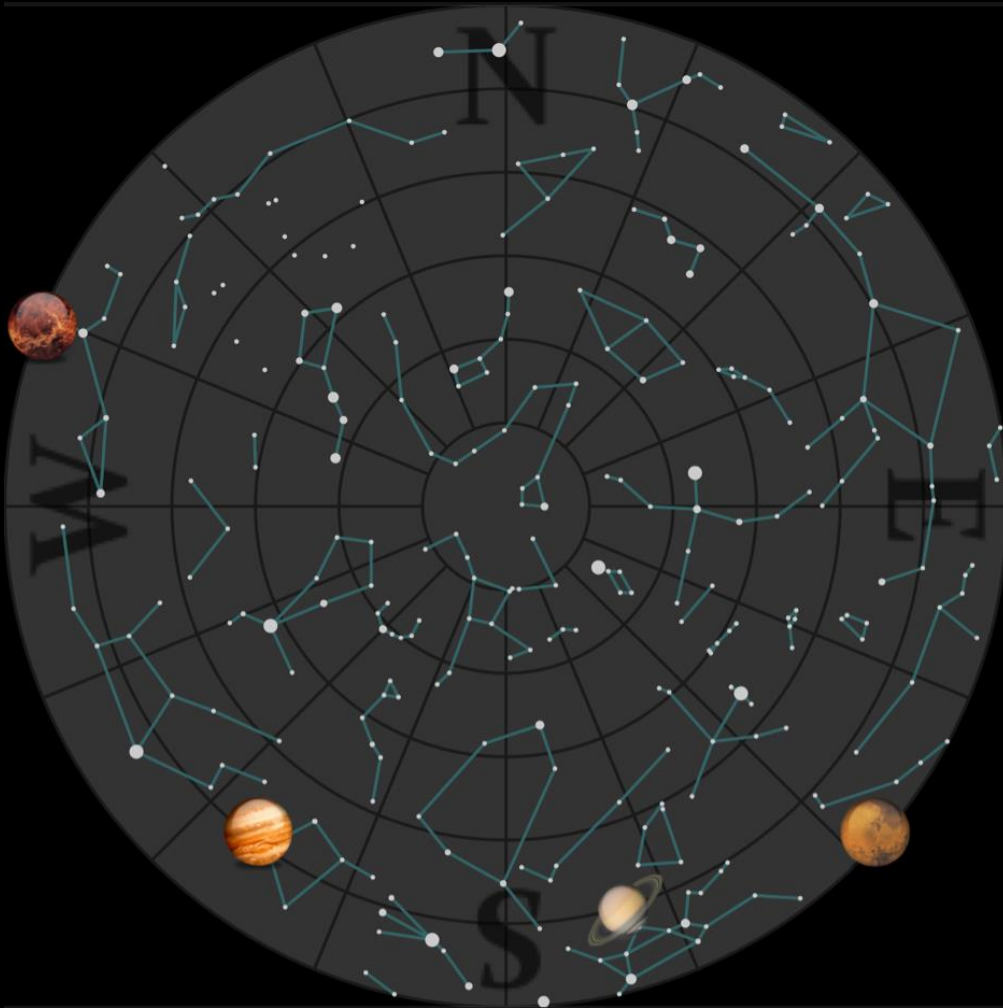


What's Up?

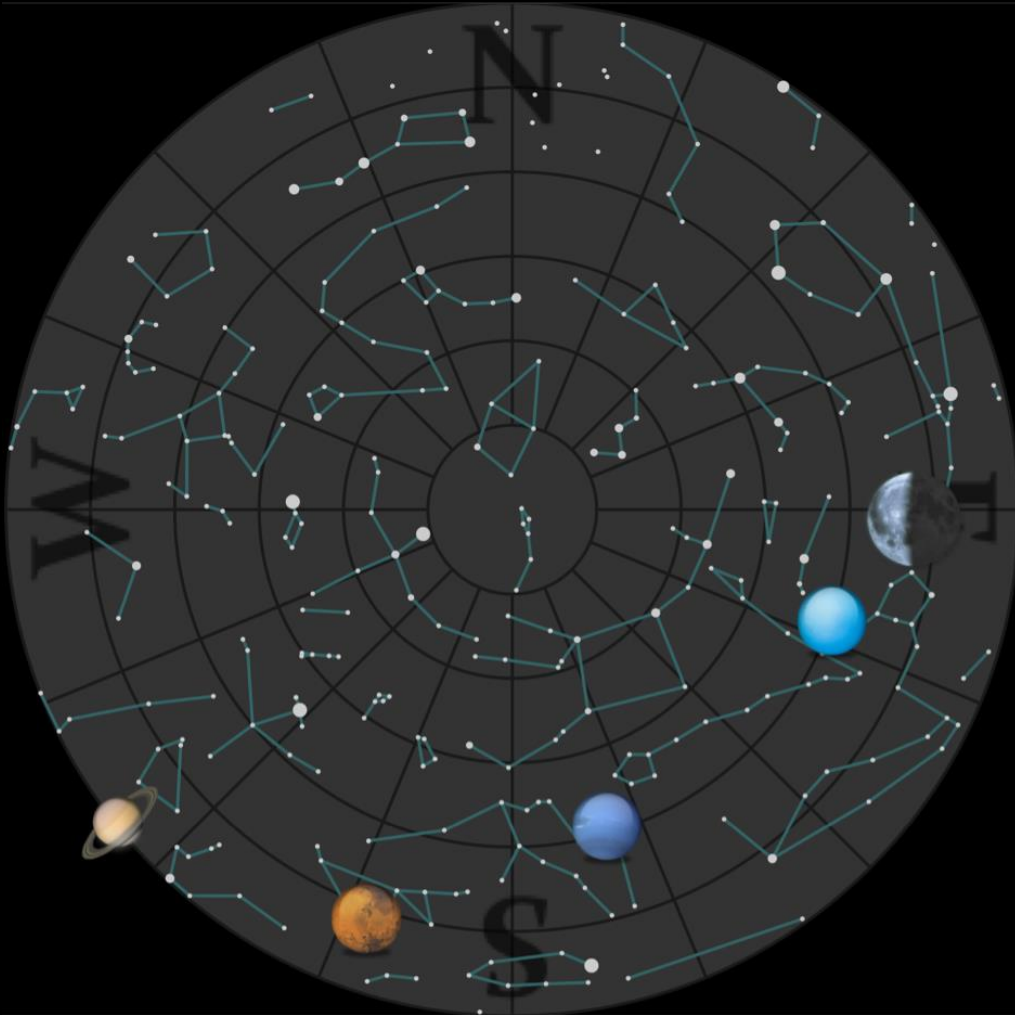
2018 July 09 to August 13

Bill Barton, FRAS

•The Sky 22:00
Tonight







•The Sky 04:00
Tomorrow



Inner Solar System

- Sun
 - Declination decreasing
 - Equinox September 23
- Mercury
 - In evening sky until early August, and favourable for observation
 - Maximum elongation from Sun will be on July 12 (26°)
 - Rising 07:00, setting 22:30
- Venus
 - In the evening sky until October 2018
 - Maximum elongation and half phase on August 17 (46°)
 - Rising 08:30, setting 23:15

Earth

- Time
 - 00:00UT \approx 19:07ST today
- Moon
 -  New, 13 and August 11
 -  First Quarter, 19
 -  Full, 27 (Hay or Thunder)
 -  Last Quarter, August 4
- Eclipses
 - Partial Solar July 13 (not visible from UK) & August 11 (extreme north of Scotland)
 - Total Lunar July 27 (from moonrise for UK, see next slide)
- Meteors
 - Perseids from July 23 to August 20, peak August 13, ZHR=80+

Total Lunar Eclipse of 2018 Jul 27

Ecliptic Conjunction = 20:21:30.3 TD (= 20:20:19.6 UT)
 Greatest Eclipse = 20:22:54.3 TD (= 20:21:43.5 UT)

Penumbral Magnitude = 2.6792 P. Radius = 1.1738° Gamma = 0.1168
 Umbral Magnitude = 1.6087 U. Radius = 0.6488° Axis = 0.1051°

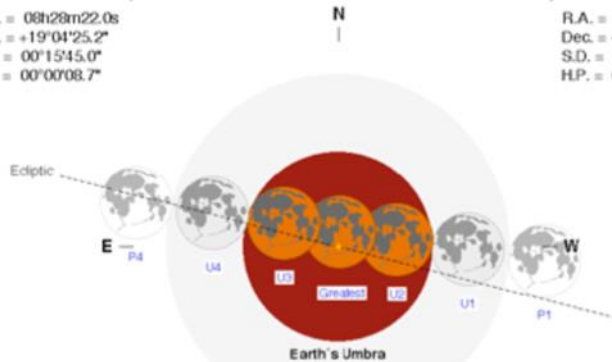
Saros Series = 129 Member = 38 of 71

Sun at Greatest Eclipse
 (Geocentric Coordinates)

R.A. = 08h28m22.0s
 Dec. = +19°04'25.2"
 S.D. = 00°15'45.0"
 H.P. = 00°00'08.7"

Moon at Greatest Eclipse
 (Geocentric Coordinates)

R.A. = 20h28m18.2s
 Dec. = -18°58'10.6"
 S.D. = 00°14'42.7"
 H.P. = 00°53'59.7"



Eclipse Durations

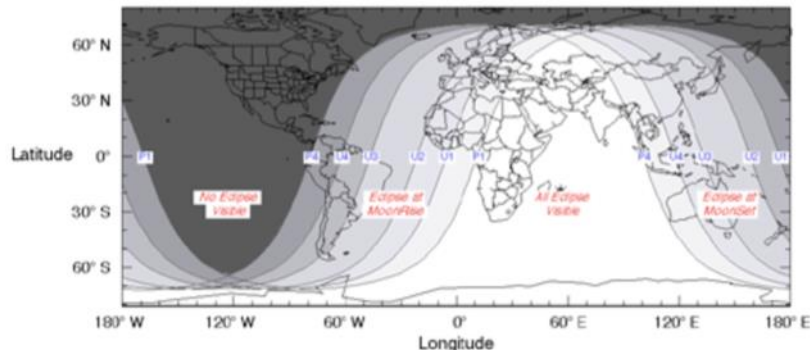
Penumbral = 06h13m48s
 Umbral = 03h54m32s
 Total = 01h42m57s

ΔT = 71 s
 Rule = CdT (Danjon)
 Eph. = VSOP87/ELP2000-85

Eclipse Contacts

P1 = 17:14:49 UT
 U1 = 18:24:27 UT
 U2 = 19:30:15 UT
 U3 = 21:13:12 UT
 U4 = 22:19:00 UT
 P4 = 23:28:37 UT

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



- Total Lunar Eclipse July 27
 - Eclipse begins 19:24 BST
 - Totality begins 20:30 BST
 - Moon rise 20:46 BST
 - Sunset 20:53 BST
 - Totality ends 22:13 BST
 - Eclipse ends 23:19 BST
- Moon azimuth
 - (at 20:46 BST) $\approx 122^\circ$
- Moon declination
 - (at 21:22 BST) $\approx -19^\circ$

Lunar Occultations

- None of note this period

Outer Solar System

- Mars
 - Rising around 22:45, setting 06:30. Perihelic Opposition July 27, but very low altitude
- Jupiter
 - Rising around 15:45, setting 01:15. Opposition was on May 9
- Saturn
 - Rising around 20:10, setting 04:00. Opposition was on June 27, 2018
- Uranus
 - Rising around 00:45, sets 15:00. Opposition on October 24, 2018
- Neptune
 - Rising around 23:30, sets 10:30. Opposition on September 7, 2018

Society Events

- BBQ
 - July 14, Newbourne Village Hall from 1:00pm, BBQ lighting at 3:00pm. Also raffle
- Workshop
 - July 23, Newbourne Village Hall, 7:45pm, *Basic Astrophotography*, Andy Gibbs

Other Events I

- DASH
 - Solar Observing Meeting, Sunday July 15, location TBA
 - Lunar Eclipse, Friday July 27, 8:30pm, Dunwich Heath
- LYRA
 - Discussion Meeting, Tuesday July 10, 7:30pm, Coach House Room, Parkhill Hotel. Matthew Bothwell “From Big Bang to Big Rip - a History of Modern Cosmology”
 - Observing Meeting, Tuesday July 24, 7:30pm, Barn Car Park, Parkhill Hotel

Other Events II

- Athenæum Astronomical Association
 - Members Meetings, Nowton Park, Thursday 19 July, 7:30pm. An Introduction to Radio Astronomy
 - Thursday 2 August, 7:30pm. *How Stars Make Elements*
- SPA
 - Saturday 28 July, 2.00pm. Gustave Tuck Lecture Theatre, University College, London
 - Prof David Rothery, *Mercury and the BepiColombo mission*
 - Graham Cluer, *last year's total solar eclipse*
 - David Finnigan, Deep Sky Section Director