SkyNews Astronomical events for Indian observers

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Sun, Planets and Transitions

The **Sun** will be in Capricornus, the Sea Goat (*Makara*) on 1 February. Its angular diameter will be 32'28". It moves to Aquarius, the Water Bearer (*Kumbha*) on 16 February. On 28 February, its angular diameter will decrease to 32'18".

Mercury is in Capricornus on 1 February. It moves to Aquarius on 13 February, and then to Pisces, the Fishes (*Meena*) on 27 February.

Ephemeris of Mercury:

Date	Alt*	Mag	Phase	diam"	El°
20 Feb	+05.1°	-1.3	0.95	5.23	9.1
28 Feb	+11.9°	-1.0	0.77	5.97	15.4

Venus remains in Pisces in February.

Ephemeris of Venus:

Date	Alt*	Mag	Phase	diam"	El°
01 Feb	+38.9°	-4.6	0.376	32.17	45.0
10 Feb	+37.0°	-4.6	0.309	36.64	42.3
20 Feb	+32.5°	-4.6	0.224	42.76	37.3
28 Feb	+26.5°	-4.6	0.150	48.40	31.2

* The altitudes of Mercury and Venus are given at the start of civil twilight if the planet is to the west of the Sun and at the end of civil twilight if it is to the east of the Sun.

Mars remains in Gemini, the Twins (*Mithuna*) in February 2025.

List of Events in February 2025 (Time in IST)

Dt	Dy	Time	Event
01	Sa	02:50	Venus 3.3° N of Neptune
01	Sa	03:32	Jupiter-Aldebaran: 5.2° N
01	Sa	10:16	Moon-Saturn: 1.1° S
02	Su	03:06	Neptune 1.2° S of Moon
02	Su	01:57	Moon-Venus: 2.4° N
02	Su	03:36	Moon ascending node
02	Su	08:13	Moon perigee: 367500 km
04	Tu	18:37	Jupiter stationary in RA
05	We	13:32	First quarter
06	Th	12:13	Moon-Pleiades: 0.5° S
07	Fr	07:31	Jupiter 5.4° S of Moon
08	Sa	16:10	Moon north declination: 28.6° N
09	Su	17:27	Mercury superior conjunction
10	Mo	01:06	Moon-Mars: 0.8° S
10	Mo	10:49	Moon-Pollux: 2.2° N
11	Tu	10:33	Moon-Beehive: 2.7° S
12	We	19:23	Full Moon
13	Th	04:51	Moon-Regulus: 2.3° S
15	Sa	12:23	Moon descending node
17	Mo	17:31	Moon-Spica: 0.3° N (occultation)
18	Tu	06:41	Moon apogee: 404900 km
20	Th	23:02	Last quarter
21	Fr	13:51	Moon-Antares: 0.5° N occn
23	Su	04:02	Moon south declination: 28.7° S
24	Mo	15:06	Mars stationary in RA
25	Tu	15:18	Mercury 1.5° N of Saturn
28	Fr	06:15	New Moon

Ephemeris of Mars:

Date	Mag	Diam"	El°
01 Feb	-1.0	13.64	157.0
10 Feb	-0.8	12.79	145.9
20 Feb	-0.5	11.74	134.8
28 Feb	-0.3	10.90	126.8

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Jupiter remains in Taurus, the Bull (*Vrushabha*). It is visible all through the night this month. There are some excellent events involving its moons (see below).

Ephemeris of Jupiter:

Date	Mag	Diam"	El°
01 Feb	-2.5	43.26	118.3
10 Feb	-2.5	42.03	109.3
20 Feb	-2.4	40.67	99.6
28 Feb	-2.3	39.61	92.0

Saturn remains in Aquarius.

Ephemeris of Saturn:

Date	Mag	Diam"	El°
01 Feb	1.1	15.90	35.3
10 Feb	1.1	15.78	27.2
20 Feb	1.1	15.68	18.3
28 Feb	1.1	15.64	11.3

March of the Moon

On 1 February, soon after dusk, the 12% illuminated Moon, visible as a thin crescent, about, will be halfway between Venus and Saturn. The next day the Moon will be so high up that now Venus will be seen halfway between the Moon and Saturn. On 6 February the Moon, the Pleiades cluster (*Kruttika*) and Jupiter are on one line, and Aldebaran (*Rohini*) can be seen to the right of Jupiter. Above the eastern horizon, the 90% illuminated Moon can be seen right above Mars.

Between 12 and 13 February, the Moon passes north of Regulus (*Magha*). Regulus can be seen about 2° south of the Moon above the western horizon at dawn.

On the morning of 17 February, the Moon can be seen west of spica (*Chitra*), and then on the 21st, to the west of Antares (*Jyeshtha*).

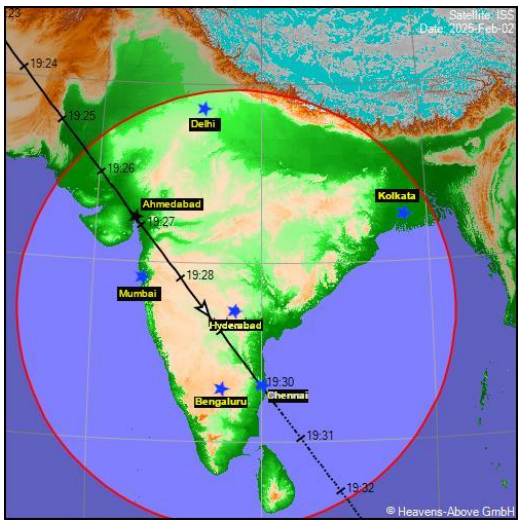
Sighting of the International Space Station (ISS)

On 2 February 2025, observers in the southern part of India will have one of the most favourable chances to see the passage of the ISS, with Sunita Williams, Butch Wilmore and five other astronauts on board.

During this pass, the ISS will brighten up to magnitude -3.8. At that time, it will be the third brightest object in the sky, after the Moon (-8.4) and Venus (-4.6). The magnitude of Jupiter will be -2.5.

While no optical aid is required to spot the ISS, a pair of binoculars will help. Avoid using a telescope unless you are an expert.

Visual sighting of any artificial satellite is exciting. Data is available for precisely when, where and which satellite can be seen. Satellites in space become visible to us on the Earth because their solar panels reflect sunlight. As the satellite enters into the shadow of the Earth, its brightness diminishes until it disappears completely.



The figure on the left shows the ground track of the ISS on 2 February 2025.

Sighting details of the ISS for a few cities:

In the table below we have listed the details for five major cities, as follows:

a: The event

b: Time (IST)

c: Altitude above the horizon

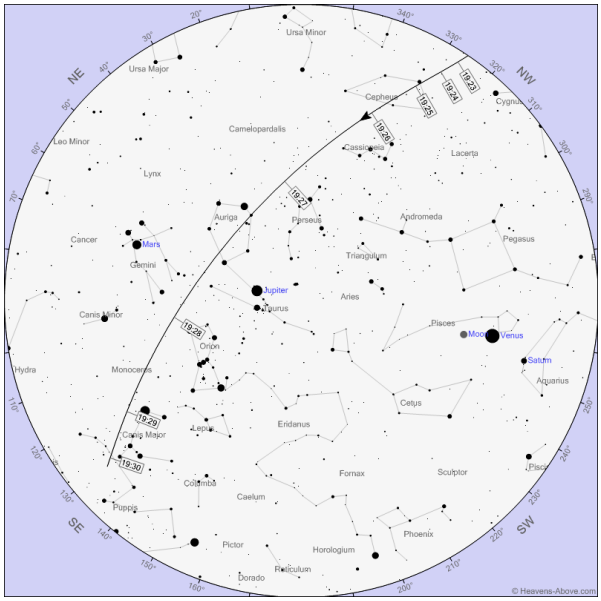
d: Azimuth (see diagram below)

e: Distance (in km) from the observer

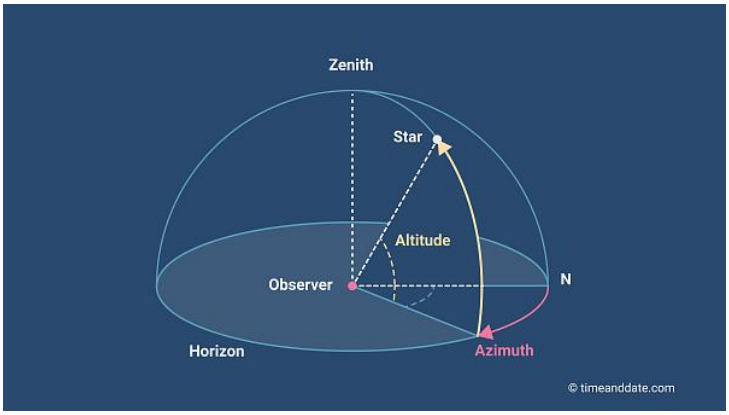
f: Magnitude of the ISS

Note that after reaching its maximum altitude, the ISS enters the Earth's shadow. Observers will see it fading and finally disappearing.

City	a	b	c	d	e	f
Ahmedabad	Rises	19:21:23	0°	319° (NW)	2342	0.4
	Reaches altitude 10°	19:23:28	10°	318° (NW)	1478	-0.6
	Maximum altitude	19:26:47	83°	232° (SW)	418	-3.8
	Drops below altitude 10°	19:30:06	10°	143°(SE)	1473	-1.2
	Enters shadow	19:30:27	8°	143°(SE)	1619	-1.0
Mumbai	Rises	19:22:04	0°	325° (NW)	2339	-0.3
	Reaches altitude 10°	19:24:11	10°	329° NNW)	1476	-0.8
	Maximum altitude	19:27:28	62°	51° (NE)	467	-3.8
	Enters shadow	19:30:16	13°	131° (se)	1285	-1.6
Hyderabad	Rises	19:23:19	0°	319° (NW)	2337	0.4
	Reaches altitude 10°	19:25:24	10°	317° (NW)	1475	-0.6
	Maximum altitude	19:28:42	70°	234° (SW)	438	-3.6
	Enters shadow	19:30:16	28°	155° (SSE)	799	-2.5
Bengaluru	Rises	19:24:07	0°	328° (NNW)	2335	0.3
	Reaches altitude 10°	19:26:14	10°	332° (NNW)	1474	-0.8
	Maximum altitude	19:29:29	59°	53° (NE)	477	-3.8
	Enters shadow	19:30:16	44°	107° (ESE)	580	-3.5
Chennai	Rises	19:24:30	0°	323° (NW)	2335	0.4
	Reaches altitude 10°	19:26:35	10°	323° (NW)	1474	-0.7
	Maximum altitude	19:29:53	89°	235° (SW)	414	-3.9
	Enters shadow	19:30:16	68°	147° (SSE)	443	-3.8



The track of the ISS over the Mumbai sky on 2 February 2025. For the track over other cities please visit https://skytonight.wordpress.com.



Above: Azimuth of a star. Image courtesy: https://www.timeanddate.com/astronomy/horizontal-coordinate-system.html

Events Involving the Moons of Jupiter

In the table below, we have listed events that can be seen 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; 3 = satellite number.event type.phase.

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

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

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

Example:

Events for 2 and 3 February and what they mean:

2	**21:28:00**	**2.Oc.D**
3	**02:28:12**	**2.Ec.R**
	02:28:36	**1.Oc.D**
	23:39:06	**1.Tr.I**

Means that

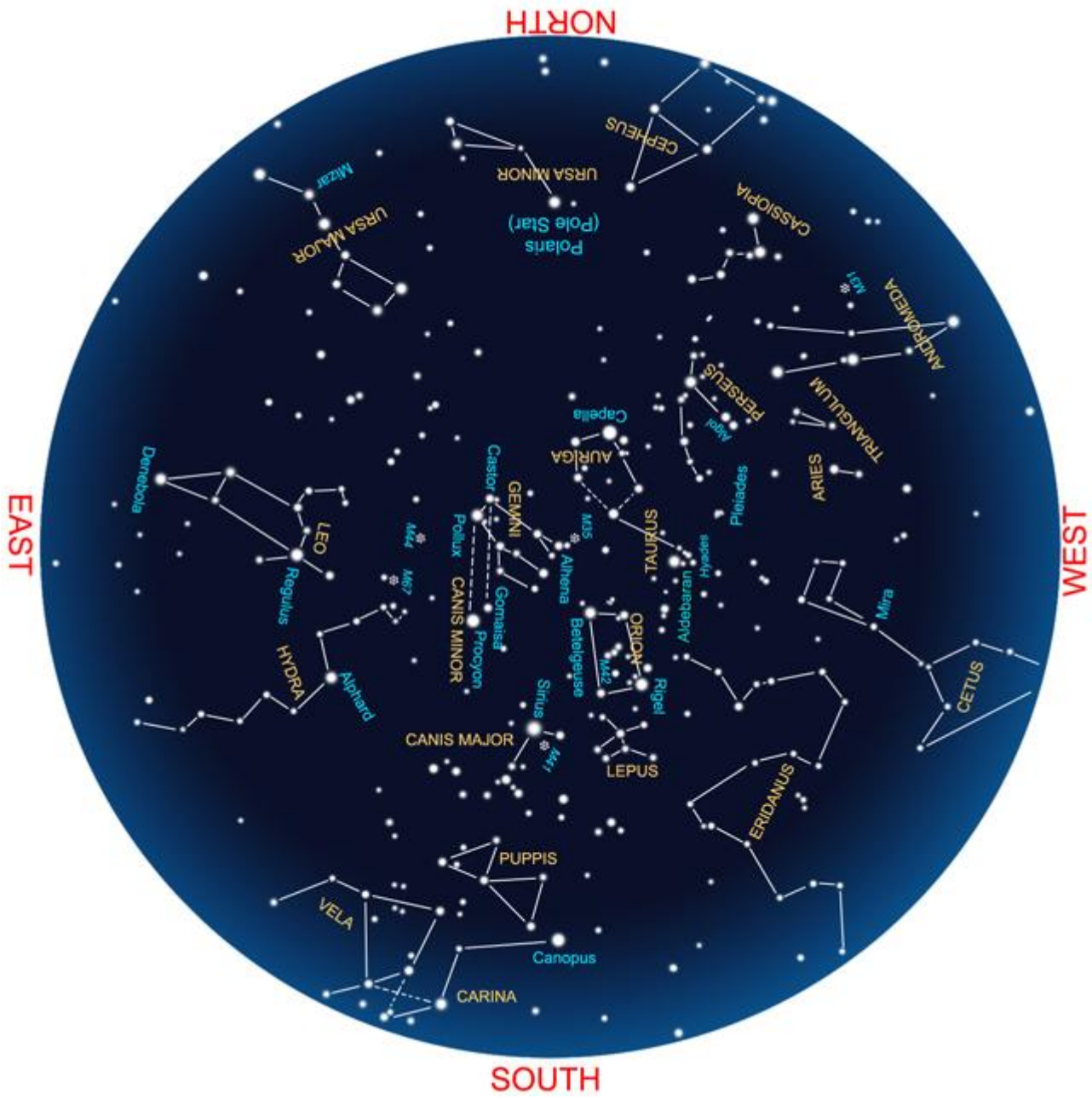
At 21:28:00 hours on 2 February, Callisto will be occulted by Jupiter. Later it will enter Jupiter's shadow and will reappear at 02:28:12 hours. At 02:28:36 hours Io will be occulted, and will transit across Jupiter at 23:39:06 hours that evening.

Satellites of Jupiter in February 2025

1	2	3	1	2	3	1	2	3	1	2	3
2	21:28:00	2.Oc.D	7	23:22:06	3.Oc.R	14	0:50:30	3.Oc.D	21	19:51:12	1.Sh.E
3	02:28:12	2.Ec.R	8	1:57:06	3.Ec.D	18	20:10:48	3.Sh.I	25	21:15:06	3.Tr.E
3	02:28:36	1.Oc.D	9	23:57:48	2.Oc.D	18	21:25:42	2.Tr.I	25	23:58:30	2.Tr.I
3	23:39:06	1.Tr.I	11	1:31:00	1.Tr.I	18	22:35:48	3.Sh.E	26	00:11:06	3.Sh.I
4	00:49:24	1.Sh.I	11	21:21:06	2.Sh.I	18	23:56:36	2.Sh.I	26	23:47:00	1.Tr.I
4	01:51:00	1.Tr.E	11	21:27:30	2.Tr.E	18	23:58:24	2.Tr.E	27	01:05:36	1.Sh.I
4	18:58:48	2.Tr.E	11	22:47:42	1.Oc.D	19	00:40:24	1.Oc.D	27	21:00:54	2.Oc.R
4	20:56:18	1.Oc.D	11	23:56:00	2.Sh.E	19	21:52:30	1.Tr.I	27	21:02:48	1.Oc.D
4	21:20:18	2.Sh.E	12	2:15:06	1.Ec.R	19	23:09:48	1.Sh.I	27	21:04:48	2.Ec.D
5	00:19:54	1.Ec.R	12	19:59:06	1.Tr.I	20	00:04:30	1.Tr.E	27	23:44:24	2.Ec.R
5	19:18:12	1.Sh.I	12	21:14:00	1.Sh.I	20	01:22:12	1.Sh.E	28	00:34:18	1.Ec.R
5	20:18:48	1.Tr.E	12	22:11:00	1.Tr.E	20	19:08:42	1.Oc.D	28	19:34:36	1.Sh.I
5	21:30:36	1.Sh.E	12	23:26:24	1.Sh.E	20	21:05:36	2.Ec.R	28	20:28:06	1.Tr.E
7	21:03:30	3.Oc.D	13	20:43:54	1.Ec.R	20	22:39:06	1.Ec.R	28	21:47:00	1.Sh.E

Errata: In the January 2025 issue of SkyNews, the headline of the table giving the events around the satellites of Jupiter was printed as 'Satellites of Jupiter in December 2024' instead of 'Satellites of Jupiter in January 2025'. The error is regretted. -- *Editors*

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



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Or visit https://skytonight.wordpress.com/monthly-sky-notes-and-links/

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