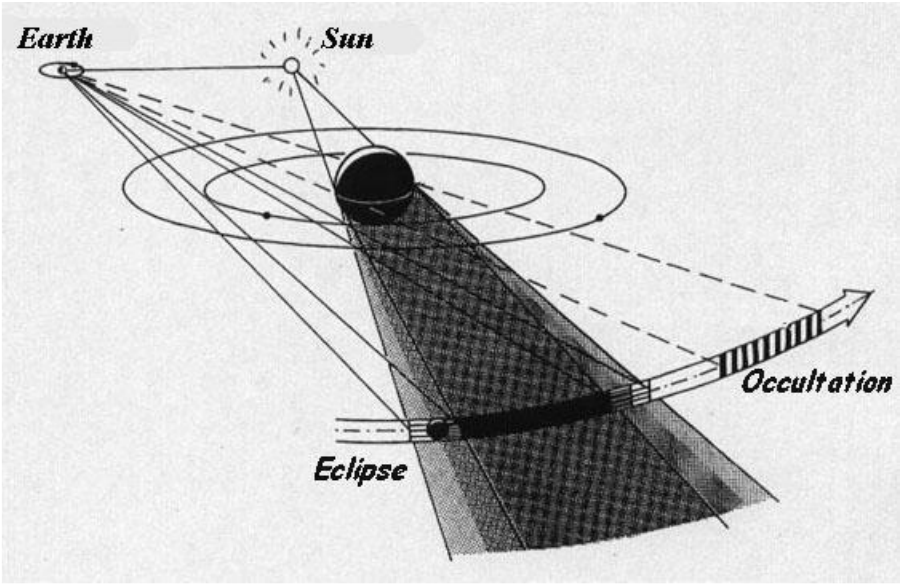
Sep: Distance (arcsecs) of the eclipsed/occulted satellite from the centre of the planet.

PA: PA (deg) of the eclipsed/occulted satellite with respect to the planet.

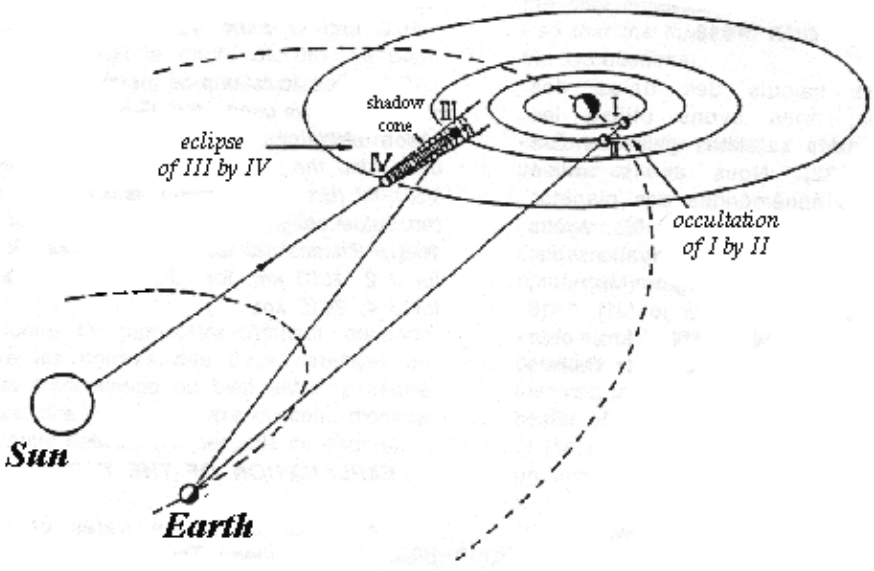
MinD: The minimum separation of the centres of the satellites, or satellite and shadow - in arc secs.

Mutual Events of Galilean Moons for December

Date	Time IST	Event	Ph	Dur	dMag	%Ill	Sep	PA	MinD	Alt
2	03:17:28	(III) ecl (II)	P	425	1.2	31.9	61.3	290	0.46	61
23	01:37:00	(III) ecl (I)	P	756	1.3	30.7	117.1	112	0.45	57
24	23:31:05	(III) ecl (I)	P	1135	4.9	1.1	121.1	292	0.11	29
1 Jan	03:15:08	(III) ecl (I)	P	760	5.4	0.7	125.9	292	0.05	84



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)



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

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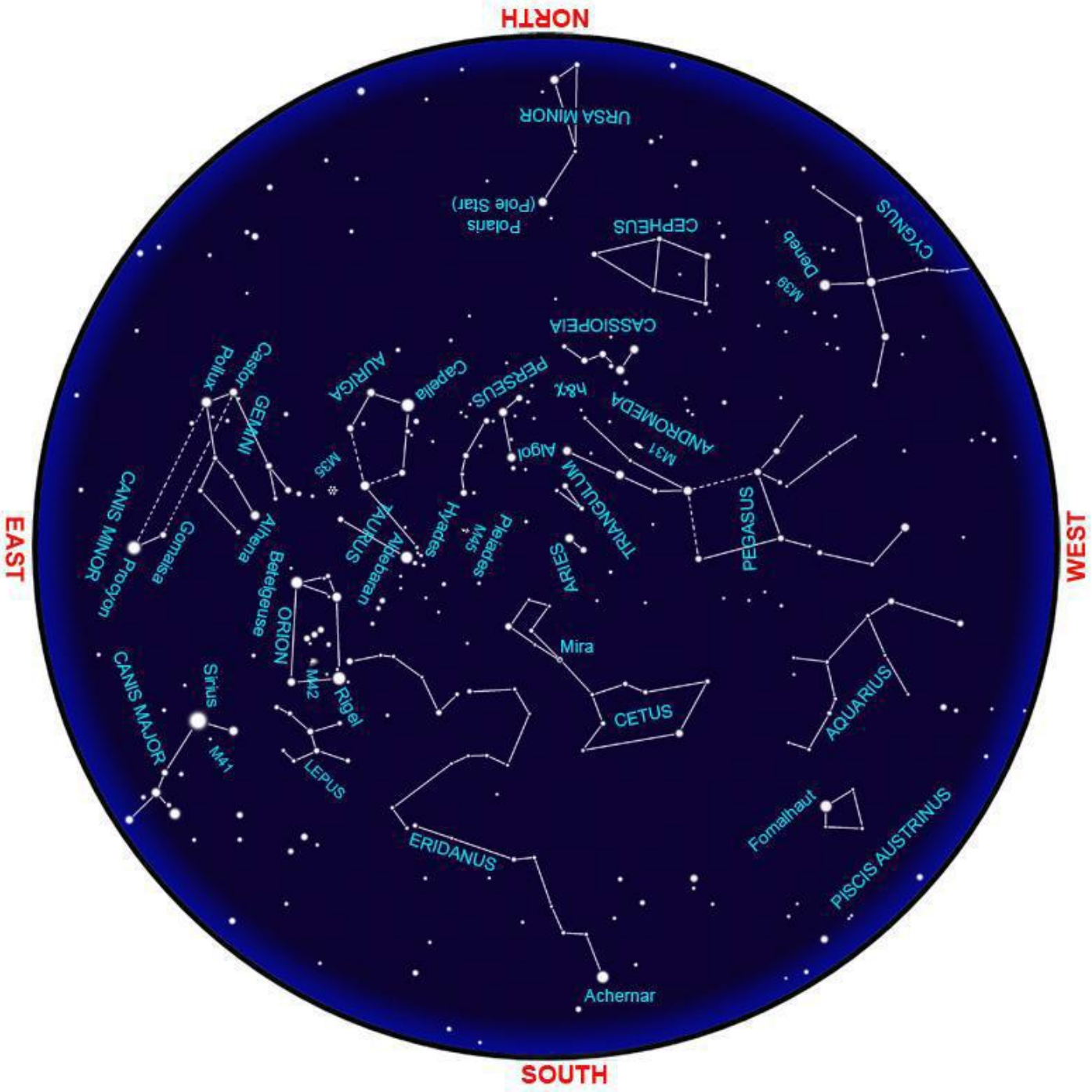
This sky map for December is drawn for mid-northern latitudes, to be used around 9:30 p.m. local time



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