SkyNews Astronomical events for Indian observers

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Sun and Planets

Mercury, which was visible in the morning sky of July 2020, is getting very close to the Sun this month. It passes through M44 (the Beehive Cluster) on 9 August, but will be too difficult to observe. On 17 August, Mercury will be at superior conjunction, i.e. it will be right behind the Sun. After that it reappears above the western horizon at sunset. But this appearance of Mercury in the evening sky is not quite favourable.

Venus continues to shine as a brilliant -4 magnitude object in the morning sky over the eastern horizon an hour before sunrise. It attains its maximum western elongation of 45.8° on 13 August at about 6:30 am. After that the angle between Venus and the Sun starts decreasing. During these morning appearances Venus will be seen moving southwards.

Mars can be seen above the eastern horizon by local midnight. By the end of the month it will rise two and a half hours after the local sunset.

Jupiter and Saturn are above the eastern horizon at sunset. All through the month the two planets maintain nearly the same distance of about 8° from each other.

Transitions of the Sun and Planets

(*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 the 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.*)

List of Events in August 2020

Dt	Dy	Time	Event
01	Sa	14:17	Moon south declination: 24.1° S
02	Su	01:44	Mercury-Pollux: 6.7° S
02	Su	05:00	Moon-Jupiter: 1.6° N
02	Su	18:47	Moon-Saturn: 2.4° N
03	Mo	21:29	Full Moon
09	Su	13:27	Moon-Mars: 0.8° N, occultation
09	Su	19:21	Moon apogee: 404700 km
10	Mo	23.00	Uranus 3.3° N of Moon
11	Tu	22:15	Last quarter
12	We	18:32	Perseid shower: ZHR = 90
13	Th	06:29	Venus elongation: 45.8° W
13	Th	14:24	Aldebaran 3.9° S of Moon
15	Sa	00:52	Moon ascending node
15	Sa	18:31	Moon-Venus: 4.2° S
16	Su	02:10	Moon north declination: 24.2° N
17	Mo	20:17	Mercury superior conjunction
19	We	08:11	New Moon
21	Fr	16:29	Moon perigee: 363500 km
25	Tu	23:28	First quarter
27	Th	17:22	Moon descending node
28	Fr	19:36	Moon south declination: 24.2° S
29	Sa	07:03	Moon-Jupiter: 1.5° N
29	Sa	22:10	Moon-Saturn: 2.3° N

The Sun is in Cancer, the Crab (*Karka*) as the month begins and moves to Leo, the Lion (*Simha*) on 10 August.

Mercury moves from Gemini, the Twins (*Mithuna*) to Cancer on 4 August.

Venus is in Taurus, the Bull (*Vrishabha*) as the month begins and moves to Orion, the Hunter (*Mrugha*) on 5 August. This is as per the constellation boundaries defined by the International Astronomical Union. The planet then moves to Gemini on 13 August.

Mars is in Pisces, the Fish (*Meena*) this month.

Both Jupiter and Saturn are in Sagittarius, the Archer (*Dhanu*) in August 2020.

March of the Moon

On 1 August, the almost full Moon can be seen right above Jupiter (that is, to its west) in the eastern sky soon after sunset. The next day it will move below Saturn (i.e. to the east of the planet).

On 8 August the Moon rises about 20 minutes after Mars and on 9 August both of them can be seen less than 5° from each other. Later, the Moon occults Mars but this event is not visible from India.

On 10 August the Moon passes within 3.3° south of Uranus. It should be possible to see both of them together through a pair of binoculars. The Moon will be about 57% illuminated at this time.

On 13 August the Moon is just about 5° west of Aldebaran in the pre-dawn sky. On 15 August the lunar crescent can be seen right above (west of) Venus and the next day it will be below Venus. After its New Moon phase on 19 August it reappears above the western horizon at sunset.

The Moon follows a 27.32 day periodic cycle in its revolution around the Earth. On 28 August it will be seen in the eastern sky to the west of Jupiter (i.e. above Jupiter). The next day on 29 August, it will be less than 3° south of Saturn. On 30 August it will be below Saturn. Compare this with its positions on 1 and 2 August.

Gateway of Heaven

This is a relatively new asterism.

The ancient astronomers created figures out of randomly scattered stars in the sky, which we call constellations. Some of these were common among many civilisations; for example, a pattern of about a dozen stars were imagined as a scorpion by many civilisations in the northern hemisphere. But the same group of stars were imagined as a fishing hook by sky watchers of the Polynesian Islands.

A committee setup by the International Astronomical Union defined 88 constellations in 1921. In 1928 the committee defined exact boundaries for these constellations based on the celestial coordinate system.

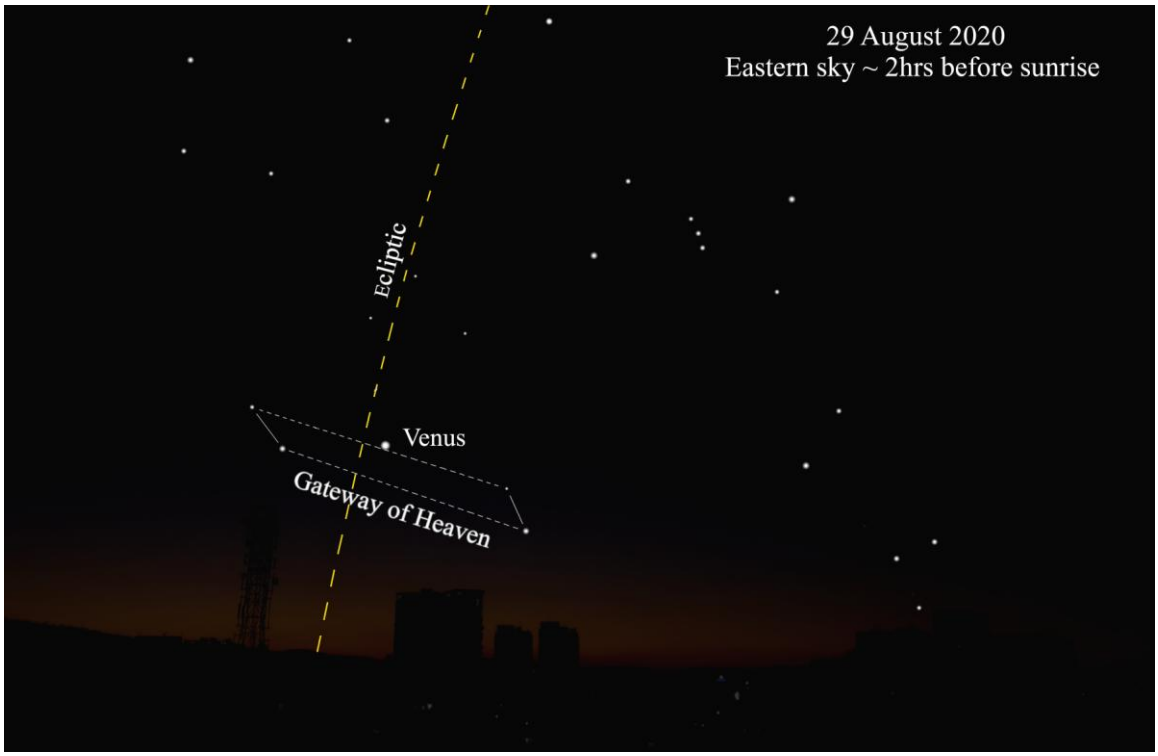
Yet, many amateur astronomers identified different patterns in the sky. For example, the famous British amateur astronomer Patrick Moore labelled a group of stars as the Summer Triangle. These were the three bright stars Alpha Aquile (Altair), Alpha Cygni (Deneb) and Alpha Lyra (Vega). The stars are nearly equidistant from each other on the celestial sphere and form an equilateral triangle. They can be seen over the eastern horizon on June and July evenings and progressively shift upwards at the same time over the next couple of months. Such a group of stars which is smaller than a constellation but forms a recognisable pattern is called an asterism.

Around 1976–77, amateur astronomers began talking about a new asterism called the '**Gateway of Heaven**'. It is not very clear who first defined this group, but it is certain that it was talked about by amateur astronomers in Bangalore, India.

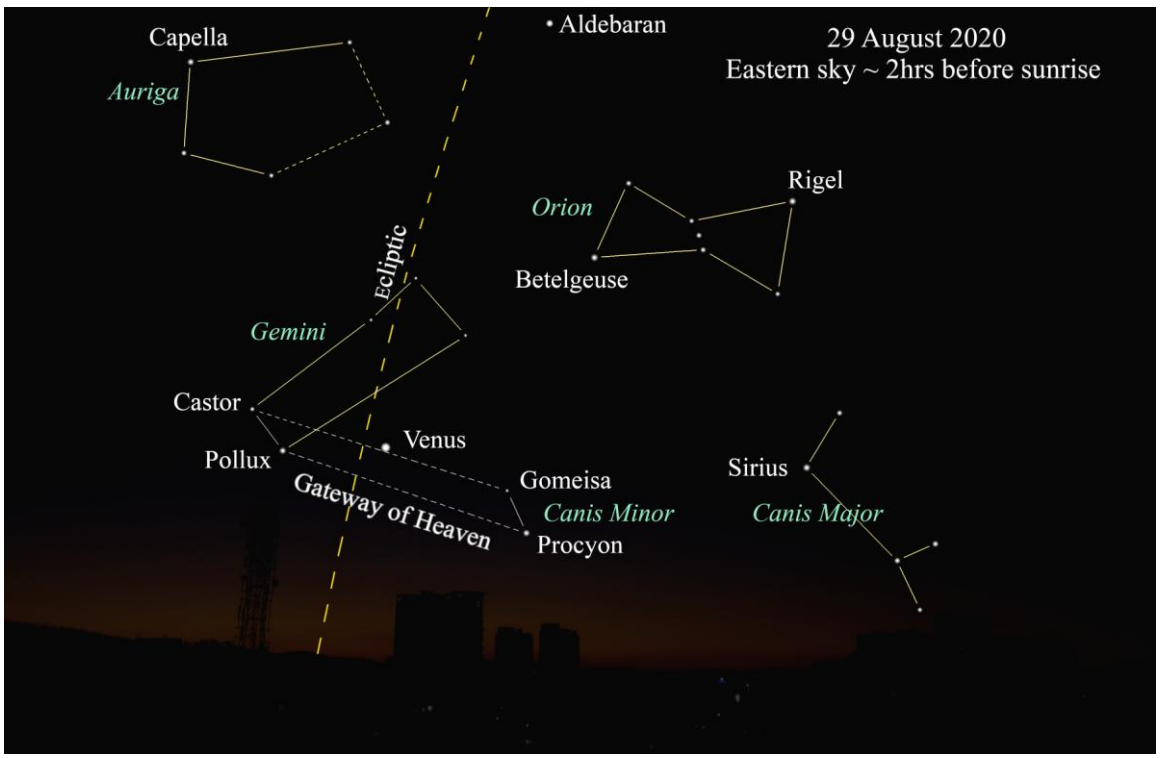
This group resembles a long parallelogram formed by the two brightest stars of Gemini, Castor and Pollux, at the northern end; and two stars of Canis Minor, Procyon and Gomeisa, at the southern end. See the diagram. It is like a long railway gate. This parallelogram is called the **Gateway of Heaven**. The line of the ecliptic, which is the apparent path of the Sun on the celestial sphere, passes almost through the centre of this parallelogram. Hence the Moon and all the planets can also be seen within this parallelogram at some time. This is an excellent photo opportunity for astrophotographers.

On 16 August the Moon passes through the Gateway of Heaven. By the end of the month Venus can be seen in the Gateway of Heaven.

Gateway of Heaven



The Gateway of Heaven is the imaginary parallelogram made by the stars Castor, Pollux, Procyon and Gomeisa. The graphic above shows Venus inside the Gateway of Heaven as seen from the ground. The figure below is the same graphic with the prominent constellations and stars marked for reference.



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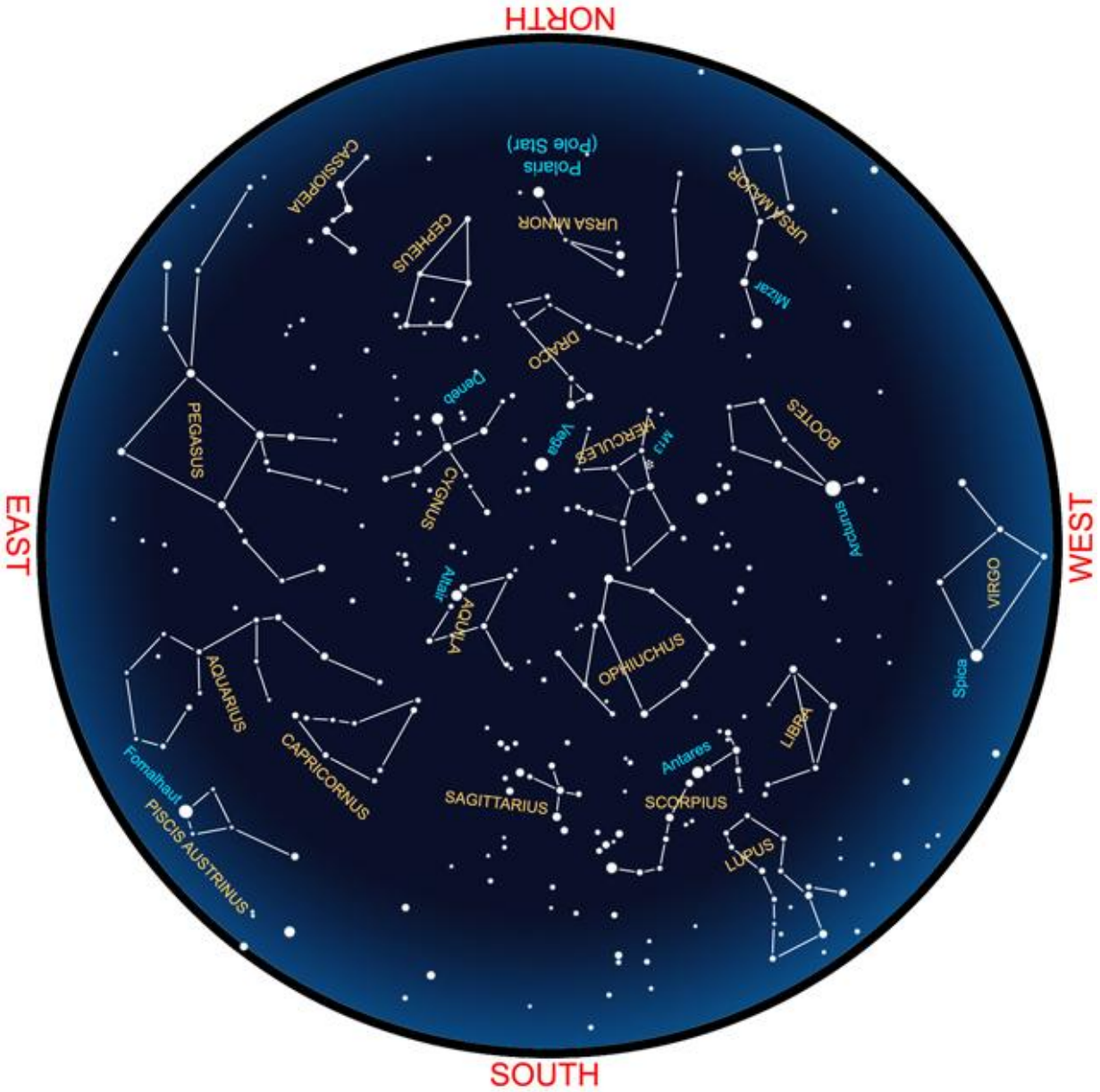
Sky map for the month of August, drawn for mid northern latitudes, to be used around 9:30 pm local time



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