



Sun, Planets and Transitions

On 1 September the Sun will be in Leo, the Lion (*Simha*). Its angular diameter will be 31'41". On 21 September the Sun will move to Virgo, the Virgin (*Kanya*). On 31 September its angular diameter will be 31'56".

The September equinox (autumnal equinox in the northern hemisphere) will be on 23 September at 23:50 hours IST. At that moment, the Sun will cross the celestial equator from the northern to the southern hemisphere; its rays will be perpendicular to the Earth's equator.

Note that on this day, day and night are not 'equal' everywhere on Earth. Please visit ["Equinox days – equal or otherwise"](#) for an explanation.

Mercury will be in Leo on 1 September. It will cross over to Virgo on 15 September. The Sun-Earth-Mercury angle will decrease after its glorious appearance above the eastern horizon at dawn. Between 2 and 3 September, it passes about a degree north of Regulus (*Magha*). Mercury's magnitude will be -1.4, and that of Regulus +1.4. The objects will be observable, with a little difficulty. Mercury will be in superior conjunction with the Sun on 13 September, at 16:16 hours. It will be visible later in October as an 'evening star'.

Ephemeris of Mercury:

Date	Alt*	Diam"	Mag	El°
01 Sep	+05° 30	5.49	-1.3	11.8 W

After that, Mercury is too close to the Sun to be seen.

Venus will be in Cancer, the Crab (*Karka*) on 1 September and will cross over to Leo on 10 September. On 1 September, it is south of the Beehive cluster (M44). This is known as *Pushya Nakshatra* in Indian astrology. On 19 September, Venus is north of Regulus. We also see a thin lunar crescent close to these two objects.

List of Events in September 2025 (Time in IST)

Dt	Dy	Time	Event
02	Tu	03:34	Moon farthest south declination: 28.6° S
02	Tu	20:39	Mercury-Regulus: 1.2° N
06	Sa	10:25	Uranus stationary in RA
07	Su	23:39	Full Moon
07	Su	23:43	Total lunar eclipse (maximum — see text)
08	Mo	04:38	Moon ascending node
09	Tu	01:39	Moon-Saturn: 4° S
10	We	17:40	Moon perigee: 364800 km
13	Sa	03:18	Moon-Pleiades: 1° S
13	Sa	08:58	Mars-Spica: 2.2° N
13	Sa	16:16	Mercury superior conjunction
13	Sa	05:18	Uranus 5.3° S of Moon
14	Su	16:03	Last quarter
15	Mo	02:53	Moon north declination: 28.6° N
16	Tu	16:36	Moon-Jupiter: 4.7° S
16	Tu	23:28	Moon-Pollux: 2.5° N
17	We	22:54	Moon-Beehive: 2.1° S
19	Fr	14:29	Venus-Regulus: 0.5° N
19	Fr	16:41	Moon-Regulus: 1.4° S
19	Fr	17:16	Moon-Venus: 0.9° S
21	Su	04:43	Moon descending node
21	Su	10:40	Saturn opposition
22	Mo	16:33	Mercury 2.5° N of Moon
22	Mo	01:12	Partial solar eclipse
22	Mo	01:24	New Moon
22	Mo	23:50	Autumnal equinox
23	Tu	16:59	Neptune opposition
24	We	03:01	Moon-Spica: 1.2° N
24	We	20:20	Moon-Mars: 4.3° N
26	Fr	15:16	Moon apogee: 405600 km
27	Sa	23:04	Moon-Antares: 0.7° N
29	Mo	11:39	Moon south declination: 28.6° S
30	Tu	05:24	First quarter

Ephemeris of Venus:

Date	Alt*	Diam"	Mag	El°
01 Sep	+24°55'18"	12.29	-4.0	31.3 W
10 Sep	+22°18'02"	11.86	-3.9	29.1 W
20 Sep	+19°22'15"	11.46	-3.9	26.7 W
30 Sep	+16°25'43"	11.11	-3.9	24.3 W

Mars remains in Virgo, the Virgin (*Kanya*), in September 2025. It is still fairly well above the western horizon at sunset. From 10 to 16 September, it can be seen passing north of Spica (*Chitra*). Spica is a spectral class B star; and planet Mars has a ruddy colour. Hence the two will make a good, contrasting pair.

Ephemeris of Mars:

Date	Alt*	Diam"	Mag	El°
01 Sep	+24°44'	4.13	1.6	37 E
10 Sep	+20°42'	4.07	1.6	34 E
20 Sep	+16°26'	4.02	1.6	31 E
30 Sep	+12°26'	4.00	1.6	28 E

Jupiter remains in Gemini, the Twins (*Mithuna*) in September 2025. We see it passing through the Gateway of Heaven.

Ephemeris of Jupiter:

Date	Alt*	Diam"	Mag	El°
01 Sep	+44°36'	34.3	-2.0	51.0 W
10 Sep	+51°15'	35.0	-2.0	58.1 W
20 Sep	+58°50'	35.8	-2.1	66.3 W
30 Sep	+66°39'	36.8	-2.1	74.8 W

Saturn, which has been in Pisces, the Fishes (*Meena*) for the last several months, will move to Aquarius, the Water-bearer (*Kumbha*) on 30 September. Saturn and Neptune are still very close to each other. Both planets are approaching their opposition. Observations of these planets can be carried out for more than 10 hours at night.

Ephemeris of Saturn:

Date	Alt*	Diam"	Mag	El°
01 Sep	+27°37'	19.22	0.7	158.7 W
10 Sep	+18°45'	19.32	0.6	167.9 W
20 Sep	+02°05'	19.36	0.6	177.4 E
30 Sep	+11°41'	19.33	0.6	169.8 E

*** Altitudes of a planet are given for the beginning of civil twilight if the planet is 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

On 1 September, the Moon crosses the meridian as the Sun sets. On 2 September it is almost in the direction of the centre of the Milky Way. On 8 September, the nearly Full Moon rises above the eastern horizon soon after sunset.

On 13 September, the Moon can be seen north of Pleiades (*Kruttika*). Between 16 and 17 September, it passes through the Gateway of Heaven. Between 19 and 20 September, the Moon passes north of Venus and Regulus.

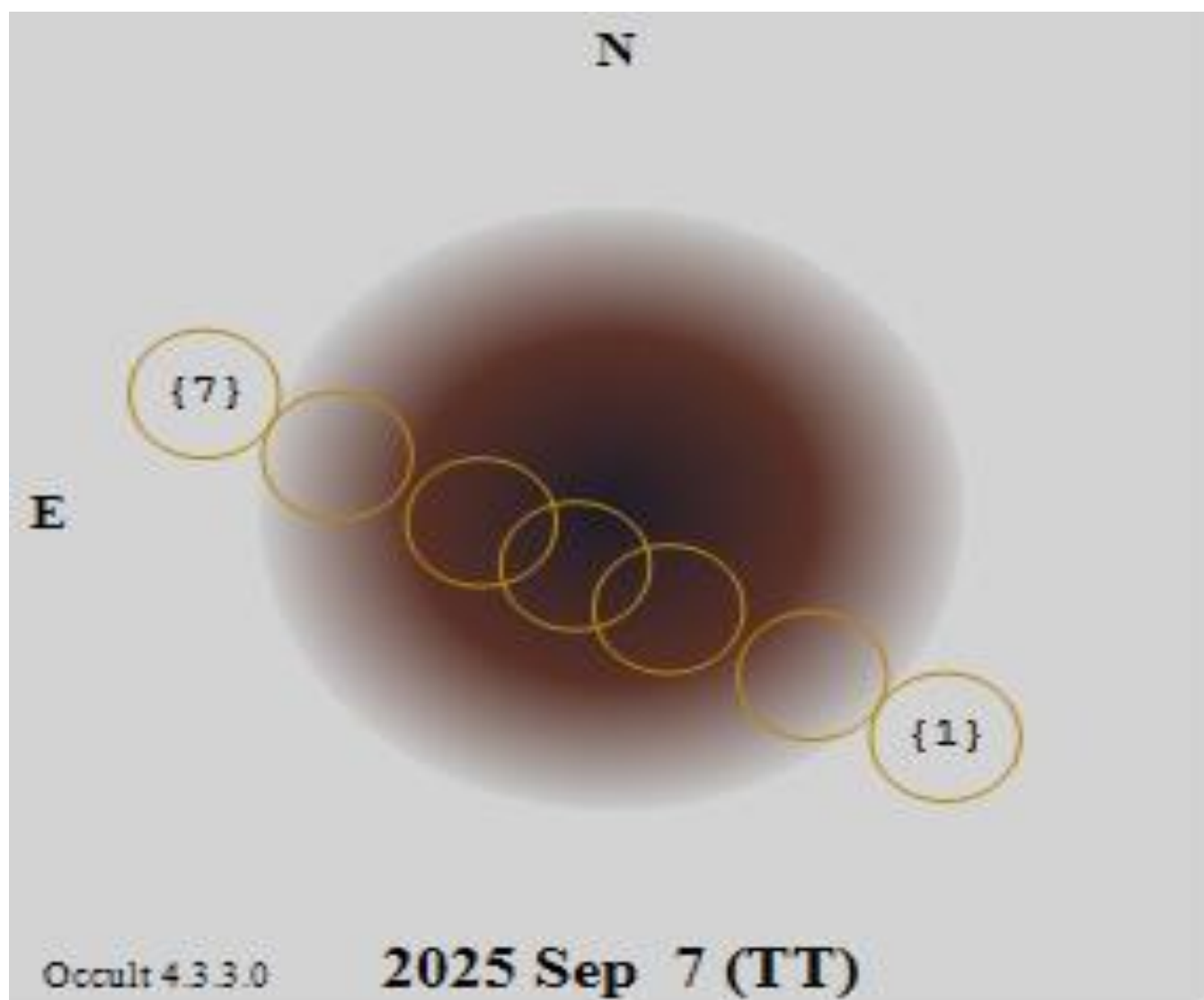
On 24 September, the thin lunar crescent makes a nice right-angled triangle with Mars and Spica. On 27 September, the Moon can be seen west of Antares (*Jyeshtha*). Two days later, it will be at the spout of the teapot asterism of Sagittarius; it will reside in Sagittarius, and on the last day of the month the Moon will be seen holding the handle of the teapot.

A Total Lunar Eclipse will occur on the night of 7-8 September 2025. It will be visible all over India. The eclipse begins on 7 September, with the Moon entering the penumbral shadow of the Earth at 8:58 pm. The maximum eclipse will be at 11:23 pm. The eclipse ends at 2:26 am on 8 September. The size of the Earth's shadow will be 1.4 times the diameter of the Moon.

No.	Event	Time in IST
[1]	Moon enters penumbra	20:58 (7 Sept)
[2]	Moon enters umbra	21:57
[3]	Total eclipse starts	23:01
[4]	Maximum eclipse	23:43
[5]	Total eclipse ends	00:23 (8 Sept)
[6]	Moon leaves umbra	01:27
[7]	Moon leaves penumbra	02:26



This image shows the side of the Earth directly facing the Moon, at various events



This image shows the position of the Moon inside the shadow of the Earth at various events



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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; and 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:

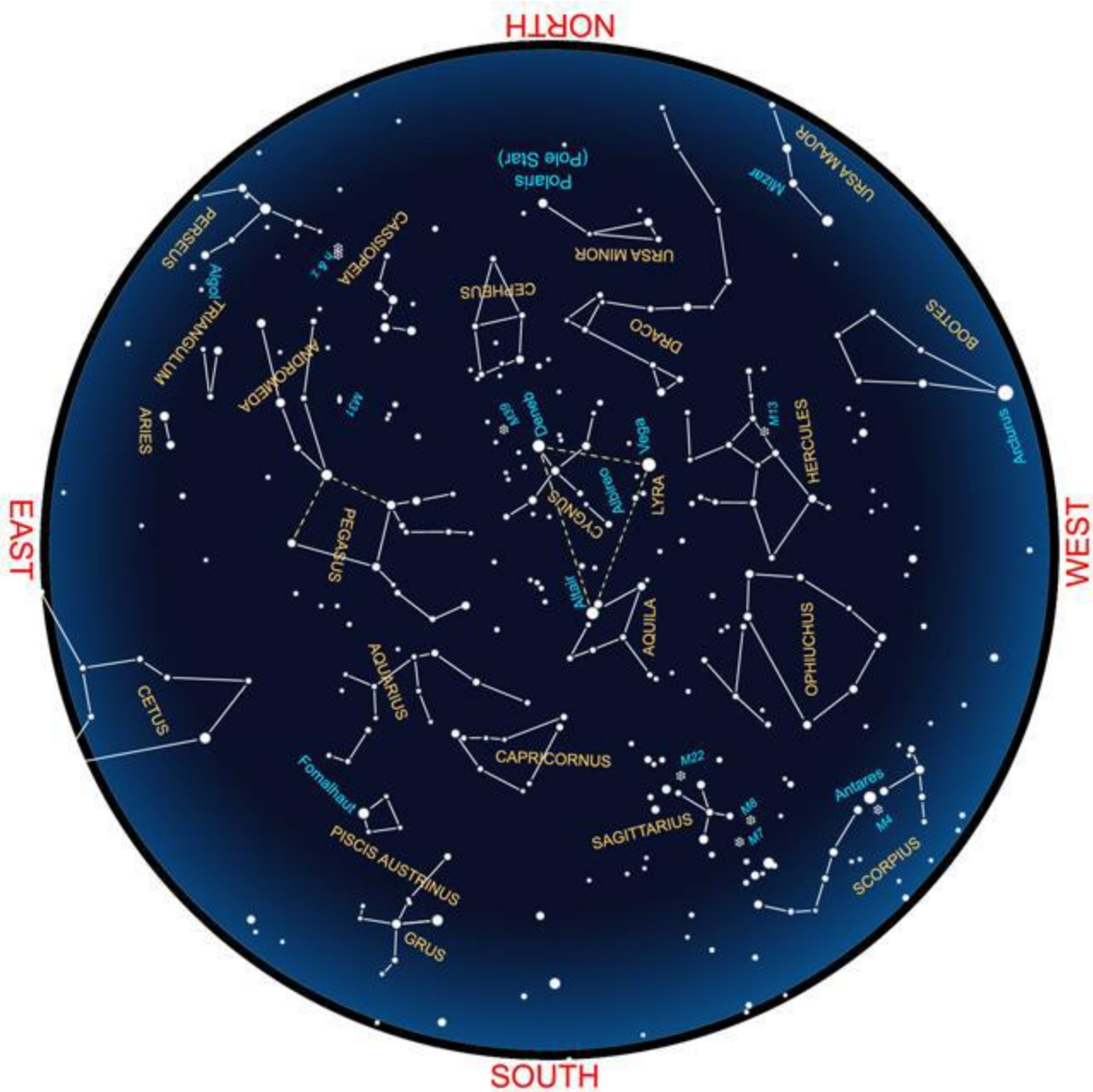
4	05:12:00	3.Oc.R
6	02:43:00	2.Tr.I

Means that

At 05:12:00 hours on 4 September, the occluded Europa will reappear from behind the disc of Jupiter. On 6 September, at 02:43:00 hours, Callisto will begin its transit across Jupiter's disc.

Satellites of Jupiter in September 2025										
<u>1</u>	<u>2</u>	<u>3</u>		<u>1</u>	<u>2</u>	<u>3</u>		<u>1</u>	<u>2</u>	<u>3</u>
04	05:12:00	3.Oc.R		14	03:48:00	1.Ec.D		23	03:42:00	1.Oc.R
06	02:43:00	2.Tr.I		15	02:15:00	1.Tr.I		23	04:45:00	4.Oc.R
06	03:20:00	2.Sh.E		15	03:06:00	2.Oc.R		29	02:59:00	3.Sh.E
06	04:45:00	1.Sh.I		15	03:21:00	1.Sh.E		29	03:07:00	2.Ec.D
07	05:33:00	2.Tr.E		15	04:30:00	1.Tr.E		29	04:54:00	1.Sh.I
07	05:49:00	1.Tr.I		19	05:46:00	3.Ec.D		29	04:58:00	3.Tr.I
07	05:17:00	1.Oc.R		21	05:46:00	2.Sh.I		29	02:04:00	1.Ec.D
08	05:51:00	4.Oc.D		22	05:42:00	1.Ec.D		01*	05:38:00	1.Oc.R
08	02:33:00	1.Tr.E		22	03:00:00	1.Sh.I		01*	01:36:00	1.Sh.E
11	04:49:00	3.Ec.R		22	03:59:00	3.Tr.E		01*	02:51:00	1.Tr.E
13	03:09:00	2.Sh.I		22	04:12:00	1.Tr.I		01*	03:03:00	2.Tr.E
13	05:28:00	2.Tr.I		22	05:14:00	1.Sh.E				
14	05:56:00	2.Sh.E		23	05:46:00	2.Oc.R		* Night of 30 September		

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



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