



**BATTLE POINT  
ASTRONOMICAL  
ASSOCIATION**



Photo credit: Mario Alejandro Torres

# THE OBSERVER

March 2023, Vol. 22

## BPAA New Planetarium Projector in the News!



Battle Point Astronomical Association chief scientist Steve Ruhl is illuminated by the tablet in his hands as he starts up the new projector in the John H. Rudolph Planetarium in Bainbridge Island's Battle Point Park on Thursday, Feb 16, 2023. *MEEGAN M. REID/KITSAP SUN*

A demonstration of our new planetarium projector was covered in articles by both the Bainbridge Island Review and the Kitsap Sun. Click on the following links to see both publications take on this exciting event!

[Starry-eyed: New planetarium projector like a 'time capsule'](#)

[Battle Point Astronomical Association hopes to inspire with new views of the heavens](#)

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## Michaela Leung



Former BPAA junior member and graduate of Bainbridge High School Class of 2016 Michaela Leung is now a PhD candidate studying exoplanets with the James Webb Space Telescope at the University of California, Riverside. Michaela was recently in Seattle to present a talk on her research at the American Astronomical Society meeting.

We hope to have Michaela give one of our 2nd Saturday talks in the near future. Read more about her research [here](#) and visit her website [here](#).

Congratulations Michaela!

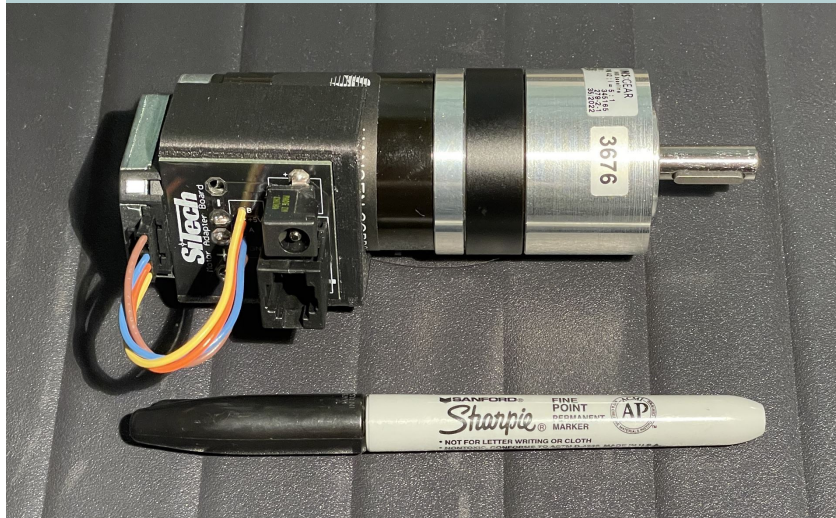
## FamJam and Earth Day

Want to have fun showing kids how to use a telescope? Join BPAA at KiDiMu's FamJam on March 25, 10am-2pm. We'll have a table display with telescopes for kids to look through, and we'll answer all their questions about astronomy ("Is Pluto a planet?").

Earth Day will be celebrated on April 22 in Battle Point Park, hosted by the Park District. BPAA will have a booth and you're invited to show up and spend some time talking with kids and adults about the Ritchie Observatory, the Rudolph Planetarium, and astronomy. And like FamJam, we'll have telescopes for folks to look through. Come help represent BPAA to the public!

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## Ritchie Telescope News



Upgrades to the Ritchie Telescope continue. Recently we discovered the old right ascension drive motor was failing. We've obtained a replacement from Sidereal Technology. But of course the new motor has different mounting holes! So we're building a new motor mount and modifying the gear train.

The new motor and gear train brings improved tracking precision that is 7-1/2 times better than that of the old motor! This will make a huge difference for astrophotography and live streaming.

## Telescope Tuesdays

Wondering what's been going on at the Ritchie Observatory? A number of BPAA members have been showing up every Tuesday to do much-needed work at the Helix House. Recent improvements include construction in the 2nd floor workshop to create usable workspace for projects and a separate enclosed room to house our new network server.

A server, you ask? Yes, the upgraded Ritchie Telescope will be supported by a robust network to handle telescope control, image processing and storage, and live streaming capability.

Come join the fun and lend a hand to make the Observatory a fun place to hang out and do astronomy! Every Tuesday starting at 10 am.

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## Comet C/2022 E3 (ZTF)



A rare photo of the Green Comet pictured with the planet Mars Feb. 10 at the Ritchie Observatory, captured with an 8" telescope. The comet is 28 million miles from earth in its first approach in 50,000 years. Photo courtesy Cole Rees

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## WHAT'S UP(COMING)!

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

Mar 7 – Full Moon

Mar 20 – March Equinox

Mar 21 – New Moon

– [1 Ceres at opposition](#)

Mar 29 – [136472 Makemake at opposition](#)

Apr 3 – [The Sombrero Galaxy is well placed](#)

Apr 4 – [Messier 94 is well placed](#)

Apr 5 – Full Moon

Apr 15 – [The Whirlpool Galaxy is well placed](#)

Apr 19 – [Messier 3 is well placed](#)

– New Moon

Apr 20 – [136108 Haumea at opposition](#)

Apr 23 – [Lyrid meteor shower 2023](#)

Apr 24 – [Messier 101 is well placed](#)

Apr 28 – [Venus at highest altitude in evening sky](#)

Apr 30 – [Asteroid 7 Iris at opposition](#)

May 5 – Full Moon

May 6 –  [\$\eta\$ -Aquariid meteor shower 2023](#)

May 9 –  [\$\eta\$ -Lyrid meteor shower 2023](#)

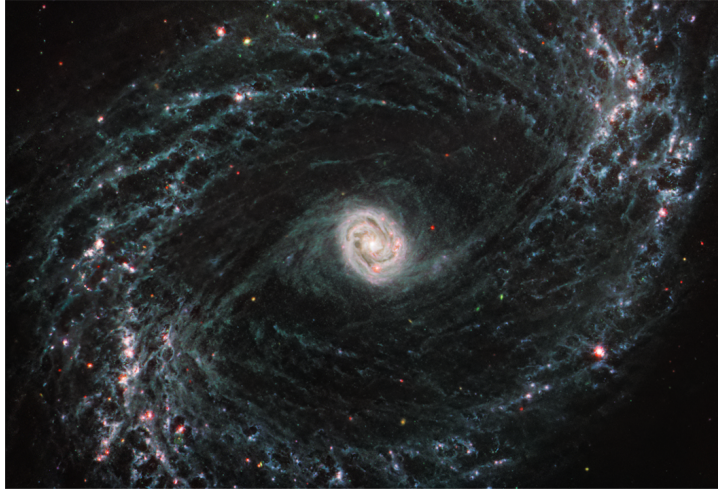
May 13 – [Messier 5 is well placed](#)

May 14 – [Comet 237P/LINEAR passes perihelion](#)

May 19 – New Moon

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## NASA's Webb Reveals Intricate Networks of Gas and Dust in Nearby Galaxies

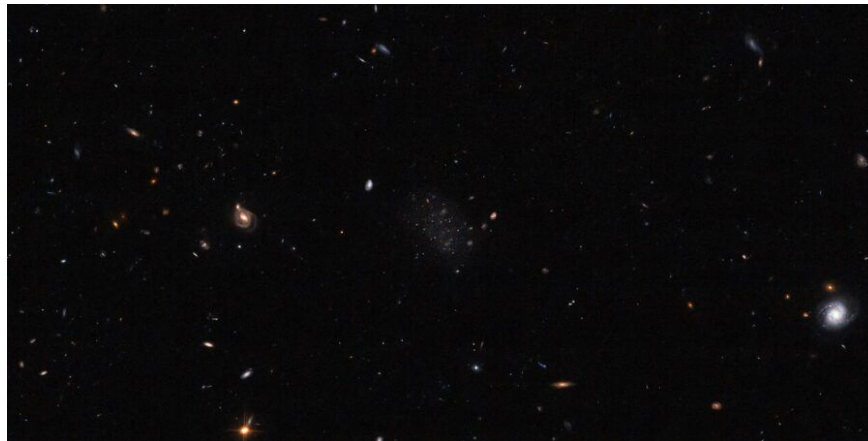


New imagery from NASA's James Webb Space Telescope is giving scientists their first look at high resolution into the fine structure of nearby galaxies and how that's impacted by the formation of young stars. NGC 1433 is a barred spiral galaxy with a particularly bright core surrounded by double star forming rings. For the first time, in Webb's infrared images, scientists can see cavernous bubbles of gas where forming stars have released energy into their surrounding environment. In the image of NGC 1433, blue, green, and red were assigned to Webb's MIRI data at 7.7, 10 and 11.3, and 21 microns (F770W, F1000W and F1130W, and F2100W, respectively). Credits: NASA, ESA, CSA, and J. Lee (NOIRLab). Image processing: A. Pagan (STScI)

Researchers using NASA's James Webb Space Telescope are getting their first look at star formation, gas, and dust in nearby galaxies with unprecedented resolution at infrared wavelengths. The data has enabled an initial collection of 21 research papers which provide new insight into how some of the smallest-scale processes in our universe – the beginnings of star formation – impact the evolution of the largest objects in our cosmos: galaxies.

(Source: [NASA](#))

## Italian Amateur Astronomer Discovers Dwarf Galaxies



In the middle of this Hubble Space Telescope image, nestled amongst a smattering of distant stars and even more distant galaxies, lies the newly discovered dwarf galaxy known as Donatiello II. ESA / Hubble & NASA, B. Mutlu-Pakdil; Acknowledgement: G. Donatiello

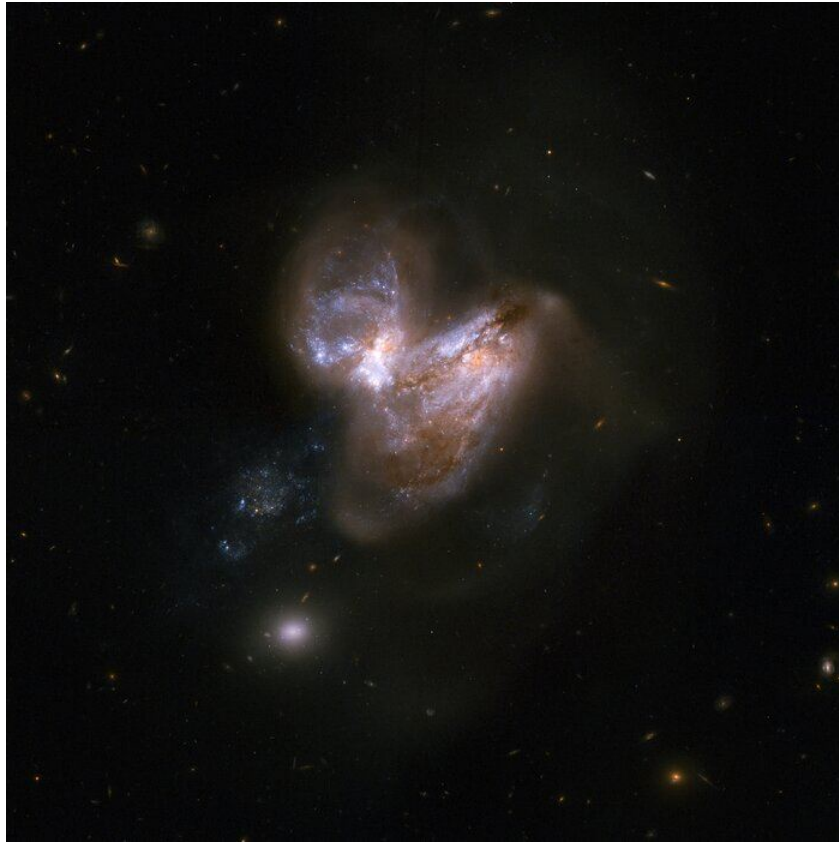
Between January and June 2020, as COVID-19 was sweeping the world, an amateur astronomer living in the province of Brindisi in southern Italy made a series of exhilarating discoveries.

Giuseppe Donatiello was poring over images made public by the Dark Energy Survey (DES), which had scanned the southern sky from the Cerro Tololo Inter-American Observatory in Chile. Amid the smattering of stars, gas, and dust, he noticed first one, then two, then three new satellites of the Sculptor Galaxy (NGC 253). Dwarf-size and spheroidal in shape, they had been overlooked by the algorithm set up to spot them.

(Source: [skyandtelescope.org](https://skyandtelescope.org))

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## New Discovery Sheds Light on Very Early Supermassive Black Holes



This system consists of a pair of galaxies, dubbed IC 694 and NGC 3690, which made a close pass some 700 million years ago. As a result of this interaction, the system underwent a fierce burst of star formation. In the last fifteen years or so six supernovae have popped off in the outer reaches of the galaxy, making this system a distinguished supernova factory. Credit: NASA, ESA, the Hubble Heritage Team (STScI/AURA)-ESA/Hubble Collaboration and A. Evans (University of Virginia, Charlottesville/NRAO/Stony Brook University)

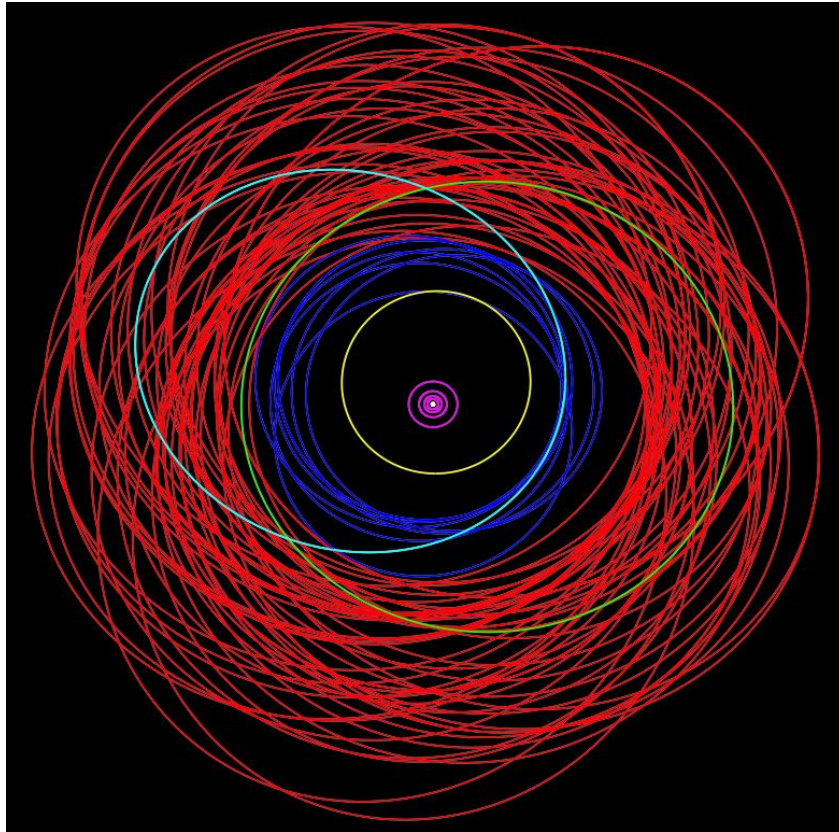
Astronomers from the University of Texas and the University of Arizona have discovered a rapidly growing black hole in one of the most extreme galaxies known in the very early universe. The discovery of the galaxy and the black hole at its center provides new clues on the formation of the very first supermassive black holes. The new work is published in Monthly Notices of the Royal Astronomical Society.

(Source: [phys.org](https://phys.org))

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## Astronomers Find a Dozen More Moons For Jupiter



This top-down diagram shows the orbits of moons around Jupiter: Purple denotes the Galilean moons, yellow for Themisto, blue for the Himalia group, cyan and green for Carpo and Valetudo, respectively, and red for far-out retrograde moons. (Note: The number of moons in this diagram is not up to date.) Scott Sheppard

The biggest planet in the solar system now has the largest family of moons. Since December 20th, the Minor Planet Center (MPC) has published orbits for 12 previously unreported moons of Jupiter. More publications are expected, says Scott Sheppard (Carnegie Institute for Science), who recently submitted observations of the Jovian system taken between 2021 and 2022. The discoveries bring the list of Jovian moons to 92, a hefty 15% increase from the previous tally of 80.

(Source: [skyandtelescope.org](https://skyandtelescope.org))

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## Scientists Find First Evidence That Black Holes Are the Source of Dark Energy



NGC524: NGC 524 is a lenticular galaxy in the constellation Pisces. It is at a distance of about 90 million light-years away from Earth. Credit: ESA/Hubble

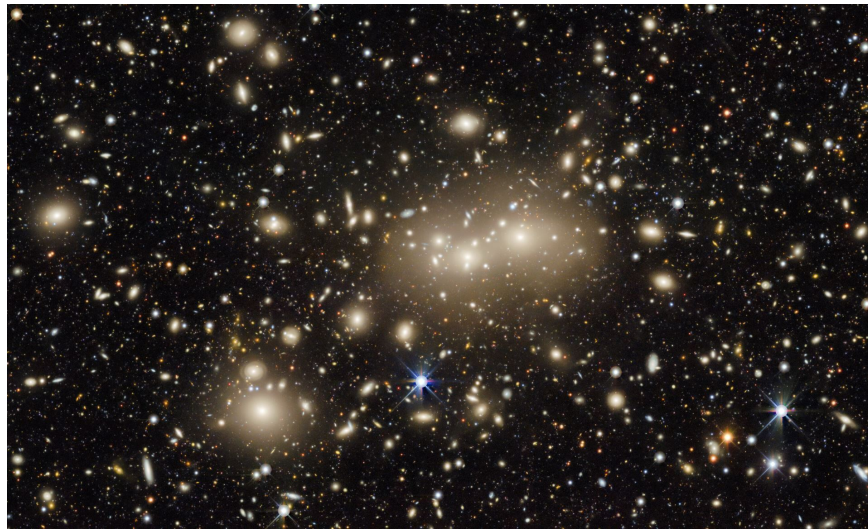
Observations of supermassive black holes at the centers of galaxies point to a likely source of dark energy—the 'missing' 70% of the universe.

The measurements from ancient and dormant galaxies show black holes growing more than expected, aligning with a phenomenon predicted in Einstein's theory of gravity. The result potentially means nothing new has to be added to our picture of the universe to account for dark energy: black holes combined with Einstein's gravity are the source.

(Source: [phys.org](https://phys.org))

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## Over One Billion Galaxies Blaze Bright In Colossal Map of the Sky



This is an image centered on a relatively nearby galaxy cluster dubbed Abell 3158; light from these galaxies had a redshift value of 0.059, meaning that it traveled approximately 825 million years on its journey to Earth. The image is a small part of the DESI Legacy Imaging Surveys — a monumental six-year survey covering nearly half the sky. Credit: DESI Legacy Imaging Survey/KPNO/NOIRLab/NSF/AURA; Image processing: M. Zamani & D. de Martin (NSF's NOIRLab)

The universe is teeming with galaxies, each brimming with billions of stars. Though all galaxies shine brightly, many are cloaked in dust, while others are so distant that to observers on Earth they appear as little more than faint smudges. By creating comprehensive maps of even the dimmest and most-distant galaxies, astronomers are better able to study the structure of the universe and unravel the mysterious properties of dark matter and dark energy. The largest such map to date has just grown even larger, with the tenth data release from the Department of Energy's Dark Energy Spectroscopic Instrument (DESI) Legacy Imaging Survey.

(Source: [phys.org](http://phys.org))

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