



**BATTLE POINT
ASTRONOMICAL
ASSOCIATION**



Photo Credit: Frank Petrie

THE OBSERVER

May 2023, Vol. 24

Want To Learn How to Make Images Like This Beauty?



Ritchie Telescope Image of Cigar Galaxy (M82) by Cole Rees

BPAA Chief Astronomer Cole Rees is offering to provide training on the telescope to anyone who would like to learn, starting now. If you would like to get trained on how to take pictures with the 27.5" Ritchie telescope, please contact Cole via Discord (Cole Rees on the BPAA Discord) or by email at astronomer@bpastro.org. Training first begins online, covering the basics of the system, before any hands-on work is done. Cole is usually available to train all mornings and afternoons, as well as some evenings depending on his schedule.

BPAA at Earth Day Expo 2023



BPAA volunteers at Earth Day Expo 2023

BPAA volunteers supported the Bainbridge Island Metro Parks and Recreation Division (BIMPRD) Earth Day Expo on April 22, 2023. It was announced approximately 1500 people attended and many were enthralled by enthusiastic BPAA volunteers. We added one new family membership and received over \$100 in donations!

Despite the cloudy weather, we were able to set up a 12" Dobsonian reflecting telescope and a 6" refracting telescope. These were popular to both young and old alike. We were actually able to put a solar filter on the Dobsonian during the brief period of sun we had, and people were able to make out sunspots!

In the spirit of Earth Day, at the booth we distributed literature about light pollution, along with basic information about BPAA.

Thanks to Denise Hidano for organizing and leading the BPAA volunteers: Deborah Milton, Kim and Chris Wilkes, Steve Ruhl, Cole Rees, and Joe Mulligan.

Save These Dates!

Here are some opportunities to get involved with BPAA outreach. Contact BPAA President Frank Petrie to volunteer: President@BPAAstro.org.

Every Tuesday 10am-3pm is Telescope Tuesday! Come to the Observatory and participate in a work party to make upgrades and repairs. Especially interesting is the work we're doing to upgrade the capabilities of the Ritchie Telescope.

Saturday June 3, 10am-2pm — Bainbridge Library Summer Learning Kick-off Party. BPAA will be in the Japanese Garden at the Library with our solar telescope to show visitors views of the very active Sun. Meet and talk with members of the public about why BPAA is a great community resource.

Friday June 30 - Friday July 7 — Rotary Auction setup; and Saturday July 8 — Rotary Auction. BPAA supports the Bainbridge Island Rotary Club with volunteers to help set up for the Rotary Auction, and run the event on Auction Day. Volunteer to lend a hand on one or more days! It's the least we can do to show our appreciation for Rotary's recent Huney Grant support of our new planetarium projector, telescope upgrades, and dome repair.

Tuesday July 4th — Bainbridge Island's Grand Old 4th Street Fair. Just like last year, BPAA will have a booth at the street fair. Come join us for the whole day, or just an hour, whatever amount of time you can spend to hang out with other BPAA members, talk to the public about astronomy, and have a grand old time!

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.

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

Jun 2 – [The Great Globular Cluster in Hercules is well placed](#)

Jun 3 – [Messier 12 is well placed](#)

– Full Moon

Jun 4 – [Venus at greatest elongation east](#)

Jun 6 – [Asteroid 11 Parthenope at opposition](#)

– [Messier 10 is well placed](#)

Jun 11 – [Daytime Arietid meteor shower 2023](#)

– [Messier 92 is well placed](#)

Jun 17 – New Moon

Jun 18 – [The cluster IC 4665 is well placed](#)

Jun 27 – [June Bootid meteor shower 2023](#)

Jun 29 – [The cluster NGC 6633 is well placed](#)

Jul 1 – [Close approach of Venus and Mars](#)

Jul 2 – [The cluster IC 4756 is well placed](#)

Jul 3 – Full Moon

Jul 9 – [Venus at greatest brightness](#)

Jul 17 – New Moon

Jul 25 – [Mercury at highest altitude in evening sky](#)

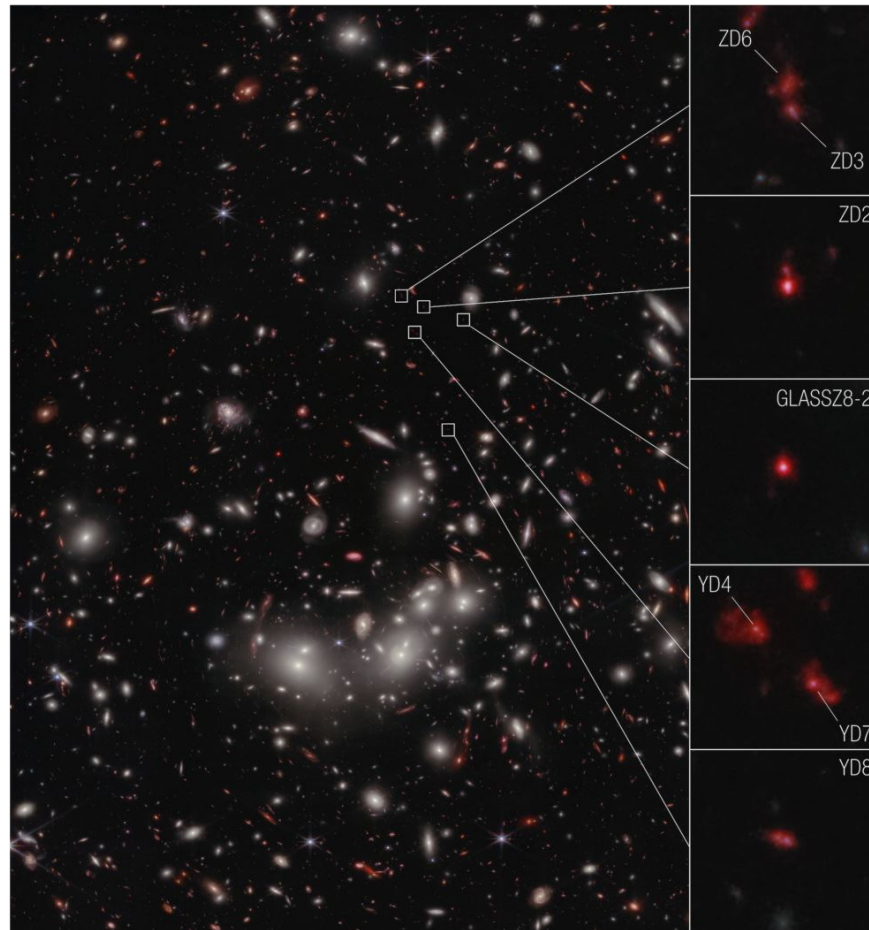
Jul 29 – [Piscis Austrinid meteor shower 2023](#)

Jul 30 – [Southern \$\delta\$ -Aquariid meteor shower 2023](#)

– [\$\alpha\$ -Capricornid meteor shower 2023](#)

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 Early-Universe Prequel to Huge Galaxy Cluster



The seven galaxies highlighted in this James Webb Space Telescope image have been confirmed to be at a distance that astronomers refer to as redshift 7.9, which correlates to 650 million years after the big bang. This makes them the earliest galaxies yet to be spectroscopically confirmed as part of a developing cluster. Credits: NASA, ESA, CSA, T. Morishita (IPAC). Image processing: A. Pagan (STScI)

Every giant was once a baby, though you may never have seen them at that stage of their development. NASA's James Webb Space Telescope has begun to shed light on formative years in the history of the universe that have thus far been beyond reach: the formation and assembly of galaxies. For the first time, a protocluster of seven galaxies has been confirmed at a distance that astronomers refer to as redshift 7.9, or a mere 650 million years after the big bang. Based on the data collected, astronomers calculated the nascent cluster's future development, finding that it will likely grow in size and mass to resemble the Coma Cluster, a monster of the modern universe.

(Source: [nasa.gov](https://www.nasa.gov))

Rocket flight and the five dwarfs



Image credit: NASA/JHUAPL/SwRI

When the New Horizons spacecraft flew by Pluto in 2015 it saw the strange surface features pictured here, which scientists have nicknamed “snakeskin terrain.” The series of ridges is unlike anything we’d seen before, and is not yet fully understood. Pluto is one of the Solar System’s [five official dwarf planets](#), all of which are fascinating worlds that have yet to be fully explored.

(Source: [planetary.org](#))

Seismic Waves Inside Mars' Core Hint at How It Became Hostile to Life

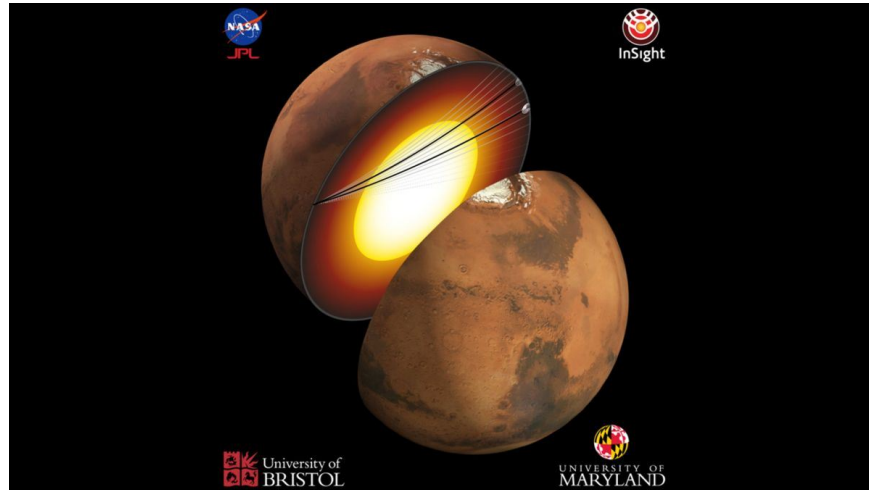


Image credit: NASA/JPL and Nicholas Schmerr

The data collected with the InSight lander revealed properties of the Martian core that could indicate why it is unfriendly to life.

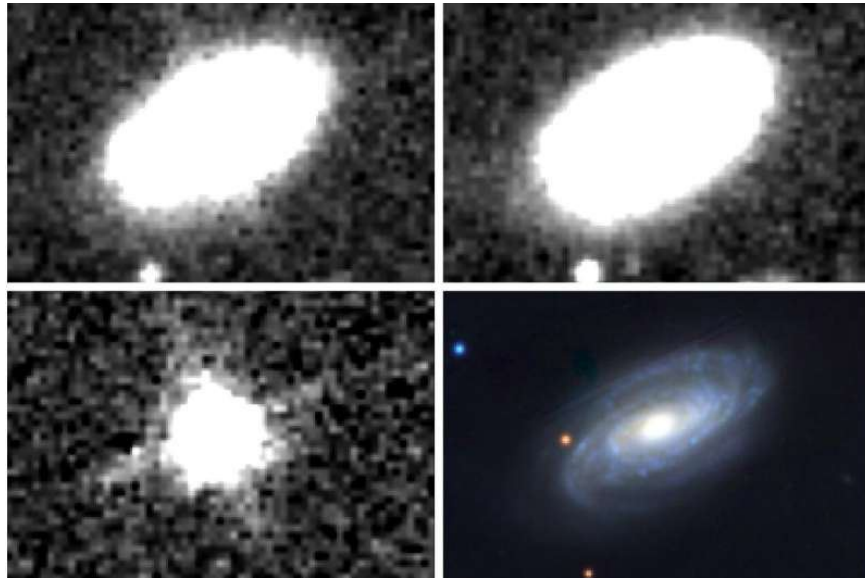
Seismic waves have been observed traveling through the core of Mars for the first time, revealing details of the composition of the Red Planet's heart.

The results may suggest why Earth can support life but its neighbor, [Mars](#), cannot. The seismic data was collected by an international team of researchers using NASA's [InSight Mars lander](#) and it reveals the Martian core to be composed of a completely liquid iron-alloy core with high percentages of sulfur and oxygen.

"The end result of the formation and evolution processes can be either the generation or absence of life-sustaining conditions," UMD Associate Professor of Geology and research author, Nicholas Schmerr, explained. "The uniqueness of Earth's core allows it to generate a [magnetic field](#) that protects us from solar winds, allowing us to keep water. Mars' core does not generate this protective shield, and so the planet's surface conditions are hostile to life."

(Source: [Space.com](#))

Astronomers Detect the Closest Example Yet of a Black Hole Devouring a Star



Astronomers at MIT and elsewhere have observed infrared signs of the closest tidal disruption event (TDE) to date. A bright flare was detected from the galaxy NGC 7392 in 2015 (top left panel). Observations of the same galaxy were taken in 2010-2011 (top right), prior to the TDE. The bottom left shows the difference between the first two images, representing the actual, detected TDE. For comparison, the bottom right panel shows the same galaxy in the optical waveband. Credit: Christos Panagiotou, et al

Once every 10,000 years or so, the center of a galaxy lights up as its supermassive black hole rips apart a passing star. This "tidal disruption event" happens in a literal flash, as the central black hole pulls in stellar material and blasts out huge amounts of radiation in the process.

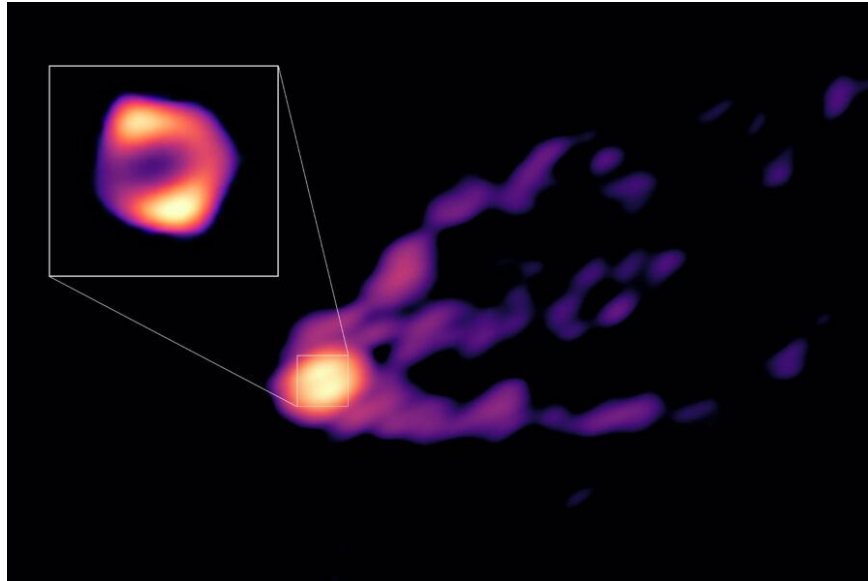
Astronomers know of around 100 tidal disruption events (TDE) in distant [galaxies](#), based on the burst of light that arrives at telescopes on Earth and in space. Most of this light comes from X-rays and [optical radiation](#).

MIT astronomers, tuning past the conventional X-ray and UV/optical bands, have discovered a new tidal disruption event, shining brightly in infrared. It is one of the first times scientists have directly identified a TDE at infrared wavelengths.

What's more, the new outburst happens to be the closest tidal disruption event observed to date: The flare was found in NGC 7392, a galaxy that is about 137 million light-years from Earth, which corresponds to a region in our cosmic backyard that is one-fourth the size of the next-closest TDE.

(Source: [phys.org](#))

First Image of Black Hole Shadow and Jet Together



This image shows the jet and shadow of the black hole at the center of the galaxy M87. Only barely discernible in the main image is a darkening in the center of the "radio core" the jet emanates from. A spruced-up zoom reveals the underlying ring structure. This image gives scientists the context needed to understand how the powerful jet is formed. Credit: R.-S. Lu (SHAO), E. Ros (MPIfR), S. Dagnello (NRAO / AUI / NSF)

For the first time, astronomers have seen how the big plasma jet shot out by a supermassive black hole connects to the material falling into the black hole.

Recently in Nature, [astronomers have unveiled an image](#) of the glow around the supermassive black hole at the center of the elliptical galaxy M87, in the Virgo Cluster made with new observations.

Ru-Sen Lu (Shanghai Astronomical Observatory) and an international team used a global network of radio dishes to peer deep into M87's heart, following the galaxy's 5,000-light-year-long plasma jet back to its source.

The team used the Global Millimetre VLBI Array, ALMA, and the Greenland Telescope [to study M87 at the 3.5 mm wavelength](#). The data reveal a thick ring around a central, darker region. Meanwhile, the jet is a fairly hollow, parabolic cylinder, its edges connecting to bright regions in the ring, which is likely where material is feeding into the jet from the disk of accreting stuff.

(Source: skyandtelescope.org)

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