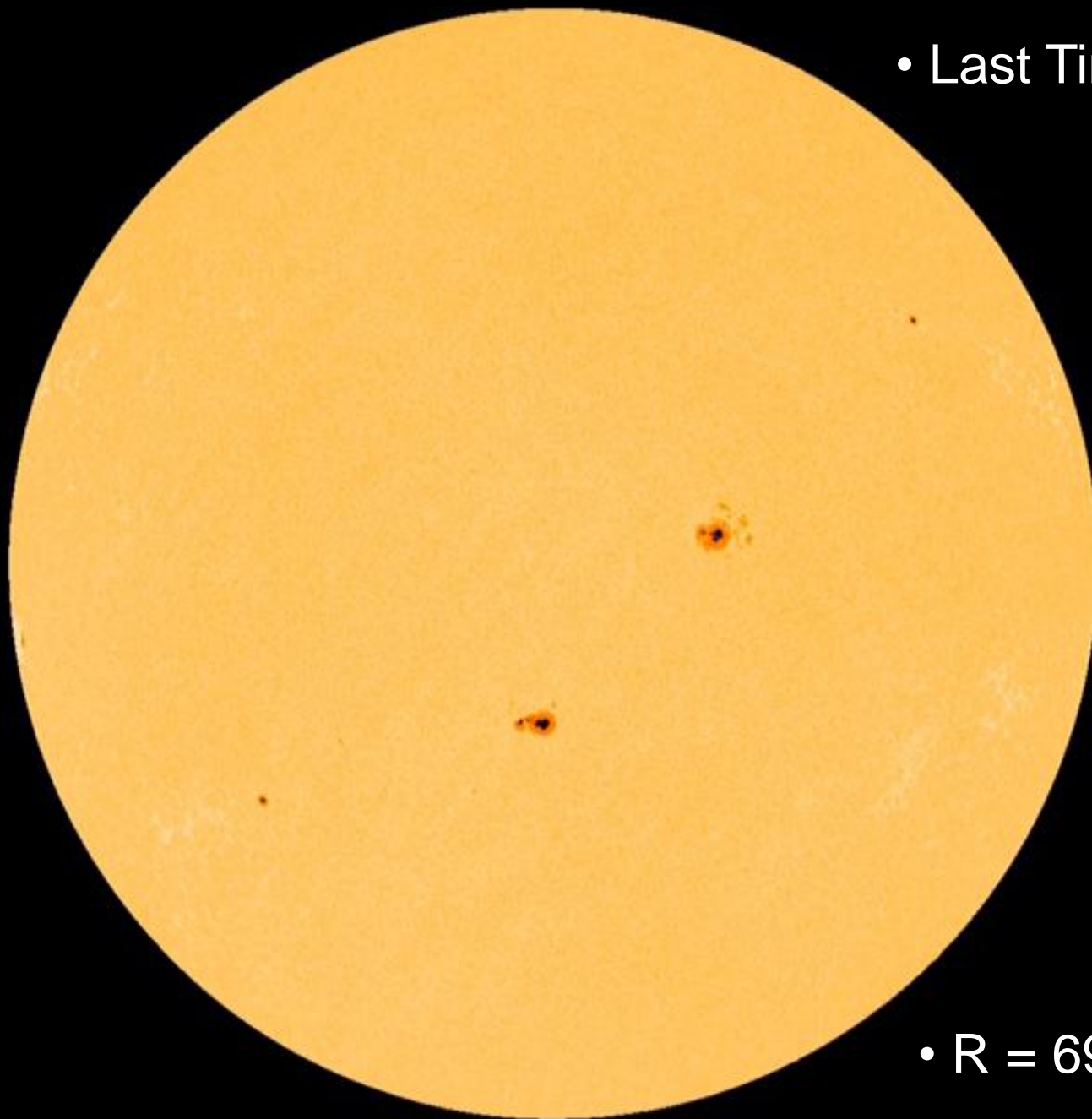


What's Up?

2023 September 25 to October 23

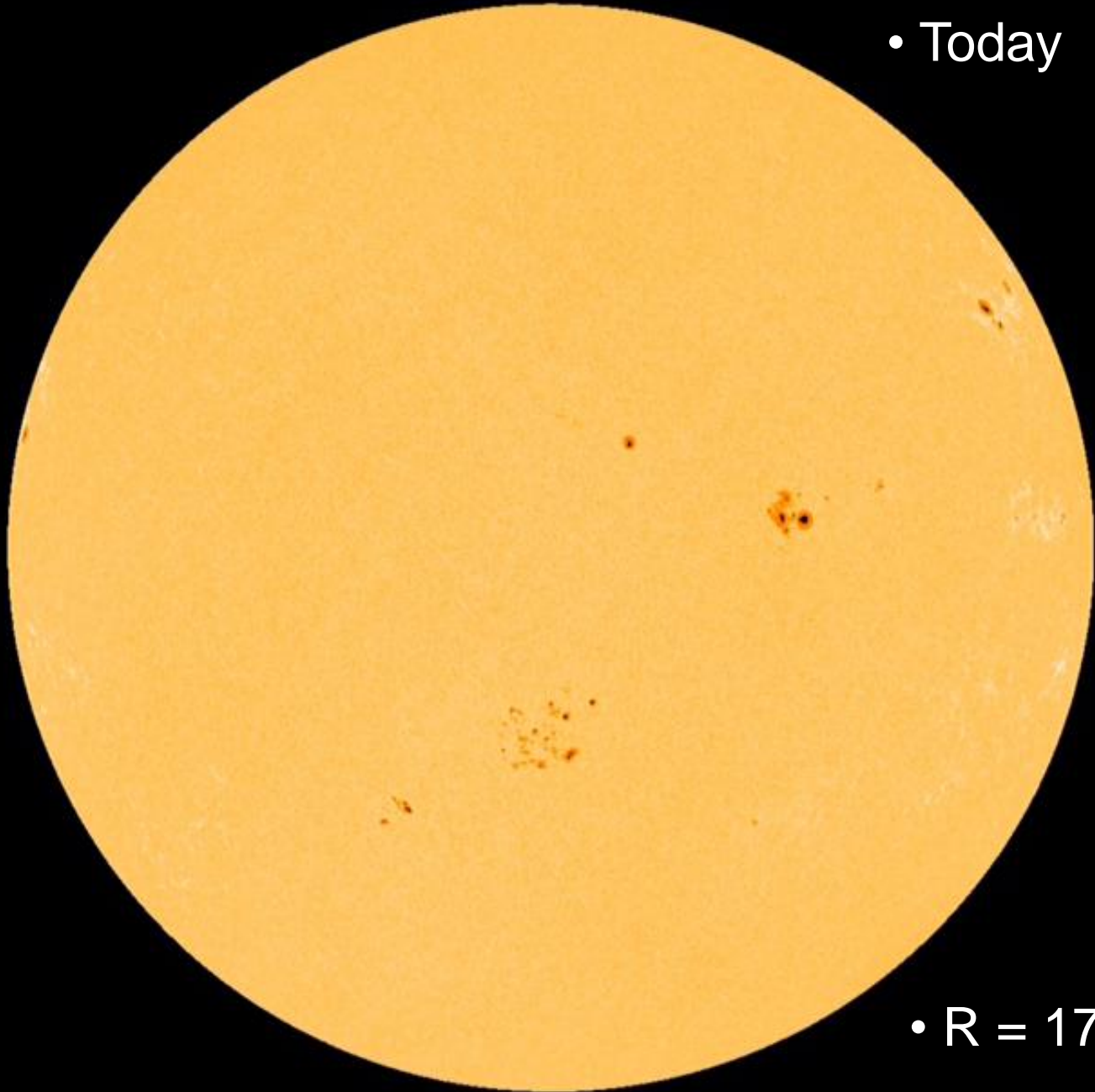
Bill Barton, FRAS

• Last Time



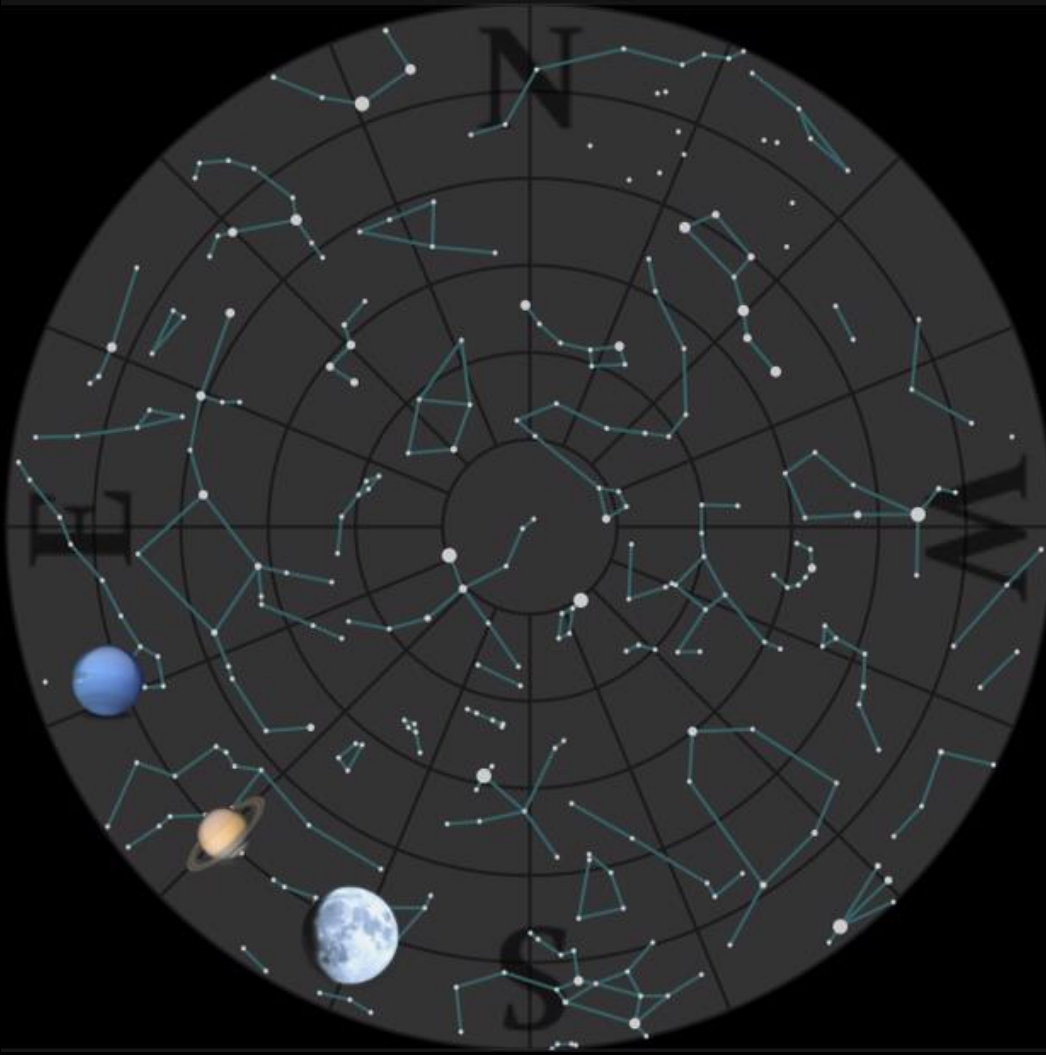
• R = 69

• Today

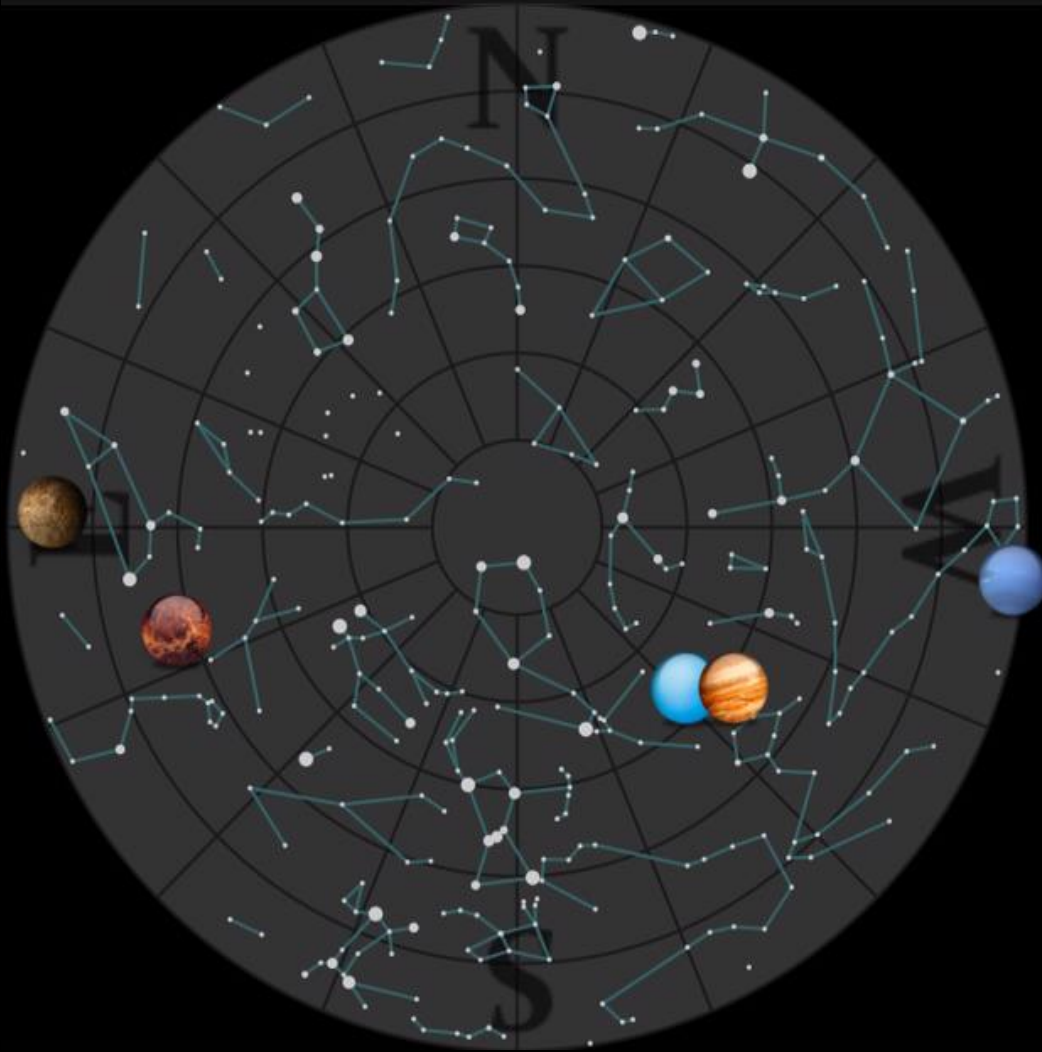


• R = 172

- The Sky 20:00 Tonight



- The Sky 06:00
Tomorrow



Inner Solar System

- Sun
 - Declination decreasing, equinox Sept. 23, solstice Dec. 22
 - Last sunspot min., Apr. 2020, next max., Jul. 2025 ($R \approx 115?$)
- Mercury
 - In morning sky, greatest elongation Sept. 22 (18°) currently 17° , mag -0.5, increasing (+5 to -2)
 - Superior conjunction Oct. 20
 - Then in evening sky, greatest elongation Dec. 04 (21°)
 - Today, rise 05:00, transit 11:40, set 18:25
- Venus
 - In morning sky, greatest elongation Oct. 23 (46°), currently 42°
 - Today, rise 02:55, transit 10:00, set 17:00

Earth

- Time
 - 00:00UT \approx 00:15ST today
 - Today, sunrise 06:40, transit 12:45, sunset 18:45
 - End of period, sunrise 07:30, transit 12:40, sunset 17:45
 - BST ends 01:00, Oct. 29
- Moon
 - ☾ Full, Sept. 29 (Harvest)
 - ☾ Last Quarter, Oct. 6
 - ☾ New, 14 (annular eclipse)
 - ☾ First Quarter, 22
- Meteors
 - Orionids, Oct. 02-Nov. 07, peak Oct. 21/22, ZHR 20+

Solar Eclipse

- Annular
- Saturday, Oct. 14
- Not visible from the UK

Annular Solar Eclipse of 2023 Oct 14

Geocentric Conjunction = 17:36:28.8 UT J.D. = 2460232.233667
 Greatest Eclipse = 17:59:21.0 UT J.D. = 2460232.249549

Eclipse Magnitude = 0.9520 Gamma = 0.3752

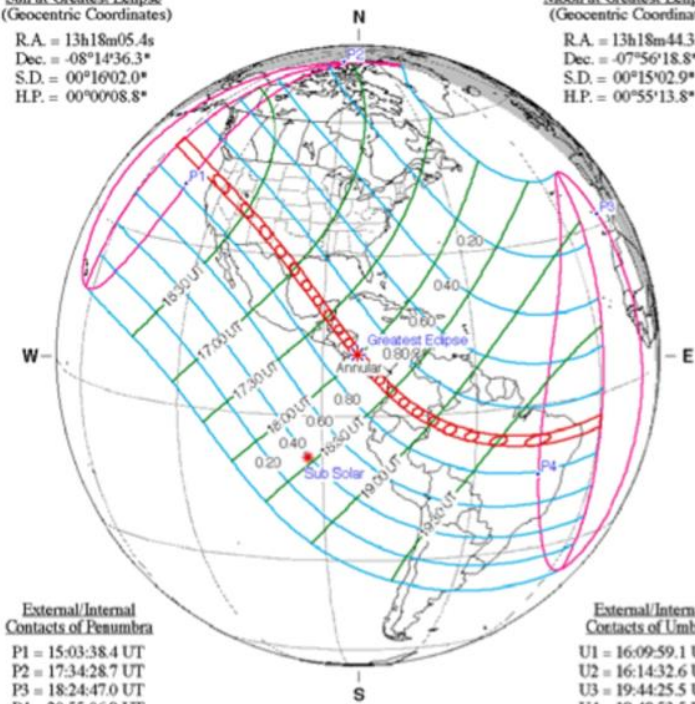
Saros Series = 134 Member = 44 of 71

Sun at Greatest Eclipse
 (Geocentric Coordinates)

R.A. = 13h18m05.4s
 Dec. = -08°14'36.3"
 S.D. = 00°16'02.0"
 H.P. = 00°00'08.8"

Moon at Greatest Eclipse
 (Geocentric Coordinates)

R.A. = 13h18m44.3s
 Dec. = -07°56'18.8"
 S.D. = 00°15'02.9"
 H.P. = 00°55'13.8"



External/Internal
 Contacts of Penumbra

P1 = 15:03:38.4 UT
 P2 = 17:34:28.7 UT
 P3 = 18:24:47.0 UT
 P4 = 20:55:06.9 UT

External/Internal
 Contacts of Umbra

U1 = 16:09:59.1 UT
 U2 = 16:14:32.6 UT
 U3 = 19:44:25.5 UT
 U4 = 19:48:53.5 UT

Local Circumstances at Greatest Eclipse

Lat. = 11°21.7'N Sun Alt. = 67.9°
 Long. = 083°04.3'W Sun Azn. = 208.0°
 Path Width = 187.4 km Duration = 05m17.2s

Ephemeris & Constants

Eph. = Newcomb/ILE
 $\Delta T = 80.7$ s
 $k1 = 0.2724880$
 $k2 = 0.2722810$
 $\Delta b = 0.0^*$ $\Delta l = 0.0^*$

Geocentric Libration
 (Optical + Physical)

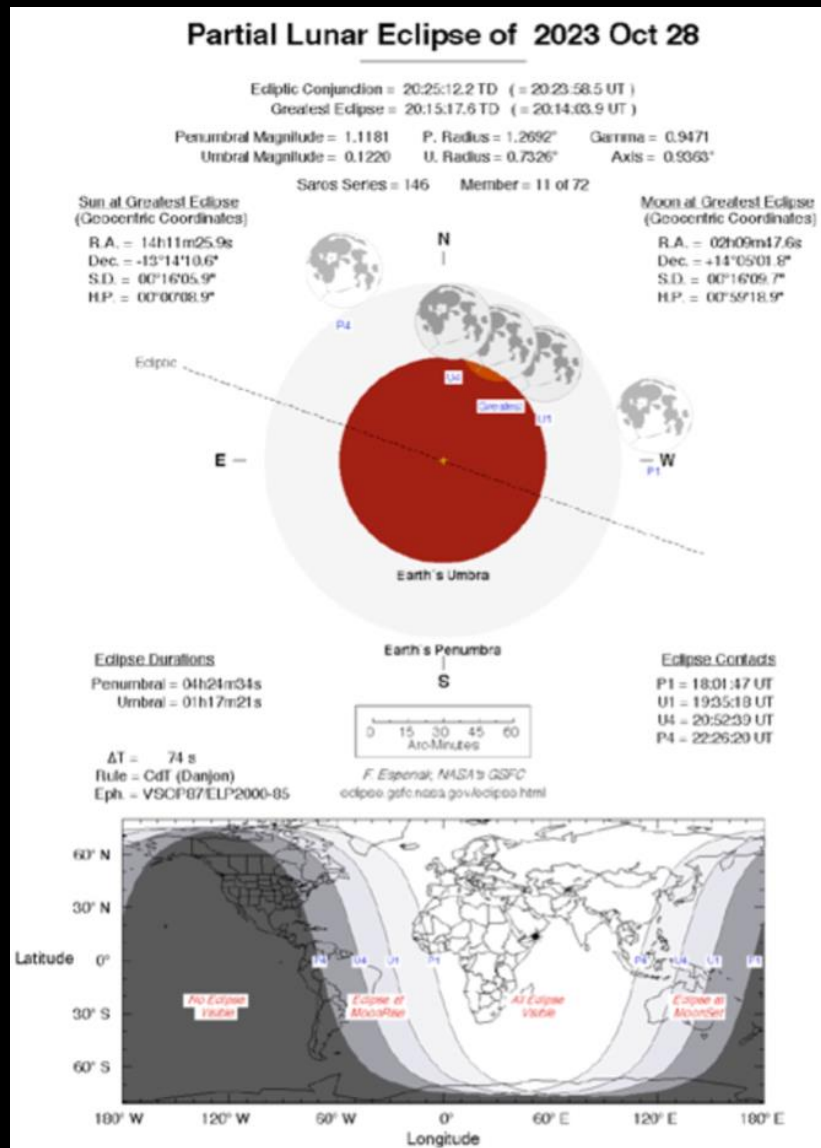
$l = -3.80^*$
 $b = -0.48^*$
 $c = 20.45^*$

Brown Lun. No. = 1247



Lunar Eclipse

- Partial
- Saturday, Oct. 28
- All eclipse visible from the UK
- 8:35pm - 9:53pm BST



Occultations

- Moon
 - Oct. 18, α Scorpii (Antares), mag. 1.1, DD 13:54, RB 15:09
 - Next time something special.....
- Thursday, Nov. 09, Venus, DB 09:47, RD 10:48
 - solar elongation 45° , phase 0.59
 - Venus transit, 08:45
 - last quarter moon, Nov. 05
 - new moon, Nov. 13

Conjunctions

- Moon - Mercury
 - Oct. 14, 11:00, 0.67°

Outer Solar System

- Mars
 - Conjunction Nov. 18. Opposition 2025 Jan. 16. Today, rise 08:15, transit 13:45, set 19:15
- Jupiter
 - Opposition Nov. 03. Conjunction 2024 May 18, Today, rise 20:05, transit 03:30, set 10:50
- Saturn
 - Opposition Aug. 27. Conjunction 2024 Feb. 28, Today, rise 17:55, transit 22:50, set 03:50
- Uranus
 - Opposition Nov. 13. Conjunction 2024 May 13. Today, rise 20:15, transit 04:00, set 11:45
- Neptune
 - Opposition Sept. 19. Conjunction 2024 March 17. Today, rise 18:40, transit 00:30, set 06:15

OASI Events

- Online
 - Thursday, Oct. 19, 8:00pm, Monthly Zoom Meeting

Local Societies Events

- DASH (Darsham Village Hall, 7:00pm, Sundays)
 - Oct. 01, Dr Matt Bothwell, 'The JWST and Giant Galaxies in the Early Universe'
 - 15, Observing Meeting
 - 29, Paul Whiting, 'So who's this STEVE then?'
- LYRA (Parkhill Hotel, Oulton, 7:30pm, Tuesdays)
 - TBA
- AAA (Whepstead Village Hall, 7:30pm, Wednesdays)
 - 27, AGM
 - Oct. 11, Paul Fellows, 'Quark Stars' & Andy Parrott 'La Palma and its Observatory'
 - Oct. 25, TBA

National Events

- British Astronomical Association
 - Thursday Sept. 28, 19:30-21:00, Deep Sky Section Zoom Meeting
 - Saturday Sept. 30, 09:30-17:15, Exoplanet Zoom Meeting
 - Wednesday Oct. 25, 17:00-20:00, AGM, Institute of Physics, 37 Caledonian Rd., London (+live stream?)