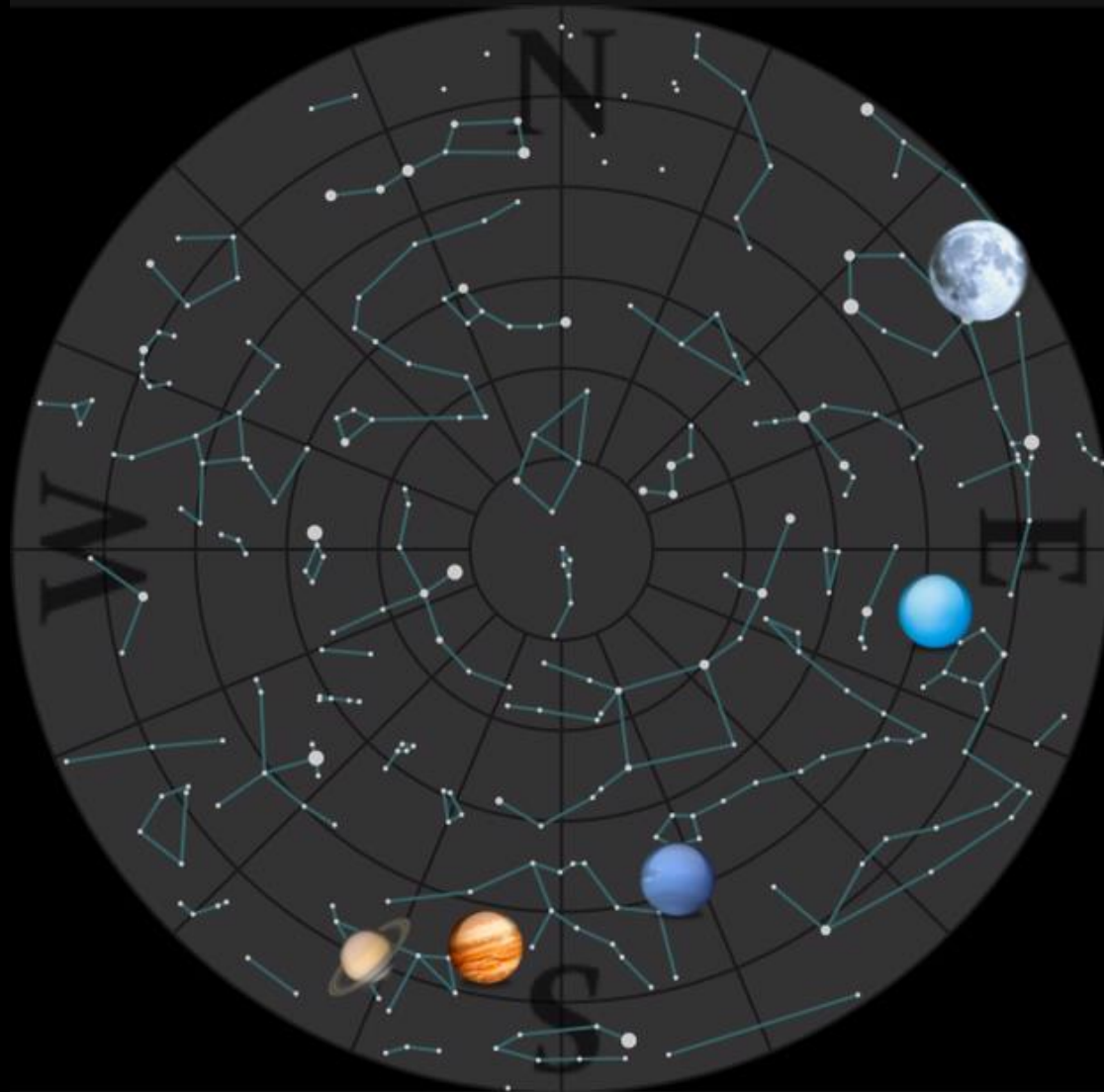


# What's Up?

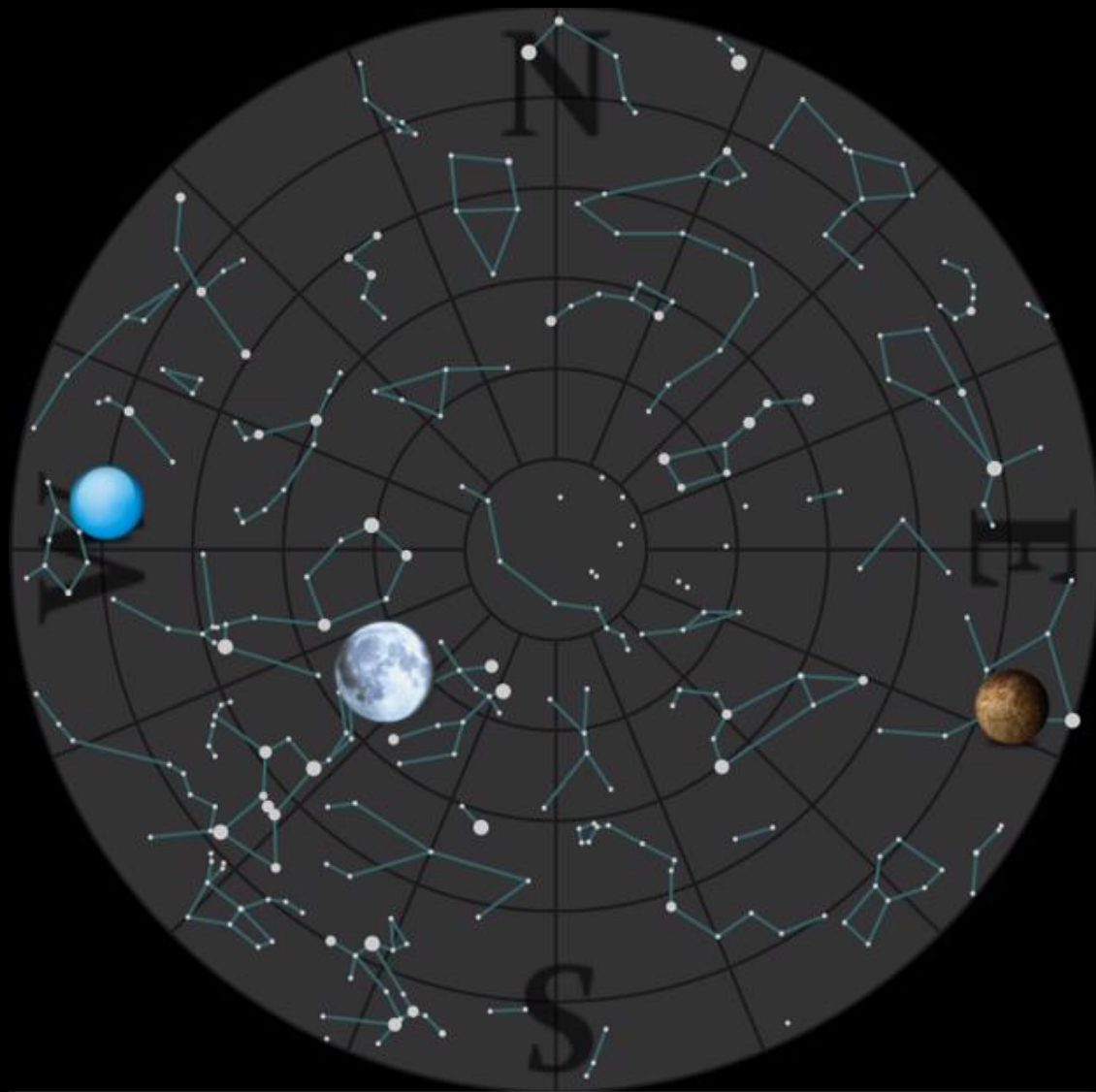
2021 October 25 to November 22

Bill Barton, FRAS

•The Sky 21:00  
Tonight







•The Sky 07:00  
Tomorrow



# Inner Solar System

- Sun
  - Declination decreasing, solstice Dec. 21, perihelion Jan. 04, 2022
- Mercury
  - In morning sky, greatest western elongation Oct. 25 ( $18^\circ$  ), currently  $18^\circ$  , good observing opportunity
  - Superior conjunction Nov. 29
  - Today, rise 05:50, transit 11:30, set 17:20
- Venus
  - In the evening sky with greatest eastern elongation October 29 ( $47^\circ$  ), currently  $47^\circ$
  - Inferior conjunction Jan. 09, 2022
  - Today, rise 12:20, transit 15:45, set 19:15

# Earth

- Time
  - 00:00UT  $\approx$  02:15ST today
  - BST  $\rightarrow$ UT, 02:00, 31 October
  - Today, sunrise 07:40, transit 12:40, sunset 17:40
  - End of period, sunrise 07:25, transit 11:45, sunset 16:00
- Moon
  -  Last Quarter, 28
  -  New, Nov. 04
  -  First Quarter, 11
  -  Full, 19 (Beaver or Frost Moon)
- Meteors
  - Nothing specific

# Eclipse

- Partial Lunar
  - November 19
  - U1, 07:19
  - Moonset, 07:21
  - U4, 10:47

## Partial Lunar Eclipse of 2021 Nov 19

Ecliptic Conjunction = 08:58:37.0 TD (= 08:57:24.4 UT)  
 Greatest Eclipse = 09:04:05.7 TD (= 09:02:53.1 UT)

Penumbral Magnitude = 2.0720 P. Radius = 1.1829° Gamma = -0.4552  
 Umbral Magnitude = 0.9742 U. Radius = 0.6434° Axis = 0.4104°

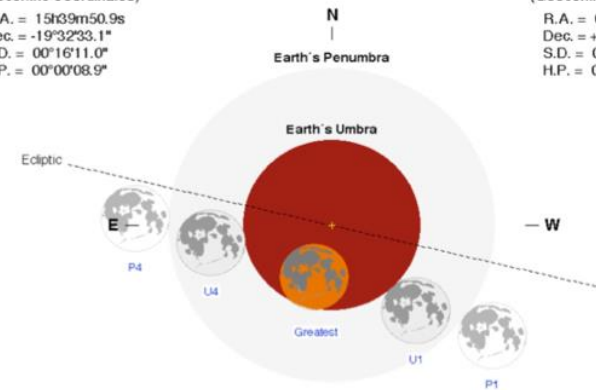
Saros Series = 126 Member = 46 of 72

Sun at Greatest Eclipse  
 (Geocentric Coordinates)

R.A. = 15h39m50.9s  
 Dec. = -19°32'33.1"  
 S.D. = 00°16'11.0"  
 H.P. = 00°00'08.9"

Moon at Greatest Eclipse  
 (Geocentric Coordinates)

R.A. = 03h40m24.8s  
 Dec. = +19°09'15.5"  
 S.D. = 00°14'44.5"  
 H.P. = 00°54'06.1"



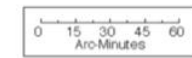
### Eclipse Durations

Penumbral = 06h01m29s  
 Umbral = 03h28m23s

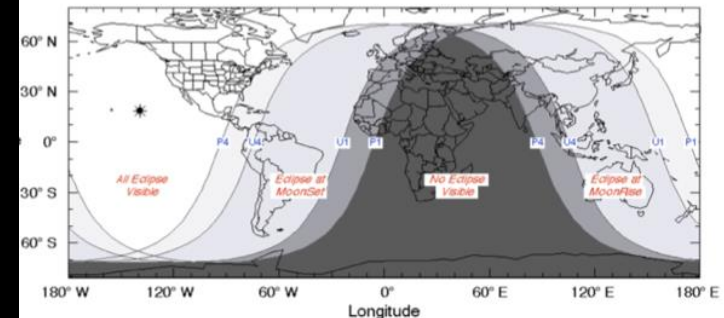
AT = 73 s  
 Rule = CdT (Danjon)  
 Eph. = VSOP87/ELP2000-85

### Eclipse Contacts

P1 = 06:02:09 UT  
 U1 = 07:18:41 UT  
 U4 = 10:47:04 UT  
 P4 = 12:03:38 UT



F. Espenak, NASA's GSFC  
[eclipse.gsfc.nasa.gov/leclipse.html](http://eclipse.gsfc.nasa.gov/leclipse.html)



# Occultations etc.

- Ceres (mag 6.7)
  - Aldebaran, mag 0.8,  $0.1^\circ$  S, Nov. 03, 07:00
- Lunar
  - $\phi$  Sagittarii, mag. 3.2, Nov. 08, DD 18:52

# Outer Solar System

- Mars
  - Solar conjunction Oct. 8. Opposition Dec. 08, 2022. Today, rise 07:00, transit 12:15, set 17:30
- Jupiter
  - Opposition Aug. 20. Conjunction Mar. 05, 2022. Today, rise 15:35, transit 20:20, set 01:00
- Saturn
  - Opposition Aug. 2. Conjunction Feb. 04, 2022. Today, rise 15:00, transit 19:15, set 23:30
- Uranus
  - Opposition Nov. 4. Today, rise 18:00, transit 01:20, set 08:50
- Neptune
  - Opposition Sept. 14. Conjunction Mar. 13, 2022. Today, rise 16:25, transit 22:00, set 03:40



# OASI Events

- November 8
  - Astrophotography Basics Workshop, Andy Gibbs

# Societies Events

- SPA online meeting and YouTube stream, Saturday 30 October 2pm, Dr Suzie Imber (University of Leicester) “Mercury: First Rock from the Sun”
- Haw Wood Star Party, 1-8 November
- DASH Meeting, Sunday 21 November, 7:30pm, Matt Bothwell, “The Invisible Universe”
- BAA Christmas Meeting, Saturday 04 December 2:00-6:00pm, Prof Catherine Heymans “The Mysteries of the Multiverse” & Prof Sara Russell “The Winchcombe Meteorite”, Royal Society of Medicine, Wimpole St., W1 (Booking necessary, not open yet)