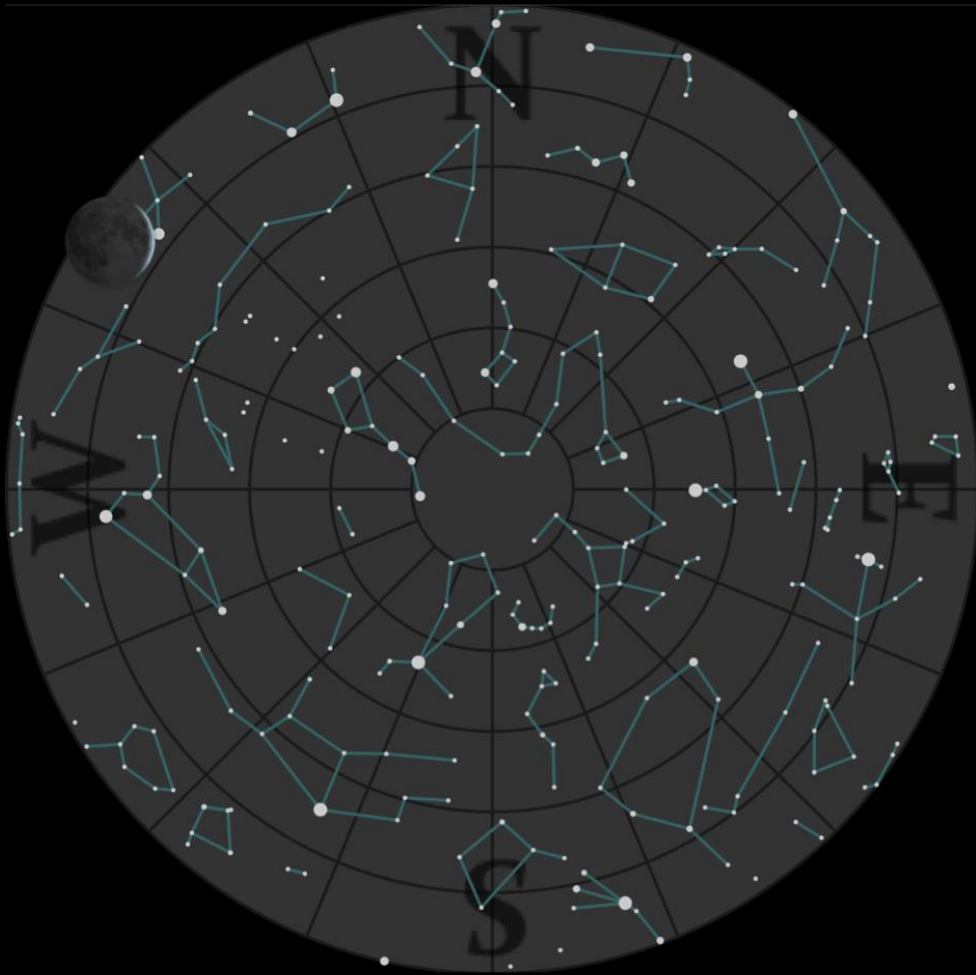


What's Up?

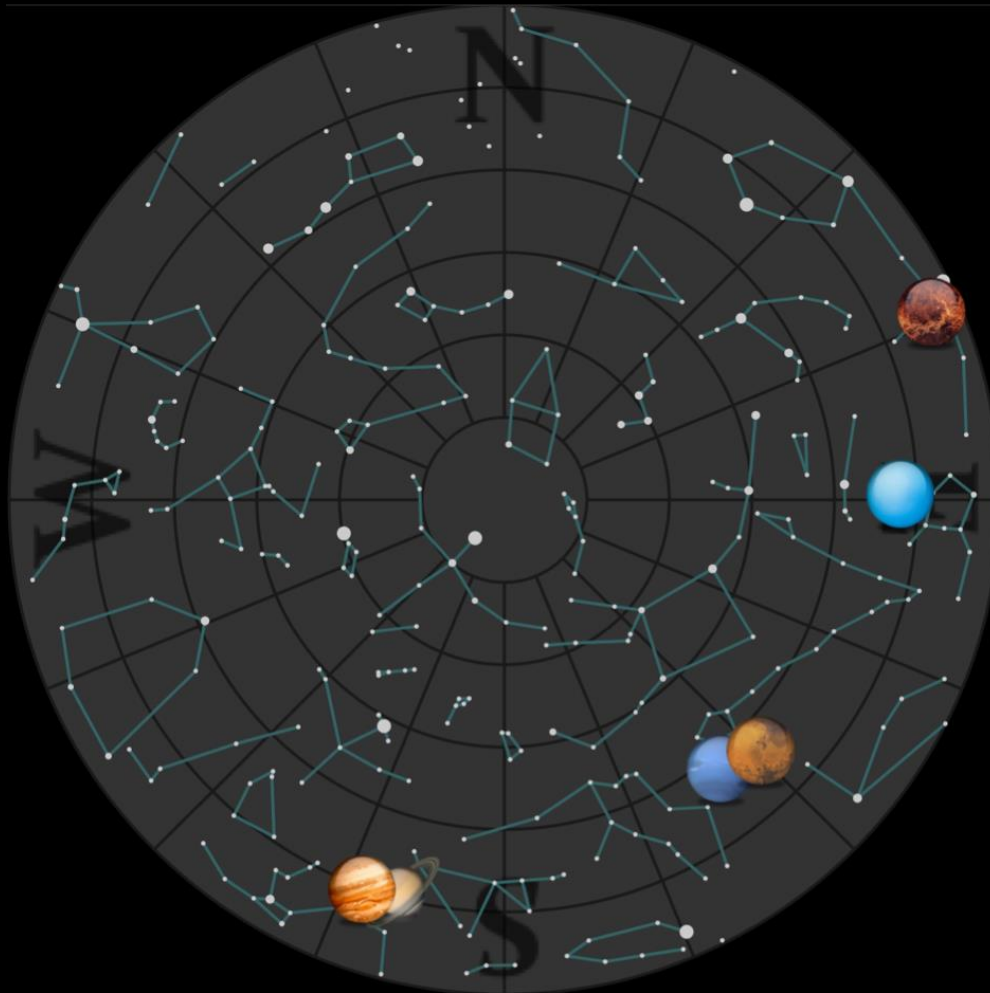
2020 June 22 to July 27

Bill Barton, FRAS

•The Sky 22:00
Tonight







•The Sky 04:00
Tomorrow



Inner Solar System

- Sun
 - Declination decreasing, Aphelion July 04, Equinox September 22
- Mercury
 - Currently in evening sky
 - Inferior conjunction July 01
 - Then in morning sky, greatest elongation July 22 (20°)
 - Today, rise 05:55, transit 13:50, set 21:50
- Venus
 - In morning sky, greatest western elongation August 13 (46°)
 - Today, rise 03:25, transit 11:10, set 18:50

Earth

- Time
 - 00:00UT \approx 18:00ST today
 - Today, sunrise 04:35, transit 12:55, sunset 21:15
 - End of period, sunrise 05:10, transit 13:00, sunset 20:50
- Moon
 -  First Quarter, 28
 -  Full, 05 (Hay or Thunder Moon)
 -  Last Quarter, 12
 -  New, 20
- Meteors
 - Perseids from July 17, max August 12. max ZHR = 80+

Eclipses

- Penumbral Lunar
 - July 5
 - Moon rise 19:58 (July 4), transit 23:49 (July 4), set 04:33
 - P1 = 04:07
 - Sun rise 04:42
 - Greatest eclipse = 05:31
 - P4 = 06:52

Penumbral Lunar Eclipse of 2020 Jul 05

Ecliptic Conjunction = 04:45:33.9 TD (= 04:44:22.1 UT)

Greatest Eclipse = 04:31:11.9 TD (= 04:30:00.1 UT)

Penumbral Magnitude = 0.3546 P. Radius = 1.2382" Gamma = -1.3638

Umbral Magnitude = -0.6436 U. Radius = 0.7138" Axis = 1.3146"

Saros Series = 149 Member = 3 of 72

Sun at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 06h59m10.5s

Dec. = +22°44'23.3"

S.D. = 00°15'43.9"

H.P. = 00°00'08.6"

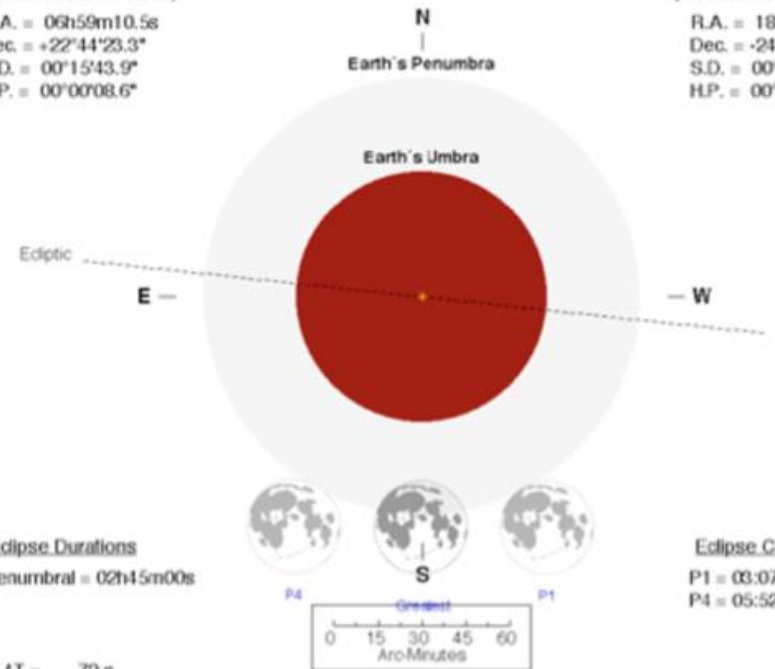
Moon at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 18h59m12.6s

Dec. = -24°00'16.2"

S.D. = 00°15'45.6"

H.P. = 00°57'50.4"



Eclipse Durations

Penumbral = 02h45m00s

Eclipse Contacts

P1 = 03:07:23 UT

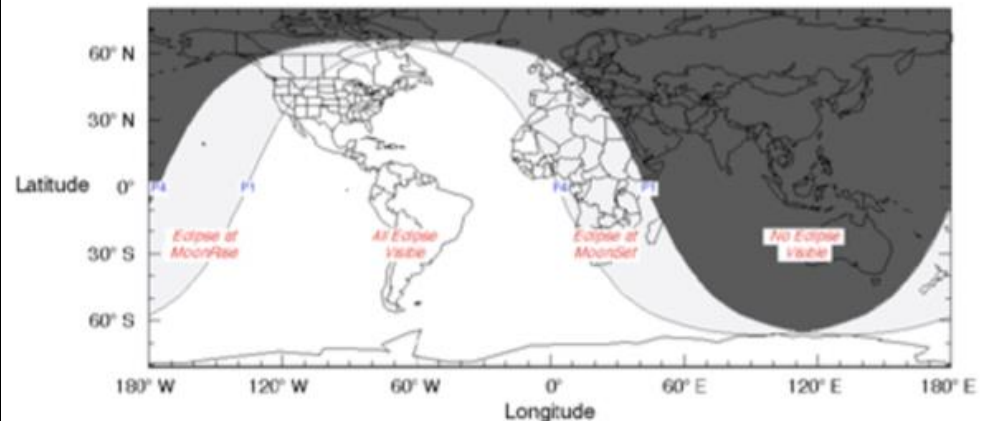
P4 = 05:52:23 UT

$\Delta T = 72$ s

Rule = CdT (Danjon)

Eph. = VSOP87/ELP2000-85

F. Espenak, NASA's GSFC
eclipse.gsfc.nasa.gov/eclipse.html



Occultations

- Lunar
 - Nothing specific

Outer Solar System

- Mars
 - Opposition October 13. Today, rise 01:00, transit 06:40, set 12:25
- Jupiter
 - Opposition July 14. Today, rise 22:30, transit 02:40, set 06:45
- Saturn
 - Opposition July 20. Today, rise 22:50, transit 03:05, set 07:15
- Uranus
 - Opposition October 31. Today, rise 02:00, transit 09:20, set 16:40
- Neptune
 - Opposition September 11. Today, rise 00:40, transit 06:20, set 12:00

Societies Events

- Physical Events Cancelled or Postponed due to Coronavirus
- Virtual Meetings or Webinars

And Finally

- Starlink Launch 9
 - June 25, 21:39BST
 - Sunset 21:15 (dark 21:45)