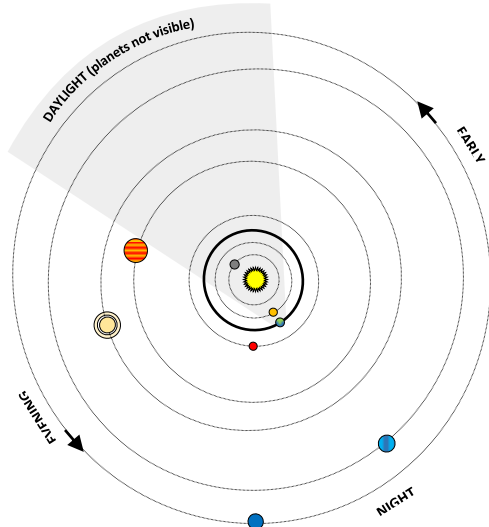


*A single bright star drifts slowly across the southern horizon this month. It's a lonely sentinel, announcing that it is autumn, and quietly foretelling of the winter to come. 'Tis a beacon, and a warning - for the autumn skies are also haunted by the ghosts of dead and dying stars, the planetary nebulae. As we approach the Halloween sky from the safety of our telescopes, be aware, but be quiet! Can you conjure the character to cautiously call on creation's creepiest creatures?*

**Solar System:** We start this month with Halloween's favorite astronomical object, the moon: it will be new on the 8<sup>th</sup> and full on the 24<sup>th</sup>. This means it will be dark in the early evening on Halloween for trick-or-treat!

**Venus** and **Mercury** are not visible this month, because Venus is between Earth and the Sun and Mercury is behind the Sun from our vantage point. **Jupiter** is low in the southwest and by the end of the month will set 1 hour after sunset. **Saturn** and **Mars** are still bright in the southern sky before midnight. The moon passes within 2-degrees of Saturn on October 14 and Mars on October 18. (This is called "conjunction," when 2 objects share the same coordinates.) **Uranus**, in Pisces, will be at opposition on Oct 23; and **Neptune** is still chillin' in Aquarius.

The Solar System on October 15, 2018



**Deep Sky:** Around midnight, look for a star which appears alone in the southern sky: **Fomalhaut (alpha-Pisces Austrini)**. It stands out since it's located in an area of the sky that from our vantage point is devoid of any bright stars. Among its many different names, Fomalhaut is sometimes referred to as "The Lonely Star of Autumn." Fomalhaut is a class-A main

sequence star of about 3 solar masses which burns with a luminosity of 15 suns. It is orbited by a Jupiter-like planet called "Dagon" and an expansive planet-forming ring of dust similar to our sun's Kuiper Belt. Although it is a young star, it's expected to run out of fuel in about 1 billion years (a short life span due to its heat).

The October sky also features many prominent planetary nebulae - the "ghosts" of stars. When a small or medium-sized star (like our sun, or Fomalhaut) runs out of fuel, the core of the star collapses and the outer layers billow into space, forming a ghostly ring (nebula) around the burnt-out star's corpse (now a white dwarf). *Your search for these ghosts will be much easier if you get your hands on an oxygen 3 filter, which filters out all wavelengths of light except the "doubly ionized oxygen" light from planetary nebula.*

Start overhead in Lyra to find the bright and beautiful **RING NEBULA (M57, NGC6720)** hovering 1400 lightyears away. Near M57, in Vulpecula, the enigmatic **DUMBELL NEBULA (M27, NGC6853)** glows at the same distance. East of these, above the great square of Pegasus, you find a small, blue, glowing ball - the **BLUE SNOWBALL NEBULA (NGC7662)** - in Andromeda, farther away at 3600 lightyears from earth.

Turning our attention to the southern sky, look in Sagittarius for the **LITTLE GEM NEBULA (NGC6818)**, 6400 lightyears away. Then move east to Aquarius the **SATURN NEBULA (NGC7009)** which is 3200 lightyears away. Continuing east, above Fomalhaut, lies the largest "ghost" in our sky: **The Helix Nebula (NGC7293)**, a mere 600 lightyears away. Finally, rising in the southeast this month is the **SKULL NEBULA (NGC246)**, a dim and spooky looking little planetary nebula that haunts our galactic neighborhood 1800 lightyears away.

**CAAA Club News:** The October meeting will be a 7pm on Monday, October 1, 2018. Get ready to play Astro-Jeopardy! Fun! Bring your telescopes or other observation gear to set up / show off prior or after the meeting. We'll also be welcoming several new members. All are welcome.

In November, CAAA will be providing an educational outreach to a local Girl Scouts group. More details to come at the meeting and on the website.

-Jim

### Deep-Sky Challenge Map: Autumn's Ghosts

(facing south)

Banksy Farm 34° 45' N 082° 50' W

Thu Oct 11, 2018 09:42:54 PM

S 167.5° Alt +49.3°

91.2° x 115.2°

