

THE OBSERVER

BATTLE POINT ASTRONOMICAL ASSOCIATION

WWW.BPASTRO.ORG BAINBRIDGE ISLAND, WA



BPAA's Loaner Telescope Program

Are you thinking about buying a telescope but can't figure out what to get? Good telescopes are expensive, and cheap ones are a waste of money if you really want to enjoy the night sky. BPAA has about a dozen small and medium size telescopes available for members to check out and take home to use, just like a library book. Before spending your hard-earned money, you can learn about the performance of different scopes and what features and accessories are important for exploring the sky. Then, when you are ready to spend your money you can do so wisely.

If you'd like to borrow a telescope, contact BPAA President Frank Petrie (President@BPAAstro.org) or Chief Astronomer Nels Johansen (Astronomer@BPAAstro.org) for more information.

In the coming months we will highlight some of the variety of available telescopes that you can check out.

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WHAT'S UP(COMING)!

December 13, 14 - Geminids Meteor Shower - Meteors will radiate from the constellation Gemini, but can appear anywhere in the sky

December 14 - New Moon

December 14 - Total Solar Eclipse - totality visible in parts of southern Chile and southern Argentina

December 21 - December Solstice

December 21 - Rare Conjunction of Jupiter and Saturn - first great conjunction since 2000 - the two bright planets will appear within only 7 arc minutes of each other, so close that they will appear to make a bright double planet

December 21, 22 - Ursids Meteor Shower - Meteors will radiate from the constellation Ursa Minor, but can appear anywhere in the sky

December 30 - Full Moon

January 2 - Earth at perihelion - the point on its orbit that is closest to the Sun at 13:50 UTC (05:50 PST)

January 2, 3 - Quadrantids Meteor Shower - Meteors will radiate from the constellation Bootes, but can appear anywhere in the sky

January 13 - New Moon

January 24 - Mercury at Greatest Eastern Elongation

January 28 - Full Moon

These are screenshots taken during the November 1 Impromptu Virtual Star Party. Nels and Frank imaged M11 Wild Duck Cluster, M13 Great Hercules Cluster, and M57 Ring Nebula as participants watched via Zoom. The images are a bit blurry because 1) they're screenshots, 2) the focuser remote control was not working and we had to focus manually, and 3) the Ritchie Telescope needs a little collimation. Nevertheless, these first attempts show us what's possible, and the imaging will improve with practice. Members can learn to operate the Ritchie and the Mallincam to make images of their own favorite objects.



M11, an open star cluster also known as the Wild Duck Cluster for the roughly V-shaped arrangement of its brightest stars, was discovered by the German astronomer Gottfried Kirch in 1681. It is located 6,200 light-years from Earth in the constellation Scutum and has an apparent magnitude of 6.3. Of the 26 open clusters included in the Messier catalog, M11 is the most distant that can be seen with the naked eye. M11 is one of the most densely populated open clusters known. Containing over 2,900 stars, it appears as a triangular patch of light through a pair of binoculars.



Over 100,000 stars whirl within the globular cluster M13, one of the brightest star clusters visible from the Northern Hemisphere. Located 25,000 light-years from Earth with an apparent magnitude of 5.8, this glittering metropolis of stars in the constellation Hercules can be spotted with a pair of binoculars most easily in July. Discovered by Edmond Halley (yes, that Halley) in 1713, the cluster's individual stars were not resolved until 1779. Near its core, stars are so crowded that they can run into each other and even form a new star, making this cluster of great scientific interest to astronomers.



M57, or the Ring Nebula, is a planetary nebula, the glowing remains of a sun-like star. The tiny white dot in the center of the nebula is the star's hot core, called a white dwarf. M57 is about 2,000 light-years away in the constellation Lyra, and is best observed during August. Discovered by the French astronomer Antoine Darquier de Pellepoix in 1779, the Ring Nebula has an apparent magnitude of 8.8 and can be spotted with moderately sized telescopes.

Arecibo Radio Telescope in Puerto Rico Is to Close

The National Science Foundation announced on 11/17/20 that it will close the huge telescope at the Arecibo Observatory in Puerto Rico in a blow to scientists worldwide who depend on it to search for planets, asteroids and extraterrestrial life.

The independent, federally funded agency said it's too dangerous to keep operating the single dish radio telescope — one of the world's largest — given the significant damage it recently sustained.

NSF officials noted that even if crews were to repair all the damage, engineers found that the structure would still be unstable in the long term.

The telescope was built in the 1960s with money from the Defense Department amid a push to develop anti-ballistic missile defenses. In its 57 years of operation, it endured hurricanes, endless humidity and a recent string of strong earthquakes.

Scientists worldwide have used the dish to track asteroids on a path to Earth, conduct research that led to a Nobel Prize and determine if a planet is potentially habitable.

Ralph Gaume, director of NSF's Division of Astronomical Sciences, stressed that the decision has nothing to do with the observatory's capabilities, which have allowed scientists to study pulsars to detect gravitational waves as well as search for neutral hydrogen, which can reveal how certain cosmic structures are formed.

(Source: <https://time.com/5914133/arecibo-radio-telescope/>)

What's Up With The Ritchie?

Chief Astronomer Nels Johansen is still looking for members who want to learn how to use the much improved Ritchie telescope that is back on line (as you saw on the previous page). If you are interested in learning how to operate the Ritchie, contact Nels at: Astronomer@bpastro.org

Members will continue to receive updates on the Ritchie and on programs related to its use and maintenance. Watch this space for further developments.

Support BPAA through the Red Envelope campaign!

BPAA relies on community donations through the One Call For All campaign for a significant share of its annual income, which supports our programs and facility upkeep. It's easy to support BPAA with a tax-deductible one-time or recurring donation, simply follow [this link](#) to BPAA's page on the OCFA donation portal. Or, you can include BPAA when you return your Red Envelope. Thank you for supporting community science education on Bainbridge Island!



Solar Cycle 25 Has Begun

The Solar Cycle 25 Prediction Panel, an international group of experts co-sponsored by NASA and NOAA, announced that [solar minimum occurred in December 2019](#), marking the start of a new solar cycle. Because our Sun is so variable, it can take months after the fact to declare this event. Scientists use sunspots [to track solar cycle progress](#); the dark blotches on the Sun are associated with solar activity, often as the origins for giant explosions — such as solar flares or coronal mass ejections — which can spew light, energy, and solar material into space.

“As we emerge from solar minimum and approach Cycle 25's maximum, it is important to remember solar activity never stops; it changes form as the pendulum swings,” said Lika Guhathakurta, solar scientist at the Heliophysics Division at NASA Headquarters in Washington.

With solar minimum behind us, scientists expect the Sun's activity to ramp up toward the next predicted maximum in July 2025. Doug Biesecker, panel co-chair and solar physicist at NOAA's Space Weather Prediction Center ([SWPC](#)) in Boulder, Colorado, said Solar Cycle 25 is anticipated to be as strong as the last solar cycle, which was a below-average cycle, but not without risk.

“Just because it's a below-average solar cycle, doesn't mean there is no risk of extreme space weather,” Biesecker said. “The Sun's impact on our daily lives is real and is there. SWPC is staffed 24/7, 365 days a year because the Sun is always capable of giving us something to forecast.”

News of current solar activity can be found at <https://spaceweather.com/archive.php>

(Source: <https://www.nasa.gov/press-release/solar-cycle-25-is-here-nasa-noaa-scientists-explain-what-that-means/>)

Annual Members Meeting

The meeting will be held via Zoom on January 13, 2021. Hear what BPAA accomplished in 2020 and how we've been coping with the pandemic, and vote for our 2021 board members. Look for the President's annual report and meeting invitation in your email in mid-December.