



PARTIAL LUNAR ECLIPSE OF 16 AUGUST 2008

Eclipses can take place whenever the Sun, the Earth, and the Moon are aligned or nearly in a straight line.

As the Moon orbits the Earth, it reaches points along its orbit where it is in line with the Sun, but usually its orbit is tilted (inclined) with the Earth's orbit around the Sun. When the Moon is between the Earth and the Sun (conjunction) it is called a New Moon, and when the Earth is between the Sun and the Moon (opposition), it is called a Full Moon.

A lunar eclipse occurs when the Full Moon enters the Earth's shadow (umbra) as it orbits the Earth as shown in Figs 1 and 2. Lunar eclipses can be observed from all the areas that will fall into the night time during a lunar eclipse.

A partial lunar eclipse is predicted to occur on **Saturday, 15th Shaaban 1429 H (16th August 2008)** according to Umm Al-Qura calendar.

According to the Local Time of Saudi Arabia (GMT+3), the start of the partial lunar eclipse (the instance moon touches the Earth's Shadow, no. **1** in Fig. 1) will occur at about **10:36 p.m.** The maximum partial lunar eclipse, no. **2** in Fig. 1 (about 75 % of the area of the moon will be eclipsed, its magnitude is 81%) happens at about **12:10 a.m.** and it ends at about **1:45 a.m.** (the instance the moon will completely emerge the earth's shadow and that is the end of the observable lunar eclipse, no. **3** in Fig. 1).

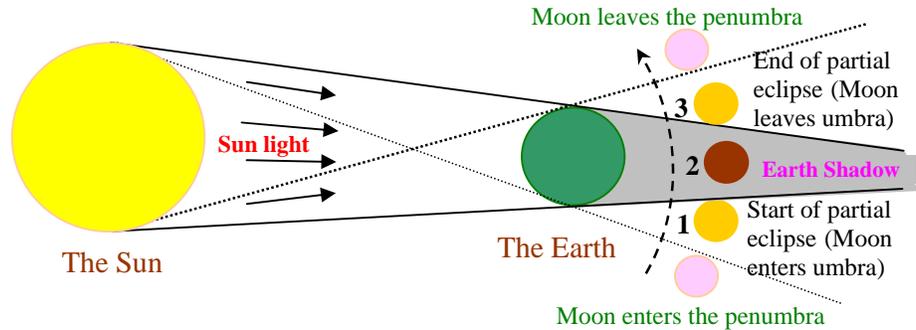


Fig (1): Lunar Eclipse: The Figure shows Geometry of a lunar Eclipse

People around the world can see some stages of the partial lunar eclipse except North America, north west South America, and north east Asia.

Observers in areas located in east and middle of Africa, west Asia, and Middle East can see the entire duration of the Saturday partial lunar eclipse (see the map). The entire period of the lunar eclipse is observable in Saudi Arabia since it occurs at night.

The entire eclipse will last for about three hours (186 minutes).

Observers in Saudi Arabia can watch the entire period of the partial eclipse since it occurs at night.

Please remember that Eclipses or any other celestial phenomena are not related to life, death, or destiny or fate of a person. A solar eclipse coincided with the day of the death of Ibraheem, son of our Prophet Mohammad – PBUH (ﷺ) and people believed that it happened because of his death, but our Prophet (ﷺ) said: (what the meaning is) the Sun and the Moon are Signs of Allah and they will NOT be eclipsed for the death or the life of any person, if you see them make dua'a to Allah and pray till it is over. Therefore, do not forget to observe the Eclipse prayer during the eclipse time as directed to us by our Prophet (ﷺ).

Since at greatest partial eclipse is about 75% (Its magnitude is about 81%) of the lunar area is darkened (enters the Earth shadow), most of the people will notice it since still it is not that late and we should prepare ourselves to go to mosques to perform eclipse prayer as directed by our Prophet - PBUH (ﷺ).

For more information please contact: Dr. Ali Mohammad Al-Shukri
Chairman of Physics Department, Physics Dept., KFUPM
Tel: 860-2255 - Fax: 860-2293 - email: alshukri@kfupm.edu.sa
Homepage: faculty.kfupm.edu.sa/PHYS/alshukri

Fig. 2

Partial Lunar Eclipse of 2008 Aug 16

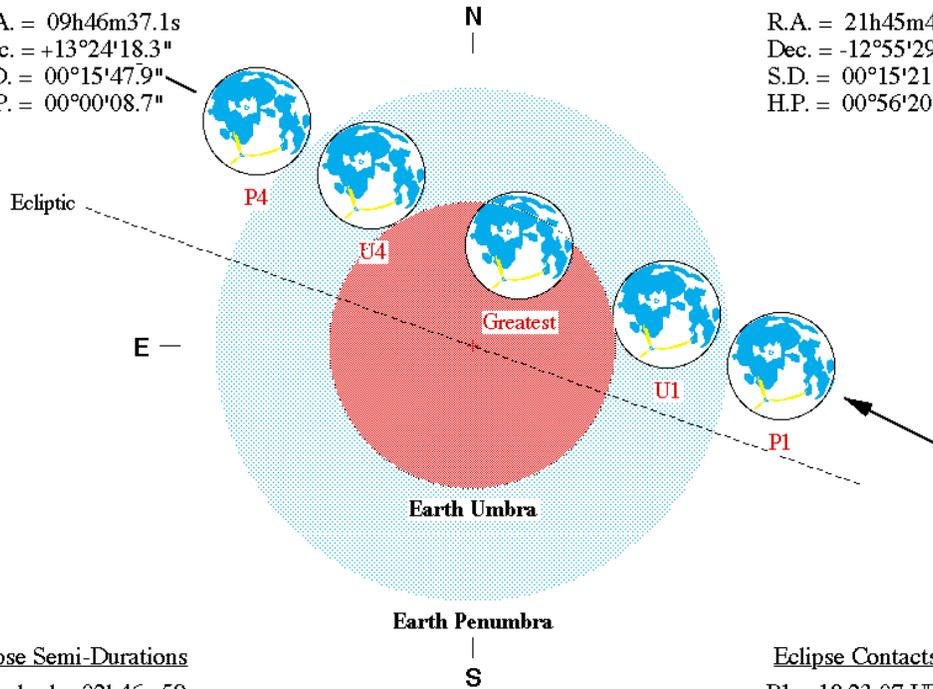
Geocentric Conjunction = 21:40:03.4 UT J.D. = 2454695.40282
Greatest Eclipse = 21:10:08.5 UT J.D. = 2454695.38204
Penumbral Magnitude = 1.8620 P. Radius = 1.2273° Gamma = 0.5647
Umbral Magnitude = 0.8124 U. Radius = 0.6901° Axis = 0.5303°
Saros Series = 138 Member = 29 of 83

Sun at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 09h46m37.1s
Dec. = +13°24'18.3"
S.D. = 00°15'47.9"
H.P. = 00°00'08.7"

Moon at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 21h45m41.8s
Dec. = -12°55'29.0"
S.D. = 00°15'21.1"
H.P. = 00°56'20.6"



Eclipse Semi-Durations

Penumbral = 02h46m59s
Umbral = 01h34m27s

Eclipse Contacts

P1 = 18:23:07 UT
U1 = 19:35:45 UT
U4 = 22:44:38 UT
P4 = 23:57:06 UT

Eph. = Newcomb/ILE
 $\Delta T = 65.4$ s

F. Espenak, NASA's GSFC - 2004 Jul 07
<http://sunearth.gsfc.nasa.gov/eclipse/eclipse.html>

