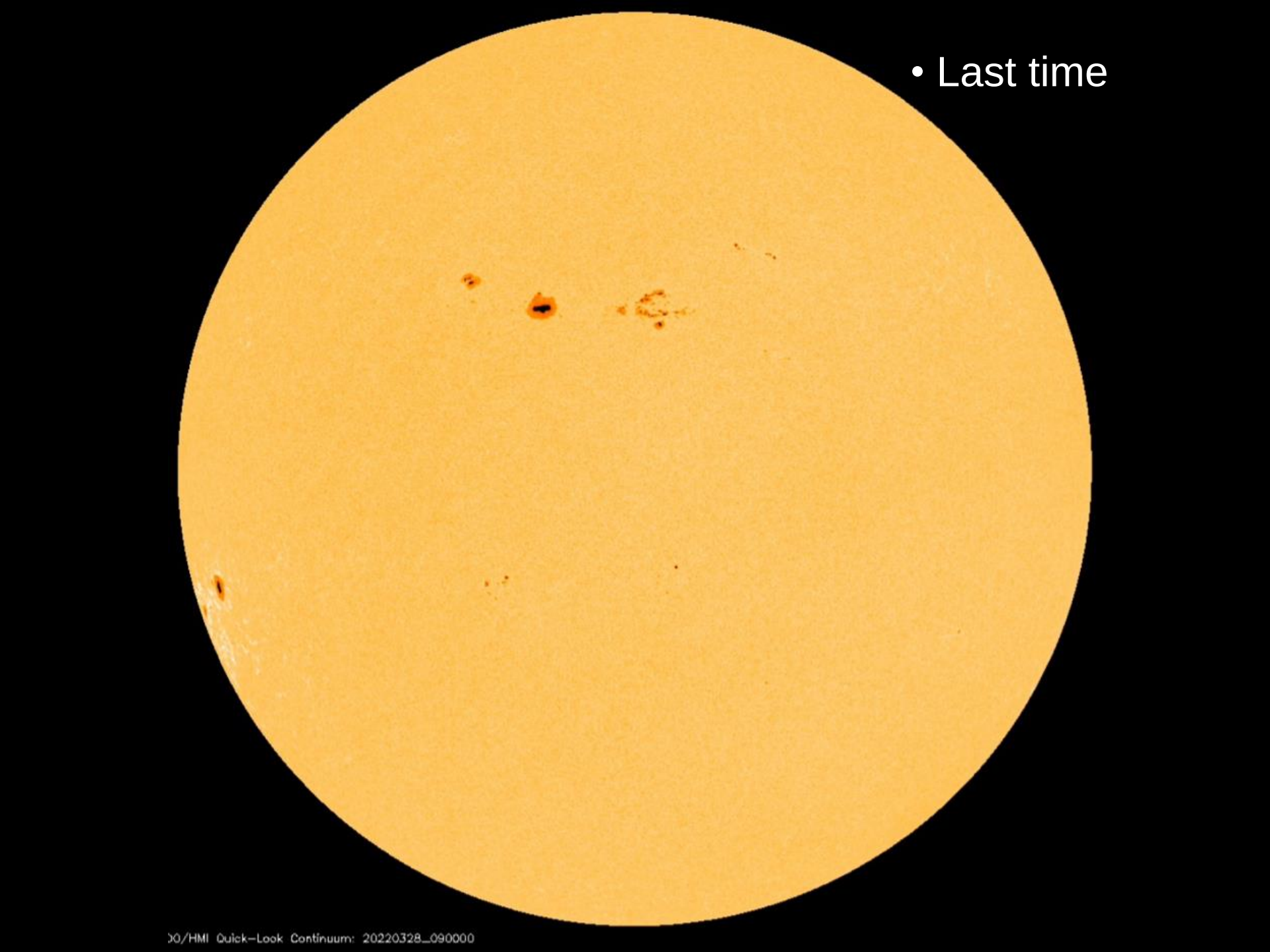
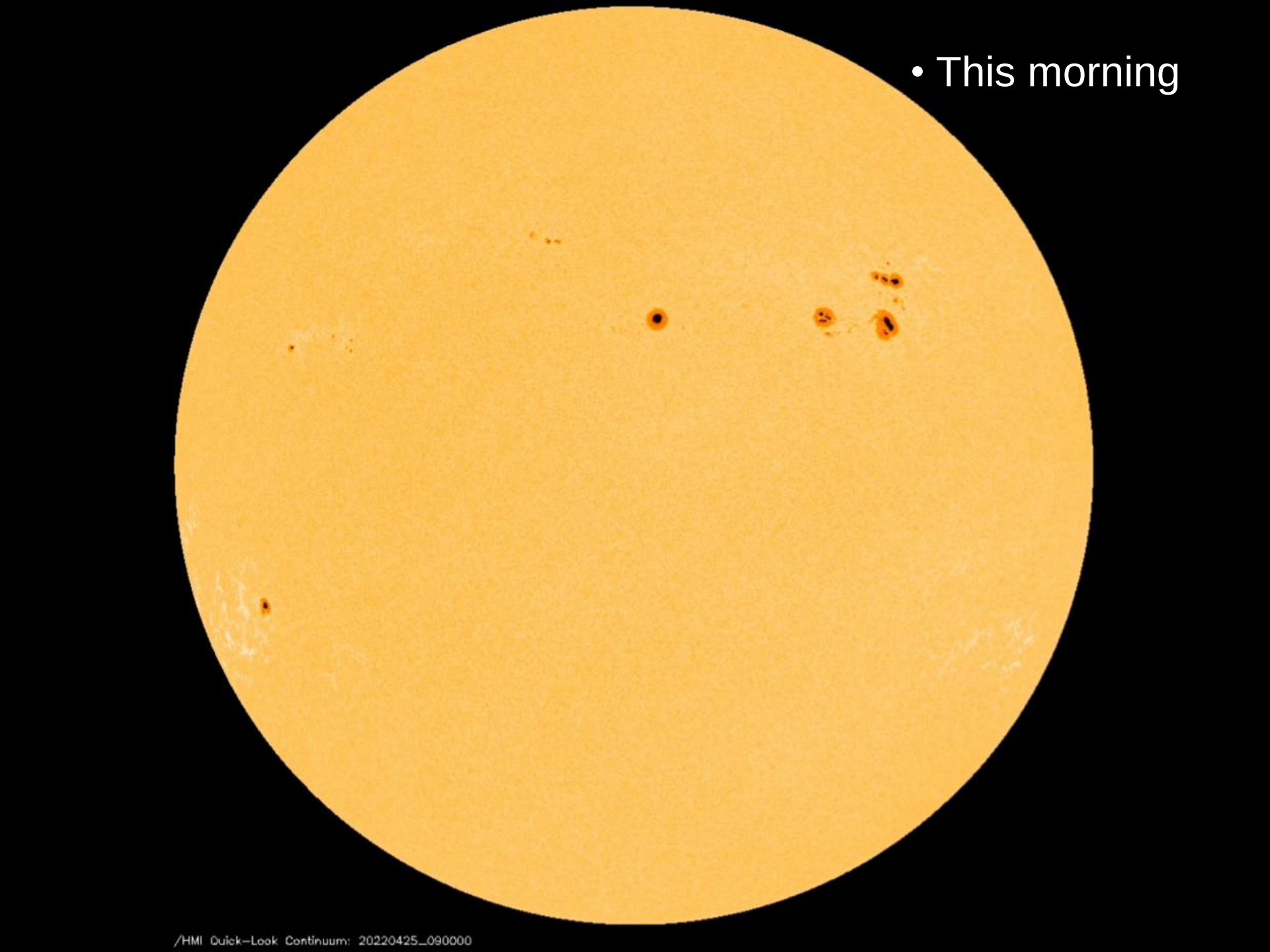
What's Up?

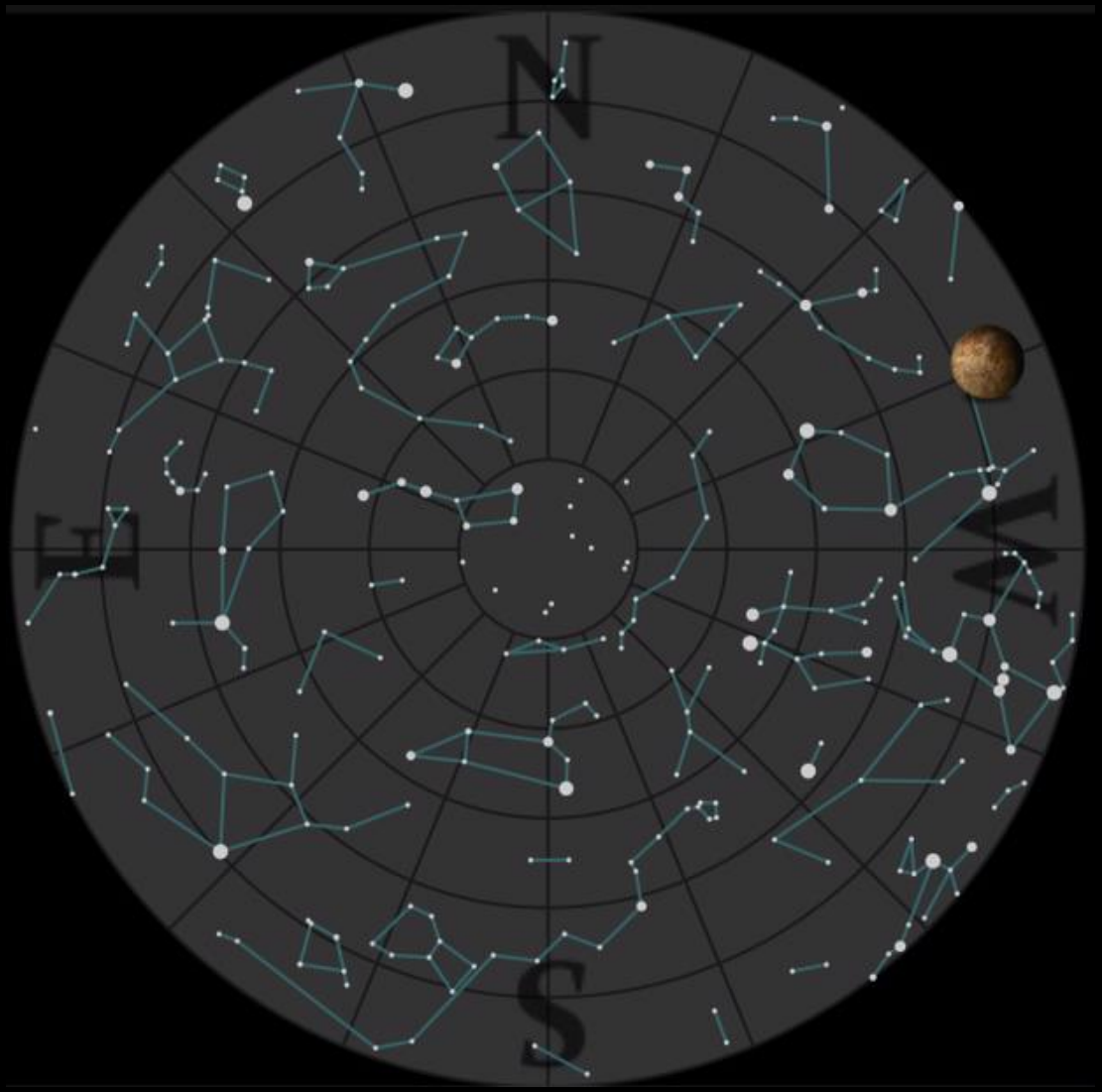
2022 April 25 to May 23

Bill Barton, FRAS

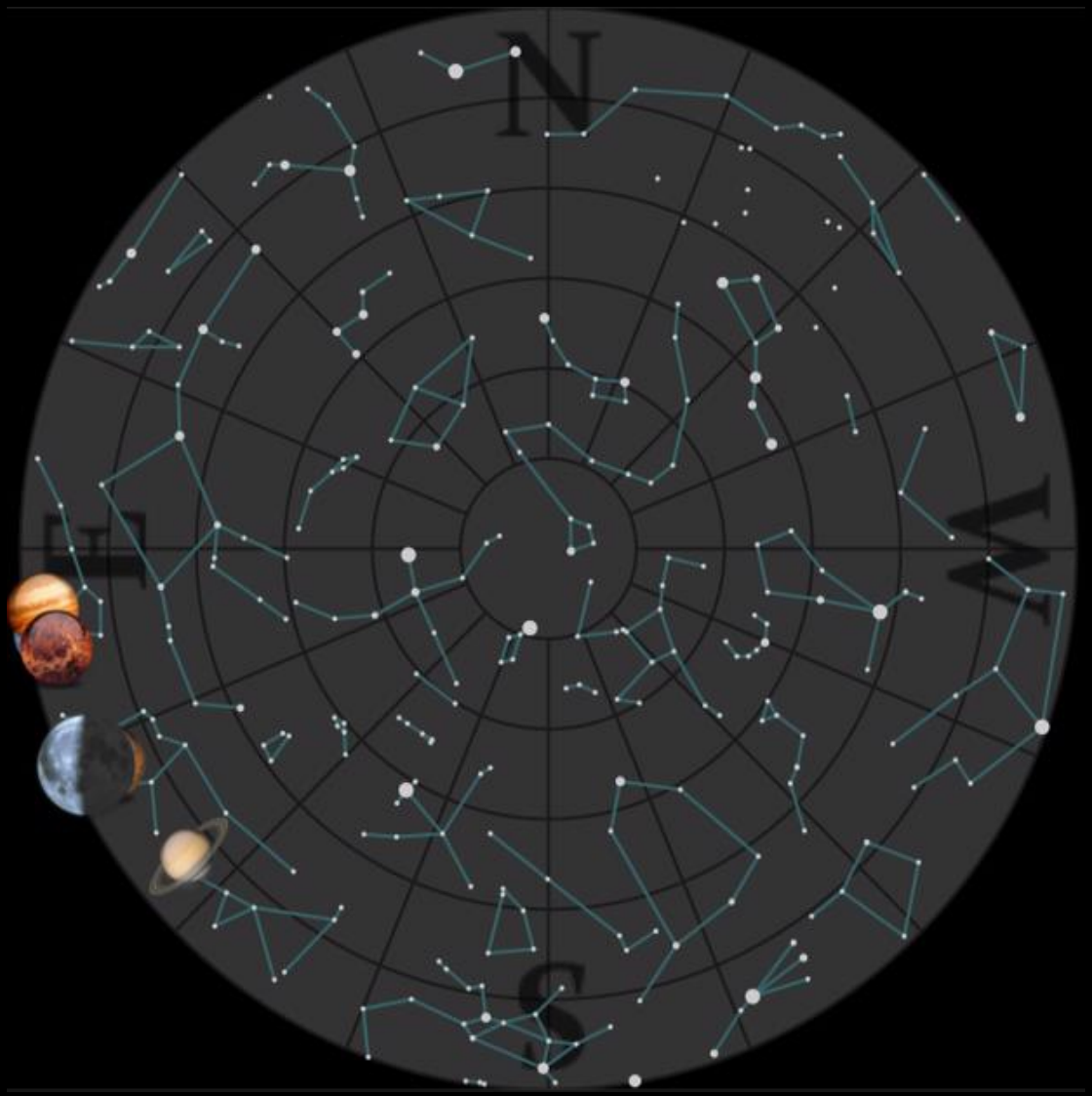

• Last time
)O/HMI Quick-Look Continuum: 20220328_090000



- This morning



- The Sky 21:00 Tonight



- The Sky 05:00 Tomorrow

Inner Solar System

- Sun
  - Declination increasing
- Mercury
  - In evening sky, greatest elongation Apr. 29 (21°), currently 19°
  - Inferior conjunction May 21
  - Then in morning sky, greatest elongation Jun. 16 (23°)
  - Good observing opportunity late Apr. early May
  - Today, rise 06:00, transit 14:05, set 22:10
- Venus
  - In morning sky greatest elongation Mar. 20 (47°), currently 44°
  - Superior conjunction Oct. 22
  - Today, rise 04:30, transit 10:10, set 15:50

Earth

- Time
  - 00:00UT ≈ 14:15ST today
  - Today, sunrise 05:35, transit 12:50, sunset 20:10
  - End of period, sunrise 04:50, transit 12:50, sunset 20:50
- Moon
  -  New, 30 (a black Moon)
  -  First Quarter, May 09
  -  Full, 16
  -  Last Quarter, 22
- Meteors
  - η Aquarids, Apr. 19-May 28, peak May 06, ZHR = 40

Eclipses

- Partial Solar
  - Apr. 30

Partial Solar Eclipse of 2022 Apr 30

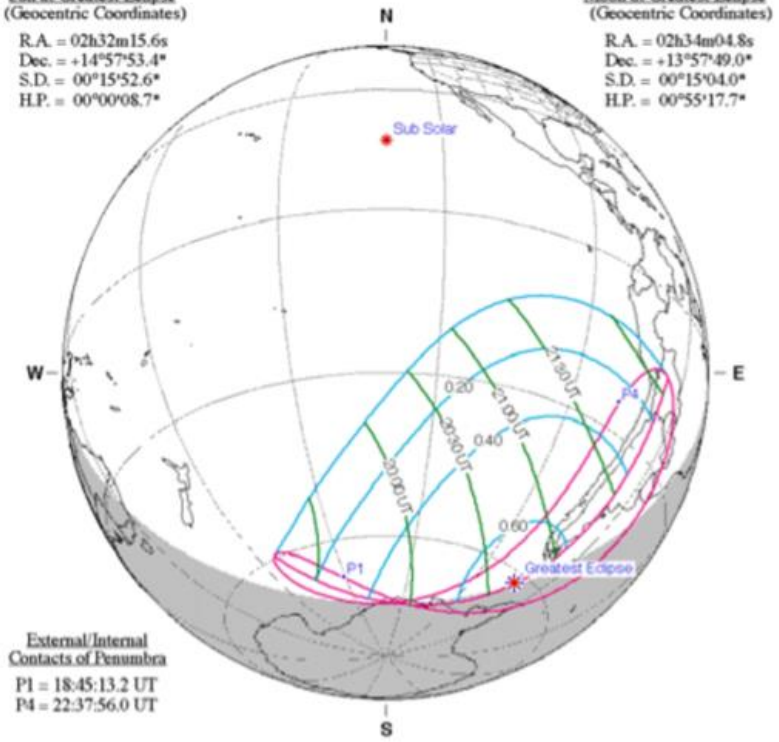
Geocentric Conjunction = 19:40:42.5 UT J.D. = 2459700.319937
Greatest Eclipse = 20:41:20.2 UT J.D. = 2459700.362039

Eclipse Magnitude = 0.6389 Gamma = -1.1900

Saros Series = 119 Member = 66 of 71

Sun at Greatest Eclipse
(Geocentric Coordinates)
R.A. = 02h32m15.6s
Dec. = +14°57'53.4"
S.D. = 00°15'52.6"
H.P. = 00°00'08.7"

Moon at Greatest Eclipse
(Geocentric Coordinates)
R.A. = 02h34m04.8s
Dec. = +13°57'49.0"
S.D. = 00°15'04.0"
H.P. = 00°55'17.7"



External/Internal
Contacts of Penumbra
P1 = 18:45:13.2 UT
P4 = 22:37:56.0 UT

Ephemeris & Constants
Eph. = Newcomb/ILE
ΔT = 79.2 s
k1 = 0.2724880
k2 = 0.2722810
Δb = 0.0" Δl = 0.0"

Geocentric Libration
(Optical + Physical)
l = 4.01°
b = 1.40°
c = -16.62°
Brown Lun. No. = 1229

0 1000 2000 3000 4000 5000
Kilometers

F. Espenak, NASA's GSFC - Fri, Jul 2,
sunearth.gsfc.nasa.gov/eclipse/eclipse.html

Eclipses

- Total Lunar
  - May 16
  - Eclipse at Moonset

  - Umbral Start 03:28
  - Umbral Complete 04:29
  - Sunrise 05:00
  - Moonset 05:03

Total Lunar Eclipse of 2022 May 16

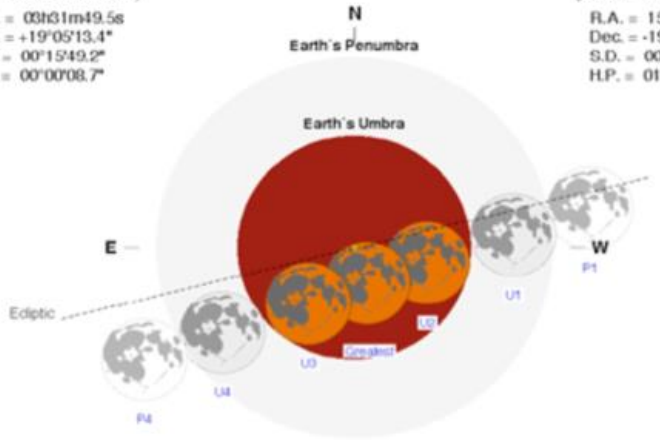
Ecliptic Conjunction = 04:15:18.8 TD (= 04:14:06.0 UT)
Greatest Eclipse = 04:12:41.6 TD (= 04:11:28.8 UT)

Penumbral Magnitude = 2.3726 P. Radius = 1.2854° Gamma = -0.2532
Umbral Magnitude = 1.4137 U. Radius = 0.7580° Axis = 0.2555°

Saros Series = 131 Member = 34 of 72

Sun at Greatest Eclipse (Geocentric Coordinates)
R.A. = 03h31m49.5s
Dec. = +19°05'13.4"
S.D. = 00°15'49.2"
H.P. = 00°00'08.7"

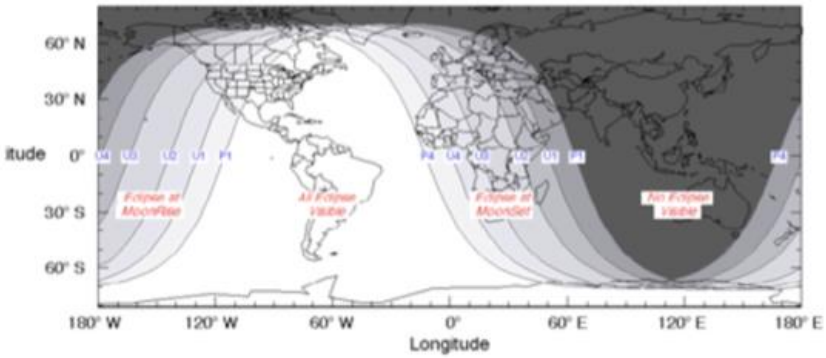
Moon at Greatest Eclipse (Geocentric Coordinates)
R.A. = 15h31m27.8s
Dec. = -19°19'40.4"
S.D. = 00°16'29.9"
H.P. = 01°00'33.1"



Eclipse Durations
Penumbral = 05h18m40s
Umbral = 03h27m14s
Total = 01h24m50s

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

Eclipse Contacts
P1 = 01:32:07 UT
U1 = 02:27:53 UT
U2 = 03:29:00 UT
U3 = 04:53:56 UT
U4 = 05:55:07 UT
P4 = 06:50:48 UT



Occultations

- Lunar
  - May 09, η Leonis, mag. 3.5, DD 19:30, RB 20:42
  - May 13, γ Virginis, mag. 2.8, DD 01:56, RB 02:47
  - May 14, λ Virginis, mag. 4.5, DD 22:34

Conjunctions

- Planetary
  - Apr. 27, 20:00, Neptune 0.01° N of Venus (rise 28 Apr. 04:25)
  - Apr. 30, 20:00, Jupiter 0.3° N of Venus
  - May 18, 00:00, Neptune 0.6° N of Mars

Outer Solar System

- Mars
  - Opposition Dec. 08. Today, rise 04:10, transit 09:20, set 14:30
- Jupiter
  - Opposition Sept. 26. Today, rise 04:40, transit 10:30, set 16:20
- Saturn
  - Opposition Aug. 04. Today, rise 03:40, transit 08:30, set 13:15
- Uranus
  - Conjunction May 05, Opposition Nov. 09. Today, rise 06:00, transit 13:30, set 20:55
- Neptune
  - Opposition Sept. 16. Today, rise 04:40, transit 10:20, set 16:10

OASI Events

- Only routine
- However please note the Newbourne meeting of May 09 has been rescheduled to May 02

Local Societies Events

- DASH (Darsham Village Hall, 7:00pm, Sundays)
  - May 01, Solar Outreach, location TBA
  - May 15, AGM
  - May 29, Solar Outreach, location TBA

- LYRA (Parkhill Hotel, Oulton, 7:30pm, Tuesdays)
  - May 10, Matt Bothwell “Hubble – Tension in Cosmology”

- AAA (Whepstead Community Centre, 7:30pm, Wednesdays)
  - TBA

National Event

- Society for Popular Astronomy
  - Saturday, 30 April, 2:00pm, Institute of Physics, 37 Caledonian Road, London N1 9BU
  - Professor Graziella Branduardi-Raymont (UCL-MSSL) “Exploring the Solar System in X-rays”
  - Robin Scagell “what’s visible in the night sky”
  - Grant Bowskill (First Light Optics) “An Outreach Observatory in Spain”