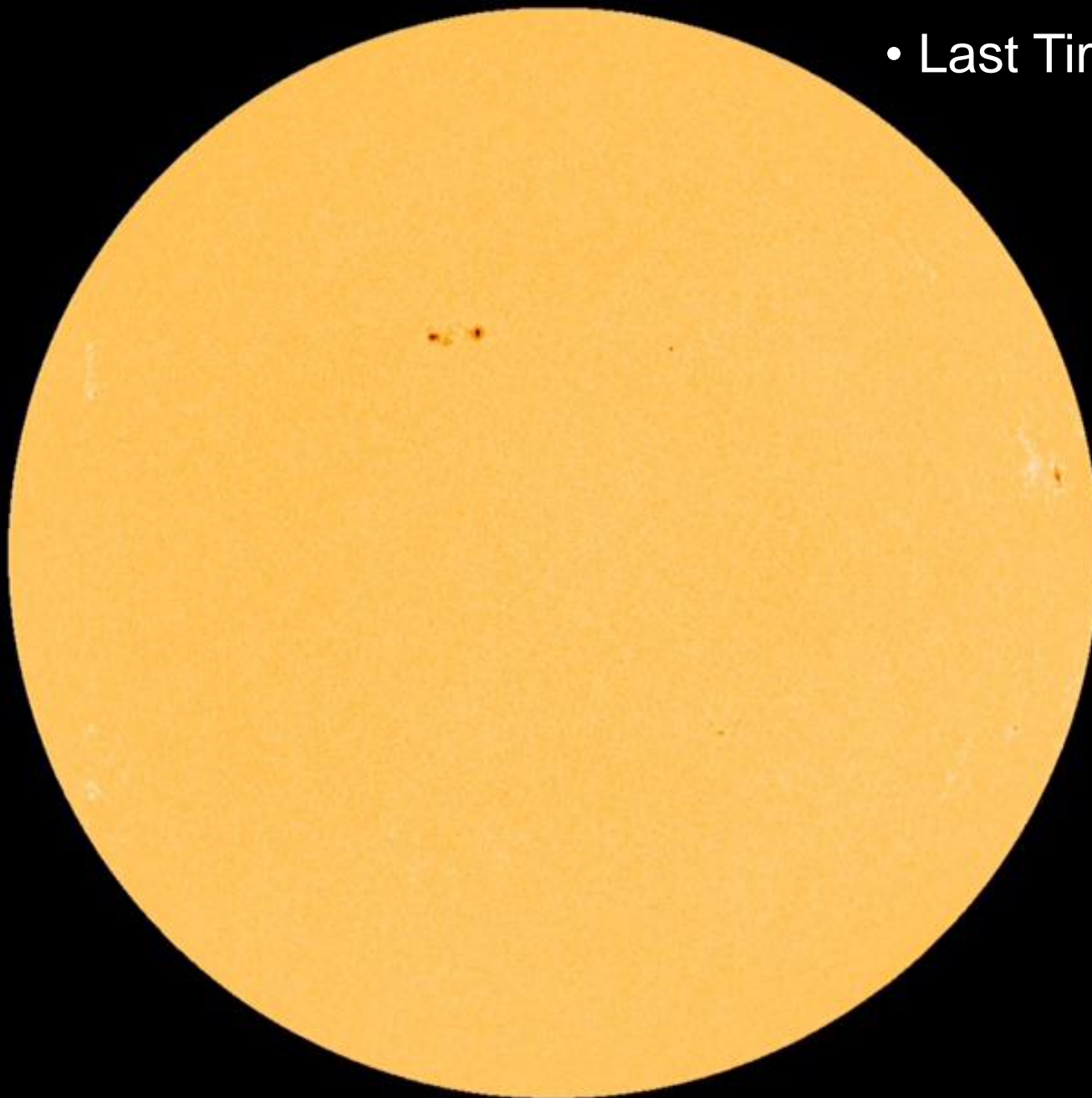


# What's Up?

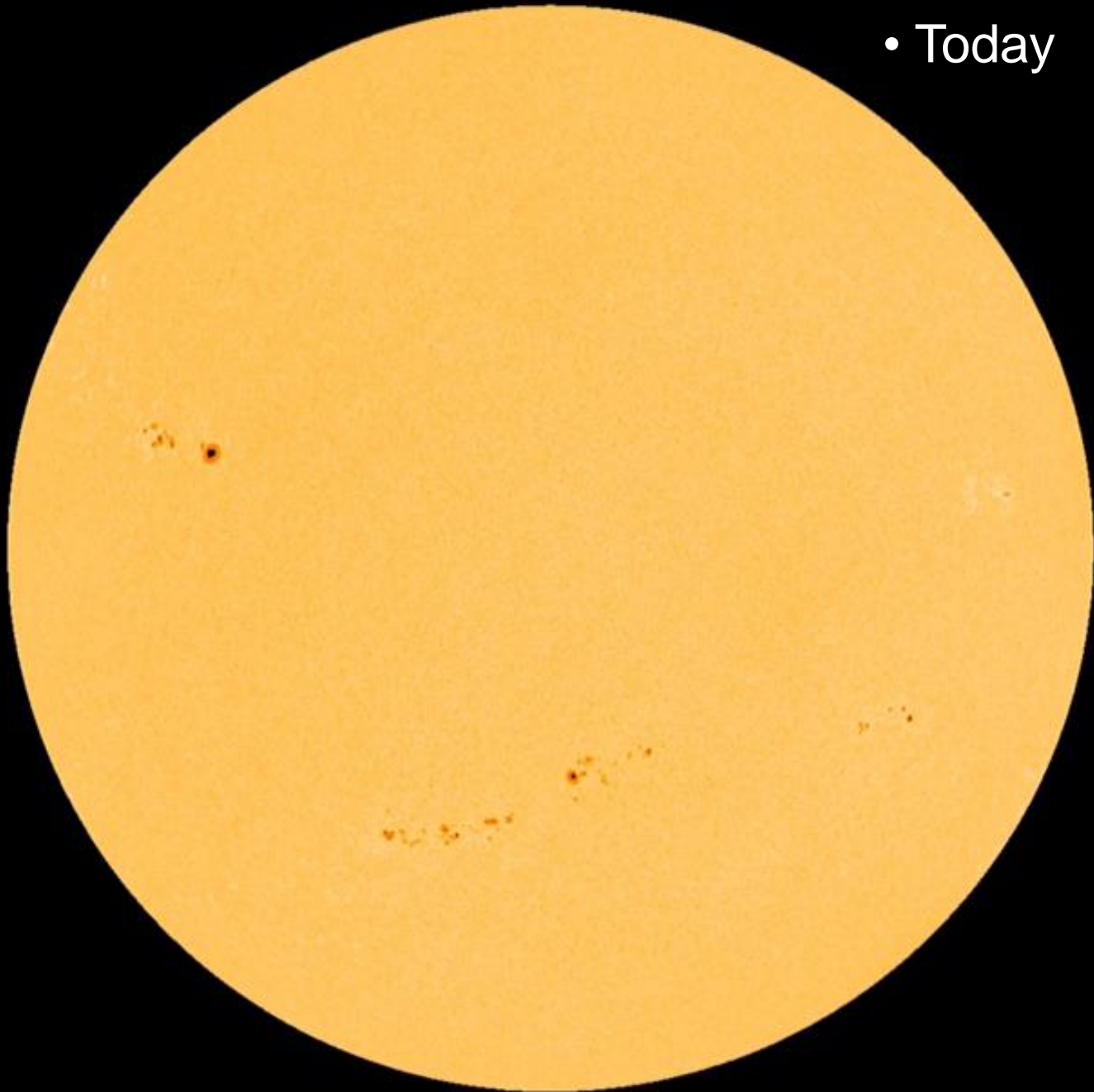
2022 September 26 to October 24

Bill Barton, FRAS

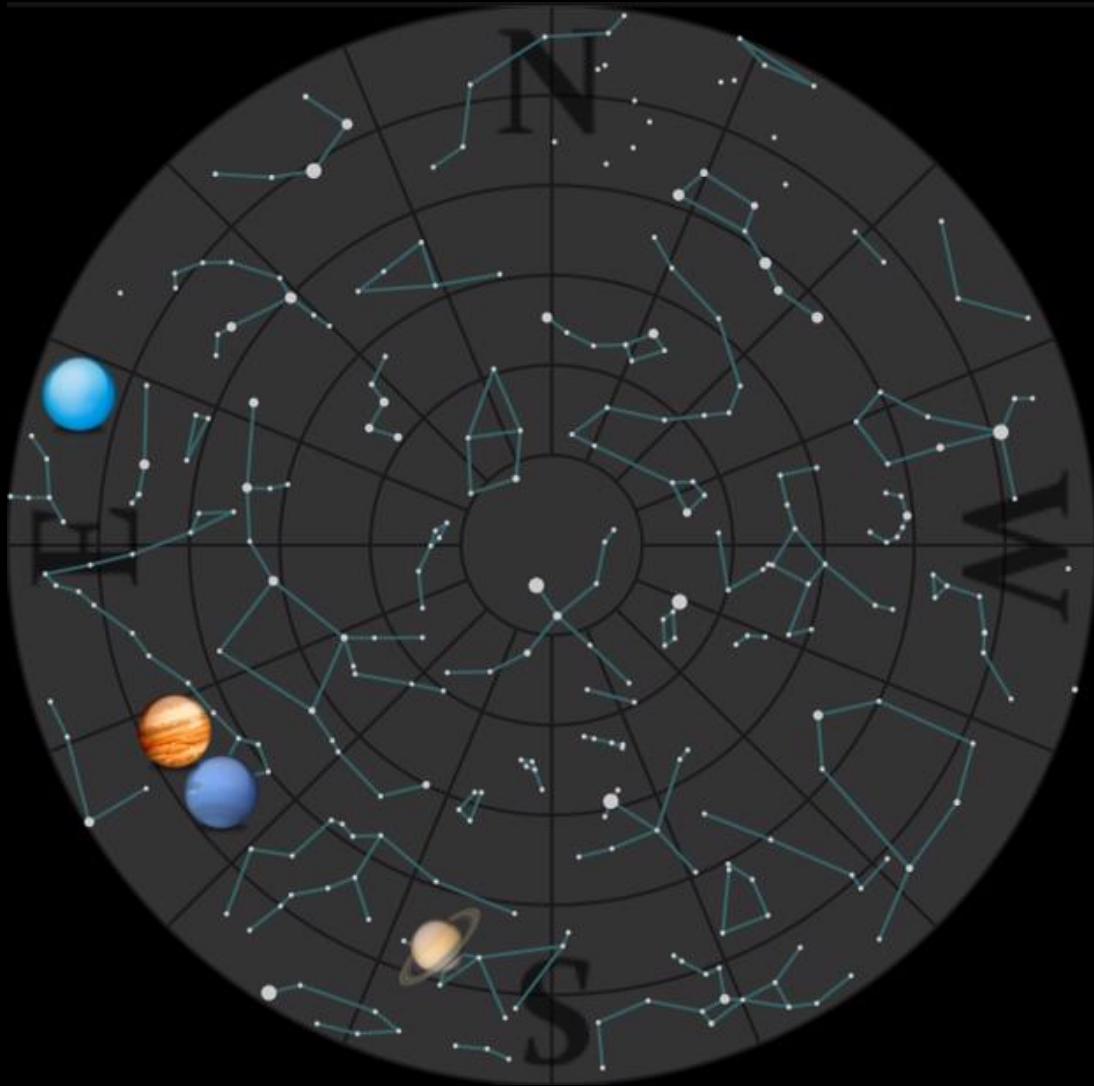
• Last Time



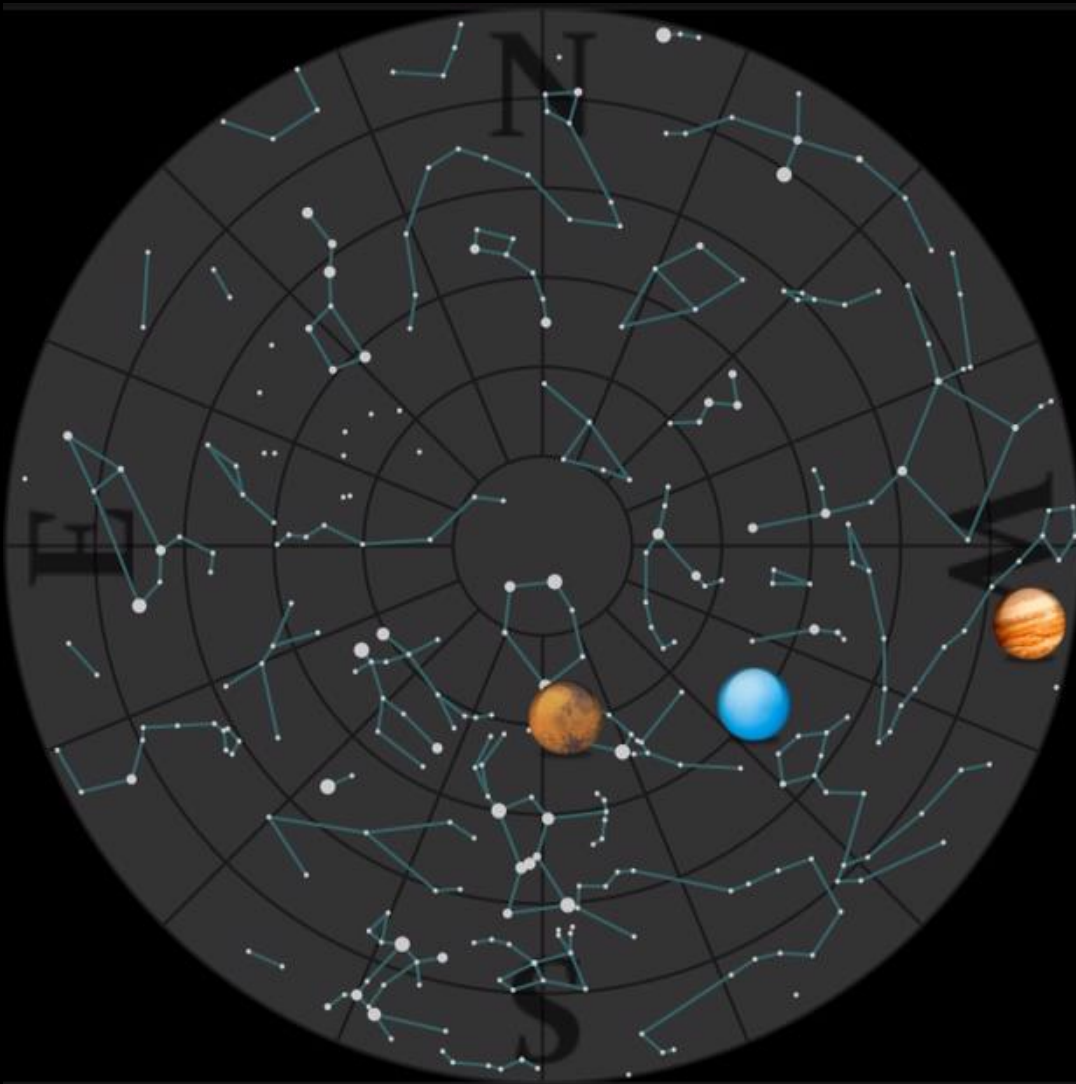
• Today



- The Sky 21:00 Tonight







- The Sky 06:00  
Tomorrow



# Inner Solar System

- Sun
  - Declination decreasing, equinox Sept. 23, solstice Dec. 21
- Mercury
  - Inferior conjunction Sept. 23
  - In morning sky, greatest elongation, Oct. 08 ( $18^\circ$  ), currently  $6^\circ$
  - Superior conjunction Nov. 08
  - Today, rise 06:20, transit 12:20, set 18:20
- Venus
  - In morning sky greatest elongation Mar. 20 ( $47^\circ$  ), currently  $7^\circ$
  - Superior conjunction Oct. 22
  - Then in evening sky greatest elongation Jun. 04, 2023 ( $45^\circ$  )
  - Today, rise 06:00, transit 12:20, set 18:40

# Earth

- Time
  - 00:00UT  $\approx$  00:20ST today
  - Today, sunrise 06:45, transit 12:45, sunset 18:45
  - End of period, sunrise 07:35, transit 12:40, sunset 17:45
- Moon
  -  First Quarter, Oct. 03
  -  Full, 09 (Hunters Moon)
  -  Last Quarter, 17
  -  New, 25 (partial solar eclipse)
- Meteors
  - Orionids, Oct. 02-Nov. 07, peak Oct. 22, ZHR 20

# Partial Solar Eclipse of 2022 Oct 25

Geocentric Conjunction = 10:03:36.7 UT    J.D. = 2459877.919175  
 Greatest Eclipse = 11:00:00.4 UT    J.D. = 2459877.958338  
 Eclipse Magnitude = 0.8611    Gamma = 1.0700

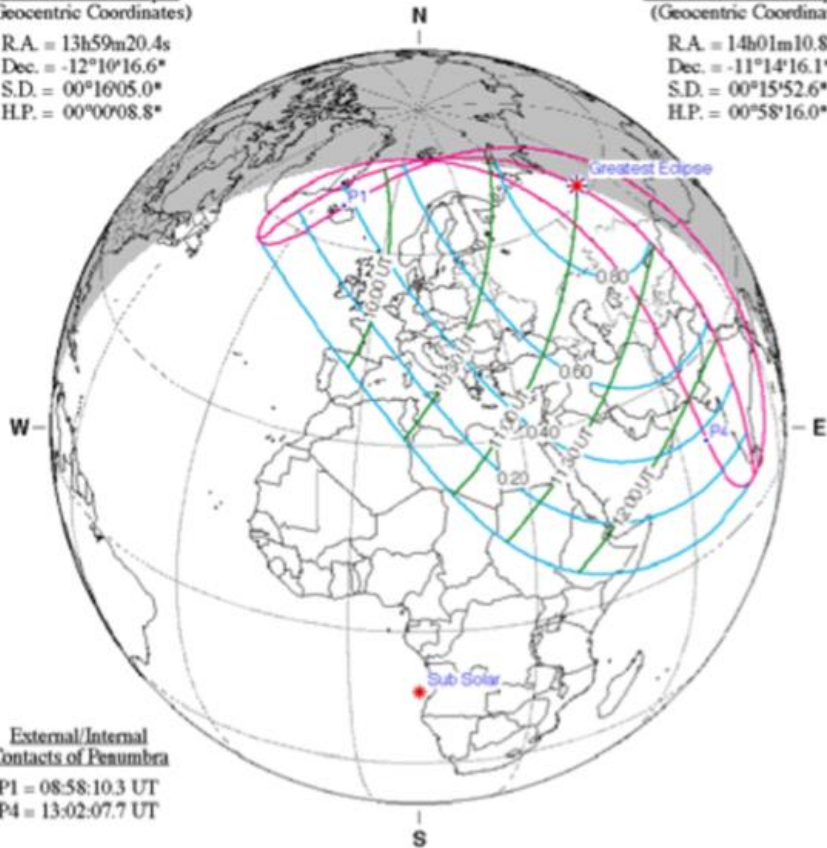
Saros Series = 124    Member = 55 of 73

### Sun at Greatest Eclipse (Geocentric Coordinates)

R.A. = 13h59m20.4s  
 Dec. = -12°10'16.6"  
 S.D. = 00°16'05.0"  
 H.P. = 00°00'08.8"

### Moon at Greatest Eclipse (Geocentric Coordinates)

R.A. = 14h01m10.8s  
 Dec. = -11°14'16.1"  
 S.D. = 00°15'52.6"  
 H.P. = 00°58'16.0"



### External/Internal Contacts of Penumbra

P1 = 08:58:10.3 UT  
 P4 = 13:02:07.7 UT

### Ephemeris & Constants

Eph. = Newcomb/ILE  
 $\Delta T = 79.7 \text{ s}$   
 $k1 = 0.2724880$   
 $k2 = 0.2722810$   
 $\Delta b = 0.0''$      $\Delta l = 0.0''$

### Geocentric Libration (Optical + Physical)

$l = -4.55^\circ$   
 $b = -1.38^\circ$   
 $c = 18.60^\circ$

Brown: Lun. No. = 1235



F. Espenak, NASA's GSFC - Fri, Jul 2,  
[sunearth.gsfc.nasa.gov/eclipse/eclipse.html](http://sunearth.gsfc.nasa.gov/eclipse/eclipse.html)

## Local Circumstances for Ipswich

1st Contact	10:07:51
Mid Eclipse	11:00:25
4th Contact	11:54:46
Max. Obs.	28%





# Occultations

- Lunar
  - none of note this period

# Conjunctions

- None of note this period

# Asteroid Impact

- NASA's Double Asteroid Redirection Test (DART,  $\approx 550\text{kg}$ ) will target Dimorphos ( $170\text{m}\varnothing$ ,  $5 \times 10^9 \text{ kg}$ ) natural satellite of Didymos ( $800\text{m}\varnothing$ ) 11 million km (7 million miles, 38 light seconds) from Earth
- Impact is timed for 23:14 UT today (00:14 BST, Tuesday)
- Dimorphos currently orbits Didymos in roughly 11h 55m, the impact velocity will be around 6.6 km/s, resulting in a change of Dimorphos velocity of 1 mm/s, its orbital period will reduce to 11h 45m
- The mission will be observed by earthbased telescopes as well as the James Webb Space Telescope and LICIACube (Light Italian CubeSat for Imaging of Asteroids) which will fly-by some 160 seconds after impact

# Outer Solar System

- Mars
  - Opposition Dec. 08 ( $17.1/25.6''=0.667$ ). Today, rise 21:30, transit 05:45, set 13:55
- Jupiter
  - Opposition Sept. 26. Today, rise 18:45, transit 00:50, set 06:55
- Saturn
  - Conjunction Feb. 17 2023. Today, rise 17:25, transit 22:00, set 02:30
- Uranus
  - Opposition Nov. 09. Today, rise 20:00, transit 03:40, set 11:15
- Neptune
  - Opposition Sept. 16. Today, rise 18:30, transit 00:15, set 06:00

# OASI Events

- Open Weekend at Orwell Park
  - Friday 28 & Saturday 29 Oct.

# Local Societies Events

- DASH (Darsham Village Hall, 7:00pm, Sundays)
  - Oct. 09, Chris Mead, “Learning about Astrophotography during Lockdown”
  - Oct. 23, observing meeting
- LYRA (Parkhill Hotel, Oulton, 7:30pm, Tuesdays)
  - Oct. 11, LYRA Secretary, Dennis Ramirez, TBA
- AAA (Whepstead Community Centre, 7:30pm, Wednesdays)
  - Sept. 28
  - Oct. 12
  - Oct. 26

# National Events

- SHA AGM
  - 10:00-17:00, Saturday, Oct. 22, Birmingham & Midland Institute, 9 Margaret Street, Birmingham
- BAA AGM,
  - 17:30-20:00, Wednesday Oct. 26, Institute of Physics, 37 Caledonian Road, London

# And Finally

- Grace Cook School, Fuller Way, Stowmarket
  - 13:30-15:00, Friday, Oct. 14, Official Opening Ceremony