

## Mars perihelic opposition and total lunar eclipse on night of July 27 and early next morning

A Mars perihelic opposition will occur on the night of July 27 (Friday), followed by a total lunar eclipse in the early morning of the next day. The two astronomical events will be visible if weather permits.

During Mars opposition, Mars, the Earth and the Sun lie on a straight line, with Mars and the Sun located exactly on the opposite sides of the Earth. When Mars is at its perihelion (Note) during the opposition, it is called the Mars perihelic opposition (Figure 1). During the event, Mars is also closest to the Earth, and therefore the planet will look brighter than usual. Mars perihelic opposition occurs every 15 or 17 years. The last Mars perihelic opposition took place in 2003, and members of the public may have the chance to witness the event again with the naked eye on July 27. Mars will appear as a bright reddish orange dot in the nights around the opposition, with its brightness second only to the Moon and Venus in the night sky. Details of the coming Mars perihelic opposition are as follows:

Date	Hong Kong Time	Phenomenon	Elevation	Direction (Azimuth)
July 27 (Friday)	1.13pm	Mars opposition	Below the horizon	–
	7.06pm	Sunset	-1 degree	West-northwest (291 degrees)
	7.18pm	Mars rise	-1 degree	East-southeast (117 degrees)
July 28 (Saturday)	0.34am	Mars transit	42 degrees	South (180 degrees)
	5.51am	Mars set	-1 degree	West-southwest (242 degrees)

Members of the public may also observe the second total lunar eclipse of the year in the early hours of July 28. The eclipse will begin at 1.13am, with the stage of total eclipse lasting for 1 hour and 44 minutes, the longest duration since 2000. The event will be visible at most places with an unobstructed view to the southwest till moonset at 6am (Figures 2 and 3). Details of the total lunar eclipse are as follows:

Date	Hong Kong Time	Phenomenon	Elevation	Direction (Azimuth)
July 27 (Friday)	6.45pm	Moonrise	-1 degree	East-southeast (111 degrees)
July 28 (Saturday)	1.13am	Moon enters penumbra	46 degrees	South-southwest (197 degrees)
	2.24am	Moon enters umbra	39 degrees	Southwest (217 degrees)
	3.30am	Total eclipse begins	29 degrees	Southwest (231 degrees)
	4.22am	Maximum eclipse	19 degrees	West-southwest (239 degrees)
	5.14am	Total eclipse ends	9 degrees	West-southwest (245 degrees)
	5.53am	Sunrise	-1 degree	East-northeast (69 degrees)
	6.00am	Moonset	-1 degree	West-southwest (250 degrees)
	6.19am	Moon leaves umbra	Below the horizon	—
	7.30am	Moon leaves penumbra	Below the horizon	—

Members of the public can watch the whole event via a webcast to be jointly provided by the Hong Kong Observatory, the Hong Kong Space Museum, the Ho Koon Nature Education cum Astronomical Centre, the Po Leung Kuk Ngan Po Ling College and the Hong Kong Sheng Kung Hui Solar Tower€§Camp on the following webpage:

[www.hko.gov.hk/gts/event/webcast-20180728.htm](http://www.hko.gov.hk/gts/event/webcast-20180728.htm).

For the weather on July 27 and 28, please refer to the latest nine-day weather forecast issued by the Hong Kong Observatory at the following webpage:

[www.hko.gov.hk/wxinfo/currwx/fnd.htm](http://www.hko.gov.hk/wxinfo/currwx/fnd.htm).

As regards the astronomical observation conditions for that night, please refer to the "Weather Information for Astronomical Observation" webpage:

[www.hko.gov.hk/gts/astronomy/astro\\_portal.html](http://www.hko.gov.hk/gts/astronomy/astro_portal.html).

The next lunar eclipse visible in Hong Kong will occur on July 17, 2019, and will be a partial lunar eclipse.

Note: Perihelion is the point in the planet's orbit when it is closest to the Sun.