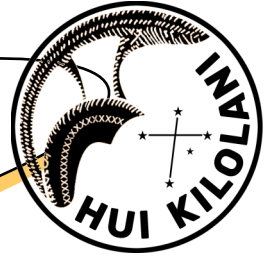


# THE ASTRONEWS



Volume 74, Issue 11

November 2024

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

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

There are 2 additional sections in this November 2024 edition of AstroNews. The first section (page A1 - A2) is the classified section for telescope gears up for bid. All bid monies (donations) will go into HAS general funds. The second section (page A3 - A4) is a biography for our next month (12/3/2024) speakers from TMT.

**\*\*\* Join us at our December 3rd meeting to hear an update on the Three Meter Telescope. \*\*\***

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. Requests from school and other organizations such as Boy Scouts & Girl Scouts will surely be coming in. We have Girl Scouts of Hawai'i annual STEM Fest at Ford Island on Saturday, 11/2/2024 at 9:00 AM. We have to sign up for this event and turn in the base access form. Hopefully, we can get more people to sign up and help next year. There is a function at Hawaii Baptist Academy on 11/7/2024. The "3rd Friday monthly evening Planetarium 2024" at Bishop Museum on November 15th, 2024, from 6:00 PM - 9:00 PM is still going on (Sunset 5:49 PM, Saturn rises 2:01 PM, & Full Moon rises at 5:49 PM). We also have Iolani School Event

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## Upcoming Events:

- The next Board meeting is Sun., Nov 2<sup>nd</sup> 3:30 PM. **(Zoom Meeting)**
- The next meeting is on Tue., Nov 5<sup>th</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, 11/15/2024, of the month at 7:00 PM

# President's Message

## November 2024

I hope you had a chance to see Comet C/2023 A3 (Tsuchinshan-ATLAS). It emerged from the Sun's glare in the evening sky just in time for our in-town public star parties on October 12th. I arrived at Kahala Community Park shortly after sunset. As I was setting up my equipment, Sue Girard shouted, "I've got the comet!" I walked over, expecting to look through her telescope, but instead saw one of the best naked-eye comets I've ever seen. It was still mid-twilight, but the comet was clearly visible with several degrees of tail standing almost straight above it.

I looked for it the next night from home and found it slightly later in the evening. It was moving so fast that it was considerably higher than the previous night and looked about the same in the darker sky even though it had dimmed considerably already. The next few nights were cloudy, and it quickly faded from grandeur but was still faintly visible without optical aid a week later, but just barely. However, it was still impressive through a telescope then.

This will probably be the only time this body will appear in our skies. It appears that the very elongated elliptical orbit of this visitor from the Oort cloud has changed into a hyperbolic one through gravitational interactions with planets, which means that it should escape the Sun's gravity well and become an interstellar object.

Comets come from two reservoirs: the Kuiper belt (the source of most short-period comets) beyond Neptune's orbit, and the Oort cloud, extending to the limits of the Sun's gravitational influence. Kuiper belt objects probably formed more-or-less in their present locations, but Oort cloud comets are thought to have been thrown out there from the inner solar system by gravitational interactions with planets early in the solar system's history. It is thought that many Oort cloud comet orbits have been circularized by passing stars or other gravitational interactions, but even those with very elliptical

*(Continued on page 4)*

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# Observer's Notebook—November 2024 by Ort

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

Nov 2, 21h, Moon 2.05° S of Mercury; 20° and 19° from Sun in evening sky; magnitudes -5.9 and -0.3  
 Nov 4, 14h, Moon 3.1° S of Venus; 39° from Sun in evening sky; magnitudes -7.5 and -4.0  
 Nov 10, 16h, Moon 0.21° NE of Saturn; 114° from Sun in evening sky; magnitudes -11.0 and 0.9; occultation  
 Nov 11, 17h, Moon 0.64° N of Neptune; 127° from Sun in evening sky; magnitudes -11.5 and 7.8; occultation  
 Nov 15, 14h, Moon 4.2° NNW of Uranus; 176° and 179° from Sun in morning midnight sky; magnitudes -12.8 and 5.6  
 Nov 17, 5h, Moon 5.6° N of Jupiter; 156° and 157° from Sun in morning sky; magnitudes -12.2 and -2.8










## Other Events of Interest Times are Hawaii Standard Time

Nov 4, 14h, Southern Taurid meteors; ZHR 7; 3 days after New Moon  
 Nov 11, 14h, Northern Taurid meteors; ZHR 5; 3 days after First Quarter Moon  
 Nov 13, 14h, Moon at perigee; distance 56.46 Earth-radii  
 Nov 16, 14h, Leonid meteors; ZHR 10; 1 day after Full Moon  
 Nov 20, 15h, Moon, Mars, and Beehive cluster within circle of diameter 3.65°; about 113° from the Sun in the morning sky; magnitudes -11, 0, 4  
 Nov 26, 2h, Moon at apogee; distance 63.54 Earth-radii

1 November: Callisto lies south of Jupiter's southern pole (am)  
 4 November: Venus near the waxing crescent Moon (pm)  
 4 November: Rare transit of Titan's shadow on Saturn from 21:08 UT (pm)

17 November: Uranus reaches opposition  
 30 November: Mars lies near M44 (pm)

## Planets in November

 <h3>Mercury</h3> <p>is emerging into the evening sky as it approaches greatest elongation east. From Honolulu, it will become visible at around 18:09 (HST), 10° above your south-western horizon, as dusk fades to darkness.</p>	 <h3>Venus</h3> <p>is emerging into the evening sky as it approaches greatest elongation east. From Honolulu, it will become visible at around 18:03 (HST), 26° above your south-western horizon, as dusk fades to darkness.</p>	 <h3>Mars</h3> <p>is currently visible as a morning object. From Honolulu, it is visible in the morning sky, becoming accessible around 23:23, when it reaches an altitude of 9° above your eastern horizon.</p>
 <h3>Jupiter</h3> <p>is currently approaching opposition and is visible as a morning object. From Honolulu, it is visible in the morning sky, becoming accessible around 20:03, when it reaches an altitude of 7° above your eastern horizon</p>	 <h3>Saturn</h3> <p>is currently an early evening object, now receding into evening twilight. From Honolulu, it is visible in the evening sky, becoming accessible around 18:18 (HST), 52° above your south-eastern horizon, as dusk fades to darkness</p>	 <h3>Uranus</h3> <p>is currently approaching opposition. From Honolulu, it is visible between 19:26 and 05:17. It will become accessible at around 19:26, when it rises to an altitude of 21° above your eastern horizon.</p>
 <h3>Neptune</h3> <p>is currently an early evening object. From Honolulu, it is visible in the evening sky, becoming accessible around 18:43 (HST), 53° above your south-eastern horizon, as dusk fades to darkness.</p>	 <h3>Pluto (Dwarf Planet)</h3> <p>will become visible at around 18:43 (HST), 38° above your south-western horizon, as dusk fades to darkness. It will then sink towards the horizon, setting at 22:22.</p>	 <h3>15 Eunomia (Asteroid)</h3> <p>is visible in the morning sky, becoming accessible around 21:33, when it reaches an altitude of 21° above your north-eastern horizon.</p>

# Meeting Minutes

H.A.S. Secretary

*October 1<sup>st</sup> 2024 7:30 PM (Bishop Museum Planetarium and Zoom Meeting)*

*Andy Stroble*

Meeting called to order at 7:32pm by President Chris Peterson.

Minutes of previous meeting unanimously adopted, with correction of Bishop Museum Third Friday date.

Star Party Reports: Public at Dillingham was well attended, and a fireball was observed. Reminder that visitors to the hangar bathrooms are to park in the lot, not next to the hangars.

Board elections will take place at the December meeting. The position of School Star Party coordinator is open, nominations or volunteering are welcome.

We have 4 school star party requests, 10/19 Kamehameha, Helemanu 10/23, HBA 11/7, and Iolani 11/18. Volunteers with scopes are needed!

Ort shared photos of the occultation of Saturn by the Moon, and comet C/2023 A3 taken from Sandy beach. He also showed results from his new Dwarf III, including solar, Messiers 13, 31, 8 and 20, and the Veil and the Ring Nebula.

Bill announced that Patrick S has donated 2 telescopes, a C8 and a Comet Catcher, as well as many accessories. Details will be in AstroNews, and bids will be accepted.

Tom reported on "Observe the Moon" night on 9/14 at the Family Camp near the Koolau Golf Course. 140 people were in attendance, weather was not very cooperative.

He also demonstrated how to look up observation reports of fireballs on the AMS website, where we found one report from Kauai that matched the one observed at Dillingham. The group began to file our own report, with much discussion of vectors and such.

Sabina shared astrophotos of multiple objects, taken with a cell phone and a Dwarf II, including M27 and the Helix nebula.

Sue shared shots of Caroline's Rose, and the Bubble nebula, M45 and other usual suspects.

Peter set his SeeStar50 on some more challenging targets, such as the Draco Trio, the Deerlick Group, and Stephans' Quartet, along with assorted nebula, globular clusters, and used GraXpert, gradient removal software, in processing the images.

Bill announced we will have a speaker on the TMT at the December meeting.

Romee announced that Bishop Museum will hold a Solar event on Sunday 11/3, and asked for volunteers with solar gear, and mentioned that there may be ice cream, or Sundaes.

Meeting adjourned at 8:59pm.

There were 8 persons in person, and 8 unique zoom logins.


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

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*(Continued from page 2) - President's Message*

orbits would still spend most of their time in the distant parts of their orbits. Those that come no closer than Saturn or so mostly escape our detection. Only when something changes their orbits to bring them closer to the Sun are we treated to spectacular sights such as we just had the opportunity to witness.

**Hawaiian Astronomical Society**  
**Event Calendar**

November 2024						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1  New Moon 2:47AM	2  Public Party Dillingham Airfield Gate closes 7:00P
3 Daylight Saving Time Ends BoD Meeting 3:30 PM Zoom	4	5 Election Day  General Meeting Bishop Museum Hybrid 7:30 PM	6	7  School Party Hawaii Baptist Academy 6:00PM	8  1st Qtr 7:55PM	9  Public Party Geiger / Kahala Sunset 5:51PM
10	11 Veterans Day	12	13	14	15  Full Moon 11:28AM Planetarium At Night Bishop Museum	16
17	18  Iolani Astronomy 6:30 PM - 7:30 PM Iolani School	19	20	21	22  3rd Qtr 3:27PM	23
24	25	26	27	28 Thanksgiving Day	29	30  New Moon 8:21P Club Party Dillingham Airfield

**<<Upcoming Star Parties>>**

- Public Party-Dillingham November 2 — 7:00 PM**
- Public Party Geiger/Kahala November 9 — 7:00 PM**
- Club Party Dillingham November 30 —7:00 PM**

Upcoming School Star Parties

Date	Time	Location
11/7/2024	6:00PM	Hawaii Baptist Academy
11/18/2024	6:30PM	Iolani School

# NASA's Night Sky Notes

## November's Night Sky Notes: Snowballs from Space

By Kat Troche



If you spotted comet C/2023 A3 (Tsuchinshan-ATLAS) in person, or seen photos online this October, you might have been inspired to learn more about these visitors from the outer Solar System. Get ready for the next comet and find out how comets are connected to some of our favorite annual astronomy events.

### Comet Composition

A comet is defined as an icy body that is small in size and can develop a 'tail' of gas as it approaches the Sun from the outer Solar System. The key traits of a comet are its **nucleus**, **coma**, and **tail**.

The **nucleus** of the comet is comprised of ice, gas, dust, and rock. This central structure can be up to 80 miles wide in some instances, as [recorded by the Hubble Space Telescope in 2022](#) – large for a comet but too small to see with a telescope. As the comet reaches the inner Solar System, the ice from the nucleus starts to vaporize, converting into gas. The gas cloud that forms around the comet as it approaches the Sun is called the coma. This helps give the comet its glow. But beware: much like Icarus, sometimes these bodies don't survive their journey around the Sun and can fall apart the closer it gets.

The most prominent feature is the **tail** of the comet. Under moderately dark skies, the brightest comets show a dust tail, pointed away from the Sun. When photographing comets, you can sometimes resolve the second tail, made of ionized gases that have been electronically charged by solar radiation. These ion tails can appear bluish, in comparison to the white color of the dust tail. The ion tail is also always pointed away from the Sun. In 2007, NASA's STEREO mission [captured images of C/2006 P1 McNaught and its dust tail](#), stretching over 100 million miles. Studies of those images revealed that solar wind influenced both the ion and dust tail, creating striations – bands – giving both tails a feather appearance in the night sky.



*(Continued on page 9)*

Comet McNaught over the Pacific Ocean. Image taken from Paranal Observatory in January 2007. Credits: ESO/Sebastian Deiries

## Telescopes and Accessories

The following items are for sale with proceeds going to the Hawaiian Astronomical Society general fund. (Donated items for sale to club members)

Item	Condition	Starting Donation
Celestron C8 with Skyview Pro (Mount and accessories* )	Optical items in very good condition, OTA as new	\$500.00
Celestron OTA C8 with Visual Back, carry Case, Losmandy D & Vixen Dovetails.	Excellent, unused almost new \$1350+ retail	\$500.00
SkyView Pro GoTo Mount*	Old but working, can be controlled by PC with a special cable	\$75.00
Celestron f/6.3 Reducer*	Like new, \$190 retail	\$50.00
Televue 2' Diagonal*	Older version in good condition	\$100.00
Outdoor tripod cover*	Light version	\$20.00
8" Bahtinov masks (2)*		\$10.00
SvBony SV205 Camera*	OK	\$20.00
Observers chair	Old, fair condition ** sale pending **	\$25.00
Celestron #94224 Polar finder scope	Unknown, old	\$20.00
Orion Deluxe Collimator	In original box w/instructions. Battery contacts are clean.	\$25.00
Nikon D60 camera, T-adapters, batteries & chargers, cords, ScopeTronix 20mm & 40mm eyepieces with accessories for doing Eyepiece Projection imaging.	Scopetronix parts fit Nikon T-adapter	\$50.00
Star Finder Charts	Good / ** sale pending **	\$30.00
Televue 1-1/4 2.5x Barlow	Good / retail \$135+	\$35.00
Telrad Finder (2)	Good / ** 1 sale pending **	\$20.00
Carry Bag Orion (2) 5x1x1	Good	\$15.00

## Telescopes and Accessories

The following items are for sale with proceeds going to the Hawaiian Astronomical Society general fund. (Donated items for sale to club members)

Item	Condition	Starting Donation
2" Apertura 26mm Eye-piece SWA 70 FMC	Excellent / retail \$100	\$25.00
Eyepieces, Plossi * ** (4) 4mm, 6mm, 15mm, or 20mm	Very Good	\$15.00
Bogen Variable length telescope Tripod**	Good / \$175 retail	\$75.00
Celestron Comet Catcher 6" Newtonian Telescope. w/ manual mount & accessories**	Old but includes wooden tripod, mount, bahtinov masks, cover	\$50.00
<b>Starred * or ** items listed are void if the main OTA is bought as a package.</b>		
Baader #2458400 Coma Corrector	Excellent but old version	\$25.00
NextImage 5 Solar System Imager	Good // retail \$200	\$25.00
<b>YOUR ITEM HERE for inter-club member sales</b>		
Send me your item description and price		





## Three Meter Telescope Update Speakers



### TMT Project Manager – Fengchuan Liu

Dr. Fengchuan Liu is the TMT Project Manager since December 2020, after serving as the Deputy Project Manager on science, technology and engineering since Oct. 2015.

Dr. Liu has played an integral role in managing the international partnership's design and development of TMT's observatory, telescope and instruments that will allow astronomers to see deeper into space and observe cosmic objects with unprecedented sensitivity. Since June 2021, Dr. Liu has relocated to Hilo on the island of Hawai'i to focus on shaping TMT's new community engagement approach that is through genuine dialogues with the whole community, especially the Native Hawaiian grassroot community, that is based on respect and inclusion, and that includes culture learning, environmental protection and educational programs contributing to a brighter future for everyone in Hawai'i, especially those in underserved communities. He has been a member of AURA's (Association of Universities on Research in Astronomy) Solar Observatory Council since 2016, overseeing the management and development of DKIST (Daniel K. Inouye Solar Telescope).

Dr. Liu completed his bachelor's degree in China, and received his master's and doctorate degrees in Physics from the University of Washington. After conducting post-doc research at the University of California, he had a 20-year career at NASA's Jet Propulsion Laboratory as Project Scientist and Project Manager on space missions. He has received numerous awards, including the NASA Outstanding Leadership Medal, NASA Exceptional Achievement Medal, and JPL Magellan Award.

## Three Meter Telescope Update Speakers



### **Yuko Kakazu, Ph.D. (She/Her/Hers)**

Title: Astronomer & Education, Outreach, and Broader Impacts Manager

Affiliation (Dual Appointment): Thirty Meter Telescope (TMT) International Observatory & National Astronomical Observatory of Japan (NAOJ)

Bio: Dr. Yuko Kakazu is a Scientist and the Education, Outreach, and Broader Impacts Manager at the Thirty Meter Telescope International Observatory and National Astronomical Observatory of Japan. Originally from Okinawa, Japan, she is the first Ph.D. astronomer from Okinawa. Her research specializes in galaxy formation and evolution in the early Universe. She obtained her Ph.D. in astronomy at the Institute for Astronomy, University of Hawai‘i at Manoa and has conducted research at the Institut d’Astrophysique de Paris, California Institute of Technology, University of Chicago, and Kavli Institute for Cosmological Physics.

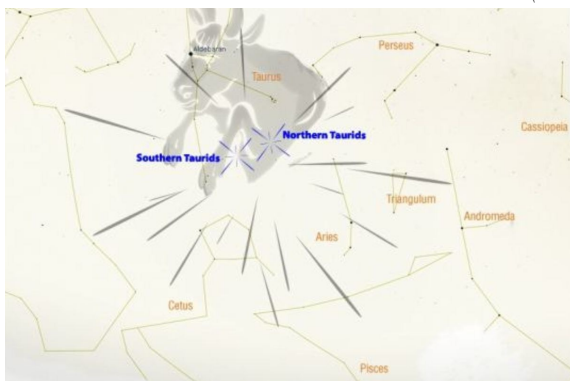
She joined the Subaru Telescope in Hawai‘i in 2013 and led education and outreach programs. In 2021, she joined TMT International Observatory (TIO) and its new team in Hilo, Hawai‘i. At TIO, she leads education, outreach, and broader impact initiatives to build community-based astronomy. Dr. Kakazu actively plans and executes educational outreach programs based on community inputs and unique needs in Hawai‘i, integrating traditional knowledge and philosophy into the programs, and building partnerships with community organizations and schools. She is dedicated to bridging the gap between science, culture, and society, working to make science more accessible, inclusive, and inspiring for future generations.

She is actively involved in nurturing U.S.-Japan relations, serving as a Board of Councilor at OIST, Trustee and Education Ambassador for the OIST Foundation, Director and Education Committee Chair for the Japanese Chamber of Commerce and Industry of Hawai‘i, Fellow of the U.S.-Japan Network for the Future program under the Mansfield Foundation, and Council Leader for the U.S.-Japan Council.

**Southern Taurids (002 STA)** - This stream, with its Northern counterpart, forms part of the complex associated with Comet 2P/Encke. The Southern Taurids are a long-lasting shower that several peaks during its activity period. The shower is active for more than two months but rarely produces more than five shower members per hour, even at maximum activity. The Taurids (both branches) are rich in fireballs and are often responsible for increased number of fireball reports from September through November.

The brightness and relative slowness of many Taurid meteors makes them ideal targets for still imaging, while these factors coupled with low, steady, Taurid rates makes them excellent subjects for newcomers to practice their visual plotting techniques. The main maximum (ZHR 5–10) of this shower is November 05, however, there is an early maximum (ZHR

*(Continued on page 10)*



The *Northern Taurids (017 NTA)* and the *Leonids (013 LEO)* are greatly affected by the full Moon this year.

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

First Quarter	Full Moon	Last Quarter	New Moon
November 8	November 15	November 22	November 1/30

Shower	Activity	Maximum		Radiant		V <sub>∞</sub> km/s	r	ZHR
		Date	λ	α	δ			
Southern Taurids (002 STA)	Sep 10 - Nov 20	Nov 5	223°	52°	+15°	27	2.3	7
<a href="#">Northern Taurids (017 NTA)</a>	Oct 20 - Dec 10	Nov 12	230°	58°	+22°	29	2.3	5
Leonids (013 LEO)	Nov 06 - Nov 30	Nov 17	235.27°	152°	+22°	71	2.5	10
α-Monocerotids (246 AMO)	Nov 15 - Nov 25	Nov 21	239.32°	117°	+01°	65	2.4	Var
Nov. Orionids (250 NOO)	Nov 13 - Dec 06	Nov 28	246°	91°	+16°	44	3.0	3

Have you always wanted to see a souther Taurid meteor? This month is the time to look! For more info: Thomas Giguere, 808-782-1408, [Thomas.giguere@yahoo.com](mailto:Thomas.giguere@yahoo.com). Meteor shower information, credit IMO.net and AMSmeteors.org

# Cash Flow - 9/9/2024 to 10/9/2024

<b>Beginning Balance</b>	<b>\$6,700.51</b>
<b>Money into selected accounts comes from</b>	
Membership - Electronic	\$40.00
Membership - Family	\$2.00
Subscription - Astronomy	\$34.00
<b>Total Money In</b>	<b>\$76.00</b>

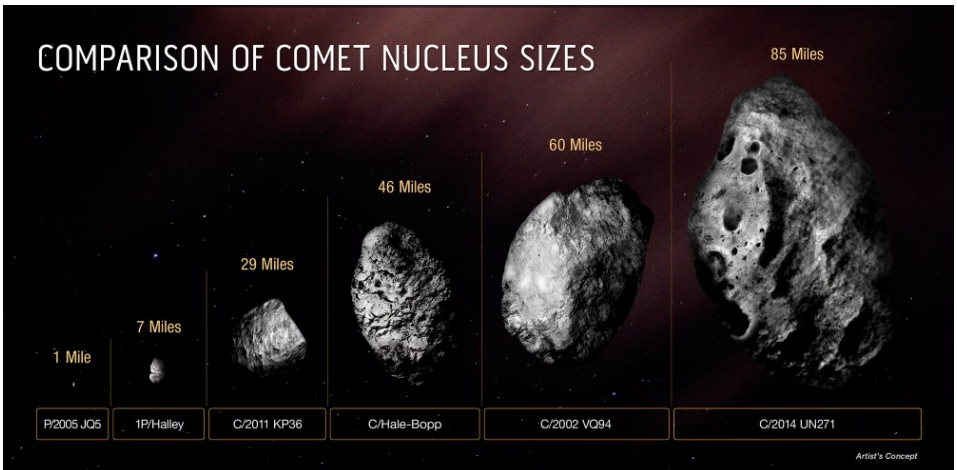
<b>Money out of selected accounts goes to</b>	
Subscription – Astronomy	\$68.00
<b>Total Money Out</b>	<b>\$68.00</b>

Difference	\$8.00
<b>Ending Balance</b>	<b>\$6,708.51</b>

Here are the financials up through October 9.

Thanks to everyone who paid, or renewed. I was gone the month of October, but am back and getting caught up.

Covid wastewater nation-wide figures are pretty low, the summer surge having ended. Oahu levels mirror that. Remember to mask indoors, or in a crowd. The latest measurements are from October 21. Meanwhile, enjoy the sky.



## Coming and Going

Comets appear from beyond Uranus, in the Kuiper Belt, and may even come from as far as the Oort Cloud. These visitors can be **short-period** comets like Halley's Comet, returning every 76 years. This may seem long to us, but **long-period** comets like Comet Hale-Bopp, observed from 1996-1997 won't return to the inner Solar System until the year 4385. Other types include **non-periodic** comets like NEOWISE, which only pass through our Solar System once.

But our experiences of these comets are not limited to the occasional fluffy snowball. As comets orbit the Sun, they can leave a trail of rocky debris in its orbital path. When Earth finds itself passing through one of these debris fields, we experience meteor showers! The most well-known of these is the Perseid meteor shower, caused by Comet 109P/Swift-Tuttle. While this meteor shower happens every August in the northern hemisphere, we won't see Comet Swift-Tuttle again until the year 2126.



A view of the 2023 Perseid meteor shower from the southernmost part of Sequoia National Forest, near Piute Peak. Debris from comet Swift-Tuttle creates the Perseids. Credit: NASA/Preston Dyches

See how many comets (and asteroids!) have been discovered on [NASA's Comets page](#), learn how you can [cook up a comet](#), and check out our mid-month article where we'll provide tips on how to take astrophotos with your smartphone!

*(Continued from page 1) Editor Notes*

on 11/18/2024. So, if you have a telescope and the event is in your area, please sign up and help.

So far, October has been a busy month for Astronomer around the world. We started the month with Comet C/2023 A3 (Tsuchinshan-ATLAS) that we could see in the eastern sky just before sunrise. It reached perihelion on September 27, 2024, and moved into the evening sky.

We then have a Solar Eclipse (Annular Solar Eclipse in some parts of the world and Partial Solar Eclipse in other parts including Hawaii) on Wednesday, 10/2/2024. Many of HAS members were at Sandy Beach to observe and to photograph the partial eclipse. We were worried about the weather but were not disappointed.

The public star party at Dillingham Airfield on 10/5/2024 was canceled due to military training.

On Thursday, 10/10/2024, we have a Geomagnetic storm that went up to G5-class (Extreme). People around the world had a chance to view and took photos of Aurora Borealis. It even reached Hawaii. I was able to take a photo of it. Subaru telescope on Maunakea's All-sky cam also showed auroras activity that night.

Comet A3 showed back up around October 12, 2024, in the western sky after sunset (closest approach to the sun). It continued to be available for several more weeks. Hopefully, many of our members and people around Hawaii were able to observe this comet.

The in-town star party was on October 12th, 2024. At Kahala Community Park, we have several members with telescopes there. I am not sure how many visitors were there, but our members were able to see Comet C/2023 A3 (Tsuchinshan-ATLAS) without any aid. They took some photos also. Let's hope we have time in HAS general meeting to share photos.

At Geiger Community Park, we only had one member that night. He could only show the night sky by manually controlling his telescope due to technical issues. We had 15 visitors that night without putting up the banner. Steve said he could only see the tail of the comet from Geiger Park.

*(Continued on page 11)*

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*(Continued from page 7) - Meteor Log*

near 5) around October 13; a date which often was listed as actual STA maximum. The moon will be 11% illuminated on the peak.

**November Orionids (250 NOO)** - Detailed analysis of video data revealed that there are two consecutive, very similar showers whose activity intervals partially overlap each other: the November Orionids (250 NOO), followed by the Monocerotids (019 MON). In the last days of November the NOO shower is the strongest source in the sky. The radiant is located in northern Orion, about 8° north of  $\alpha$  Ori. This location is close to the Northern Taurids, but far enough east to distinguish meteors from the two sources.

Additionally, the faster velocity of the November Orionids should help distinguish these meteors from the slower Taurids. The radiant culminates near 2h local time, but is above the horizon for most of the night. New Moon on December 1 provides good conditions for optical observations. The moon will be 6% illuminated on the peak.

*(Continued from page 10) Editor Notes*

October “3rd Friday monthly evening Planetarium” on Friday, 10/18/2024, was not too bad. We were able to show Venus, Saturn, & Comet A3 to the visitors. Moon rose a little late (7:13 PM). So, no Moon viewing.

The club member only star party at Dillingham Airfield on 10/26/2024 was also canceled due to bad weather. Let’s hope our next star party (public) at Dillingham Airfield on 11/2/2024 will be OK.

Many members now use Electronically Assisted Astronomy (EAA) devices. 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.



This photo of Comet C/2023 A3 (Tsuchinshan-Atlas) was taken on Sunday, 10/13/2024, at 7:23 PM from Kahe Point Beach Park. (Canon 90D, Tamron 11-20mm f/2.8 at 11mm, Exp. 10 Sec., ISO-1600)



**Europa Clipper Begins Journey to Jupiter’s Icy Moon**

A white rocket lifts off from the launch pad, spewing billowing clouds of white vapor horizontally along the ground. A relatively short column of flames erupts from below the rocket just after liftoff. The early afternoon sky and the water in the foreground are similar, vibrant shades of blue. Image credit: SpaceX



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Hubble Sees a Celestial Cannonball

The spiral galaxy in this NASA/ESA Hubble Space Telescope image is IC 3225. It looks remarkably as if it was launched from a cannon, speeding through space like a comet with a tail of gas streaming from its disk behind it. The scenes that galaxies appear in from Earth's point of view are fascinating; many seem to hang calmly in the emptiness of space as if hung from a string, while others star in much more dynamic situations!

Image Credit: ESA/Hubble & NASA, M. Sun