

THE ASTRONOMERS



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February 2025

A word from your editor by
Sapavith 'Ort' Vanapuru

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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. More requests from the school and other organizations such as Boy Scouts & Girl Scouts will surely be coming in. The "3rd Friday monthly Star Tonight 2025" at Bishop Museum on February 17th, 2025, time TBD. There is no school event this month. 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 1/4/2025 was not bad. Vog is there for Geiger. It is pretty good now. We have 4 Members with 4 telescopes. It is planets and Moon night. We saw Venus, Saturn, Neptune, Moon, Uranus, Jupiter with GRS, and Mars. We had 2 families (8 visitors). We had Chris, Susy, Andy and Hiroko at Kahala. We had quite a few visitors. The sky was pretty decent but quickly turned foggy and got cloudy. We left about 9:30pm.

There were 6 of us at Bishop Museum for Planetarium at night on 1/17/2025. There were about 15-20 folks from the Museum show. Sky cleared so we showed mostly Planets.

Sue said that there were quite a few visitors at Dillingham Airfield on 1/18/2025, a good number of HAS folks. Sky cleared up about 7:30pm. Clouded back up around 10pm so we left. I got the Andromeda galaxy and a crappy Thors helmet, but I got part of it.

The club members' only star party at Dillingham Airfield on 1/25/2025 was not bad.

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Upcoming Events:

- The next Board meeting is Sun., Feb 2nd 3:30 PM. **(Zoom Meeting)**
- The next meeting is on Tue., Feb 4th 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, 2/21/2025, of the month at 7:00 PM

President's Message February 2025

At the dawn of the 20th century, stars were nearly as mysterious as they had always been. It was only in 1925 that Cecilia Payne, a graduate student at Harvard and Radcliffe, first figured out, through the use of spectroscopy, that stars were composed mostly of hydrogen and helium. This was proposed in her doctoral thesis.

In the next decade or two, the nuclear reactions that power stars and produce all the heavier elements were worked out. By the middle of the century, both fission and fusion had been harnessed to create weapons of war. Atomic bombs using fission were used by the United States against Japan in World War II, but fusion-based hydrogen bombs have never been deployed in a war.

Fission reactions are easier to control than fusion, so nuclear reactors using fission were soon developed. Some claimed that fission reactors would make the electricity they produced "too cheap to meter", but that proved overly optimistic. Fission reactors have, however, provided a significant source of electricity.

Fusion power has long seemed tantalizingly close. For the last 50 or 60 years it has been "thirty years away." We may be a little closer now.

Just days ago, Chinese researchers claimed to have sustained a fusion reaction for 1066 seconds at a temperature of 100 million degrees Celsius, reportedly through the use of high-temperature superconducting materials. While this is a significant advance, much work remains to be done before a self-sustaining reaction that produces more energy than is required to create it is achieved.

Another consideration is the feedstock. This reactor used deuterium and tritium, isotopes of hydrogen. It is my understanding that long-lived radioactive waste is produced through this kind of reaction. It has been suggested that a better feedstock would be helium 3, an intermediate product that the Sun produces in its fusion reactions. Adding a second neutron to produce helium 4 is said to be a much cleaner reaction. If so, we could mine that material

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Observer’s Notebook—February 2025 by Ort

Planets Close to the Moon Times are Hawaii Standard Time

- Feb 1, 12h, Moon 1.27° NNW of Neptune; 45° from Sun in evening sky; magnitudes -8.0 and 7.9
- Feb 1, 13h, Moon 2.09° SE of Venus; 45° from Sun in evening sky; magnitudes -8.0 and -4.6
- Feb 5, 10h, Moon 4.5° NNW of Uranus; 96° from Sun in evening sky; magnitudes -10.4 and 5.7
- Feb 6, 17h, Moon 5.4° N of Jupiter; 113° from Sun in evening sky; magnitudes -11.0 and -2.5
- Feb 9, 11h, Moon 0.85° NE of Mars; 147° from Sun in evening sky; magnitudes -11.9 and -0.8
- Feb 28, 9h, Moon 1.32° NNW of Saturn; 10° from Sun in evening sky; magnitudes -5.2 and 1.2










Other Events of Interest Times are Hawaii Standard Time

- Feb 1, 9h, Moon, Venus, and Neptune within circle of diameter 3.33°; about 44° from the Sun in the evening sky; magnitudes -8, -5, 8
- Feb 10, 22h, Moon 2.69° NNE of Beehive Cluster; 165° from Sun in evening sky; magnitudes -12.3 and 3.7
- Feb 14, 12h, Venus shows greatest illuminated extent, 334 square seconds
- Feb 15, 23h, Venus brightest; magnitude -4.64°
- Feb 25, 0h, Mercury 1.44° NNW of Saturn; 13° from Sun in evening sky; magnitudes -1.2 and 1.2

- 1 February: Venus near the 13%-lit waxing crescent Moon (evening)
- 7 February: Jupiter near the crescent Moon before setting (morning)

- 8 February: Callisto 3 arcseconds from Jupiter’s southern limb (19:08 UT)
- 9 February: Mars very close to the Moon’s southern limb (evening)
- 24 February: Titan and its shadow transit Saturn (12:28-18:50 UT)

Planets in February

 Mercury recently passed behind the Sun at superior solar conjunction. From Honolulu, it is not observable – it will reach its highest point in the sky during daytime and is 0° below the horizon at dusk.	 Venus is visible as an evening object, having recently passed greatest elongation east. From Honolulu, it will become visible at around 18:43 (HST), 34° above your western horizon, as dusk fades to darkness.	 Mars recently passed opposition. From Honolulu, it is visible in the evening sky, becoming accessible around 18:45 (HST), 45° above your eastern horizon, as dusk fades to darkness.
 Jupiter is currently an early evening object, now receding into evening twilight. From Honolulu, it is visible in the evening sky, becoming accessible around 18:43 (HST), 80° above your eastern horizon, as dusk fades to darkness.	 Saturn will soon pass behind the Sun at solar conjunction. From Honolulu, it will become visible at around 19:01 (HST), 12° above your western horizon, as dusk fades to darkness.	 Uranus is currently an early evening object, now receding into evening twilight. From Honolulu, it will become visible at around 19:22 (HST), 72° above your western horizon, as dusk fades to darkness.
 Neptune will soon pass behind the Sun at solar conjunction. From Honolulu, it is not observable – it will reach its highest point in the sky during daytime and is no higher than 17° above the horizon at dusk.	 Pluto (Dwarf Planet) is not observable in Honolulu – it will reach its highest point in the sky during daytime and is no higher than 4° above the horizon at dawn.	 4 Vesta (Asteroid) is visible in the morning sky, becoming accessible around 01:32, when it reaches an altitude of 21° above your eastern horizon.

Meeting Minutes

H.A.S. Secretary

January 7th 2024 7:30 PM (Bishop Museum Planetarium and Zoom Meeting)

Andy Stroble

Meeting in the Paki 2 Meeting Room was called to order at 7:30pm by President Chris Peterson. Minutes of previous meeting unanimously adopted.

Peter Saravello will be speaking on Hubble at our February meeting, VP Bill announced.

Star party reports: At Kahala there was vog. Venus, Saturn, and Jupiter in the sky. Mars is not making its best appearance. Geiger wrapped up by 8:30, but viewed six planets!

Attending for the first time were Andy Thomas, and Frank, guest of Gary.

School Star parties: Jan. 10th Pearl Harbor Kai Elementary, expecting 80 guests. Jan. 24th Waiolani Judd STEAM event.

Sabina shared her experience visiting the Johnson Space Center in Houston.

Steven Chun presented more photos of Sol, using a Calcium K-line filter, showing faciles and plages, and another with prominences, combined into one image.

Peter further demonstrated the capabilities of the Celestron Origin smart telescope, with images of the Fornax Dwarf galaxies, various nebulae and other galaxies. And Peter also shared a comparison of the available smart scopes

President Chris mentioned the Lunar Eclipse of March 13th, and was told that Romee has that on her plate, for a Bishop Museum event. In other news, the carpet in the Planetarium will be replaced by Friday, with chairs to follow.

Adjourned at 9:08

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

(Continued from page 1) Editor Notes

Three members stayed until 11:30 PM to do astrophotography. Hopefully they have good images to show at the meeting.

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.

(Continued from page 2) - President's Message

from pyroclastic deposits on the Moon. It would probably be the only material economically worth returning from the Moon.

It is difficult to predict where any advance in knowledge will lead. I doubt that Cecilia Payne was thinking about providing the world's energy needs when she wrote her thesis. Never doubt that the pursuit of astronomical knowledge is a worthwhile endeavor.

Hawaiian Astronomical Society
Event Calendar

February 2025							Mar ▶
◀ Jan	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
							1
2 Groundhog Day BoD Meeting Zoom 3:30PM	3	4  1st Qtr 10:02PM General Meeting Hybrid 7:30PM Bishop Museum	5	6	7		8 Public Star Party Geiger/Kahala Sunset 6:25PM
9	10	11	12  Full 3:53AM	13	14 Valentine's Day		15 Public Star Party Dillingham Airfield Gate Closes 6:00P
16	17 Presidents Day	18	19	20  3rd Qtr 7:32AM	21 Star Tonight Planetarium 7:00PM		22 Washington's Birthday Club Star Party Dillingham Airfield Gate Closes 6:00P
23	24	25	26	27  New 2:44PM	28	Notes:	

<<Upcoming Star Parties>>

Public Party Geiger/Kahala February 8 — 6:25 PM
Public Party-Dillingham February 15 — 6:00 PM
Club Party Dillingham February 22 —6:00 PM

Upcoming School Star Parties

Date	Time	Location

NASA's Night Sky Notes



February Night Sky Notes: How Can You Help Curb Light Pollution?

By Dave Prosper, Updated by Kat Troche

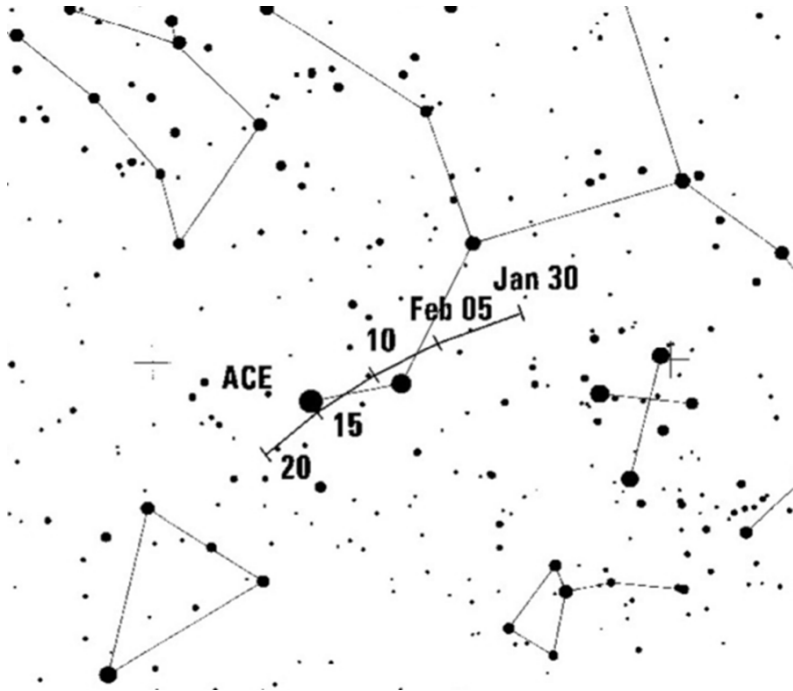


Before and after pictures of replacement lighting at the 6th Street Bridge over the Los Angeles River. The second picture shows improvements in some aspects of light pollution, as light is not directed to the sides and upwards from the upgraded fixtures, reducing skyglow. However, it also shows the use of brighter, whiter LEDs, which is not generally ideal, along with increased light bounce back from the road. Image Credit: [The City of Los Angeles](#)

Light pollution has long troubled astronomers, who generally shy away from deep sky observing under full Moon skies. The natural light from a bright Moon floods the sky and hides views of the Milky Way, dim galaxies and nebula, and shooting stars. In recent years, human-made light pollution has dramatically surpassed the interference of even a bright full Moon, and its effects are now noticeable to a great many people outside of the astronomical community. Harsh, bright white LED streetlights, while often more efficient and long-lasting, often create unexpected problems for communities replacing their older streetlamps. Some notable concerns are increased glare and light trespass, less restful sleep, and disturbed nocturnal wildlife patterns. There is increasing awareness of just how much light is too much light at night. You don't need to give in to despair over encroaching light pollution; you can join efforts to measure it, educate others, and even help stop or reduce the effects of light pollution in your community.

Amateur astronomers and potential citizen scientists around the globe are invited to participate in the [Globe at Night \(GaN\)](#) program to measure light pollution. Measurements are taken by volunteers on a few scheduled days every month and submitted to their database to help create a comprehensive map of light pollution and its change over time. GaN volunteers can take and submit measurements using multiple methods ranging from low-tech naked-eye observations to high-tech sensors and smartphone apps.

The α -Centaurids (102 ACE) are mainly known from their appearances in 1974 and 1980 when bursts of only a few hours' duration apparently yielded ZHRs close to 20–30. The average peak ZHR between 1988–2007 is 6, although observational coverage has been patchy. Significant activity was reported in 2015 on February 14 (airborne observation) although there was no outburst predicted for that time. An outburst on 2021 February 13–15 associated with the γ -Crucids (1047 GCR) may have been a return of the α -Centaurids. Visual observations get increasingly difficult after the maximum due to moonlight. More data is needed about the stream; we recommend that observers concentrate on the first week of February. The shower's radiant is nearly circumpolar for the mainland and well-placed from the late evening onwards.



Phases of the Moon (courtesy timeanddate.com)

First Quarter	Full Moon	Last Quarter	New Moon
February 4	February 12	February 20	February 27

Major Show-er	Activity	Maximum		Radiant		V_{∞} km/s	r	ZHR
		Date	$\lambda \odot$	α	δ			
α -Centaurids (102 ACE)	Jan 31 – Feb 20	Feb 8	319.4°	211°	-58°	58	2.0	6

Guaranteed bragging rights if you spot an α -Centaurids before your facebook friends! Tom Giguere, 808-782-1408, Thomas.giguere1@gmail.com.

Cash Flow - 12/09/2024 to 01/09/2025

Beginning Balance	\$8,411.82
Money into selected accounts comes from	
Donation	\$145.00
Membership - Electronic	\$20.00
Membership - Paper	\$52.00
Subscription - Astronomy	\$34.00
Total Money In	\$251.00
Money out of selected accounts goes to	
Astronews	\$385.83
Office-supplies	\$236.00
Total Money Out	\$621.83
Difference	-\$370.83
Ending Balance	\$8,040.99

Here are the financials up through January 9.

Thanks to everyone who donated, paid, or renewed. The Astronews item reflects the mailing costs for much of 2024. The Office-supplies figure reflects the yearly P.O. Box renewal fee.

A couple of extraneous comments: The club star party on January 25 was perhaps the best attended one I have ever seen. Participants were rewarded with clear skies shortly after sundown, and which stayed clear. The majority brought some form of astrophotography setup, along with a visual only scope for chasing planets and deepsky objects. The public star party on January 18 was also very well attended. Hope to see you in February.

Covid wastewater nation-wide figures continued to rise, but now show signs of peaking nation-wide. Oahu figures show similar results, up at some wells, down, or level at others. Overall, levels are about two-thirds of last August’s maximum. Enjoy the sky.



Los Angeles Fires Seen from International Space Station

On Jan. 10, 2025, NASA astronaut Don Pettit posted two images of the Los Angeles fires from the International Space Station. Multiple destructive fires broke out in the hills of Los Angeles County in early January 2025, fueled by a dry landscape and winds that gusted up to 100 miles per hour.

Image credit: NASA/Don Pettit

Message From Your Vice President

February 2025

by Bill Barr

This month we have a speaker:

"The Hubble Space Telescope was saved by a 130 year old idea" - Peter Ceravolo.



In the late 1800's an obscure European telescope designer, Ludwig Schupmann devised a way to fix a large refractor's residual color problem.

Unfortunately Schupmann's telescope design did not catch on, and he was never credited for his innovation. However his revolutionary technique and is widely used in modern instrument design and saved the HST.

Please take a look at our equipment for sale in this newsletter.

Sales of our used and/or donated equipment have continued to go well. Three Nexstar 8SE's and a Nexstar 6SE have recently been acquired by our members.

This month we have a few things for sale. There is a complete telescope restoration project and a very well outfitted Meade ETX-125 AT 127mm GoTo Maksutov-Cassegrain Telescope. If you wish to purchase your first telescope, please let us know so we can keep an eye out for you. Our telescopes are donated so we pass on a far reduced donation price.

Donated and Member Equipment for sale. First come first serve. Negotiations okay!		
Item	Info	Donation/Cost
First come first serve on all items. Let me know what you would like to sell OR BUY!	Contact Bill (Dustypath at gmail.com)	
Celestron Eyepiece Collimator In original box w /instructions.	Batteryless	\$20
Nanuk 910 Case, brand new	New \$60+	\$30
ZWO EAF bracket for Celestron SCT	NEW	\$30
Baader Coma Corrector #2458400 for fast Newtonians	\$217 new	\$50
Manual mount, no clutches. Stick it on a post in your back yard with a cover.		Any, free or headed for the trash
Manual mount, clutches. Old and neglected 3" telescope. Needs a cleaning. Could be a good daytime telescope.		Any, free or headed for the trash

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

Globe at Night citizen scientists can use the following methods to measure light pollution and submit their results:

- Their own smartphone camera and dedicated app
- Manually measure light pollution using their own eyes and detailed charts of the constellations
- A dedicated light pollution measurement device called a Sky Quality Meter (SQM).
- The free GaN [web app](#) from any internet-connected device (which can also be used to submit their measurements from an SQM or printed-out star charts)

Night Sky Network members joined a telecon with Connie Walker of Globe at Night in 2014 and had a lively discussion about the program's history and how they can participate. The audio of the telecon, transcript, and links to additional resources can be found on their [dedicated resource page](#).



Light pollution has been visible from space for a long time, but new LED lights are bright enough that they stand out from older streetlights, even from orbit. Astronaut Samantha Cristoforetti took the above photo from the ISS cupola in 2015. The newly installed white LED lights in the center of the city of Milan are noticeably brighter than the lights in the surrounding neighborhoods. Image Credit: NASA/ESA

The [International Dark-Sky Association \(IDA\)](#) has long been a champion in the fight against light pollution and a proponent of smart lighting design and policy. Their website provides many resources for amateur astronomers and other like-minded people to help communities understand the negative impacts of light pollution and how smart lighting policies can not only help bring the stars back to their night skies but also make their streets safer by using smarter lighting with less glare. Communities and individuals find that their nighttime lighting choices can help save con-

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siderable sums of money when they decide to light their streets and homes "smarter, not brighter" with shielded, directional lighting, motion detectors, timers, and even choosing the proper "temperature" of new LED light replacements to avoid the harsh "pure white" glare that many new streetlamps possess. Their pages on [community advocacy](#) and on [how to choose dark-sky-friendly lighting](#) are extremely helpful and full of great information. There are even [local chapters of the IDA](#) in many communities made up of passionate advocates of dark skies.

The IDA has notably helped usher in "[Dark Sky Places](#)", areas around the world that are protected from light pollution. "[Dark Sky Parks](#)", in particular, provide visitors with incredible views of the Milky Way and are perfect places to spot the wonders of a meteor shower. These parks also perform a very important function, showing the public the wonders of a truly dark sky to many people who may have never before even seen a handful of stars in the sky, let alone the full glorious spread of the Milky Way.

More research into the negative effects of light pollution on the [health of humans](#) and the [environment](#) is being conducted than ever before. Watching the nighttime light slowly increase in your neighborhood, combined with reading so much bad news, can indeed be disheartening! However, as awareness of light pollution and its negative effects increases, more people are becoming aware of the problem and want to be part of the solution. There is even an episode of PBS Kid's [SciGirls](#) where the main characters help mitigate light pollution in their neighborhood!

Astronomy clubs are uniquely situated to help spread awareness of good lighting practices in their local communities to help mitigate light pollution. Take inspiration from [Tucson, Arizona](#), and other dark sky-friendly communities that have adopted good lighting practices. Tucson even reduced its skyglow by 7% (as of 2018) after its own [citywide lighting conversion](#), proof that communities can bring the stars back with smart lighting choices.

Originally posted by Dave Prosper: November 2018
Last Updated by Kat Troche: January 2025

(Continued from page 9) Message From Your Vice President

<p>Meade LX200R (ACF) 8"</p> <p>In good working condition. ACF= Advanced Coma Free Optics Alt-Az fork mounted with 2" diagonal and accessories. Contact Steven C. for more details.</p>		<p>\$500 Member Sale</p>
<p>Meade ETX-125</p> <p>127mm (5") #15 telescopes optics with Ultra-High Transmission Coatings (UHTC) for extremely bright images with high contrast and clarity A full Go-To computerized telescope in an extremely compact form (weighs just 26 lbs. assembled!) - perfect for both the backyard and when traveling to dark sky locations!</p> <p>Included: Electronic focuser, flip mirror, Erect Image Prism, Variable Polarizing Filter, 8mm-24mm Zoom Eyepiece, 2x Barlow, 6.7mm UWA Eyepiece, 26mm Plossl Eyepiece</p> <p>Also: #497 AutoStar Computer Controller new in box</p>		<p>\$175 In good condition. Please email about details</p>
<p>Meade LX200 ACF 10" complete</p>	<p>email for details</p>	<p>\$1,000</p>

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Suni Williams Conducts Spacewalk

NASA astronaut Suni Williams is seen outside the International Space Station during the Jan. 16, 2025, spacewalk where she and fellow NASA astronaut Nick Hague replaced a rate gyro assembly that helps maintain the orientation of the orbital outpost.

Image credit: NASA