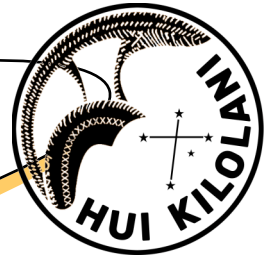


# THE ASTRONEWS



Volume 74, Issue 9

September 2024

[www.hawastsoc.org](http://www.hawastsoc.org)

## A word from your editor by Sapavith 'Ort' Vanapruch

HAS is getting more requests for school & Bishop Museum events. As much as the Board of Directors would like to help with all events, it is just not possible. Fall semester has begun. Requests from school and other organizations such as Boy Scouts & Girl Scouts will surely be coming in. The "3rd Friday monthly evening Planetarium 2024" at Bishop Museum on September 20th, 2024, from 6:00 PM - 9:00 PM is still going on (Sunset 6:29 PM, Saturn rises 5:29 PM, Moon rises at 8:39 PM). On that same night, we will have an event at Pearl City Highlands Elementary School. Let's hope we have good weather. So, if you have a telescope and the event is in your area, please sign up and help.



Star Party at Dillingham Airfield for August were both canceled. The club one on August 3rd was canceled due to military training. The public one on August 24th was canceled due to bad weather caused by Hurricane Hone.

The in-town star party at Kalaha Community Park and Geiger Community Park on August 10, 2024, were OK. Sue said "There were a fair number of visitors at Kahala this evening. Seems to have been a school of some sort cuz lots of little kids. We had

*(Continued on page 10)*

## Inside this issue:

Club Information	2
President's Message	2
Observer's Notebook	3
Meeting Minutes	4
Event Calendar	5
NASA's Night Sky Notes	6
Meteor Log	7
Treasurer's Report	8

## Upcoming Events:

- The next Board meeting is Sun., Sep 1<sup>st</sup> 3:30 PM. **(Zoom Meeting)**
- The next meeting is on Tue., Sep 3<sup>rd</sup> at the Bishop Museum at 7:30 PM. —**Hybrid (In person and Zoom) Meeting**
- Bishop Museum's planetarium show "Planetarium at night" is every 3rd Friday, 9/20/2024, of the month at 7:00 PM

# President's Message

## September 2024

Saturn is back, heralding the beginning of a long period of good planetary observing opportunities. It is now rising shortly after sunset and will come to opposition on September 7th. As all planets do, Saturn goes through seasons, but since its year is almost 30 times as long as Earth's, its seasons are each more than 7 years long. Just as Earth has two equinoxes per year, so does Saturn. At those moments, the ring plane lines up exactly with the direction toward the Sun, and the rings all but disappear, being illuminated directly by the Sun only along their edge.

We are approaching one of these events now, so the rings do not appear very open. At the last equinox, in August of 2009, the Cassini spacecraft was in orbit around Saturn and was able to get unprecedented views of features only visible near equinox. The next one occurs on May 6, 2025.

Of course, since we observe from Earth, our position with respect to Saturn and the Sun also influences how we see the rings. Our orbit around the Sun is not identical to Saturn's, so we don't necessarily cross the plane of the rings at Saturn's equinox. Our next ring plane crossing is on March 23, 2025. That means that for a while, we would be in position to see the side of the rings that is not illuminated by the Sun. However, Saturn will be back near conjunction with the Sun then, so I don't know if that will be something we can observe.

While the rings are the most spectacular feature of Saturn, equinoxes present other opportunities. Fainter moons of Saturn become easier to find. Transits of moons and their shadows are more likely to occur near equinox. Of course, Saturn is about twice as far from the Sun as Jupiter, and most of its moons are much smaller than the Galilean satellites, so any moon or shadow transits would be subtler than those we see on Jupiter, but being rarer only makes them more memorable.

Once Saturn gets well placed for early evening viewing, it won't be long before Jupiter joins it, coming to opposition three months after Saturn. Mars reaches opposition on January 16th of next year, so we have several months of planetary observations to look forward to. Enjoy!

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# Observer's Notebook—September 2024 by Ort

## Planets Close to the Moon Times are Hawaii Standard Time

- Sep 1, 4h, Moon 4.6° NNE of Mercury; 17° from Sun in morning sky; magnitudes -5.6 and 0.5
- Sep 17, 1h, Moon 0.35° NNE of Saturn; 170° from Sun in evening midnight sky; magnitudes -12.6 and 0.6; occultation
- Sep 17, 22h, Moon 0.63° N of Neptune; 177° from Sun in morning midnight sky; magnitudes -12.8 and 7.8; occultation
- Sep 21, 20h, Moon 4.4° NNW of Uranus; 123° from Sun in morning sky; magnitudes -11.3 and 5.7
- Sep 23, 13h, Moon 5.8° N of Jupiter; 100° from Sun in morning sky; magnitudes -10.5 and -2.4
- Sep 25, 4h, Moon 4.9° N of Mars; 81° from Sun in morning sky; magnitudes -9.7 and 0.5

## Other Events of Interest Times are Hawaii Standard Time

- Sep 4, 18h, Moon shows minimum libration for the year, 0.18°
- Sep 5, 0h, Moon 1.05° SSW of Venus; 25° from Sun in evening sky; magnitudes -6.3 and -3.9; occultation
- Sep 6, 8h, Moon 0.51° NE of Spica; 40° from Sun in evening sky; magnitudes -7.4 and 1.0; occultation
- Sep 14, 6h, Mars and Uranus at heliocentric conjunction; longitude 54.5°
- Sep 18, 0h, Venus 2.40° NNE of Spica; 28° from Sun in evening sky; magnitudes -3.9 and 1.0
- Sep 21, 20h, Moon, Uranus, and the Pleiades within circle of diameter 5.40°; about 121° from the Sun in the morning sky; magnitudes -11, 6, 3

### BBC Sky at Night










- 2 September: Very thin Moon lies near Regulus (am)
- 5 September: Venus lies near 5%-lit waxing crescent Moon (pm)

8 September: Saturn at opposition

13/14 September: Excellent Ganymede shadow transit from 23:38 BST

18 September: Small partial lunar eclipse of the Harvest Moon (am)

## Planets in September

<p> <b>Mercury</b></p> <p>will soon pass behind the Sun. From Honolulu, however, it is visible in the dawn sky, rising at 05:19 (HST) – 57 minutes before the Sun.</p>	<p> <b>Venus</b></p> <p>recently passed behind the Sun at superior solar conjunction. From Honolulu, however, it will become visible at around 18:47 (HST), 14° above your western horizon, as dusk fades to darkness.</p>	<p> <b>Mars</b></p> <p>is currently visible as a morning object. From Honolulu, it is visible in the dawn sky, rising at 00:34 (HST) and reaching an altitude of 69° above the eastern horizon before fading from view as dawn breaks at around 05:48.</p>
<p> <b>Jupiter</b></p> <p>is currently emerging from behind the Sun. From Honolulu, it is visible in the dawn sky, rising at 23:28 (HST) and reaching an altitude of 88° above the north-eastern horizon before fading from view as dawn breaks at around 06:02.</p>	<p> <b>Saturn</b></p> <p>recently passed opposition. From Honolulu, it is visible in the evening sky, becoming accessible around 19:00 (HST), 11° above your eastern horizon, as dusk fades to darkness.</p>	<p> <b>Uranus</b></p> <p>is currently visible as a morning object. From Honolulu, it is visible in the morning sky, becoming accessible around 23:34, when it reaches an altitude of 21° above your eastern horizon.</p>
<p> <b>Neptune</b></p> <p>is currently approaching opposition. From Honolulu, it is visible between 20:25 and 05:09. It will become accessible at around 20:25, when it rises to an altitude of 21° above your eastern horizon.</p>	<p> <b>Pluto</b> (Dwarf Planet)</p> <p>is visible in the morning sky, becoming accessible around 19:26, when it reaches an altitude of 7° above your eastern horizon. It will then reach its highest point in the sky at 00:51, 68° above your southern horizon.</p>	<p> <b>1—Ceres</b> (Asteroid)</p> <p>is visible in the evening sky, becoming accessible around 19:26 (HST), 37° above your southern horizon, as dusk fades to darkness. It will then reach its highest point in the sky at 19:29, 37° above your southern horizon.</p>

# Meeting Minutes

H.A.S. Secretary

*August 6<sup>th</sup>, 2024 7:30 PM (Bishop Museum Planetarium and Zoom Meeting)*

*Andy Stroble*

Meeting called to order at 7:33pm by President Chris Peterson.  
Minutes of previous meeting unanimously adopted.

The passing of Mike Morrow was noted, and his memorial service announced. Tom has an obituary in the AstroNews.

School Star Parties. Mark Watanabe reported we are holding events at  
Pearl Highlands Elementary, 9/20  
Helemano Elementary, Oct. 3  
Hawaii Baptist Academy, November 1  
Iolani School, November 18

Regular participation at Bishop Museum's Third Friday is also ongoing.

Volunteers are needed. And, Mark has announced he would like to resign from the School Star Party Co-ordinator position at the end of the year. Again, volunteers needed. Board elections are held during the Decemeber meeting.

Attending for the first time were Larry and Sarah Lucer, Reed Smythe formerly of DC, and Leilani who is applying to graduate school in astronomy. Also we had Rodi Pasqually and family from Italy. (apologies for any misspellings!)

Ort shared pictures, of fireworks and a video of a water jug during our local Lahaina noon, as well as a stack of C20, the North American Nebula, 240 images on a Dwarf II with 40 darks, and post processing in Siril. He also announced a viewing session for the Persied Meteor shower, at Mokuleia Army Beach.

Sabina shared images from her phone, and pictures of the Eagle Nebula, M31, comet 13P/Olbers, and the Lagoon and Trifid nebulae, taken with her Dwarf II. She discussed the step learning curve of getting into astrophotography, learning process, steps, using dark frames, the Atlas and things like IRpass filters

[We now have at least 6 members using the Dwarf II smart telescope. Things should get interesting. ]

VP Bill related his experiences on the Mainland in the last half of July under Bortle 5 skies. And he shared an image of C20 showing the Cygnus Wall, And he discussed using PixInsight, with assorted plug-ins and tutorials for the same.

Steve Chun shared some shots of the Milky Way taken with only a smartphone (Samsung S21 Ultra) on a tripod. The trick to doing this, without tracking, is to not touch the phone. And setting ISO high enough. 30 second exposures.

Joanne treated so to some Planetarium magic, showing us where to look for a periodic stella nova (T Corona Borealis), and taking us on a trip to the two stars of Alberio. We also got a preview of Saturn when the rings are edge on, and the conjunction of Jupiter an Mars on the morning of Aug. 14th. Next year, Mars will have a conjunction with Antares, which should be interesting. And, middling black hole detected in Omega Centauri!

Meeting adjourned at 9:00 pm.

There were 12 persons in person, and 9 unique zoom logins.

Faithfully submitted,  
James Andy Stroble, Secretary.  
Honolulu, Hawaii

# Hawaiian Astronomical Society Event Calendar

September 2024						
← Aug						Oct →
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 BoD Meeting Zoom 3:30PM	2 Labor Day  New Moon 3:55PM	3 General Meeting Bishop Museum Hybrid 7:30PM	4	5	6	7 Public Star Party Kahala / Geiger Sunset 6:41PM
8	9	10  1st Qtr 8:05PM	11 Patriot Day	12	13	14
15	16	17  Full Moon 4:34PM	18	19 3rd Friday Night Planetarium Bishop Museum	20 5th Gr. Star Party Pearl City Highlands ES 5:30PM - 8:30PM ←←	21 Public Star Party Dillingham Airfield Gate Close 7:00PM
22 Start of Fall (Autumnal Equinox)	23	24  3rd Qtr 8:49AM	25	26	27	28 Club Star Party Dillingham Airfield Gate Close 7:00PM
29	30	Notes:				

## <<Upcoming Star Parties>>

**Public Party Geiger/Kahala September 7 — 7:00 PM**  
**Public Party-Dillingham September 14 — 7:00 PM**  
**Club Party Dillingham September 28 — 7:00 PM**

### Upcoming School Star Parties

Date	Time	Location
9/20/2024	5:30PM	Pearl City Highlands Elementary School

# NASA's Night Sky Notes

## September's Night Sky Notes: Marvelous Moons

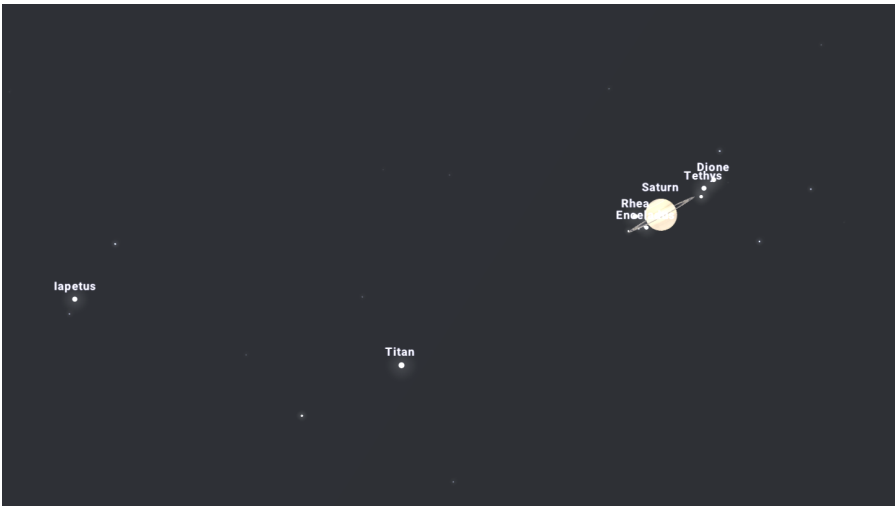
By Kat Troche



September brings the gas giants Jupiter and Saturn back into view, along with their satellites. And while we organize celebrations to observe our own Moon this month, be sure to grab a telescope or binoculars to see other moons within our Solar System! We recommend observing these moons (and planets!) when they are at their highest in the night sky, to get the best possible unobstructed views.

### The More the Merrier

As of September 2024, the ringed planet Saturn has 146 identified moons in its orbit. These celestial bodies range in size; the smallest being a few hundred feet across, to Titan, the second largest moon in our solar system.



The Saturnian system along with various moons around the planet Saturn: Iapetus, Titan, Enceladus, Rhea, Tethys, and Dione. Credit: Stellarium Web

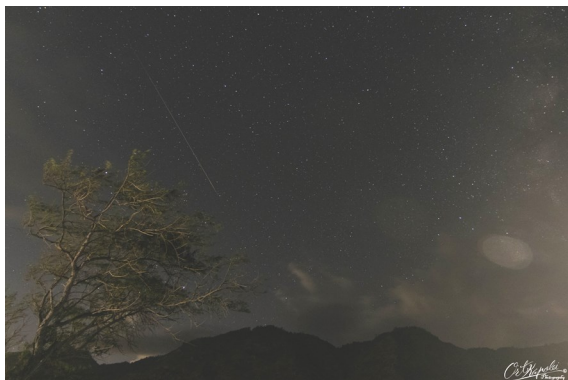
Even at nearly 900 million miles away, Titan can be easily spotted next to Saturn with a 4-inch telescope, under urban and suburban skies, due to its sheer size. With an atmosphere of mostly nitrogen with traces of hydrogen and methane, Titan was briefly explored in 2005 with the Huygens probe as part of the Cassini-Huygens mission, providing more information about the surface of Titan. NASA's mission Dragonfly is set to explore the surface of Titan in the 2030s.

*(Continued on page 9)*

The August Perseids (peak 11-12th) were viewed by several groups last month and reports varied.

- Once again I was on a trip to Arizona to attend the Planetary Cratering Consortium (PCC) in Flagstaff. This time of year is the monsoon season, which brings plenty of cloud cover and rain. I didn't see any meteors.
- Ort viewed from Mokuleia Army Beach on Oahu's north shore on the night/morning of Aug 10/11th. Summarizing his outing involved 5 HAS members with family/friends. Including Ort, Michael, Leilani with her parents, Nikhil with 4 friends, & Sabrina with 4 friends. Total meteor count: 19 Perseids and 9 Sporadics. Ort took total of 481 photos. Only 4 photos have meteors in them. There were too many campers on the beach for the weekend. Their lanterns and lights affected the photos.
- Rob and Tom Lancaster from Kaneohe saw 3 small Perseids and 1 sporadic on Aug 8-9th.

*(Continued on page 11)*



*Ort imaged a Perseid*

### Phases of the Moon (courtesy timeanddate.com)

<b>First Quarter</b>	<b>Full Moon</b>	<b>Last Quarter</b>	<b>New Moon</b>
September 10	September 17	September 24	September 3

Shower	Activity	Maximum		Radiant		V <sub>∞</sub> km/s	r	ZHR
		Date	λ	α	δ			
α-Aurigids (206 AUR)	Aug 28-Sep 05	Aug 31	158.6°	91°	+39°	66	2.5	6
Sept. ε-Perseids (208 SPE)	Sep 05–Sep 21	Sep 09	166.7°	48°	+40°	64	3.0	8
Dayt. Sextantids (221 DSX)	Sep 09-Oct 09	Sep 27	184.3°	156°	-02°	32	2.5	5

The α-Aurigids are included this month since the duration of the shower extends into September. For more info contact: Tom Giguere, 808-782-1408, Thomas.giguere@yahoo.com.

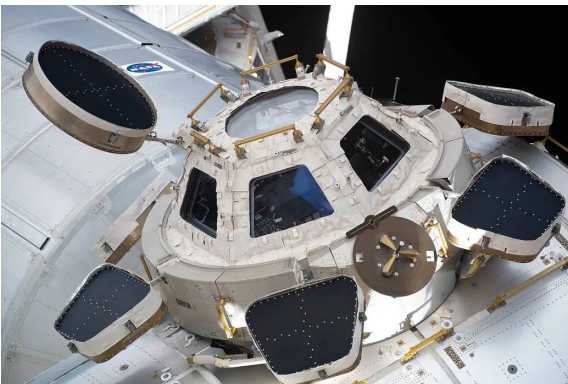
# Cash Flow - 7/10/2024 to 8/11/2024

<b>Beginning Balance</b>	<b>\$6,389.73</b>
<b>Money into selected accounts comes from</b>	
Membership - Electronic	\$140.00
Membership - Family	\$2.00
<b>Total Money In</b>	<b>\$142.00</b>
<b>Money out of selected accounts goes to</b>	
Snacks	\$56.22
<b>Total Money Out</b>	<b>\$56.22</b>
Difference	\$85.78
<b>Ending Balance</b>	<b>\$6,475.51</b>

Here are the financials up through August 11.

Thanks to everyone who paid, or renewed.

Covid wastewater figures range from moderate to moderately high, and the trend has leveled off, or begun to rise again on Oahu. Be careful out there, as school starts now. Remember to mask indoors, or in a crowd.



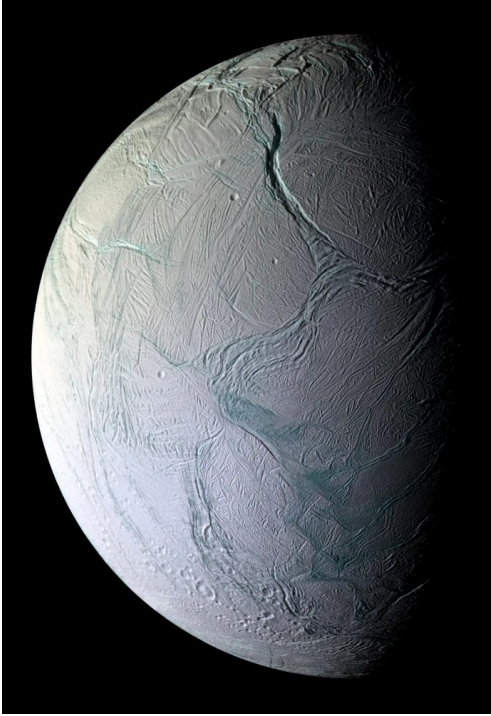
The International Space Station's "window to the world" is pictured from the Nauka Multipurpose Laboratory Module.

The cupola is a small module designed for the observation of operations outside the station such as robotic activities, the approach of vehicles, and spacewalks. Its six side windows and a direct nadir viewing window provide spectacular views of Earth and celestial objects. The windows are equipped with shutters to protect them from contamination and collisions with orbital debris or micrometeorites. The cupola house the robotic workstation that controls the Canadarm2.

Image credit: NASA



Saturn's moon Enceladus was also explored by the Cassini mission, revealing plumes of ice that erupt from below the surface, adding to the brilliance of Saturn's rings. Much like our own Moon, Enceladus remains tidally locked with Saturn, presenting the same side towards its host planet at all times.



This mosaic of Saturn's moon Enceladus was created with images captured by NASA's Cassini spacecraft on Oct. 9, 2008, after the spacecraft came within about 16 miles (25 kilometers) of the surface of Enceladus. Credit: NASA/JPL/Space Science Institute

### The Galilean Gang

The King of the Planets might not have the most moons, but four of Jupiter's 95 moons are definitely the easiest to see with a small pair of binoculars or a small telescope because they form a clear line. The Galilean Moons – Ganymede, Callisto, Io, and Europa – were first discovered in 1610 and they continue to amaze stargazers across the globe.

- Ganymede: largest moon in our solar system, and larger than the planet Mercury, Ganymede has its own magnetic field and a possible saltwater ocean beneath the surface.
- Callisto: this heavily cratered moon is the third largest in our solar system.

(Continued on page 10)



The Jovian system: Europa, Io, Ganymede, and Callisto. Credit: Stellarium Web

*(Continued from page 9) NASA's Night Sky Notes*

Although Callisto is the furthest away of the Galilean moons, it only takes 17 days to complete an orbit around Jupiter.

- Io: the closest moon and third largest in this system, Io is an extremely active world, due to the push and pull of Jupiter's gravity. The volcanic activity of this rocky world is so intense that it can be seen from some of the largest telescopes here on Earth.
- Europa: Jupiter's smallest moon also happens to be the strongest candidate for a liquid ocean beneath the surface. NASA's Europa Clipper is set to launch October 2024 and will determine if this moon has conditions suitable to support life. Want to learn more? Re-watch the July 2023 Night Sky Network webinar about Europa Clipper [here](#).

Be sure to celebrate International Observe the Moon Night here on Earth September 14, 2024, leading up to the super full moon on September 17th! You can learn more about supermoons in our mid-month article on the Night Sky Network page!

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*(Continued from page 1) Editor Notes*

quite a bit of clouds but there were pukas. I managed to get a few pictures with my Dwarf II". Geiger was about the same for weather. We have 3 telescopes setup (Ort, Peter, & Reid). There were only 2 families that showed up. One daily had 2 keiki. The other was Leilani and her mom.



(Photo from Sue)

Later that night, I went out to Mokuleia Army Beach to observe the Perseids Meteor Shower. The sky was cloudy at first but cleared up some. Enough to see a few meteors. I stayed until 1

*(Continued on page 11)*

*(Continued from page 10) Editor Notes*

AM. Sabrina and her friends stayed for a couple more hours. More details of the Meteor Shower is on page 7, Meteor Log.

We had a conjunction of Mars and Jupiter on the morning of Wednesday 8/14/2024. The sky was clear. I was able to take some photos through a telescope, 50 mm lens and 24 mm lens. John Sandor saw it also. He took a photo with his iPhone 13 Pro. I will display it in the meeting.



(Ort Photo)

August “3rd Friday monthly evening Planetarium” on Friday, 8/16/2024, we had bad weather in August. A few visitors were able to see the Moon through a hazy sky. Let’s hope we have a better sky in September.

The funeral service for Mike Marrow was on Friday, August 23, 2024, 12:00 PM - 1:00 PM (HST), at Church of Jesus Christ of Latter Day Saints - Ewa Beach, 91-1154 North Road, Ewa Beach, HI 96706. It was really a celebration of Mike’s life. Families and friends expressed their feelings about Mike. They had music, a cheer, and a dance for Mike. You had more laughter and joy that day. The way Mike would have liked it.

So, if you are observing and able to capture any night sky object. You can share it in AstroNews by emailing it to me at [astronews@hawastsoc.org](mailto:astronews@hawastsoc.org) with some detail. I will post it.

Clear Night everyone.

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*(Continued from page 7) - Meteor Log*

$\alpha$ -Aurigids (206 AUR) - This shower has produced outbursts with peak ZHRs of  $\approx 30$ –50 recorded in 1935, 1986, 1994 and 2019. Observations of the first predicted outburst in 2007 confirmed the calculated values widely. This outburst was characterised by many bright meteors. The peak ZHR of  $\approx 130$  lasted only for about 20 minutes. Slightly enhanced rates were also observed in 2021. The Aurigid radiant reaches a useful elevation only after  $\approx 01$ h local time— this year with no moonlight interference. Will 2024 bring an outburst?



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### Rings and Things

An almost circular galaxy is at the center of the image. It has a glowing bar stretching across its core; from the ends of the bar, thin spiral arms wrap around the galaxy to form a closed disk. The arms are fuzzy from the dust and stars they contain. The galaxy is on a black, mostly empty background. A few foreground stars with cross-shaped diffraction spikes can be seen, as well as some distant galaxies in the background.

Image credit: ESA/Hubble & NASA, I. Chilingari