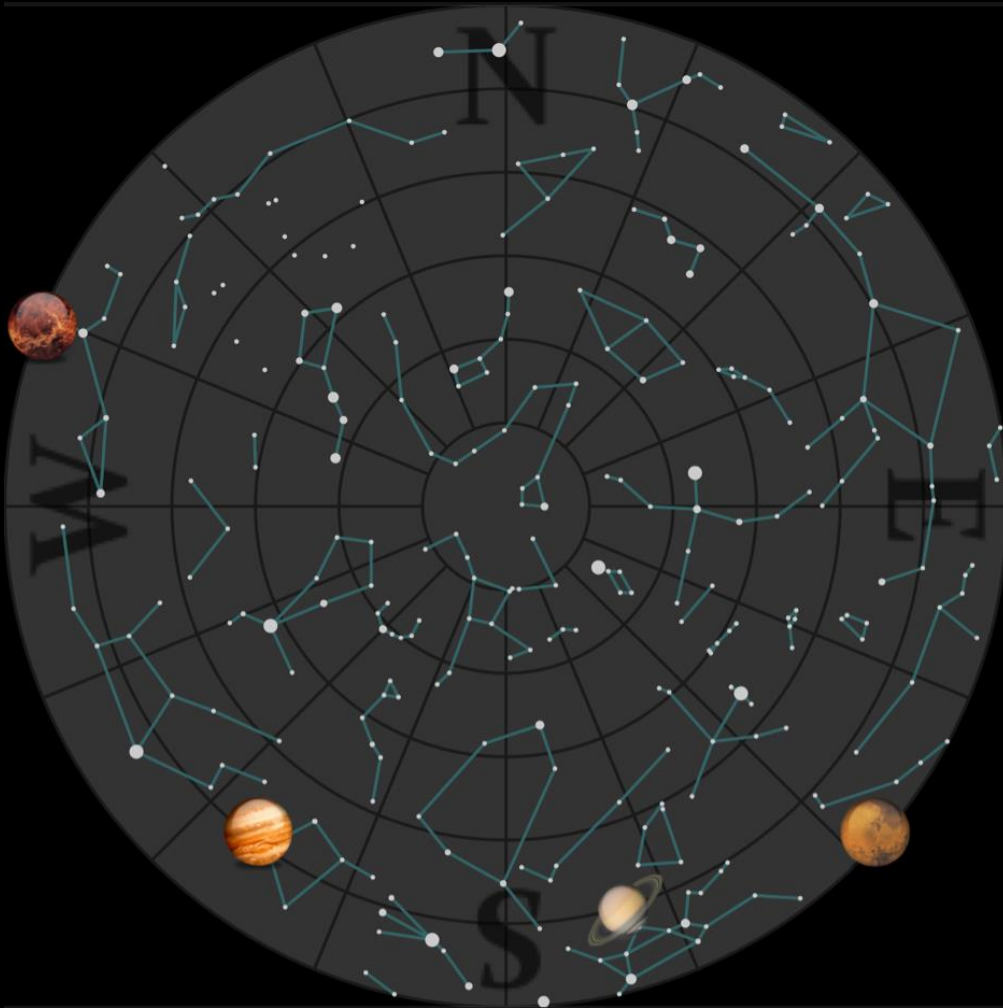


# What's Up?

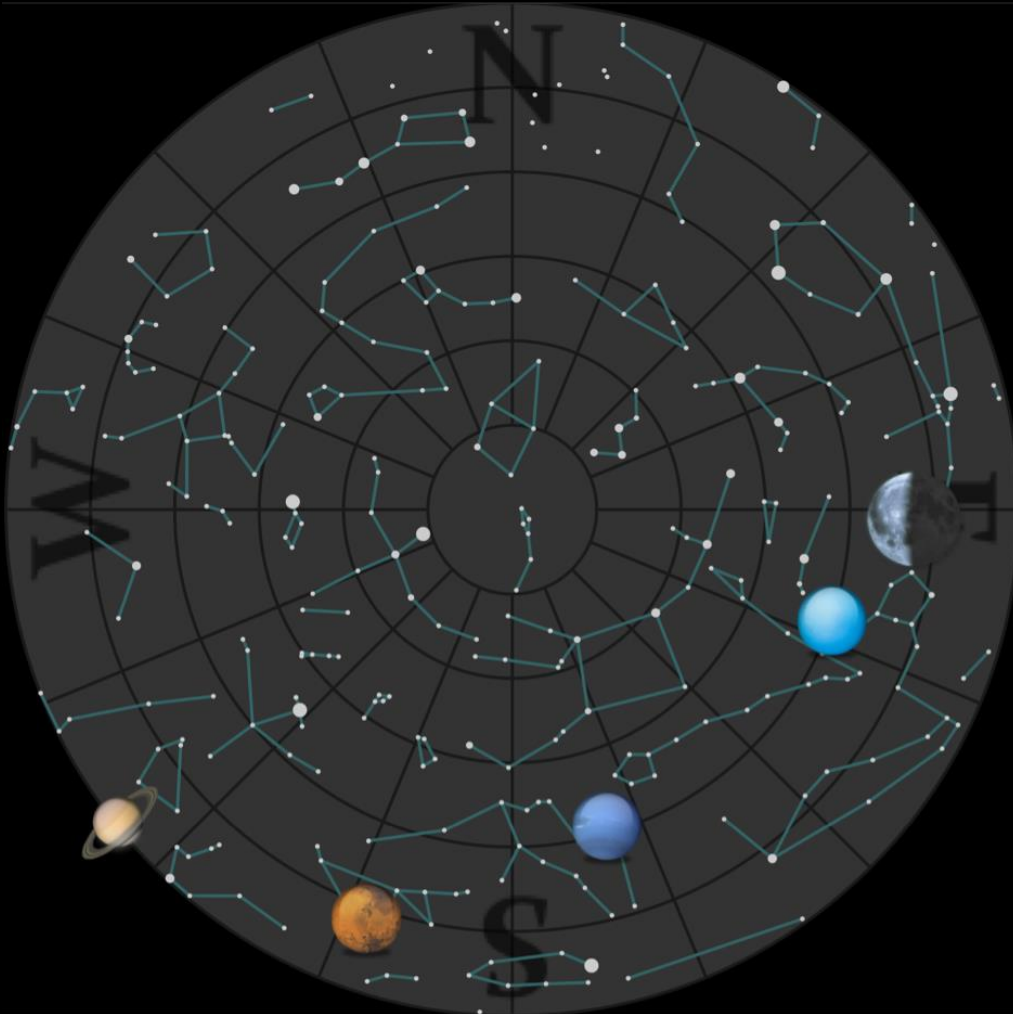
2018 July 09 to August 13

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 ( $26^{\circ}$ )
  - Rising 07:00, setting 22:30
- Venus
  - In the evening sky until October 2018
  - Maximum elongation and half phase on August 17 ( $46^{\circ}$ )
  - 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°

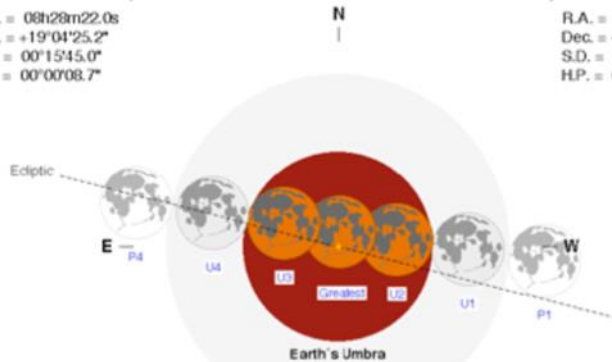
Saros Series = 129 Member = 38 of 71

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)

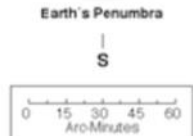
R.A. = 20h28m18.2s  
 Dec. = -18°58'10.6"  
 S.D. = 00°14'42.7"  
 H.P. = 00°53'59.7"



### Eclipse Durations

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

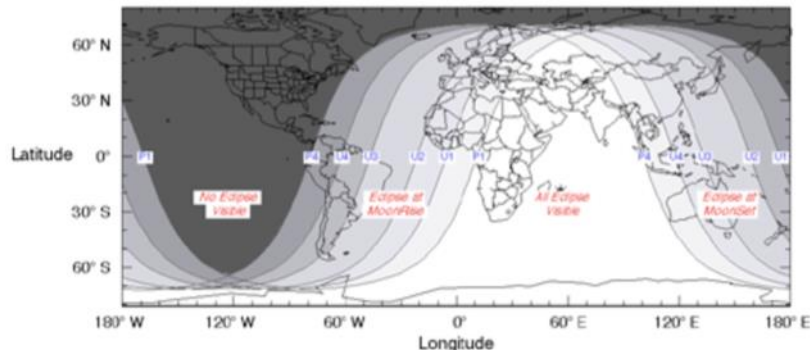
ΔT = 71 s  
 Rule = CdT (Danjon)  
 Eph. = VSOP87/ELP2000-85



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

### 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



- 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