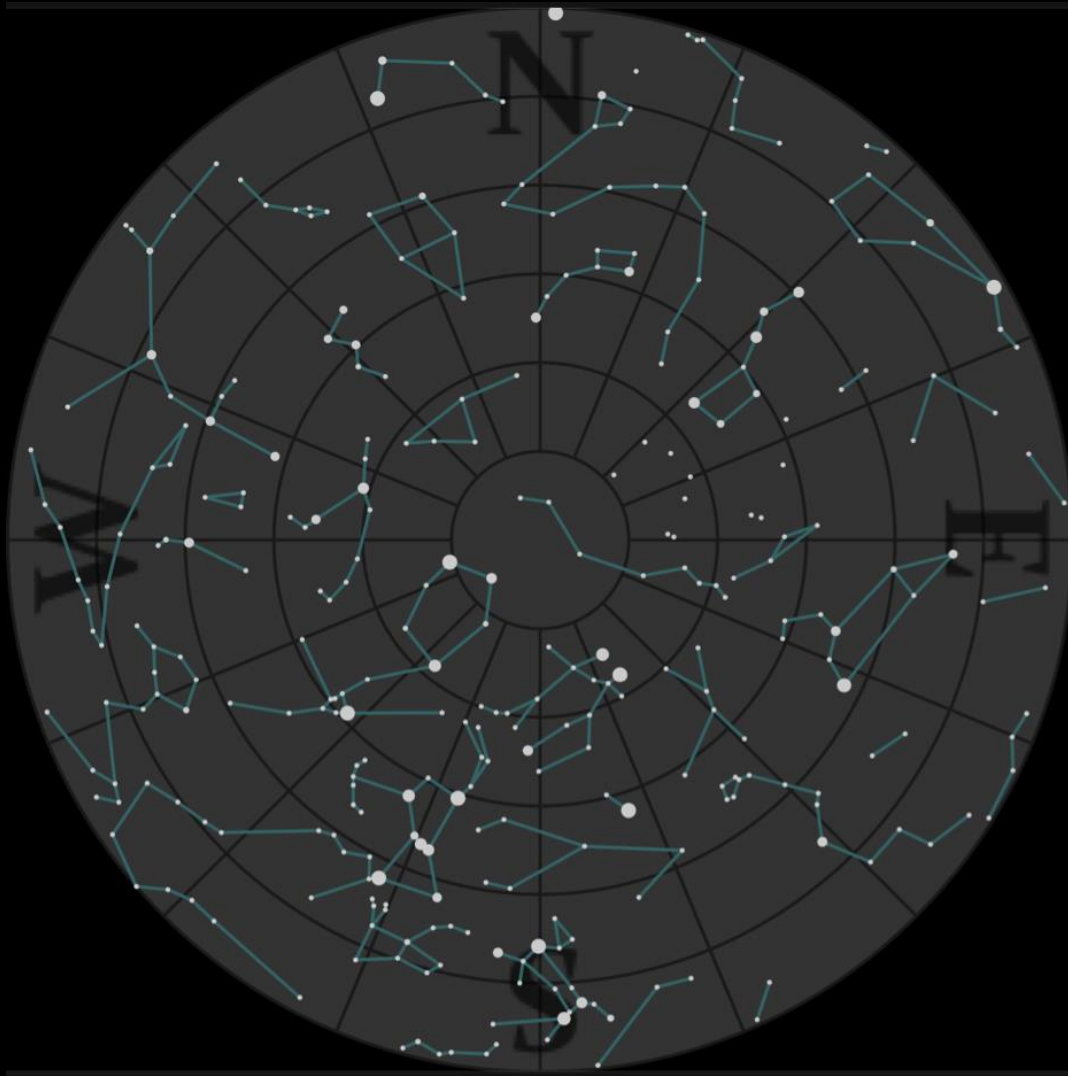


What's Up?

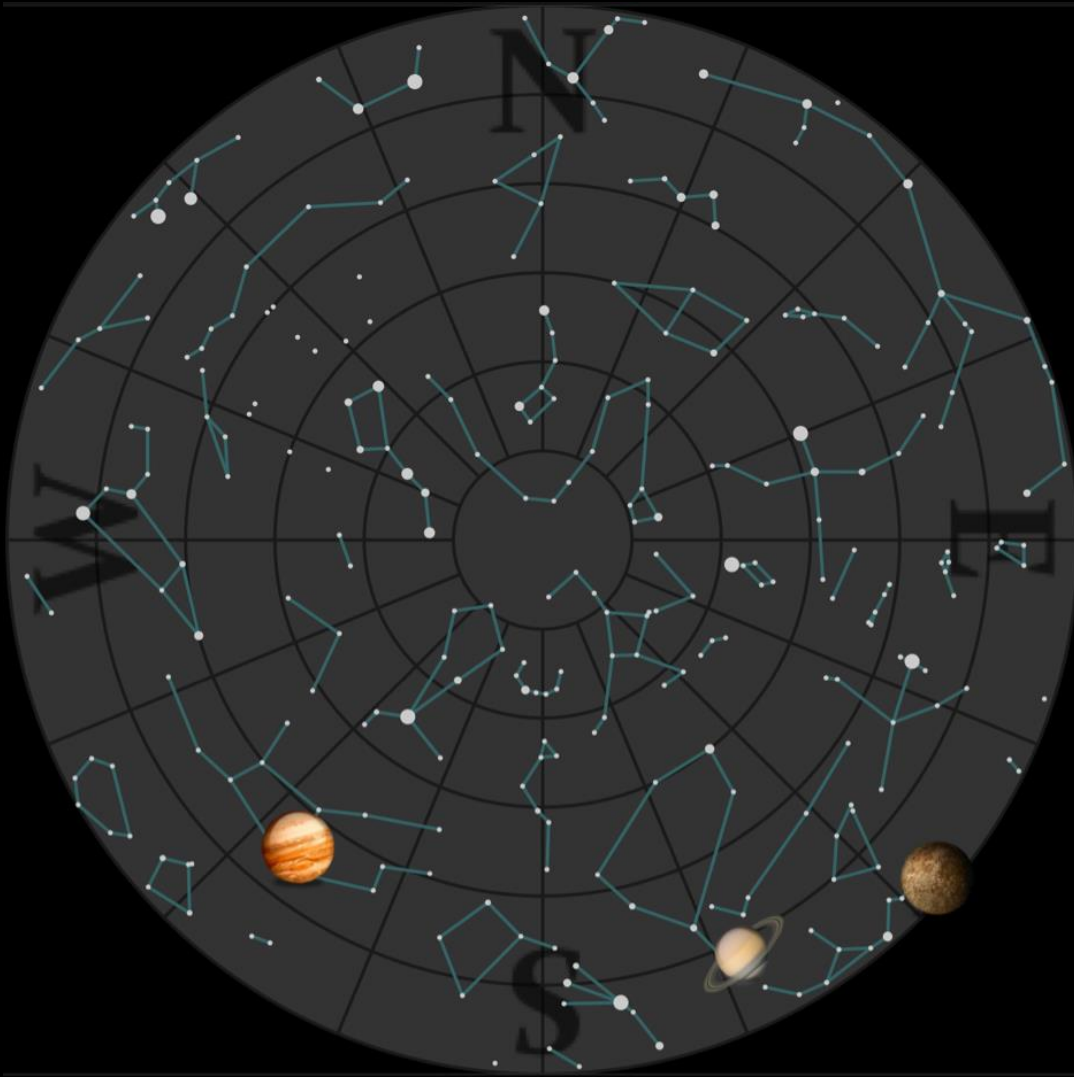
2017 January 30 to February 27

Bill Barton, FRAS

**•The Sky 22:00
Tonight**



**•The Sky 07:00
Tomorrow Morning**



Inner Solar System

- Sun
 - Declination increasing, rising earlier, setting later, in Capricornus
- Mercury
 - In the morning sky throughout this period, in Sagittarius
 - Superior conjunction (far side of sun) on March 07
- Venus
 - In evening sky, phase and elongation reducing, in Pisces
 - Maximum eastern elongation was on January 12 (47°)
 - Now heading toward inferior conjunction (between us and the sun) on March 25

Earth

- Moon
 - First Quarter, February 04
 - Full, February 11 (Hunger Moon)
 - Last Quarter, February 18
 - New, February 26
- Eclipses
 - February 11-12, Penumbral Lunar Eclipse
 - February 26, Annular Solar Eclipse
- Meteors
 - None this period

Penumbral Lunar Eclipse of 2017 Feb 11

Ecliptic Conjunction = 00:54:01.4 TD (= 00:32:51.3 UT)

Greatest Eclipse = 00:45:00.0 TD (= 00:43:52.9 UT)

Penumbral Magnitude = 0.9684 P. Radius = 1.2505° Gamma = -1.0254
 Umbral Magnitude = -0.0354 U. Radius = 0.7103° Axis = 0.9929°

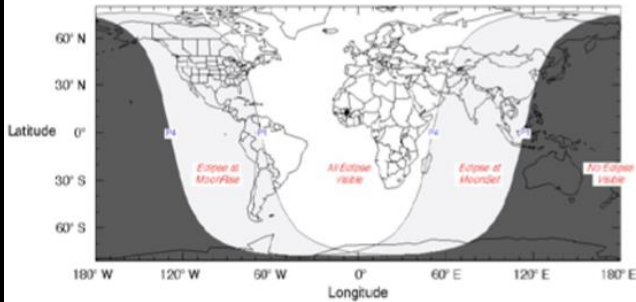
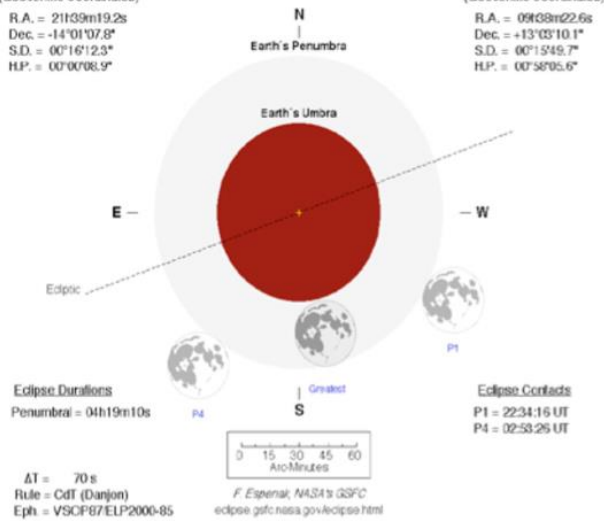
Saros Series = 114 Member = 55 of 71

Sun at Greatest Eclipse
 (Geocentric Coordinates)

R.A. = 21h39m19.2s
 Dec. = -14°01'07.8"
 S.D. = 00°16'12.3"
 H.P. = 00°00'08.9"

Moon at Greatest Eclipse
 (Geocentric Coordinates)

R.A. = 09h08m22.6s
 Dec. = +13°03'10.1"
 S.D. = 00°15'49.7"
 H.P. = 00°58'05.6"



2009 Apr 20

• Penumbral Lunar Eclipse

- February 11, 22:34
- February 12, 02:53

Annular Solar Eclipse of 2017 Feb 26

Ecliptic Conjunction = 14:59:31.7 TD (= 14:58:23.5 UT)

Greatest Eclipse = 14:54:32.8 TD (= 14:53:24.6 UT)

Eclipse Magnitude = 0.9922 Gamma = -0.4578

Saros Series = 140 Member = 29 of 71

Sun at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 22h39m23.1s

Dec. = -08°29'38.6"

S.D. = 00°16'09.0"

H.P. = 00°00'08.9"

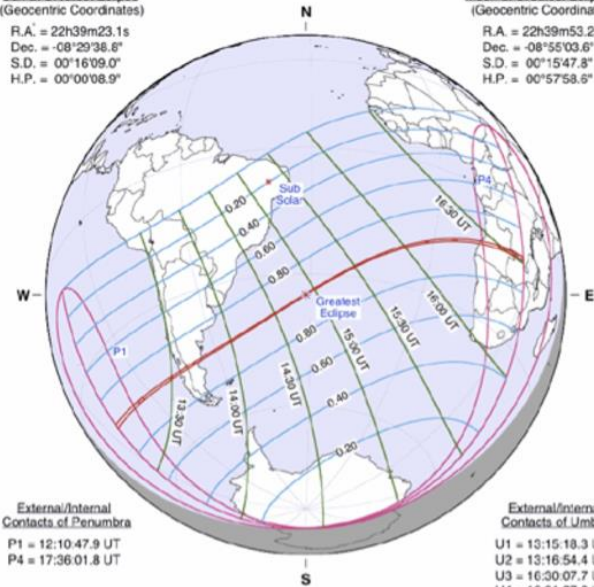
Moon at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 22h39m53.2s

Dec. = -08°55'03.6"

S.D. = 00°15'47.8"

H.P. = 00°57'58.6"



External/Internal
Contacts of Penumbra

P1 = 12:10:47.9 UT

P4 = 17:36:01.8 UT

External/Internal
Contacts of Umbra

U1 = 13:15:18.3 UT

U2 = 13:16:54.4 UT

U3 = 16:30:07.7 UT

U4 = 16:31:37.8 UT

Circumstances at Greatest Eclipse: 14:53:24.6 UT

Lat. = 34°40.8'S Sun Alt. = 62.8°

Long. = 031°11.5'W Sun Azm. = 340.5°

Path Width = 30.6 km Duration = 00m44.0s

Geocentric Libration

(Optical + Physical)

l = -5.10°

b = 0.56°

c = -23.47°

Brown Lun. No. = 1165

Constants & Ephemeris

$\Delta T = 68.3$ s

k1 = 0.2725078

k2 = 0.2722810

$\Delta b = 0.0''$ $\Delta i = 0.0''$

Eph. = JPL DE405

Circumstances at Greatest Duration: 13:16:06.3 UT

Lat. = 43°08'S Sun Alt. = 0.0°

Long. = 113°53'W Duration = 01m22.4s



F. Espenak NASA's GSFC
eclipse.gsfc.nasa.gov
2014 Feb 22

• **Annular Solar
Eclipse**

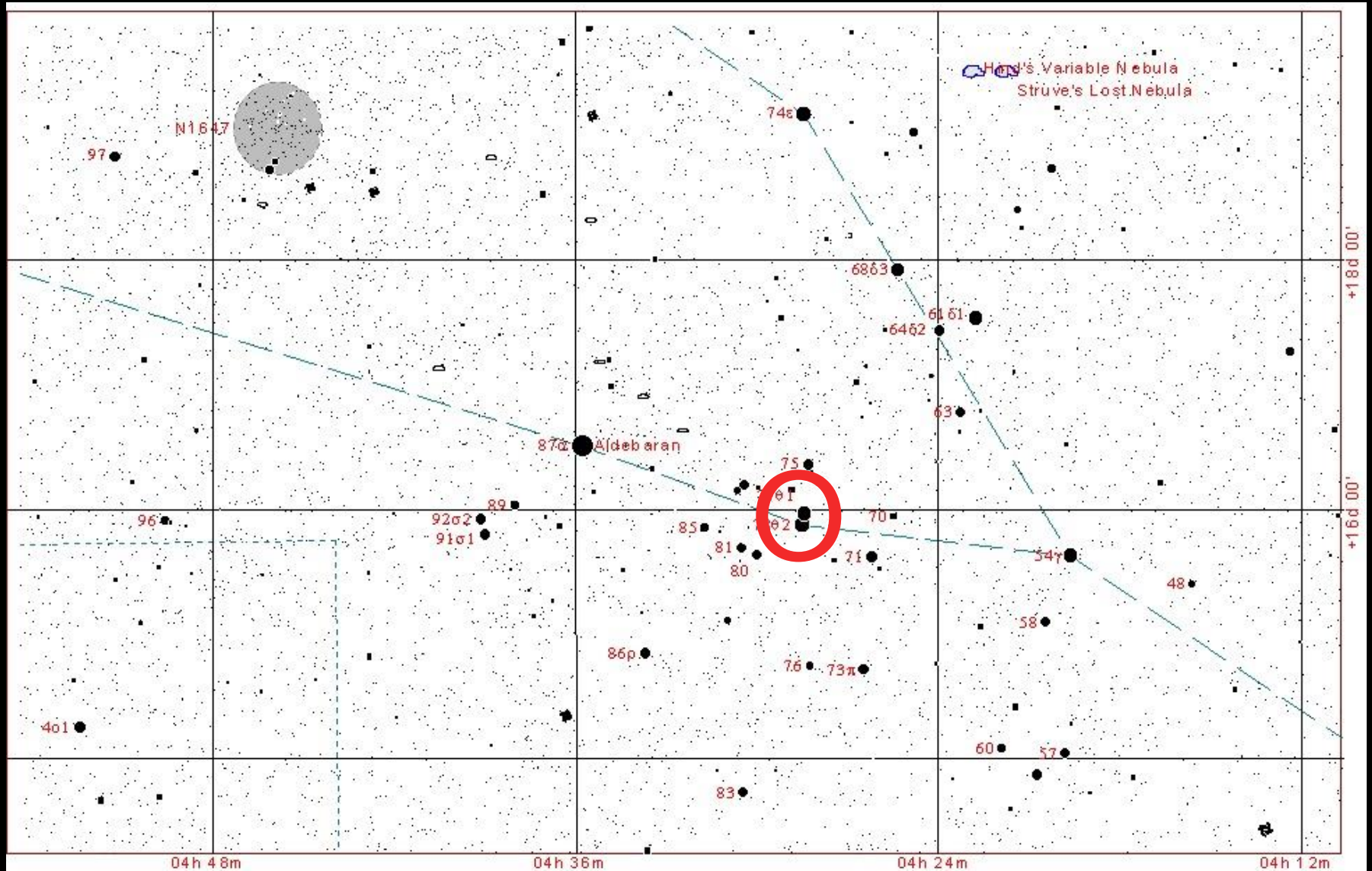
• **February 26**

• **12:10-17:36**

Lunar Occultations

- Moon still passing through the Hyades star cluster this month
- Evening of Sunday February 05th
- Moon phase, one day past 'first quarter' rising around 11:46UT
- Seven stars occulted this evening, most notably
- θ^2 Tauri (mag 3.4) dark limb disappearance at 17:47UT
- θ^1 Tauri (mag 3.8) dark limb disappearance at 17:50UT

The Hyades Star Cluster



Outer Solar System

- Mars
 - In south-west at sunset, setting around 9pm, four hours after the Sun, in Pisces
- Jupiter
 - Visible in morning sky, rising about 1am, in Virgo
- Saturn
 - In the morning sky, rising around 6am, in Ophiuchus

Society Events

- None

Other Events

- DASH
 - Lecture Meeting, Saturday February 11, 7:30pm, Westleton Village Hall.
- European Astrofest
 - Friday 10 and Saturday February 11, Kensington Conference Centre, London.