SkyNews Astronomical events for Indian observers

Volume 2 Issue 2, February 2020

Sun and Planets

It is generally said that Copernicus, the man who proposed that the planets revolve around the Sun, never actually saw Mercury. This planet does not venture too far from the Sun and remains very close to the horizon at sunset or sunrise. And from the latitude where Copernicus was observing, the sky conditions were not favourable to see objects close to the horizon. However, there is evidence that he did take at least three observations of Mercury.

For those close to the equator, Mercury is not difficult to spot, if you know where to look for it. Mercury can be spotted above the western horizon at sunset, albeit with some difficulty in the first half of this month. On 1 February it sets after the end of nautical twilight. By 7 February it sets after the end of astronomical twilight. It reaches its highest altitude of about 16.5° on 11 February.

Post sunset, the February sky also has Venus, Uranus and Neptune above the western horizon. But by the month end, Neptune will be too close to the sun to be seen.

In the morning, Mars and Jupiter can be seen above the eastern horizon just before dawn in the first half of February. By the third week of February, Saturn can also be seen above the eastern horizon before daybreak.

Don't miss the eastern sky at dawn from February 18 to 21, when the Moon slides past the first three outer planets in that order. See 'March of the Moon' below.

List of Events

Dt	Dy	Time	Event
01	Sa	11:59	Uranus 4.2º N of Moon
02	Su	07:12	First quarter
04	Tu	11:36	Aldebaran 3.1º S of Moon
06	Th	14:29	Moon ascending node
06	Th	21:40	Moon farthest north; dec.: 23.3° N
07	Fr	18:05	Pollux 5.3º N of Moon
08	Sa	15:46	Beehive Cluster 1° S of Moon
09	Su	13:03	Full Moon
10	Mo	05:00	Regulus 3.6° S of Moon
10	Mo	19:29	Mercury elongation: 18.2° E
11	Tu	02:00	Moon perigee: 3,60,500 km
16	Su	03:47	Last quarter
16	Su	18:40	Mercury stationary
18	Tu	18:48	Mars 0.8° S of Moon
19	We	05:42	Moon descending node
19	We	14:28	Moon south dec.: 23.3° S
20	Th	01:06	Jupiter 1° N of Moon
20	Th	19:17	Saturn 1.9° N of Moon
23	Su	21:02	New Moon
24	Mo	23:42	Neptune 3.8º N of Moon
26	We	07:07	Mercury inferior conjunction
26	We	17:05	Moon apogee: 4,06,300 km
27	Th	17:21	Venus 7° N of Moon
28	Fr	20:39	Uranus 4.0º N of Moon

March of the Moon

First quarter of the Moon is on 2 February. On this day the Moon is almost overhead at sunset and will set at midnight. Similarly on last quarter it is overhead at sunrise, which means that it rises at midnight.

On 9 February the full Moon will be slightly to the north and west (above and to the left if one faces east) of Regulus (*Magha*), the brightest star in the constellation of Leo (*Sinha*). Next day on 10 February the Moon passes less than 4° from the star.

From 13 to 16 February the Moon passes through Virgo (*Kanya*) and Libra (*Tula*).

The early morning sky of 18–21 February offers a visual delight, particularly if you are at a dark location. Mars, Jupiter and Saturn are right on the ecliptic and in the direction of Sagittarius which in turn is in the direction of the centre of the Milky Way.

Just before dawn on 18 February, the lunar crescent can be seen about 5° to the west and south of Mars. The next day, the Moon is between Mars and Jupiter, but closer to Mars. Early morning on 20 February, the thin lunar crescent is right below

Jupiter and then on the 21st, a very thin lunar crescent can be seen below Saturn.

After New Moon on 23 February, the Moon reappears above the western horizon at sunset. On 27 February it is just about 7° south of Venus.

Transitions of the Sun and Planets

(*Disclaimer: we categorically mention here that we do not believe in astrology and believe that an 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.*)

The Sun moves from Capricornus, the Sea-Goat (*Makara*) to Aquarius, the Water-Bearer (*Kumbha*), on 17 February.

Mercury moves from Capricornus to Aquarius on 2 February and remains there till the month end. In fact, it swings inside the boundaries of the constellation.

Venus moves from Aquarius to Pisces, the Fish (*Meena*) on 2 February.

Mars moves from Ophiuchus, the Serpent Bearer (*Bhujangadhari* or *Sarpdhar*) to Sagittarius, the Archer (*Dhanu*) on 11 February.

Jupiter and Saturn are in Sagittarius this month.

A Starry Valentine's Day

Want to wish your valentine who is far away? Nothing like a celestial Valentine's Day celebration. Connect with your sweetheart via the stars — literally.

Get your friend to look up at the sky at around 8.30 pm on 14 February. You do the same. You will see the magnificent Orion constellation with its three stars (forming the belt of the hunter) in a straight line, surrounded by four bright stars (check the star map given below.) One of the stars has a strong reddish hue, resembling a rose high above the world. This star is Betelgeuse (*Kakshi*). As both of you observe the star together, you may hum the words 'Twinkle, twinkle little star, you are my Valentine wherever you are', and wait for a response through the heavens.

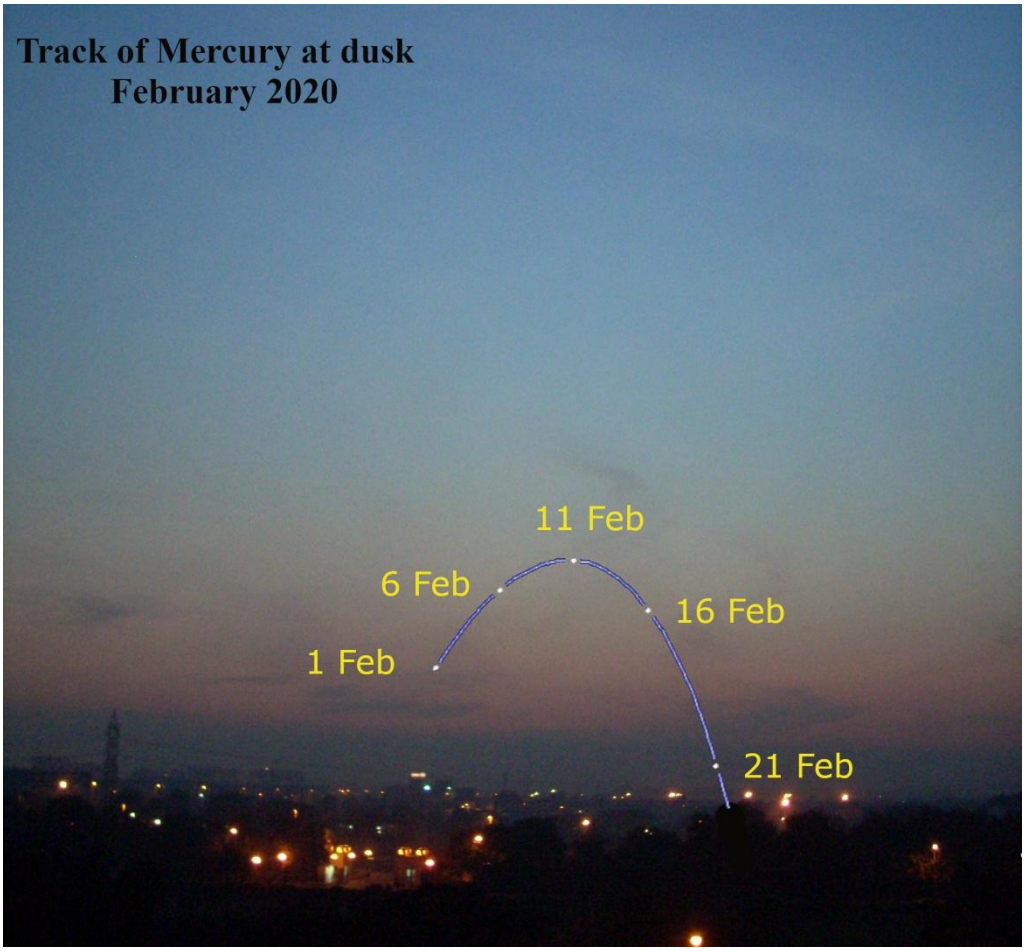
Coming back to astronomy, this red star, Betelgeuse, is what is called a supergiant. It is so massive that if you place it where the Sun is, the Earth would be engulfed within it. This star has been in the news these days. It has been noted that the star has ‘visibly’ dimmed in the recent past. It is expected that the star will explode. And that explosion can happen anytime from this very moment to hundreds of years from now. That date could even be 14 February 2020, at the precise moment when you are admiring its rosy hue, in silent communion with your sweetheart. It would indeed be a memorable Valentine's Day, and unique from an earthly perspective.

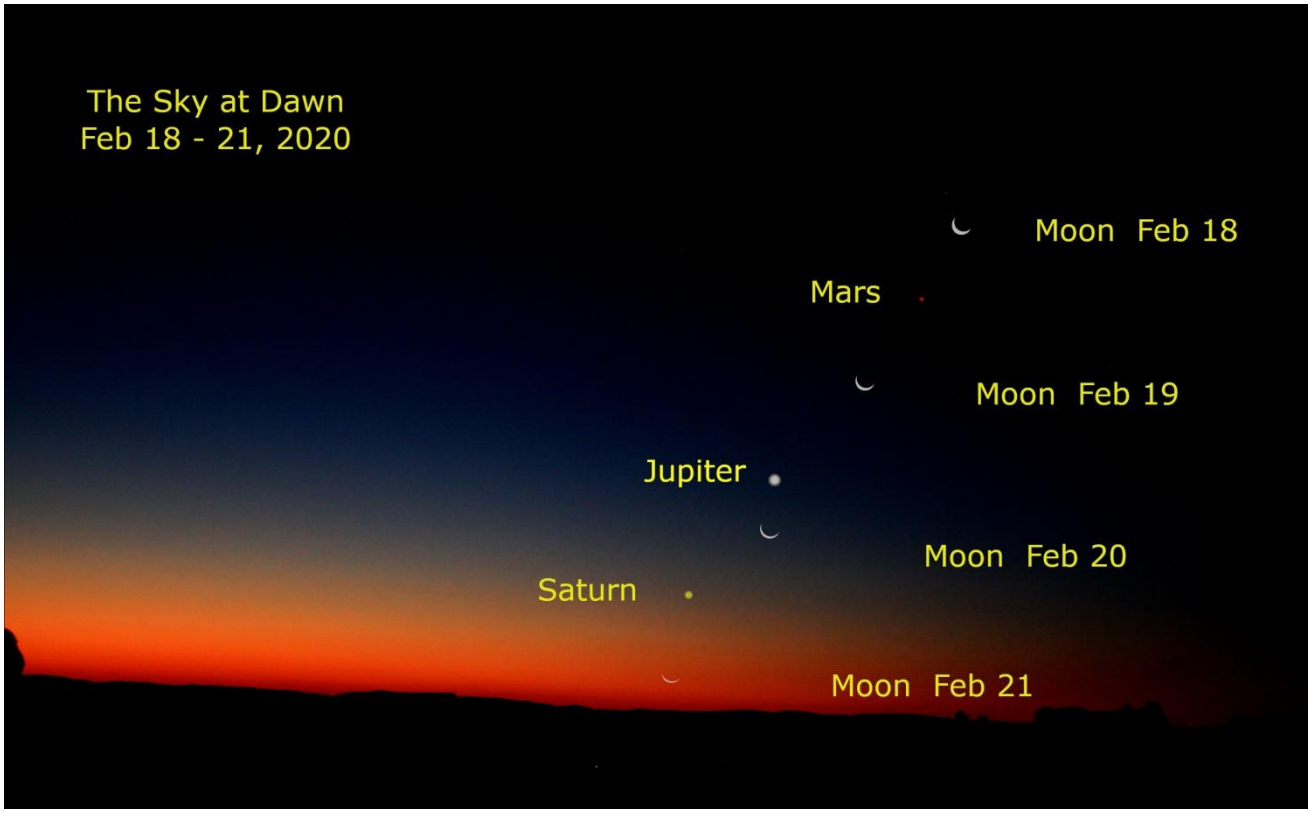
Shadow by Venus

At -4.0 magnitude, Venus is bright enough to cast a shadow of an object. To see the shadow of an object cast by Venus, you must go to a very dark site, with minimal light from any terrestrial source. A good time is after 10 February. Venus sets nearly one hour after the end of astronomical twilight. But you do not have to wait for the end of this twilight.

Here is one method for seeing a shadow due to Venus. You are, of course free to devise your own setup. Do write in and share your experience about what worked for you.

Take a box of approximate size 30 cm x 30 cm x 30 cm. Cut off the top and one side. Stick good, white, non-shiny paper at the base of the box. Paint the other three sides with dull matt black paint or line them with rough black paper. At one end stick a bar of thermocol or some material into which you can mount a vertical object like a pencil. Place the unit such that the open side faces Venus. Watch carefully. You should be able to see a faint but distinct shadow of the pencil.


Track of Mercury at dusk
February 2020
11 Feb
6 Feb
16 Feb
1 Feb
21 Feb


The Sky at Dawn
Feb 18 - 21, 2020
Moon Feb 18
Mars
Moon Feb 19
Jupiter
Moon Feb 20
Saturn
Moon Feb 21

Upcoming Star Parties:

Organizer:	**Stargazing Mumbai**
Dates:	**Saturday, 29 February, 2020**
Place:	Mahuli, Asangaon, Maharashtra (about 80 km north of Mumbai on the Mumbai-Nasik highway)
Details:	Visit the link
Fee:	Rs 350/= per person
Contact:	Sandip Shelar, +91 91126 62662

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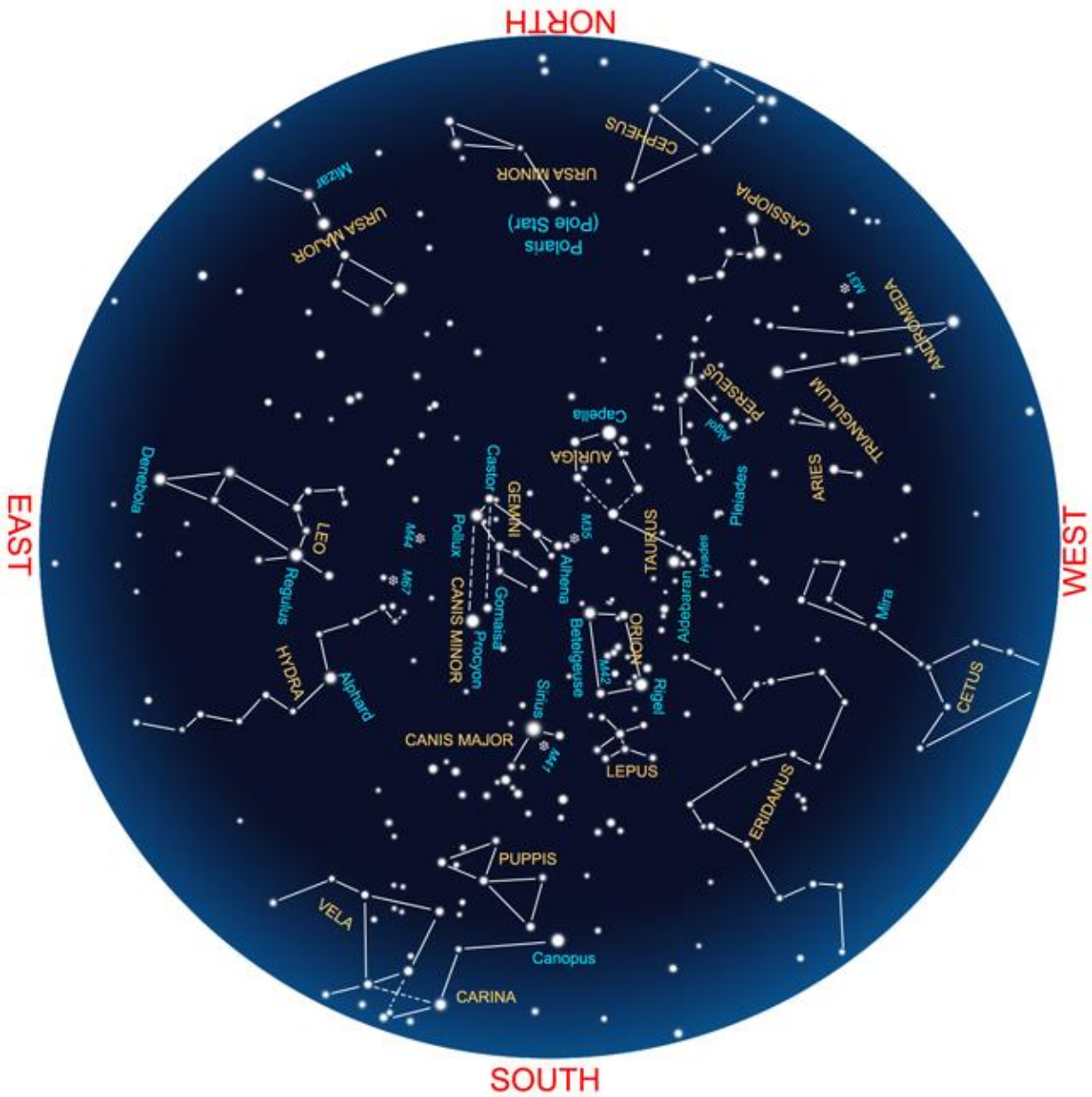
Sky map for the month of February, drawn for mid northern latitudes, to be used around 9:30 pm local time



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