



# BATTLE POINT ASTRONOMICAL ASSOCIATION

*Igniting passion for science through the lens of astronomy!*



Photo Credit: Frank Petrie

# THE OBSERVER

October 2024, Vol. 41

## BPAA Artist in Residence Reception



4:00 PM **Doors Open**

4:05 PM **Welcome**  
Astronomer introduces Deborah Milton

4:45 PM **Thoughts from Deborah Milton**

5:15 PM **Reception**  
Snacks & Beverages  
Meet & Greet with Deborah and BPAA Board Members

6:0-15 PM **Have a stellar evening!**

Photos by BPAA Member Brian Pelt

On September 8th, BPAA hosted a special event for our partners and funders. We introduced Deborah J Milton, BPAA's first ever Artist in Residence! Deborah gave a stunning presentation that explored our human connection to the universe and inspired us all to work together toward BPAA's newest initiative: to provide free art and science programming for the youth in our community.

We are grateful to Eleven Winery and Bainbridge Vineyards for donating wine, and Bainbridge Island Museum of Art for the use of their space. These sponsors helped make this event a great success.

BPAA is planning a Winter Solstice event for December 21st where we plan to share more about our youth program fund. Details to come!



### **Dome Repair Status**

We can briefly report that the shutter shape has been modified and the paint has been touched up. We have since reinstalled the drive chain.

The roofer has started sealing the gap between the dome shell and the arches. Once that is watertight, we can reinstall the shutter.

Following that we will be installing the center floor, painting the inside of the dome and preparing to install the new telescope.

Thanks to all who have been working so hard to get us to this point!

### **Second Saturday Program**

#### **The Hubble Tension**

**October 12, 6:00pm**

**Peter Moseley, BPAA**

How can we have two different high-precision values for the expansion rate of the universe? That's the question scientists and enthusiasts ask when they explore "The Hubble Tension."

For October's Second Saturday program, BPAA's own Peter Moseley will discuss the two different methods for measuring the expansion rate of the Universe (The Hubble Constant) and the latest attempts to reconcile the differences.

After the talk, Erin will take us on a tour of the fall night sky.

Reserve your spot here: <https://givebutter.com/gUGid/>

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## Planetarium Training

We are also still looking to train new Planeteers!

What is a Planeteer you might ask. It's someone who has been trained to run our new planetarium system and manage presentations in the Rudolph Planetarium! For members that checked off "Operating the Rudolph Planetarium" as a volunteer interest, this is your opportunity to shine! And all Planeteers get a great BPAA-blue shirt!

The first step is to get connected to us on our Discord channel. If you are not already on the Discord, please join here: <https://discord.gg/YSeHM26e59>. After you're on BPAA's Discord, please tag or message Erin (@astronomyftw) so they can add the Planeteer role to your account. When you've joined the Discord and have the Planeteer role, you'll have access to our team channel. All Planeteer information is kept in this channel: <https://discord.gg/BMQsfZ8d2r>.

And here a link to sign up for upcoming Planeteer training:

10/12: <https://givebutter.com/ezLBp8>

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## Cosmic Conversations

**October 15, 7:00pm**  
**Topic: TBD**

On the third Tuesday of each month, we have been engaging in COSMIC CONVERSATIONS at the Ritchie Observatory in Battle Point Park. These are open to members and operate much like a book group, wherein we pick a topic, read some background material and then discuss what we've learned. These are nonmathematical discussions where we hope to learn from each other.

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## Fourth Saturday Community Hour

October 26th, 12:00pm to 2:00pm

THE GREAT COURSES  
Topic: Science & Mathematics  
Subtopic: Astronomy


Skywatching:  
Seeing and Understanding  
Cosmic Wonders

Professor Alex Filippenko  
University of California, Berkeley

**COMMUNITY HOUR**  
SCIENCE VIDEO, SCIENCE CONVERSATION  
OCTOBER 26TH - 12 PM TO 2 PM

**SKYWATCHING: SEEING AND  
UNDERSTANDING COSMIC WONDERS**

RESERVE YOUR SPOT



Please arrive 10 minutes early to check in!

BPAA welcomes you to our free, Fourth Saturday Community Hour where we'll show excerpts from a thought-provoking and informative science video followed by a rousing discussion. This month's discussion will center around the first two video lectures in the Great Courses series Skywatching: Seeing and Understanding Cosmic Wonders, where each lecture is about 45 minutes long. We will be taking a stretch break after the first video lecture, and occasional pauses for quick discussions as warranted.

Get an unparalleled visual guide to nature's most mysterious and beautiful offerings with Skywatching: Seeing and Understanding Cosmic Wonders. With these twelve 45-minute lectures, award-winning astronomer and Professor Alex Filippenko of the University of California, Berkeley, has crafted a visually stunning tour of the sky's most dazzling displays, most of which you can see even without binoculars. Using the same dynamic and engaging teaching style that has won him praise from countless lifelong learners around the world, he shows you new ways to see your surroundings and appreciate the marvels of both our planet and the entire universe. You'll get up close and personal with nearby phenomena like clouds, sunsets, and rainbows, and then venture far out into space to learn about stars, planets, meteors, and more. Lecture 1 is titled Day and Night Skies across All Distances, and Lecture 2 is titled The Blue Sky, Clouds, and Lightning.

Come join us as we begin our Skywatching adventure to see and understand all types of cosmic wonders!

Sign up with the QR code above or at: <https://givebutter.com/fdmmV7>

### **Astro Ambassador Volunteer Opportunity!**

We are starting a new volunteer role, Astro Ambassadors, for members here at the Observatory. It is for individuals who would like to learn how to use basic visual telescopes AND help operate them at our public Star parties, pointing out different objects to the guests.

If anyone is interested in getting involved, they can email [astronomer@bpaastro.org](mailto:astronomer@bpaastro.org) or get in touch with Cole on discord. We have a dedicated chat on the discord for astro-ambassadors as well.

**Telescope Tuesdays**  
**Every Tuesday, 10:00am - 2:00pm**

There's always a lot to do at the Ritchie observatory! Come on out every Tuesday, 10am to 3pm, and get involved. Learn how stuff works. Help make improvements. An enormous amount of progress has been made, but there's always more to do. And we might even have pizza! Come on out and support Telescope Tuesdays!

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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.

Oct 1 – [The Andromeda Galaxy is well placed](#)

Oct 2 – New Moon

Oct 3 – [NGC 253 is well placed](#)

Oct 5 – [October Camelopardalid meteor shower 2024 peak](#)

Oct 8 – [Draconid meteor shower 2024 peak](#)

Oct 10 – [Southern Taurid meteor shower 2024 peak](#)

Oct 11 –  [\$\delta\$ -Aurigid meteor shower 2024 peak](#)

Oct 14 – [Conjunction of the Moon and Saturn](#)

– [The Triangulum Galaxy is well placed](#)

Oct 17 – Full Moon

– [Asteroid 19 Fortuna at opposition](#)

– [136199 Eris at opposition](#)

Oct 18 –  [\$\epsilon\$ -Geminid meteor shower 2024 peak](#)

Oct 21 – [Conjunction of the Moon and Jupiter](#)

– [Orionid meteor shower 2024 peak](#)

Oct 23 – [Conjunction of the Moon and Mars](#)

Oct 24 – [Leonis Minorid meteor shower 2024 peak](#)

Oct 26 – [The Perseus Double Cluster is well placed](#)

Oct 27 – [Asteroid 1036 Ganymed at opposition](#)

Nov 1 – New Moon

Nov 10 – [Conjunction of the Moon and Saturn](#)

Nov 12 – [Northern Taurid meteor shower 2024 peak](#)

Nov 13 – [Asteroid 11 Parthenope at opposition](#)

Nov 15 – Full Moon

– [Close approach of the Moon and M45](#)

Nov 16 – [Uranus at opposition](#)

Nov 17 – [Leonid meteor shower 2024 peak](#)

– [Conjunction of the Moon and Jupiter](#)

– [The Pleiades cluster is well placed](#)

Nov 20 – [Conjunction of the Moon and Mars](#)

Nov 21 –  [\$\alpha\$ -Monocerotid meteor shower 2024 peak](#)

Nov 22 – [Mercury at highest altitude in evening sky](#)

Nov 27 – [The Hyades cluster is well placed](#)

Nov 28 – [November Orionid meteor shower 2024 peak](#)

Nov 29 – [Comet 333P/LINEAR passes perihelion](#)

Nov 30 – New Moon

Dec 4 – [Conjunction of the Moon and Venus](#)

Dec 5 – [December  \$\phi\$ -Cassiopeid meteor shower 2024 peak](#)

Dec 6 – [Jupiter at perigee](#)

Dec 8 – [Conjunction of the Moon and Saturn](#)

Dec 11 –  [\$\sigma\$ -Hydrid meteor shower 2024 peak](#)

Dec 13 – [Close approach of the Moon and M45](#)

Dec 14 – [Geminid meteor shower 2024 peak](#)

- [Asteroid 15 Eunomia at opposition](#)
- [Conjunction of the Moon and Jupiter](#)
- [The Running Man cluster is well placed](#)
- [The Orion Nebula is well placed](#)

Dec 15 – Full Moon

- [Comae Berenicid meteor shower 2024 peak](#)

Dec 18 – [Conjunction of the Moon and Mars](#)

Dec 19 – [December Leonis Minorid meteor shower 2024 peak](#)

Dec 20 – [Mercury at highest altitude in morning sky](#)

Dec 21 – [December solstice](#)

Dec 22 – [Ursid meteor shower 2024 peak](#)

Dec 28 – [The cluster NGC 2232 is well placed](#)

Dec 29 – [The Rosette Nebula is well placed](#)

Dec 30 – New Moon

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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!

## Earth Will Have a Temporary 'Mini Moon' For Two Months



A supermoon with a partial lunar eclipse rises over Lake Michigan in Chicago, Tuesday, Sept. 17, 2024.  
Credit: AP Photo/Kiichiro Sato, File

Earth's moon will soon have some company—a "mini moon."

The mini moon is actually an asteroid about the size of a school bus at 33 feet (10 meters). After it whizzed by Earth on September 29th, it will be temporarily trapped by our planet's gravity and orbit the globe—but only for about two months.

The space rock—2024 PT5—was first spotted in August by [astronomers](#) at Complutense University of Madrid using a powerful telescope located in Sutherland, South Africa.

These short-lived mini moons are likely more common than we realize, said Richard Binzel, an astronomer at Massachusetts Institute of Technology. The last known one was detected in 2020.

"This happens with some frequency, but we rarely see them because they're very small and very hard to detect," he said. "Only recently has our survey capability reached the point of spotting them routinely."

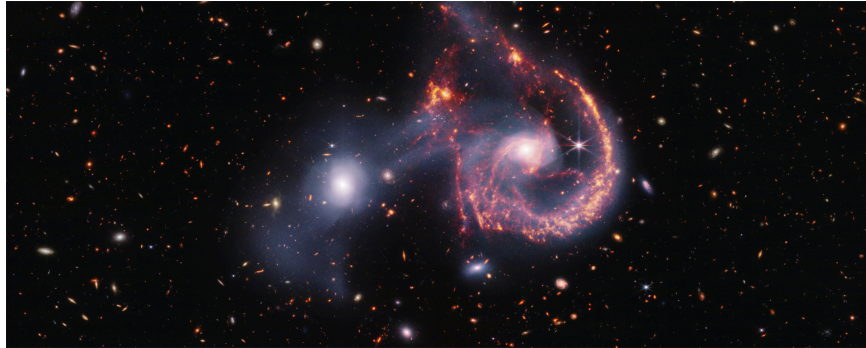
The discovery by Carlos de la Fuente Marcos and Raúl de la Fuente Marcos was [published by the American Astronomical Society](#).

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



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## NASA's Webb Provides Another Look into Galactic Collisions



This composite image of Arp 107, created with data from the James Webb Space Telescope's NIRCam (Near-Infrared Camera) and MIRI (Mid-Infrared Instrument) reveal a wealth of information about the star-formation and how these two galaxies collided hundreds of million years ago. Credit: NASA, ESA, CSA, STScI

An interaction between an elliptical galaxy and a spiral galaxy, collectively known as Arp 107, seems to have given the spiral a happier outlook thanks to the two bright “eyes” and the wide semicircular “smile.” The region has been observed before in infrared by NASA's [Spitzer Space Telescope](#) in 2005, however NASA's James Webb Space Telescope displays it in much higher resolution. This image is a composite, combining observations from Webb's MIRI (Mid-Infrared Instrument) and NIRCam (Near-Infrared Camera).

NIRCam highlights the stars within both galaxies and reveals the connection between them: a transparent, white bridge of stars and gas pulled from both galaxies during their passage. MIRI data, represented in orange-red, shows star-forming regions and dust that is composed of soot-like organic molecules known as polycyclic aromatic hydrocarbons. MIRI also provides a snapshot of the bright nucleus of the large spiral, home to a supermassive black hole.

The spiral galaxy is classified as a Seyfert galaxy, one of the two largest groups of active galaxies, along with galaxies that host quasars. Seyfert galaxies aren't as luminous and distant as quasars, making them a more convenient way to study similar phenomena in lower energy light, like infrared.

This galaxy pair is similar to the [Cartwheel Galaxy](#), one of the first interacting galaxies that Webb observed. Arp 107 may have turned out very similar in appearance to the Cartwheel, but since the smaller elliptical galaxy likely had an off-center collision instead of a direct hit, the spiral galaxy got away with only its spiral arms being disturbed.

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

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## Did a Ring of Rocks and Dust Orbit Earth Before the Dinosaurs Roamed?



Artist's impression of an ancient ring around Earth. Credit: Oliver Hull

A team of scientists thinks a clustering of ancient impact craters points to a temporary ring around Earth hundreds of millions of years ago.

Earth's gravity might have snared an asteroid making a very near miss of the planet 466 million years ago. As it shattered its debris went into orbit, giving our planet its own ring that may have lasted millions of years.

Astronomers have long thought that Earth was too small to have rings like the giant planets do. But for 40 million years in Earth's past, all known impacts happened to land near the equator, and to geologist Andy Tomkins (Monash University, Australia), that unusual concentration suggests those asteroids fell from a ring that was orbiting Earth.

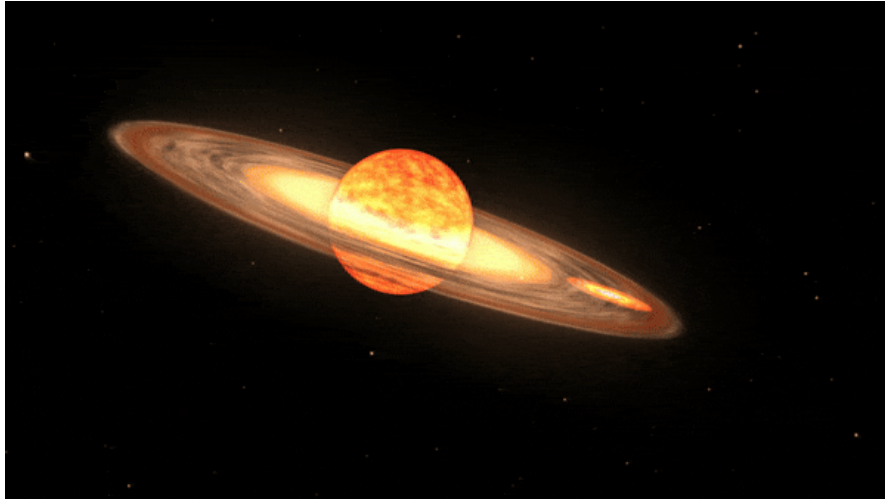
"What got me started on this was a popular news story that Mars might have had a ring in the past," says Tomkins. "I didn't realize such a small planet could ever have rings, and that made me think about what Earth would look like with rings."

Having studied meteorites, Tomkins knew that impact craters were unusually abundant during a 40-million-year window in the Ordovician Period, starting about 466 million years ago. Curious if those impacts might have come from a ring orbiting the planet, he asked colleague Erin L. Martin to plot those craters on a paleogeographic map of the planet at the time. When she found all the craters were close to the equator, they decided to investigate further.

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

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## Astronomers Prepare for Once-In-A-Lifetime Event: A 'New Star' In the Night Sky



An animation of a nova, similar to what'll happen to T Coronae Borealis. (Image credit: NASA/Conceptual Image Lab/Goddard Space Flight Center)

Any day now, our night sky will host a guest star.

Stargazers and astronomers around the world continue to gaze toward the Corona Borealis constellation 3,000 light-years from Earth, where a long-dead star is expected to reignite in an explosion so powerful it will briefly rival the brilliance of Polaris, the North Star. The stellar corpse last turned on almost 80 years ago and will not reignite for another 80 years, making this a nearly once-in-a-lifetime experience.

Already, the stellar remnant, a white dwarf called T Coronae Borealis that's feasting on material from a nearby red giant star, has revealed a tell-tale dip in brightness that "is right on top" of the one that preceded its previous outburst in 1946. Astronomers don't yet know for sure what's causing the dip, but they say it's just a matter of time before the nova satiates its hunger and explodes into a spectacular nova. "We know it's going to go off — it's very obvious," Edward Sion, a professor of astronomy and astrophysics at Villanova University in Pennsylvania, told Space.com.

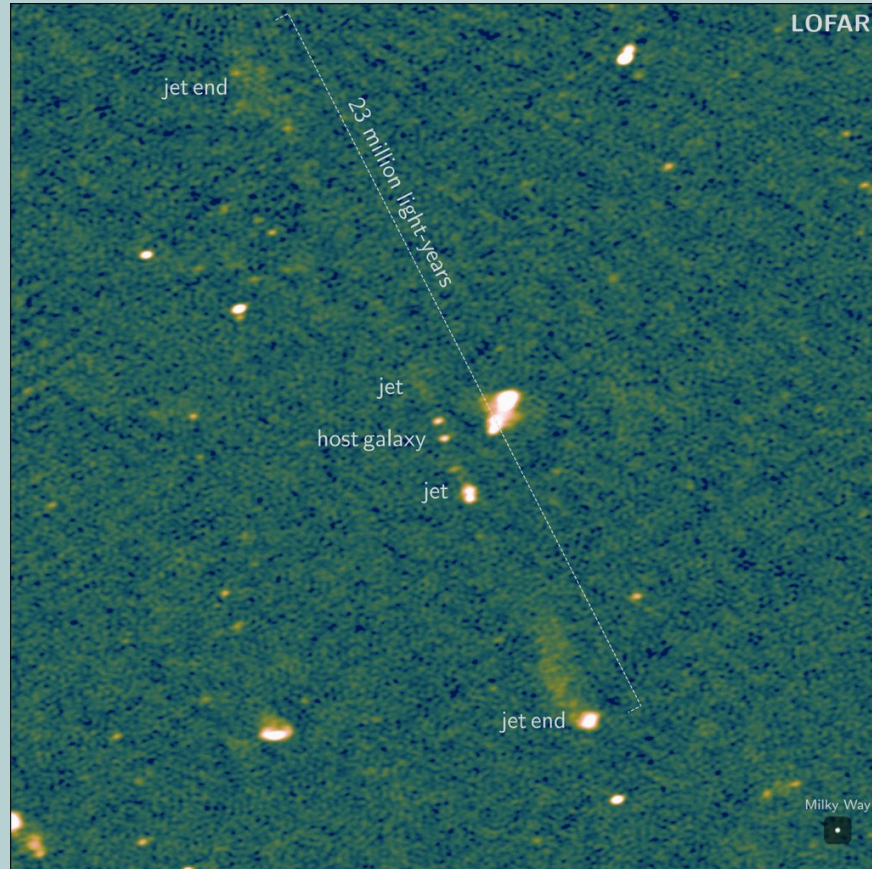
The remarkable event is a treat not just for skygazers. Astronomers have earmarked precious time onboard a host of ground- and space-based telescopes to catalog every possible detail to learn more about novae, whose dynamics remain murky thanks to only a few outbursts cataloged over decades. T Coronae Borealis, or T Cor Bor for short, belongs to an elite club of ten recurrent novae known across the Milky Way, our home galaxy, offering astronomers a rare front-row seat to closely study a stellar corpse as it devours material to the extent that it caves in, thus recoiling in a violent explosion.

Insights from this event would eventually make their way to models of how stars work, astronomers say.

(Source: [Space.com](https://www.space.com))

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## Black Hole's Colossal Jets Pierce the Cosmic Void



This picture, taken by the LOFAR radio telescope, shows the longest-known pair of black hole jets, spanning 23 million light-years. The galaxy hosting the supermassive black hole is a dot in the center of the image. (The largest blob-like structure near the center is a separate smaller jet system.) Credit: LOFAR Collaboration / Martijn Oei (Caltech)

A pair of plasma jets powered by a supermassive black hole span far beyond their host galaxy — potentially affecting the cosmic web around it.

The supermassive black hole at the center of a massive galaxy has powered a giant pair of plasma jets, spanning 23 million light-years long from tip to tip. That's almost 10 times the distance between our Milky Way and the Andromeda Galaxy.

Astronomers have nicknamed the record-breaking system Porphyron, after the king of the giants in Greek mythology. And the giant is indeed the king of many: A new catalog of such radio-emitting giant jet pairs tallies more than 11,000 of them, each spanning more than 2.3 million light-years.

“Giant jets were known before we started the campaign, but we had no idea that there would turn out to be so many,” says Martin Hardcastle (University of Hertfordshire, UK), coauthor on two associated studies. Porphyron's discovery is published in [Nature](#); the accompanying catalog will appear in [Astronomy & Astrophysics](#).

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

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## The Red Color of Mars Is Only Inches Deep



This sand dune, known as Dingo Gap, was crossed by Mars Curiosity in 2014. This image has been slightly 'white balanced' as opposed to being shown in true color, which enables the differences in the compositions and intrinsic colors of the features and rocks on the surface to be seen more clearly. (Credit: NASA/JPL-Caltech/MSSS)

Mars has a red surface and a red atmosphere, allowing its true color to be seen from space.

Various forms of ferric oxides are responsible for this color, but even rover tracks show the red color doesn't last for long.


Beneath an extremely thin layer, as thin as millimeters and no deeper than meters anywhere, it isn't red any longer.

When we look out at our planet Earth from space, we see a myriad of diverse colors. The sky itself is blue, as the atmosphere preferentially scatters shorter-wavelength blue light in all directions, giving our atmosphere its characteristic color. The oceans themselves are blue, as water molecules are better at absorbing longer-wavelength red light than they are blue light. Meanwhile, the continents appear brown or green, dependent on the vegetation (or lack thereof) growing there, while the icecaps and clouds always appear white.

But on Mars, one color dominates: red. The ground is red: red everywhere. The lowlands are red; the highlands are red; the dried-up riverbeds are red; the sand dunes are red; it's all red. The atmosphere itself is also red in every location we can measure it. The lone exception appears to be the icecaps and clouds, which are white, albeit with a reddish hue as observed from Earth. Yet quite surprisingly, the "redness" of Mars is incredibly shallow; if you dug just the tiniest bit beneath the surface, the redness vanishes. Follow the link below to read the scientific story behind just what makes the red planet so red.

(Source: [Big Think](#))

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**2024 Officers**

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Chief Astronomer - Cole Rees  
Acting Treasurer - Peter Moseley  
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Liz Walker

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