THE ASTRONEWS

Volume 75, Issue 12

December 2025

www.hawastsoc.org

A word from your editor by Sapavith 'Ort' Vanapruks

The 2025 - 2026 school year is now halfway through, the request for a school star party will continue to come in. There will also be other organizations like Boy Scouts or Girl Scouts requests that would come in. There is no school events in December. However, there is a couple of events requested for January and February 2026. Your involvement will help with bringing in more club memberships and promoting the club.

We helped out Bishop Museum's Star Tonight on Friday, 11/21/2025. There was only 1 group attending The Stars Tonight. I was not there. As per email threads, Bill, Chris, & Peter went to help out. I am not sure how the turnout was. We should hear it during the general meeting.

There was no star parties at Dillingham Airfield in November due to military training there. The in-town public start parties will be held on Saturday, 11/29/2025. Hope we have a clear night.

HERE IS WHAT IT SAID WHEN I TRIED TO GRAB PHOTOS & ARTICLES FROM NASA WEBSITE
***** Due to the lapse in federal government funding, NASA is not updating this website. *****
(Image of the day returns on November 13, 2025)

I am using articles from Astronomical League to fill this edition of the AstroNews.

(Continued on page 11)

Inside this issue:

Upcoming Events:

- The next Board meeting is Sun., Nov. 30th 3:30 PM. (**Zoom Meeting**)
- The next meeting is on Tue., Dec. 2nd at the Bishop Museum at 7:30 PM. —**Hybrid (In person and Zoom) Meeting**
- Bishop Museum's planetarium show "Star Tonight" is every 3rd Friday, 12/12/2025, of the month at 7:00 PM.

President's Message December 2025

December is the month we hold elections for HAS. All our officers and board members have agreed to serve for another year, but that doesn't mean you can't run for an office. You can nominate yourself (or someone else) up until the time we vote. Let me outline the duties of each position. Some of these are listed in our bylaws while others are simply traditions we've adopted.

The President presides over our monthly membership and board meetings and provides the monthly column you are reading now. In general, the President needs to make sure all the necessary functions of the club are being fulfilled. The Vice President is charged with handling rentals of club telescopes and accepts most donations of equipment to the club.

The Secretary takes notes at membership and board meetings and makes copies available as appropriate. The Treasurer handles all money flowing through the club, such as collecting annual dues and paying for anything the club may buy, makes required annual reports, maintains membership records and sees that the Astronews is delivered to members. The Astronews Editor produces our monthly newsletter from contributions from board members and others and by obtaining additional content from NASA or other sources.

We have two Members-at-Large on the board of directors. They purchase (with club funds) the snacks we enjoy after our membership meetings. One of them serves as the Star Party Coordinator who responds to star party requests from schools and other non-profit groups, recruits members to provide the equipment and expertise to run these, and announces the events to us.

The club holds two star parties a month at Dillingham Airfield. The board members divide the duties of running these. This amounts to three or four times a year each on average. The board meets once a month, by Zoom since COVID hit.

Other tasks are adopted on a voluntary basis, such as obtaining permits for our star parties. Ort has been coordinating a t-shirt purchase. Steven has been managing the technical duties

(Continued on page 11)

Hawaiian Astronomical Society
P.O. Box 17671
Honolulu, Hawaii 96817

President
Chris Peterson
(808) 732-7046
chrisp@higp.hawaii.edu

Vice President
Bill Barr
dustythepath@gmail.com

Secretary
Andy Stroble
jstroble@hawaii.rr.com

Treasurer
Peter Besenbruch
peter@besenbruch.info

Board Members-at-Large
Steven Chun
sctchun@usa.net

Heather Nolan
heathernolan26@hotmail.com

Astronews Editor
Sapavith 'ORT' Vanapruks
astronews@hawastsoc.org

HAS Webmasters
Peter Besenbruch
peter@besenbruch.info

School Star Party Coordinators
Lailani Gamboa
leilanitgamboa@gmail.com

THE ASTRONEWS is the monthly newsletter of the Hawaiian Astronomical Society. Some of the contents may be copyrighted. We request that authors and artists be given credit for their work. Contributions are welcome. Send them to the Editor via e-mail. The deadline is the last Wednesday of each month. We are not responsible for unsolicited artwork.

Observer's Notebook—December 2025 by Ort

Planets Close to the Moon

Times are Hawaii Standard Time

Dec 3, 16h, Moon 5.0° N of Uranus; 166° and 167° from Sun in evening sky; magnitudes -12.5 and 5.6
Dec 7, 8h, Moon 3.6° NNE of Jupiter; 141° and 142° from Sun in morning sky; magnitudes -11.8 and -2.6
Dec 18, 1h, Moon 6.1° S of Mercury; 19° and 18° from Sun in morning sky; magnitudes -5.7 and -0.5
Dec 19, 7h, Moon 4.9° S of Venus; 6° and 4° from Sun in morning sky; magnitudes -4.5 and -3.9
Dec 20, 4h, Moon 3.8° S of Mars; 7° and 5° from Sun in evening sky; magnitudes -4.6 and 1.2
Dec 26, 15h, Moon 3.6° NNW of Saturn; 80° from Sun in evening sky; magnitudes -9.8 and 1.1
Dec 26, 21h, Moon 2.92° NNW of Neptune; 84° from Sun in evening sky; magnitudes -9.9 and 7.9
Dec 31, 1h, Moon 5.1° N of Uranus; 138° from Sun in evening sky; magnitudes -11.8 and 5.6

Other Events of Interest

Times are Hawaii Standard Time

Dec 3, 15h, Moon, Uranus, and the Pleiades within circle of diameter 5.03°; about 167° from the Sun in the evening sky; magnitudes -13, 6, 3
Dec 8, 15h, Venus 5.0° N of Antares; 7° and 8° from Sun in morning sky; magnitudes -3.9 and 1.0
Dec 13, 14h, Geminid meteors; ZHR 150; 2 days after Last Quarter Moon
Dec 14, 6h, Jupiter 6.5° SSW of Pollux; 150° and 149° from Sun in morning sky; magnitudes -2.6 and 1.2
Dec 18, 4h, Moon 0.47° SE of Antares; 17° from Sun in morning sky; magnitudes -5.6 and 1.0
Dec 21, 14h, Ursid meteors; ZHR 10; 2 days after New Moon
Dec 26, 17h, Moon, Saturn, and Neptune within circle of diameter 4.29°; about 82° from the Sun in the evening sky; magnitudes -10, 1, 8
Dec 31, 1h, Moon, Uranus, and the Pleiades within circle of diameter 5.17°; about 139° from the Sun in the evening sky; magnitudes -12, 6, 3

Planets in December

☿ Mercury

will soon pass behind the Sun. From Honolulu, however, it is visible in the dawn sky, rising at 05:31 (HST) – 1 hour and 27 minutes before the Sun.

♀ Venus

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 1° above the horizon at dawn.

♂ Mars

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 3° below the horizon at dusk.

♃ Jupiter

is currently approaching opposition and is visible as a morning object. From Honolulu, it is visible in the morning sky, becoming accessible around 20:34, when it reaches an altitude of 7° above your eastern horizon

♄ Saturn

is currently an early evening object, now receding into evening twilight. From Honolulu, it is visible in the evening sky, becoming accessible around 18:24 (HST), 64° above your southern horizon.

♅ Uranus

recently passed opposition. From Honolulu, it is visible in the evening sky, becoming accessible around 18:48 (HST), 37° above your eastern horizon, as dusk fades to darkness.

♆ Neptune

is currently an early evening object, now receding into evening twilight. From Honolulu, it is visible in the evening sky, becoming accessible around 18:48 (HST), 67° above your southern horizon.

♇ Pluto (Dwarf Planet)

is not observable – it will reach its highest point in the sky during daytime and is no higher than 20° above the horizon at dusk.

1 Ceres (Asteroid)

is visible in the evening sky, becoming accessible around 18:48 (HST), 59° above your southern horizon, as dusk fades to darkness.

Meeting Minutes

H.A.S. Secretary

November 4th 2025 7:30 PM (Bishop Museum Planetarium and Zoom Meeting)
Andy Stroble

Election night, but we have no elections in Hawaii this year.
Chair moved that all prior minutes, including those not previously approved, be approved. Passed unanimously.

The Military is training at Dillingham Airfield in November, so all our star parties there are canceled for the month.

Attending for the first time were Mike DeSesso, aspiring astrophotographer, and Jonathan, a US Marine. Also, Sam and Connor, who have attended out star parties.

Vice President Bill reported on the possibility of holding star parties at the Space Force site, but it seems that logistics of doing so might be onerous. He also recommended the use of the Discord app for coordinating impromptu star parties amongst members (message Bill to be added).
HAS has donated astronomy equipment for sale, check the AstroNews for listings.

Also, our yearly election of board members is slated for the December meeting. Current board members have all agreed, after a minumum of arm-twisting, to run for re-election, but the slate is open to nominations, if anyone feels called to be of service to the club.

Our speaker for the evening, Larry Denneau, who had his first encounter with astronomy right here in the Bishop Museum Planetarium, and is a member of the ATLAS program, informed us in great detail about the most recent inter-stellar body in our solar system, 3I/ATLAS. He also provided interesting background about early solar system development, and the ATLAS project itself.

Meeting adjourned at 8:55pm. There were about a dozen Zoom logins, and 16 persons present corporeally.

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

NASA Telescopes View Spiral Galaxy

A gold and blue spiral galaxy swirls in the darkness of space. There is a bright spot of light at its center. NGC 1068, a relatively nearby spiral galaxy, appears in this image released on July 23, 2025. The galaxy contains a black hole at its center that is twice as massive as the Milky Way's.

Image credit: X-ray: NASA/CXC/SAO; Optical/IR: NASA/ESA/CSA/STScI (HST and JWST); Radio: NSF/NRAO/VLA; Image Processing: NASA/CXC/SAO/J. Schmidt and N. Wolk

Hawaiian Astronomical Society
Event Calendar

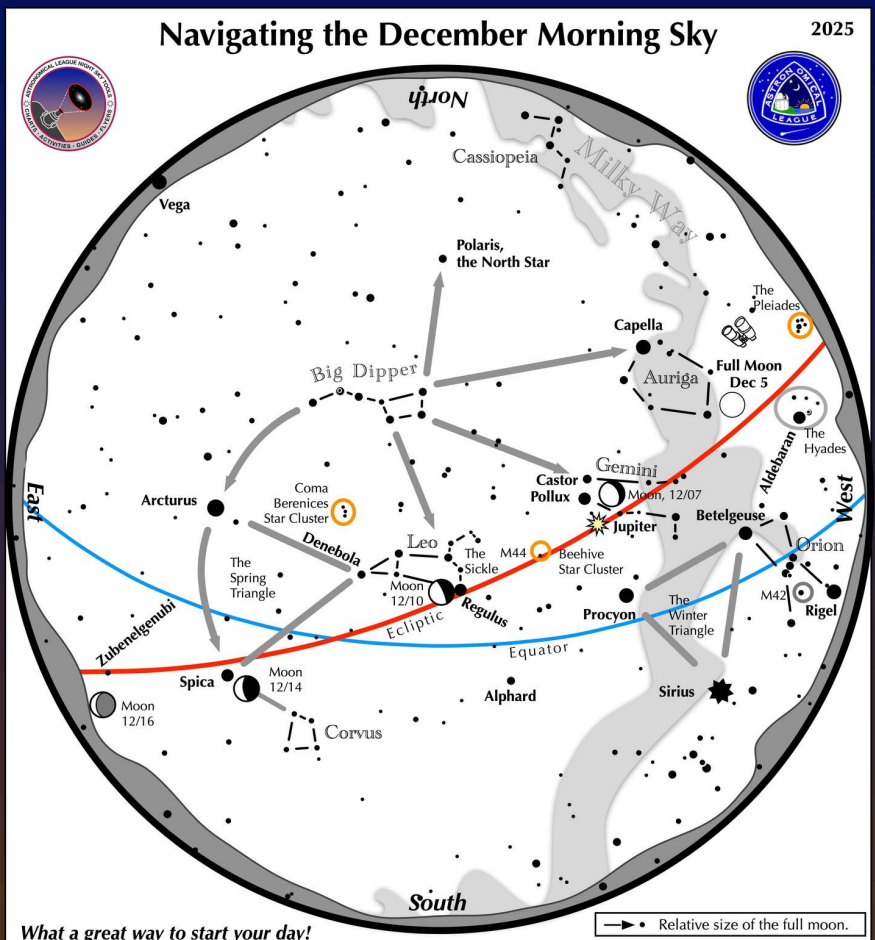
◄ Nov	December 2025					Jan ►
Sunday	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**
30 BoD Meeting 15:30 Zoom	1	2 General Meting 19:30 Hybrid Planetarium	3	4  Full Moon 13:14	5	6
7	8	9	10	11  3rd Qtr 10:51	12 Bishop Museum The Star Tonight 2 Groups	13 Club Star Party Dillingham Airfield **Gate closes 18:00**
14	15	16	17	18	19  New Moon 15:43	20 Public Star Party Dillingham Airfield **Gate closes 18:00**
21 Start of Winter (Winter Solstice)	22	23	24	25 Christmas	26	27  1st Qtr 9:09 Public Star Party Kahala / Geiger Sunset 17:58
28	29	30	31	Notes:		

<<Upcoming Star Parties>>

Club Party Dillingham December 13 — Gate closes 6 PM
Public Party-Dillingham December 20 — Gate closes 6 PM
Public Party Geiger/Kahala December 27 — 5:58 PM

Upcoming School Star Parties

Date	Time	Location



What a great way to start your day!

For observers in the middle northern latitudes, this chart is suitable for mid December at 5:00 a.m.

Late sunrises in December provide opportunities for early morning skywatching.

- Bright Jupiter shines high in the west.
- The near third quarter moon floats above Regulus on December 10.
- The waning crescent moon glows next to Spica on December 14.
- The thin crescent moon rises near the double star Zubenelgenubi on December 16.
- A great time for viewing the Big Dipper, Leo, and the Spring Triangle. And, in the second half of the month, it is time for galaxy viewing!

Astronomical League *www.astroleague.org; duplication is allowed and encouraged for all free distribution.*

Enjoy the star-filled skies of December. And here comes mighty Jupiter! Dress warmly. And take advantage of late sunrises by venturing out under the stars in the early morning hours.

(Continued on page 10)

Meteor Log—December 2025

by Tom Giguere

Our featured shower this month are the Geminids meteor shower which may be viewed under a near moonless night on Dec 14th.

Geminids (004 GEM) - The best and most reliable of the major annual showers presently observable reaches its broad moon-free maximum on December 14 centred at 08h UT. The shower is known for bright meteors and fireballs. Well north of the equator, the radiant rises about sunset, reaching a usable elevation already from the local evening hours onwards.

(Continued on page 11)

Phases of the Moon (courtesy timeanddate.com)

First Quarter	Full Moon	Last Quarter	New Moon
December 27	December 4	December 11	December 19

Shower	Activity	Maximum		Radiant		V_∞	r	ZHR
		Date	$\lambda_\odot$	α	δ	km/s		
Phoenicids (254 PHO)	Nov 28 - Dec 09	Dec 01	249.5°	08°	-27°	18	2.8	Var
Puppid/ Velids (301 PUP)	Dec 01 - Dec 15	(Dec 07)	(255°)	123°	-45°	44	2.9	10
Monoce-rotids (019 MON)	Dec 05 - Dec 20	Dec 09	257°	100°	+08°	41	3.0	3
σ-Hydrids (016 HYD)	Dec 03 - Dec 20	Dec 09	257°	125°	+02°	58	3.0	7
Geminids (004 GEM)	Dec 04 - Dec 20	Dec 14	262.2°	112°	+33°	35	2.6	150
Comae Ber-enicids (020 COM)	Dec 05 – Feb 04	Dec 16	264°	158°	+30°	64	3.0	3
Ursids (015 URS)	Dec 17 - Dec 26	Dec 22	270.7°	217°	+76°	33	2.8	10

Try the Ursids this month, but don't neglect the Geminids! For more info: Tom Giguere, 808-782-1408, Thomas.giguere1@gmail.com. Thanks to the IMO and the AMS for observing information.

Treasurer's Report

by Peter Besenbruch

Cash Flow - 9/10/2025 to 10/9/2025

Beginning Balance	**$9,787.58**
Money into selected accounts comes from	
Total Money In	**$0.00**
Money out of selected accounts goes to	
Snacks	$20.93
Total Money Out	**$20.93**
Difference	**-$20.93**
Ending Balance	**$9,766.65**

Here are the financials up through November 9. Thanks to everyone who renewed, and donated.

Covid wastewater Oahu figures are very low. The same cannot be said for influenza A, which have crept up to medium. RSV is moving up similarly. You defend against all three similarly, with a vaccine, and N95 masking.

Hang in there, and enjoy the sky.

Red Spider Nebula

Using its Near-InfraRed Camera (NIRCam), NASA's James Webb Space Telescope captured never-before-seen details of the Red Spider Nebula, a planetary nebula, in this image released on Oct. 26, 2025.

Image credit: ESA/Webb, NASA & CSA, J. H. Kastner (Rochester Institute of Technology)

Message From Your Vice President
December 2025

by Bill Barr

Sales of used equipment are back. If there's something you're interested in, be sure to email and it will be held for you.

Item	Price
Made LX 200 8 inch SCT with some accessories • 40 mm eyepiece • 20 mm eye piece • Old style fork mount with tripod (This package will be donated to Roosevelt HS Astronomy Club if no takers.)	$500
Celestron 8 inch SCT, OTA only	
Celestron ScT .62 reducer	$50
Laser collimator for Newtonian telescopes	$20
2-inch Meade diagonal, damaged	FREE
A Nextimage planetary camera	$10
Coma Corrector (only) for Newtonians	$25
1-1/4" eye pieces	
ZWO motorized focuser bracket for C8 or C11	$25
A Meade ETX-90 which is a good planetary scope with a motorized focuser.	$75
Wooden tripod	$10
Hard case for eyepieces	$20
Celestron Nexstar 4" GoTo, one arm type, internal flip mirror and minimal aaccessories	$150

Hubble Captures Puzzling Galaxy

This NASA/ESA Hubble Space Telescope image features a galaxy that's hard to categorize. The galaxy in question is NGC 2775, which lies 67 million light-years away in the constellation Cancer (the Crab).

Image credit: ESA/Hubble & NASA, F. Belfiore, J. Lee and the PHANGS-HST Team

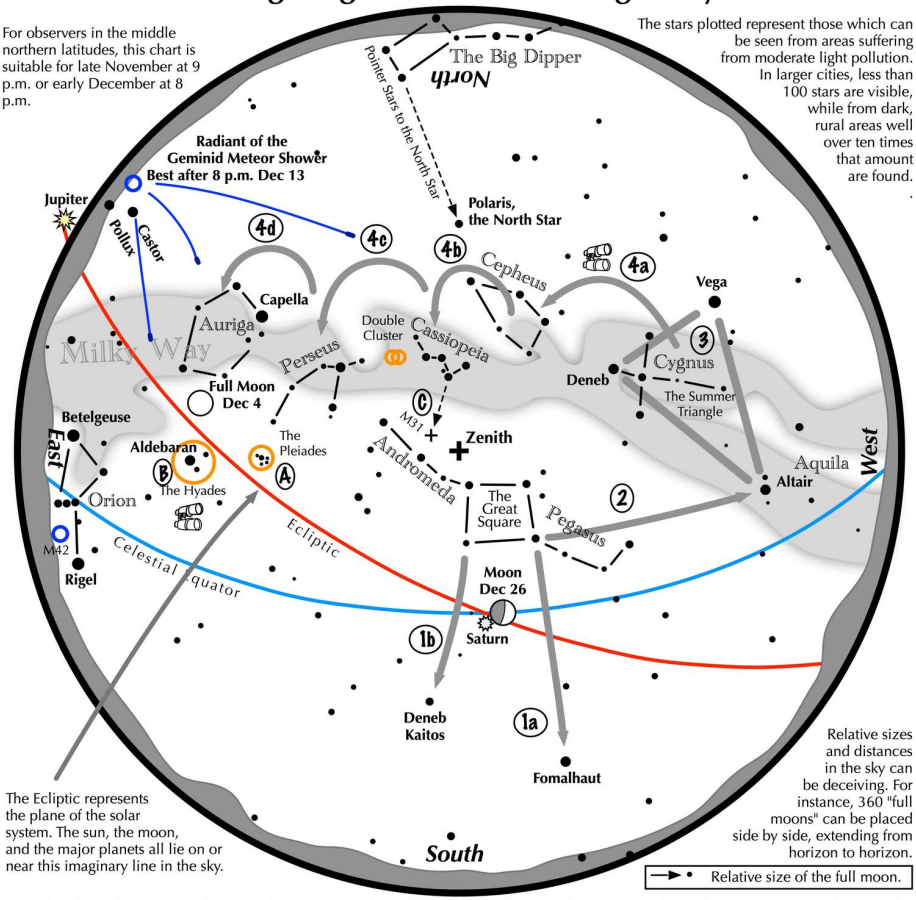
(Continued from page 6) Astronomical League

Navigating the December Night Sky

2025

For observers in the middle northern latitudes, this chart is suitable for late November at 9 p.m. or early December at 8 p.m.

The stars plotted represent those which can be seen from areas suffering from moderate light pollution. In larger cities, less than 100 stars are visible, while from dark, rural areas well over ten times that amount are found.



The Ecliptic represents the plane of the solar system. The sun, the moon, and the major planets all lie on or near this imaginary line in the sky.

Relative sizes and distances in the sky can be deceiving. For instance, 360 "full moons" can be placed side by side, extending from horizon to horizon.

Relative size of the full moon.

Navigating the December night sky: Simply start with what you know or with what you can easily find.

1. Face south. Almost overhead is the "Great Square" with four stars about the same brightness as those of the Big Dipper. Extend an imaginary line southward following the Square's two westernmost stars. The line strikes Fomalhaut, the brightest star in the southwest. A line extending southward from the two easternmost stars, passes Deneb Kaitos, the second bright star in the south.
2. Draw another line, this time westward following the southern edge of the Square. It strikes Altair, part of the "Summer Triangle."
3. Locate Vega and Deneb, the other two stars of the "Summer Triangle. Vega is its brightest member while Deneb sits in the middle of the Milky Way.
4. Jump along the Milky Way from Deneb to Cepheus, which resembles the outline of a house. Continue jumping to the "W" of Cassiopeia, to Perseus, and finally to Auriga with its bright star Capella.

Binocular Highlights

A and B: Examine the stars of the Pleiades and Hyades, two naked eye star clusters.
C: The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval.
D: Sweep along the Milky Way from Altair, past Deneb, through Cepheus, Cassiopeia and Perseus, then to Auriga for many intriguing star clusters and nebulous areas.

Astronomical League *www.astroleague.org/outreach; duplication is allowed and encouraged for all free distribution.*

(Continued from page 1) A word from your editor

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. I will be needing more of your photos & articles than ever to fill up the January AsroNews.

Mele Kalikimaka & Hau'oli Makahiki Hou
(Merry Christmas & Happy New Year)

(Continued from page 2) President's Message

of running the Zoom portion of our membership meetings. Peter has long served as our Webmaster.

We are fortunate to have a good group of dedicated members running the club. Someday it may be your turn to join them.

(Continued from page 7) Meteor Log

The Geminids are known for their broad maximum, producing ZHR of 100 and more over roughly 10–12 hours. During most returns a mass sorting was observed: there is a larger portion of bright Geminids towards the end of the immediate maximum period. Since the Geminids are on a short-period orbit, relatively rapid changes may occur. All observations of each return will help to follow and understand the evolution of this unique stream. Observers should report their rate and magnitude data around the maximum for short intervals (no longer than 15 minutes).

Ursids (015 URS) – This poorly-observed northern hemisphere shower has produced at least two major outbursts (in 1945 and 1986). Further events could have been missed due to weather conditions. The maximum is rather narrow and seems to fluctuate from year to year. Several lesser rate enhancements have been reported from 2006 to 2008, in 2011, 2014, 2015, 2017 and 2020 (visual and video data). The parent comet 8P/Tuttle has an orbital period of 13.6 years and it passed perihelion last on 2021 August 27. In the past, many Ursid peaks occurred when the comet was close to its aphelion, indicating that predictions are difficult. The Ursid radiant is barely circumpolar from Hawaii with the radiant highest in the sky towards the morning. The three day old waxing crescent will not interfere with observations.

Mapping Dark Matter

Webb near-infrared data combined with Chandra X-ray data of the Bullet Cluster show many overlapping objects, including foreground stars, galaxies in galaxy clusters, and distorted background galaxies behind the galaxy clusters.

Image credit: NASA, ESA, CSA, STScI, CXC

H.A.S.
P.O. Box 17671
Honolulu, HI 96817

City Lights and Atmospheric Glow

JAXA (Japan Aerospace Exploration Agency) astronaut Kimiya Yui captured this photo of southern Europe and the northwestern Mediterranean coast from the International Space Station as it orbited 261 miles above Earth on Aug. 30, 2025.

Image credit: JAXA/Kimiya Yui