BATTLE POINT ASTRONOMICAL ASSOCIATION

Igniting a passion for science through the lens of astronomy!

THE OBSERVER

September 2023, Vol. 28

Upcoming Event: 2nd Saturday Program

Engaging Students in Astronomical Research

Saturday, September 9, 7:30 pm

Would you like to participate in astronomical research, and perhaps make a surprising discovery?

Dr. Rachel Freed is co-founder and President of the Institute for Student Astronomical Research (InStAR), and believes strongly in bringing telescope access to students. She is committed to the belief that real scientific research can and should be a part of secondary and undergraduate astronomy education.

Dr. Freed recently earned her PhD in Astronomy Education. She also holds a BS in Biology from UC Davis and an MS in Neuroscience from Northwestern University, but it was her passion for Astronomy that brought her to her current role: engaging students in astronomical research.

Dr Freed will give her presentation via Zoom. You can watch it from home for free, or in person at the observatory for a $10 admission fee (free for BPAA members).

In-person attendance is limited to 30, and advance registration is required for admittance, so please register today.

For in-person attendees, a brief planetarium show will follow the presentation, after which we will have a star party (if weather allows).

Visit the BPAA Events page to register for In-person or Zoom registration.

BPAA Booth at Kitsap County Fair, August 23-27, 2023

New member and Bremerton resident Dan Schlesener volunteered to singlehandedly organize and run BPAA's booth at the recent Kitsap County Fair. Though initially with trepidation, Dan quickly rose to the occasion and ended up having a great time, as he describes in his report below. Thanks Dan, for your excellent representation of BPAA!

– Frank Petrie, BPAA President

When I first heard about the possibility of volunteering for establishing a BPAA Booth at the Kitsap County Fair, I was a bit nervous because BPAA was having so many events this summer I thought I may have to run the booth by myself and didn't know how that was going to go. But I have really been wanting to establish more BPAA outreach to greater Kitsap County, so I told President Frank Petrie that I would take the lead on that effort. I worked closely with Fair Administrative Assistant Cindy McKay, and finally determined that an outdoor booth using the solar telescope to show a live, close-up view of the Sun on a large monitor was likely the best way to get people's attention at the Fair and draw them to our booth. I also planned to use my laptop with DVD player to play a PBS Nova Special DVD called The Secrets of the Sun on another large monitor.

So I began planning how I was going to make that happen. I lined up training on the solar telescope with both Frank and Cole, also focusing on what I would need to project that image onto a large monitor. I then figured out what kind of booth I was going to set up and began rounding up equipment to make it happen. I found that I already had a lot of what I would need just by looking around my house/garage and shed, bought a few things that I wanted anyway, and borrowed the rest from BPAA. When it came time to start setting up the booth just before the Fair started, I found the Fair staff to be very supportive and greatly appreciative of BPAA's anticipated presence at the Fair. That really helped me get ready for the big event.

From the very first day (August 23) through the last day (August 27) of the Fair, I was amazed at all the incredible experiences I had talking with lots of wonderful people and their amazing kids! Please ask me to share some of those stories with you when you run into me. I quickly realized I was having great fun talking to people about the Sun, BPAA, and the stars, and made several new friends around the Fairgrounds as well. The BPAA outreach to greater Kitsap County was even better than I had imagined it would be, as quite a number of people showed great interest in becoming new members, and even had several contacts about donating large telescopes to BPAA. Even though I had originally scheduled the solar telescope

viewing for 11 am to 2 pm, I ended up staying until at least 4:30 pm every day, and as late as 6:30 pm, due to the large number of people visiting the BPAA booth. I was also happy that new BPAA Member Spencer March-Graham came out and helped for a couple of days and did a great job (as you can see in the accompanying pictures), and we both talked about how much fun we were having and how we should volunteer for more events like this.

Quite a number of Fair staff, up to and including Rich Nestor, Kitsap Fair & Stampede's executive director and fair manager, stopped by the BPAA booth to learn about the Sun and BPAA, and really seemed amazed and excited to have us there. I have no doubt that BPAA will be invited back to the Kitsap County Fair next year and will gladly volunteer again to support that. I highly recommend that more BPAA members volunteer for events with outreach to the public to join in on the fun and help each other out!

Daniel J. Schlesener, BPAA Member

Introducing New BPAA Volunteer Coordinator Annika Johnson

I'm pleased to announce that BPAA Junior Member Annika Johnson has volunteered to become our Volunteer Coordinator. Annika is a Bainbridge High School junior enrolled in Running Start. She will keep track of all the opportunities for BPAA members to become involved, and reach out to each of you to invite your participation in the many activities that make our organization vibrant and vital in our Kitsap community. Please don't hesitate to step forward when Annika contacts you. Better yet, email her at Volunteer@bpastro.org and let her know that you're ready to volunteer!

Rudolph Planetarium Update

As reported last month, we ordered the new planetarium dome. I'm happy to announce that our new dome has arrived! Thank you to everyone who contributed towards its purchase, whether through the BCF Community Grant, One Call For All, or directly to BPAA. Next steps are to take down the old screen, then figure out how to put together the new screen, suspend it from the ceiling, and install the negative pressure blower that keeps it inflated. Stay tuned for notification of the dome-raising work party and come on out and lend a hand.

Meanwhile, Planetarium Manager Erin Howard will be scheduling trainings on how to run planetarium shows. If you think you'd like to join the planetarium crew and run shows for our public audiences, email Erin at Planetarium@bpastro.org.

Helix Building Front Door Facelift

Recent new members Spencer and Abigail March-Graham are sprucing up the big wooden front doors of the Ritchie Observatory. They started by cleaning and sanding the wood, then applied stain and a lacquer topcoat. Next, they will polish the brass. Next time you're at the Observatory I hope you'll notice how much nicer the doors look. If you see Spencer and Abigail around the observatory, be sure to thank them for a job well done!

To complete the facelift, we're looking to clean, repair, and repaint the metal inset door panels. Member Deborah Milton, an artist, has some very creative ideas for making the doors look amazing! Stay tuned!

Ritchie Telescope Upgrades

Work continues on improvements to the Ritchie Telescope. Recent work includes equipping the dome shutter to be opened and closed remotely, and replacing the rickety, leaking, wooden shutter with an aluminum one. Board members Peter Moseley and Frank Petrie are leading this effort. If you'd like to help, let one of us know.

Meanwhile, Chief Astronomer Cole Rees continues to lead efforts to complete the IT infrastructure that will support the telescope's new imaging capabilities. Contact Cole if you'd like to help with this work. A bonus for helping is getting on the inside track for training on using the Ritchie's new capabilities! Don't miss out!

And as always, Telescope Tuesday work parties take place every week from 10am until 3pm (hint: on Tuesdays!). Come help us accomplish the many tasks that need doing around the observatory and enjoy the camaraderie of working together to make the observatory a welcoming and useful place to be.

What is BPAA to you?

Astronomy is fun and interesting on its own terms, both as a hobby and a science. It's also a gateway to scientific literacy in general. After all, everybody loves astronomy, am I right? In my view, BPAA is all about fostering excitement for science through the lens of astronomy. As president, I'm really curious to know what BPAA means to you. What is it about our organization that appeals to you? What benefits do you hope to realize from your membership? Are you happy simply supporting what the rest of us are doing, or do you want to learn something about astronomy? Do you have skills to contribute, or knowledge you're willing to share with others? I'd love to hear your thoughts on how we as an organization can best serve you, an astronomy-curious individual or family, and also how we can best serve our community. Let me know at President@BPAstro.org.

Member Contributed Image from the Ritchie Observatory

NGC 7331 - Deer Lick Galaxy Group

Image by BPAA member Fin

The NGC 7331 Group, also commonly known as the Deer Lick Galaxy Group. The members of this visual grouping of galaxies lie in the constellation Pegasus. However, despite their visual proximity in the night sky, they are not gravitationally bound to each other due to the vast distances between them. The brightest member of the Deer Lick Group, NGC 7331, is a spiral galaxy rather similar in size to our own Milky Way Galaxy approximately 40 million light-years away, whereas the light reaching us from the other four galaxies is around 300 million years older.

WHAT'S UP(COMING)!

Source for events and links are In-The-Sky.org, Dominic Ford, Editor. The links provide details for each event including a scale on how difficult they are to observe.

Sep 1 – Aurigid meteor shower 2023 peak

Sep 4 – Conjunction of the Moon and Jupiter

Sep 9 – September ε-Perseid meteor shower 2023 peak

Sep 14 – New Moon

Sep 18 – Venus at greatest brightness

Sep 19 – Neptune at opposition

Sep 22 – September equinox

Sep 23 – Mercury at highest altitude in morning sky

Sep 28 – Daytime Sextantid meteor shower 2023

Sep 29 – Full Moon

Oct 1 – Asteroid 29 Amphitrite at opposition

Oct 2 – The Andromeda Galaxy is well placed

– Close approach of the Moon and M45

Oct 3 – October Camelopardalid meteor shower peak

Oct 9 – Draconid meteor shower peak

Oct 10 – Southern Taurid meteor shower peak

Oct 11 – δ-Aurigid meteor shower peak

Oct 14 – New Moon

– Annular solar eclipse

Oct 15 – The Triangulum Galaxy is well placed

Oct 18 – Venus at highest altitude in morning sky

– 136199 Eris at opposition

Oct 22 – Orionid meteor shower peak

– Venus at dichotomy

Oct 25 – Leonis Minorid meteor shower peak

Oct 27 – The Perseus Double Cluster is well placed

Oct 28 – Full Moon

Oct 30 – Close approach of the Moon and M45

Nov 2 – Jupiter at opposition

Nov 5 – Asteroid 18 Melpomene at opposition

Nov 12 – Northern Taurid meteor shower peak

Nov 13 – New Moon

– Uranus at opposition

Nov 18 – Leonid meteor shower peak

– The Pleiades cluster is well placed

Nov 22 – α-Monocerotid meteor shower peak

Nov 27 – Full Moon

Nov 28 – November Orionid meteor shower peak

– The Hyades cluster is well placed

Here are some interesting things going on in Astronomy. If they pique your curiosity, please follow the link at the bottom of each for the full article!

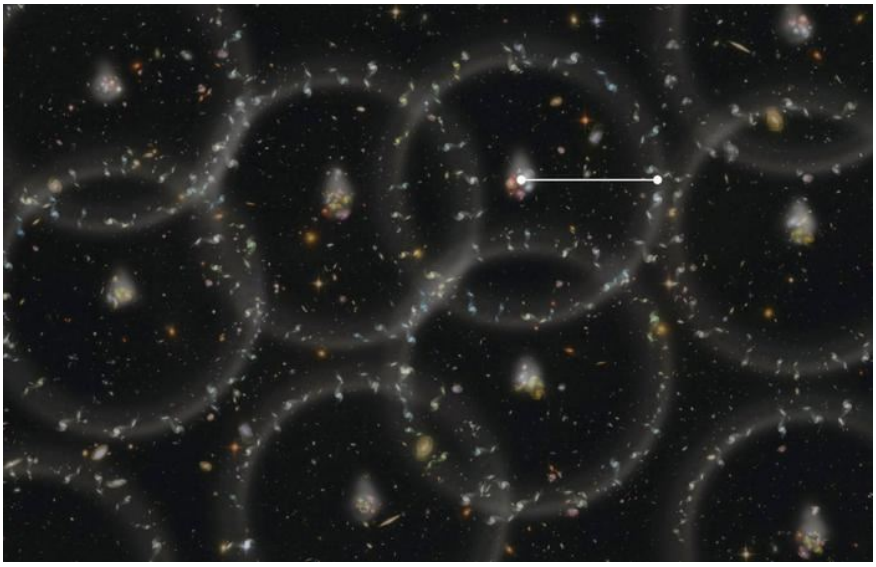
Webb Reveals New Structures Within Iconic Supernova

Webb's NIRCam (Near-Infrared Camera) captured this detailed image of SN 1987A (Supernova 1987A). At the center, material ejected from the supernova forms a keyhole shape. Just to its left and right are faint crescents newly discovered by Webb. Beyond them an equatorial ring, formed from material ejected tens of thousands of years before the supernova explosion, contains bright hot spots. Exterior to that is diffuse emission and two faint outer rings. In this image blue represents light at 1.5 microns (F150W), cyan 1.64 and 2.0 microns (F164N, F200W), yellow 3.23 microns (F323N), orange 4.05 microns (F405N), and red 4.44 microns (F444W). Credits: NASA, ESA, CSA, M. Matsuura (Cardiff University), R. Arendt (NASA's Goddard Spaceflight Center & University of Maryland, Baltimore County), C. Fransson

NASA's James Webb Space Telescope has begun the study of one of the most renowned supernovae, SN 1987A (Supernova 1987A). Located 168,000 light-years away in the Large Magellanic Cloud, SN 1987A has been a target of intense observations at wavelengths ranging from gamma rays to radio for nearly 40 years, since its discovery in February of 1987. New observations by Webb's NIRCam (Near-Infrared Camera) provide a crucial clue to our understanding of how a supernova develops over time to shape its remnant.

(Source: NASA)

Galaxy Shapes Can Help Identify Wrinkles in Space Caused by The Big Bang



A representation of what BAO distributions sort of look like. (Image credit: (Zosia Rostomian, Lawrence Berkeley National Laboratory)

Astronomers have found a new way to detect one of the oldest features of our universe.

These Baryon Acoustic Oscillations, or BAO, are subtle wrinkles that flowed through cosmic matter during the first 380,000 years of the universe's existence. Today, they are popular subjects in space science because they're one of the very few hints of the Big Bang that can still be traced — and importantly, astronomers can use the presence of BAOs to measure cosmic distances as well as the rate at which the universe is expanding.

While astronomers have historically focused on galaxy clusters to observe these cosmically imprinted waves, a new study aims to sniff out some overlooked waves by looking at galaxy shapes and orientations rather than just clusters as a whole. These features, the study researchers write, can offer a "promising cosmological probe" yet have been ignored so far.

(Source: space.com)

India's Moon Rover Completes Its Walk as Scientists Look for Signs of Frozen Water

This image provided by the Indian Space Research Organisation (ISRO) shows Vikram lander as seen by the navigation camera on Pragyan Rover on Aug. 30, 2023. Credit: Associated Press

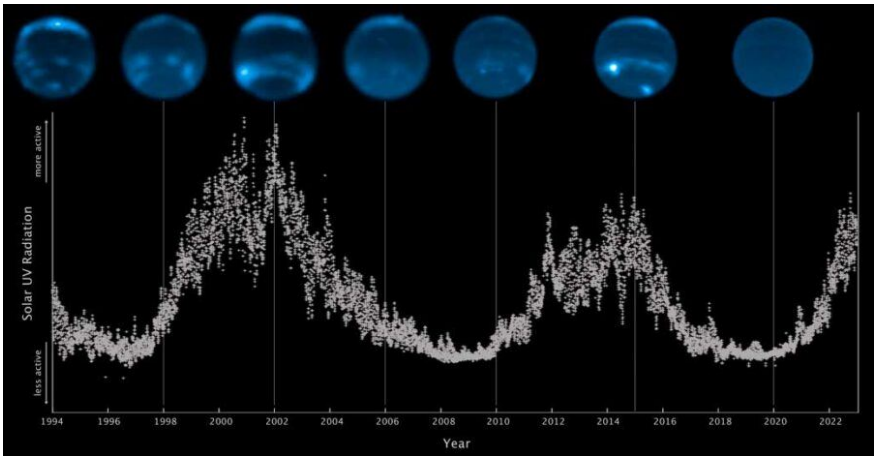
India's moon rover has completed its walk on the lunar surface and been put into sleep mode less than two weeks after its historic landing near the lunar south pole, India's space mission said.

"The rover completes its assignments. It is now safely parked and set into sleep mode," with daylight on that part of the moon coming to an end, the Indian Space Research Organization said in a statement late Saturday.

The rover's payloads are turned off and the data it collected has been transmitted to the Earth via the lander, the statement said.

(Source: NPR)

Solar Cycle May Trigger Clouds on Neptune



This sequence of Hubble Space Telescope images chronicles the waxing and waning of the amount of cloud cover on Neptune. The Sun's level of ultraviolet radiation is plotted on the vertical axis, and the 11-year solar cycle runs along the bottom from 1994 to 2022. This nearly-30-year-long set of observations shows that the number of clouds grows increasingly following a peak in the solar cycle. Credit: NASA / ESA / LASP / Erandi Chavez (UC Berkeley) / Imke de Pater (UC Berkeley)

On its frosty orbital perch, Neptune receives only 0.1% as much sunlight as Earth does. Yet it appears that the Sun's behavior can still influence the ice giant's atmosphere.

Planetary scientists have suspected for decades that the solar cycle drives atmospheric activity on Neptune. Measurements from the 1970s through the 1990s suggested its brightness changed in ways that weren't purely seasonal. Several studies found that the planet dimmed near solar maximum, when the Sun's magnetic activity reaches its peak, and brightened near solar minimum.

Observations improved dramatically in the 1990s and 2000s with the launch of the Hubble Space Telescope and the advent of advanced imaging techniques for ground-based scopes. These developments enabled astronomers to actually see the detailed distribution of clouds on Neptune — something previously possible only during Voyager 2's flyby in 1989.

But around this time, something changed. Neptune flipped its behavior, appearing bright during solar maximum instead of dim and vice versa. Scientists wondered whether the suspected connection had evaporated.

(Source: skyandtelescope.org)