

## Astronomical Highlights 2024

### Comets

Comet **12P/Pons-Brooks** is expected to reach mag. +4.2 at perihelion on **Apr. 21**, low in the evening sky in Taurus. A new comet **C/2023 A3 (Tsuchinshan-ATLAS)** is expected to reach +0 magnitude in early October in the morning sky. The comet is expected to be brighter than +6.0 from late August to early November.

### Eclipses

**Of the 4 eclipses that occur in 2024 (2 solar, 2 lunar)**, only the partial phase of the **April 8** total solar eclipse, and both lunar eclipses (**Mar. 25** penumbral and **Sept. 17** partial) are visible in Hampton Roads. On **Apr. 8**, the moon will cover 82% of the sun's diameter at 3:20 PM EDT with partial phases running from 2:03 to 4:32 PM. This eclipse is total within a path which crosses the US from Texas to Maine (see [http://xjubier.free.fr/en/site\\_pages/solar\\_eclipses/TSE\\_2024\\_GoogleMapFull.html](http://xjubier.free.fr/en/site_pages/solar_eclipses/TSE_2024_GoogleMapFull.html)). The **Mar. 25** penumbral lunar eclipse reaches maximum eclipse (98% penumbral) at 3:12 AM EDT; being penumbral, the shadow will be difficult to see. The **Sept. 17** partial lunar eclipse reaches maximum (9.1% partial) at 10:44 PM EDT, with partial phase running from 10:11 to 11:16 PM EDT.

### Planets

Mercury reaches its greatest western elongations in the morning sky **Jan. 12**, **May 9**, and **Sept. 5**, and **Dec. 25**, and greatest eastern elongations in the evening sky **Mar. 24**, **Jul. 22**, and **Nov. 16**. Around these dates will be the best times to try to spot this elusive planet in twilight. Venus reaches superior conjunction on **June 4** and thus is far from earth most of the year. Mars on the other hand had no oppositions this year. The remaining superior planets are best observed near opposition, which occurs for Saturn on **Sep 8**, Neptune on **Sep 21**, Uranus on **Nov 17**, and Jupiter on **Dec 7**

### Meteor Showers

Meteor showers are best observed away from the city lights under moonless skies. For 2024, the best shower will be the Perseids (zhr=100) on **Aug. 12-13** which has some interference with the First Quarter Moon. Other notable showers with minimal moon interference are the Quadrantids on **Jan, 3-4** (Last Quarter), Eta Aquarids (zhr=50) on **May 5-6** (waning crescent), S. Delta Aquarids (zhr=25) on **July 30-31** (waning crescent), and Ursids (zhr=10) on **Dec. 22-23** (Last Quarter).

### Occultations

The brightest stars occulted by the Moon this year visible to our locale are +1.0-magnitude Spica (alpha VIR) and +1.1-magnitude Antares (alpha SCO). Spica is occulted on **July 13** and **Nov 27**. Antares is occulted **Mar. 3** and **May 23**. The **Mar. 3** Antares event is a graze just 34km SW of our area.

The asteroid 623 Chimaera will occult the star TYC 7404-03568-1 on **June 15**, visible along a path through Virginia and North Carolina.