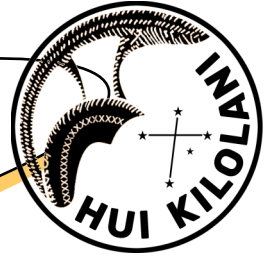


THE ASTRONEWS



Volume 75, Issue 1

January 2025

www.hawastsoc.org

A word from your editor by
Sapavith 'Ort' Vanapruch

*** General Meeting for 1/7/2025 has
been moved to Paki 2 ***

Happy New Year 2025 everyone. Hope you all have a safe one. Hope Mother Nature brings us good weather all year. After the news of what has happened in our country on the morning of the 1st, please be vigilant and protect yourself.

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. The "3rd Friday monthly evening Planetarium 2024" at Bishop Museum on January 17th, 2025, time TBD. There is one school event this month. It will be at Pearl Harbor Kai on Friday, 1/10/2025, from 6:30 pm – 8:30 pm. So, if you have a telescope and the event is in your area, please sign up and help.

The in-town public star party at Kahala & Geiger on 12/7/2024 turned out pretty good. Andy reported that "We had Sue, Chris, Strobls, and Heather at Kahala. Nice crowd and an occultation of Io!" Tom reported that "Geiger: great seeing even though it was hazy. Six from HAS (Stephen, Peter, Luis, me, + two more (Sorry, don't know names)). ~16 guests (wouldv'e been

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Upcoming Events:

- The next Board meeting is Sun., Jan 5th 3:30 PM. **(Zoom Meeting)**
- The next meeting is on Tue., Jan 7th 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, 1/17/2025, of the month at 7:00 PM

President's Message January 2025

The rhythms of astronomy occur on every time scale imaginable, from a small fraction of a second (e.g., pulsars) to star lifetimes longer than the present age of the universe. In a human lifetime, we see many patterns repeat, but never in exactly the same way.

We are now in a good period for viewing planets. Planet oppositions give us our best views of the cycle, but they differ. Mars, for example, is approaching a very unfavorable opposition. Because of the ellipticity of Mars's orbit, its distances from Earth at opposition vary widely. In 2003, for example, during one of the best oppositions possible, Mars reached an angular diameter of 25.11". The good opposition of 2018 saw it reach 24.31". During this month's opposition, it will reach only 14.57". Can it get worse? Yes, and it will at its next opposition in 2027. Then it will reach only 13.81", nearly the smallest possible. The next four oppositions will progressively improve until Mars reaches 24.61" diameter in 2035.

A line through Castor and Pollux provides a convenient visual reference to observe the retrograde motion of Mars. Retrograde motion is at a maximum when a planet reaches opposition, as Mars does on January 15th. Watch it move westward against the stars for a few more weeks.

Saturn is past its peak, but still a good target in the early evening for a while. Its rings continue to close, making for increased likelihood of observing mutual events of the planet and its satellites or spotting fainter moons that are usually overwhelmed by the brightness of the rings. The ring plane crossing won't occur until March, when Saturn will be near conjunction with the Sun and therefore unobservable, but the rings will be nearly edge-on again in November.

Look for a close conjunction of Saturn with
(Continued on page 4)

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Observer's Notebook—January 2025 by Ort

Planets Close to the Moon Times are Hawaii Standard Time

- Jan 3, 7h, Moon 1.32° SE of Venus; 47° from Sun in evening sky; magnitudes -8.1 and -4.4
- Jan 4, 8h, Moon 0.70° N of Saturn; 61° and 60° from Sun in evening sky; magnitudes -8.9 and 1.2
- Jan 5, 5h, Moon 1.07° N of Neptune; 72° from Sun in evening sky; magnitudes -9.5 and 7.9
- Jan 9, 4h, Moon 4.3° NNW of Uranus; 124° from Sun in evening sky; magnitudes -11.3 and 5.7
- Jan 10, 13h, Moon 5.4° N of Jupiter; 141° from Sun in evening sky; magnitudes -11.8 and -2.7
- Jan 13, 19h, Moon 0.44° ENE of Mars; 175° from Sun in morning midnight sky; magnitudes -12.6 and -1.4
- Jan 28, 13h, Moon 2.45° SE of Mercury; 9° and 8° from Sun in morning sky; magnitudes -4.9 and -0.8

Other Events of Interest Times are Hawaii Standard Time

- Jan 2, 14h, Quadrantid meteors; ZHR 80; 3 days after New Moon
- Jan 11, 16h, Venus dichotomy (D-shape)
- Jan 13, 17h, Moon, Mars, and Pollux within circle of diameter 4.19°; about 174° from the Sun in the morning sky; magnitudes -13, -1, 1

January 2025 UTC

- 3/4 January: Quadrantid meteor shower peak
- 4 January: Evening lunar occultation of Saturn
- 10 January: Venus at greatest eastern elongation (47.2° from the Sun; evening)
- 16 January: Mars reaches opposition
- 18 January: Venus 2.2° north of Saturn (evening)



Technicians Install Gateway's Fuel Tanks

A black piece of equipment with small silver pieces all over it is at the center of this image. This is what houses Gateway's fuel tanks.

Image credit: Maxar Space Systems

Planets in January

<p>♀ Mercury</p> <p>will soon pass behind the Sun. From Honolulu, it is not observable – it will reach its highest point in the sky during daytime and is no higher than 7° above the horizon at dawn.</p>	<p>♀ Venus</p> <p>is emerging into the evening sky as it approaches greatest elongation east. From Honolulu, it will become visible at around 18:24 (HST), 41° above your south-western horizon, as dusk fades to darkness</p>	<p>♂ Mars</p> <p>is currently approaching opposition. From Honolulu, it is visible between 18:42 and 06:51. It will become accessible at around 18:42, when it rises to an altitude of 7° above your north-eastern horizon.</p>
<p>♃ Jupiter</p> <p>is currently an early evening object. From Honolulu, it is visible in the evening sky, becoming accessible around 18:24 (HST), 47° above your eastern horizon, as dusk fades to darkness.</p>	<p>♄ Saturn</p> <p>will soon pass behind the Sun at solar conjunction. From Honolulu, it will become visible at around 18:42 (HST), 40° above your south-western horizon, as dusk fades to darkness.</p>	<p>♅ Uranus</p> <p>is currently an early evening object, now receding into evening twilight. From Honolulu, it is visible in the evening sky, becoming accessible around 19:05 (HST), 74° above your eastern horizon, as dusk fades to darkness.</p>
<p>♆ Neptune</p> <p>will soon pass behind the Sun at solar conjunction. From Honolulu, it will become visible at around 19:05 (HST), 47° above your south-western horizon, as dusk fades to darkness.</p>	<p>♇ Pluto (Dwarf Planet)</p> <p>is not observable – it will reach its highest point in the sky during daytime and is 8° below the horizon at dusk.</p>	<p>♁ 4 Vesta (Asteroid)</p> <p>is visible in the dawn sky, rising at 01:15 (HST) and reaching an altitude of 59° above the south-eastern horizon before fading from view as dawn breaks at around 06:13.</p>

December 3rd 2024 7:30 PM (Bishop Museum Planetarium and Zoom Meeting)

Andy Stroble

Meeting was called to order at 7:34pm by President Chris Peterson.
Minutes of previous meeting unanimously adopted.

Elections for the Board of Directors were held. Mark Watanabe is stepping down from the School Star Party Coordinator position, but Heather Nolan has stepped up to fill the role. Other board members agreed to stand for another term. President Chris moved that the slate be accepted, Andy Stroble seconded; All were elected by acclamation.

Joanne announced that the Planetarium will be undergoing some renovation soon, so our January meeting may be moved to another room.

Speakers Fengchuan Liu and Yuko Kakazu from the TMT updated members on the current status of the telescope. They shared information on the technical progress towards producing the mirrors and adaptive optics, and developments in reconciling with opponents to the project. However, no firm date for construction has been determined. A lively Q&A session followed.

At 8:45, Treasurer Peter shared some recent Smart Telescope astrophotography from a Celestron Origin, with images of the Veil Nebula, Abell 347, NGC 7331 (Deer Lick Group), and Stephan's Quintet.

Board member Steven Chun announced that gates at Dillingham/Kawaihapai Airfield will be closed at 6:00pm, rather than 7:00pm, so if you plan to attend, be at the viewing site by then.

Meeting adjourned at 9:00pm.
There were 16 persons in person, and 14 unique zoom logins.

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



Astronaut Suni Williams and Astrobee

Astrobee, a robot that looks like a small black cube with two blue tentacle-like arms on top. Behind it, astronaut Suni Williams stretches her arms out to match Astrobee's arms.

Image credit: NASA





(Continued from page 2) - President's Message

Venus on January 18th. Venus is showing its diminishing crescent phase as it drops lower at Sunset while growing in angular size in our eyepieces.

Jupiter is not far past opposition and conveniently placed for evening observation. Try to spot the Great Red Spot to note its frequently changing appearance and that of the other atmospheric features.

The rhythms of astronomy are endless. What are your favorites?

Hawaiian Astronomical Society Event Calendar

January 2025						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1 New Year's Day	2	3	4 Public Star Party Geiger / Kahala Sunset 6:03PM
5 BoD Meeting Zoom 3:30PM	6  1st Qtr 1:56PM	7 General Meeting Bishop Museum 7:30 PM Hybrid	8	9	10 School Party Pearl Harbor Kai 6:30PM - 8:30PM	11
12	13  Full 12:26PM Wolf Moon	14	15	16	17 Planetarium at Night Bishop Museum Time: TBD	18 Public Star Party Dillingham Airfield Gate closes 6PM
19	20 Martin Luther King Jr. / Inauguration Day	21  3rd Qtr 10:30AM	22	23	24	25 Club Star Party Dillingham Airfield Gate closes 6PM
26	27	28	29  New Moon 2:35AM	30	31	Notes:

<<Upcoming Star Parties>>

Public Party Geiger/Kahala January 4 — 6:00 PM
Public Party-Dillingham January 18 — 6:00 PM
Club Party Dillingham January 25—6:00 PM

Upcoming School Star Parties

Date	Time	Location
1/10/2025	6:30P	Pearl Harbor Kai

NASA's Night Sky Notes



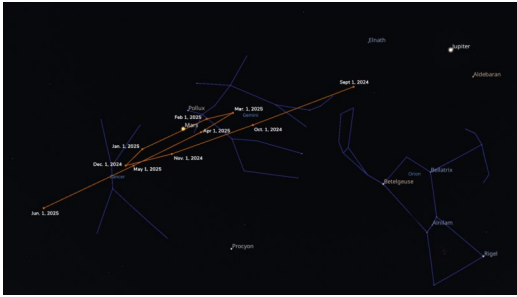
January's Night Sky Notes: The Red Planet

By Kat Troche

Have you looked up at the night sky this season and noticed a bright object sporting a reddish hue to the left of Orion? This is none other than the planet Mars! January will be an excellent opportunity to spot this planet and some of its details with a medium-sized telescope. Be sure to catch these three events this month.

Martian Retrograde

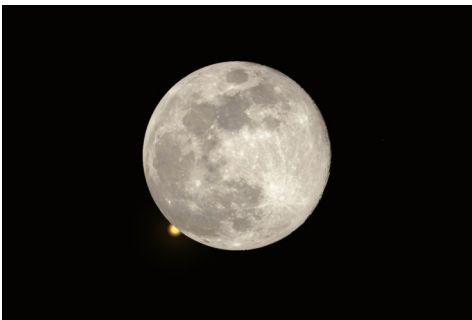
Mars entered retrograde (or backward movement relative to its usual direction) on December 7, 2024, and will continue throughout January into February 23, 2025. You can track the planet's progress by sketching or photographing Mars' position relative to nearby stars. Be consistent with your observations, taking them every few nights or so as the weather permits. You can use free software like Stellarium or Stellarium Web (the browser version) to help you navigate the night as Mars treks around the sky. You can find Mars above the eastern horizon after 8:00 PM local time.



This mid-January chart shows the path of Mars from September 2024 to June 2025 as it enters and then exits retrograde motion. Mars appears to change its direction of motion in the sky because Earth is passing the slower-moving Mars in its orbit. Credit: Stellarium

Hide and Seek

On the night of January 13th, you can watch Mars 'disappear' behind the Moon during an occultation. An occultation is when one celestial object passes directly in front of another, hiding the background object from view. This can happen with planets and stars in our night sky, depending on the orbit of an object and where you are on Earth, similar to eclipses.



A simulated view of the Moon as Mars begins its occultation on January 13, 2025. Credit: Stellarium

Geminid Report - This shower is greeted every year with high anticipation. The Moon was nearly full during the maximum period, greatly muting the ability to see any meteors. We have three observing reports:

- Rob Lancaster: We did have nice clear skies here in Haiku but with the moon, forget about it. Count=0.
- Sapavith Vanapruks: No luck in Thailand. Mostly cloudy in Bangkok. I did not even bother to try.
- Tom G: I looked for Gem's a couple of times, but didn't see any either.

The Quadrantids have the potential to be the strongest shower of the year but usually fall short due to the short length of maximum activity (6 hours) and the poor weather experi-

(Continued on page 11)



Phases of the Moon (courtesy timeanddate.com)

First Quarter	Full Moon	Last Quarter	New Moon
January 6	January 13	January 21	January 29

Shower	Activity	Maximum		Radiant		V _∞ km/s	r	ZHR
		Date	λ _☉	α	δ			
Quadrantids (010 QUA)	Dec 28 - Jan 12	Jan 03	283.15°	230°	+49°	41	2.1	80
γ-Ursae Minorids (404 GUM)	Jan 10 - Jan 22	Jan 18	298.0°	228°	+67°	31	3.0	3

Bring in the new year with the Quadrantids – first shower of the year! More info: Tom Giguere, 808-782-1408, Thomas.giguere@yahoo.com.

Cash Flow - 11/11/2024 to 12/9/2024

Beginning Balance	\$6,997.51
Money into selected accounts comes from	
Donation	\$1,510.00
Membership - Electronic	\$224.00
Membership - Family	\$16.00
Membership - Paper	\$26.00
Subscription - Astronomy	\$34.00
Total Money In	\$1,810.00
Money out of selected accounts goes to	
Insurance	\$315.00
snacks	\$80.69
Total Money Out	\$395.69
Difference	\$1,414.31
Ending Balance	\$8,411.82

Here are the financials up through December 9.

Thanks to everyone who donated, paid, or renewed. Thanks also to those who donated telescopes, eyepieces, and other equipment. The check for our yearly insurance was made out to me, as I paid the bill by credit card this year.

Covid wastewater nation-wide figures trended up sharply, though the latest numbers nation-wide are through December 21. Maybe avoid travel to Ohio and Indiana. The increase in Covid numbers in Oahu began mid-November, and continues to build. Meanwhile, enjoy the sky.



Hubble Captures an Edge-On Spiral with Curve Appeal

A spiral galaxy seen directly from the side, such that its disk looks like a narrow diagonal band across the image. A band of dark dust covers the disk in the center most of the way out to the ends, and the disk glows around that. In the center of the galaxy, a whitish circle of light bulges out above and below the disk. Each end of the disk curves slightly. The background is black and mostly empty.

Image credit: ESA/Hubble & NASA, R. Windhorst, W. Keel

Message From Your Vice President

January 2025


by Bill Barr

This month we have a presentation for Peter about the Celestron Origin. I think we also have some pent up image sharing in the queue.

A while back I suggested we start a tradition of asking and answering a question of the month. We have been too busy to do this. How about this question for a start:

What is the magnification of a telescope at prime focus with a camera?

Sales of our used and/or donated equipment have been going well. Last month two new members purchased 8-inch Celestron SCT's with Alt-Z mounts. Other members purchased items to fill out their equipment needs. This month we have another complete setup, few accessories, but complete enough to get started with visual observing.

Donated and Member Equipment for sale. First come first serve.		
Item	Condition	Donation
First come first serve on all items. Let me know what you would like to sell!	Contact Bill (Dustythepath at gmail.com)	
Orion Deluxe Collimator	In original box w /instructions. Battery contacts are clean. Spoken For	\$25
Explore Scientific 62° 20mm	Excellent Spoken for	\$20
Ultra Flat Field 60° 10mm	Excellent Spoken for	\$25
Agena Starguider (Barsta) 58° 12mm	Excellent Spoken for	\$20
ZWO EAF bracket for Celestron SCT	NEW	\$35
Nexstar SE 6" Recently donated, rarely used (4x) with original shipping box. What you see is what there is. A 6" SCT, laser finder, 25mm Plossl eyepiece, 1.25" diagonal, Alt-Z mount with hand controller and a Celestron battery.		\$250
Orion Carry Bags 5' long x 1' round		Spoken For



Hubble Spies a Cosmic Eye

This NASA/ESA Hubble Space Telescope image features the spiral galaxy NGC 2566, which sits 76 million light-years away in the constellation Puppis.

Image Credit: ESA/NASA

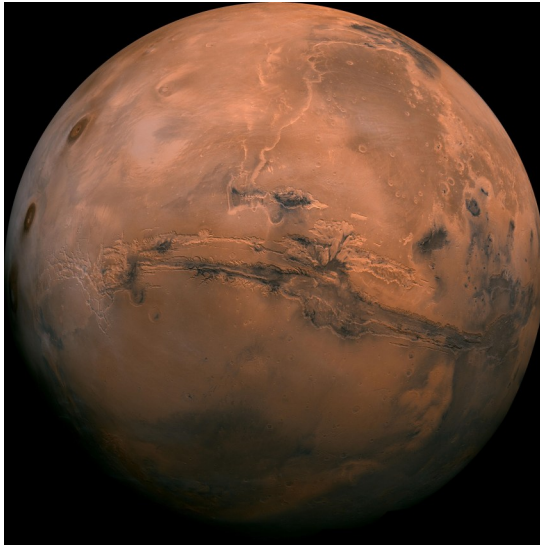
(Continued from page 6) NASA's Night Sky Notes

Depending on where you are within the contiguous United States, you can watch this event with the naked eye, binoculars, or a small telescope. The occultation will happen for over an hour in some parts of the US. You can use websites like Stellarium Web or the Astronomical League's 'Moon Occults Mars' chart to calculate the best time to see this event.

Closer and Closer

As you observe Mars this month to track its retrograde movement, you will notice that it will increase in brightness. This is because Mars will reach opposition by the evening of January 18th. Opposition happens when a planet is directly opposite the Sun, as seen from Earth. You don't need to be in any specific city to observe this event; you only need clear skies to observe that it gets brighter. It's also when Mars is closest to Earth, so you'll see more details in a telescope.

Want a quick and easy way to illustrate what opposition is for Jupiter, Saturn, Mars, or other outer worlds? Follow the instructions on our Toolkit Hack: Illustrating Opposition with Exploring the Solar System page using our Exploring Our Solar System activity!



A mosaic of the Valles Marineris hemisphere of Mars projected into point perspective, a view similar to that which one would see from a spacecraft. The mosaic is composed of 102 Viking Orbiter images of Mars. Credit: NASA/JPL-Caltech

Mars has fascinated humanity for centuries, with its earliest recorded observations dating back to the Bronze Age. By the 17th century, astronomers were able to identify features of the Martian surface, such as its ice caps and darker regions. Since the 1960s, exploration of the Red Planet has intensified with robotic missions from various space organizations. Currently, NASA has five active missions, including rovers and orbiters, with the future focused on human exploration and habitation. Mars will always fill us with a sense of wonder and adventure as we reach for its soil through initiatives such as the Moon to Mars Architecture and the Mars Sample Return campaign.

(Continued from page 7) Meteor Log

enced during early January. The average hourly rates one can expect under dark skies is 25. These meteors usually lack persistent trains but often produce bright fireballs. Due to the high northerly declination (celestial latitude) these meteors are not well seen from the southern hemisphere. American Meteor Society predictions for 2025 show a peak near 17:45 UT on January 3rd. Interesting that the International Meteor Organization has the maximum on January 3, 15:00 UT, a difference of nearly three hours. Either way, the early morning of Friday, January 3 should be productive for meteor viewing. This timing favors the Pacific area. Rates could be quite high if observed under clear, transparent skies. The waxing crescent moon will set before the radiant achieves a favorable altitude. The Quadrantids (QUA) activity extends until about January 12 and even a few days after the actual peak, bright fireballs have been observed. Another 5–7 days after the peak can still be used for undisturbed optical observations. Source: AMS, IMO.

(Continued from page 1) Editor Notes

more if we had the corner sign up, but Ort is in Thailand). Somehow, we missed the occultation of Io, but did have 400x on Saturn via Stephen's 125 refractor, nice!"

November "3rd Friday monthly evening Planetarium" on Friday, 12/20/2024, was not too bad. There were 2 groups of visitors. We were able to show Venus, Saturn, and Jupiter with GRS (Great Red Spot). (Photo by Sue)



There was no report on the public star party at Dillingham Airfield on 12/21/2024.

The club member only star party at Dillingham Airfield on 12/28/2024 was canceled. The weather at Dillingham was totally overcast. Weather app lied.

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 with some detail. I will post it.

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Chandra and Webb Spy a Cosmic Wreath

A star cluster is shown inside a large multicolored nebula that looks like a Christmas wreath

Image Credit: ESA/Webb, NASA, & CSA, P. Zeidler