

THE ASTRONEWS



Volume 74, Issue 2

February 2024

www.hawastsoc.org

A word from your editor by Sapavith 'Ort' Vanapruch

Now that we are no longer in COVID pandemic, HAS is getting more requests for school events. As much as I would like to help with all events, it is not possible. So if you have a telescope and the event is in your area, please sign up and help.



The events in January are "Jefferson Elementary School STEM night" on February 2, 2024 from 4:00 PM - 6:00 PM and "3rd Friday monthly evening Planetarium 2024" at Bishop Museum on February 16, 2024 from 6:00 PM - 9:00 PM.

Our star parties (Club (1/6) & Public (1/13)) were totally opposite in weather at Dillingham Airfield. On 1/6/2024, according to Sue, she said "There are 6 if us here. Clouds are big, but there are clear areas so maybe...;)... It cleared and got better. Folks were able to do astrophotography. The dew came on about 10:30pm so we left at 11:15pm." The public party on 1/13/2024 Steven reported that "Started to cloud up a bit past 7:30, everyone pretty much left by 8:30 I believe. Weird part was that I started to pack up, because I needed to leave with the first group at 8:30, then all of a sudden many others started to pack up as well due to deteriorating sky conditions."

In town party at Geiger and Kahala were not great in January (1/20/2024). Got cloudy at Geiger around 7:30p. 4 visitors and a dog stopped by. A mom and twin boys came from Waiialua. A lady who walked her dog

(Continued on page 11)

Inside this issue:

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

Upcoming Events:

- The next Board meeting is Sun., Feb. 4th 3:30 PM. **(Zoom Meeting)**
- The next meeting is on Tue., Feb. 6th at the Bishop Museum at 7:30 PM. —**Hybrid (In person and Zoom) Meeting**
- Bishop Museum's planetarium show "The Star Tonight" is every 3rd Friday, 2/16/2024, of the month at 7:00 PM

President's Message

February 2024

One of the oldest questions related to astronomy is, "Are we alone?" Our ancestors imagined other beings long before we understood that we lived on one planet among many. Once we learned about the other planets in our solar system, we imagined "little green men" in flying saucers coming from them or from planets that we thought might exist around other stars. Other stories considered the possibility of traveling elsewhere and discovering life there.

In our imaginations, these discoveries were seldom ambiguous. Other life was something we instantly recognized whether it was welcome or threatening. Now, however, we are seriously looking for other life. We may not find that it reveals itself in such an obvious way.

It could happen that way, of course. We might drill into Europa's subsurface ocean and pull up a sample of water teeming with organisms. Intelligent aliens might send us a message or show up in person. However, discovery of other life might be a much more gradual process.

Life on Mars, whether existing or extinct, might have left behind biological markers in the form of gases or organic molecules. These might be possible indicators but not proof of life. We have already seen such data from Mars and Venus.

Searching for life outside our own solar system is even harder. We might be able to identify elevated levels of oxygen on an exoplanet, for example, but there would be exhaustive attempts to find a non-biological explanation before that would be considered credible evidence of life. Other forms of indirect evidence might make life a more and more likely explanation long before a "smoking gun" appears and convinces most skeptics.

Global warming has been understood since the 19th century. Yet even now, when the effects are being felt and there is almost universal consensus among scientists about what is happening, many people remain skeptical. The search for other life may unfold in a similar way (although probably without a group of people profiting from convincing others that other life doesn't exist).

(Continued on page 4)

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

Mark Watanabe
mswatanabe@sbcglobal.net

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

HAS Webmasters
Peter Besenbruch
peter@besenbruch.info

School Star Party Coordinators

Mark Watanabe
mswatanabe@sbcglobal.net

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—February 2024 by Ort

Planets Close to the Moon

Times are Hawaii Standard Time

- Feb 7, 11h, Moon 5.4° SE of Venus; 29° from Sun in morning sky; magnitudes -6.9 and -4.0
- Feb 7, 23h, Moon 4.1° SE of Mars; 23° from Sun in morning sky; magnitudes -6.4 and 1.3
- Feb 8, 14h, Moon 3.1° SE of Mercury; 14° from Sun in morning sky; magnitudes -5.6 and -0.5
- Feb 10, 17h, Moon 1.66° SE of Saturn; 17° and 16° from Sun in evening sky; magnitudes -5.8 and 1.0
- Feb 11, 22h, Moon 0.74° ESE of Neptune; 34° and 33° from Sun in evening sky; magnitudes -7.2 and 7.9; occultation
- Feb 14, 21h, Moon 2.91° NNW of Jupiter; 73° from Sun in evening sky; magnitudes -9.5 and -2.3
- Feb 15, 15h, Moon 3.0° NNW of Uranus; 82° from Sun in evening sky; magnitudes -9.9 and 5.7

Other Events of Interest

Times are Hawaii Standard Time

- Feb 2, 7h, Mercury at aphelion; 0.4667 AU from the Sun
- Feb 9, 15h, Moon at perigee; distance 56.15 Earth-radii; only 19.9 hours after New Moon
- Feb 22, 0h, Venus 0.62° N of Mars; 26° from Sun in morning sky; magnitudes -3.9 and 1.3



Out observing the planets tonight? See if you can spot Comet 62P/Tsuchinshan 1 in January and February 2024 as it tracks from Leo through into Virgo. Credit: Pete Lawrence

Planets in February

<p>♿ Mercury</p> <p>Unlikely to be seen, superior conjunction on 28 February.</p>	<p>♀ Venus</p> <p>Morning planet, visibility deteriorating as it approaches the Sun.</p>	<p>♂ Mars</p> <p>Too low and dim to be seen properly in the morning sky this month.</p>
<p>♃ Jupiter</p> <p>Evening planet, best placed at start of month when still at decent altitude. Position deteriorates through month.</p>	<p>♄ Saturn</p> <p>Not viable this month, solar conjunction on 28 February.</p>	<p>♅ Uranus</p> <p>Evening planet, losing altitude as darkness falls. Currently Close to Jupiter.</p>
<p>♆ Neptune</p> <p>Lost in the evening twilight at the end of the month.</p>	<p>♇ Pluto (Dwarf Planet)</p> <p>is not observable – it will reach its highest point in the sky during daytime and is no higher than 6° above the horizon at dawn.</p>	<p>♁ 4—Vesta (Asteroid)</p> <p>is visible in the evening sky, becoming accessible around 19:13 (GMT+07), 75° above your north-eastern horizon, as dusk fades to darkness.</p>

January 2nd, 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 adopted.

Star Party Reports: Kahala and Geiger were rained out, few guests.

We will be supporting the Bishop Museum on the 12th, and on a Third Friday event, Jan. 19th.

State's lease of Dillingham Airfield expires July 5th. Further discussion of alternative dark sites, with a preference for a Southern view.

Mark Watanabe reported on School Star Parties. Waiolani Judd will be on Jan. 26, Jefferson Elementary on Feb. 2nd. More in April and May, and as usual, volunteers are needed and appreciated.

Ort shared some Lunar pictures, and the Horsehead Nebula, from his Dwarf II, and some pics of an occultation by the moon, and a green flash, of sorts.

Bill showed us 5 hours of exposure on M42 through a C14, processed with PixInsight.

Glenn Martinez shared a powerpoint of his experiences at Stellafane, on the occasion of the 100th anniversary. Lots of interesting information. <https://onedrive.live.com/edit?id=8925D85A245C3D3515305&resid=8925D85A245C3D3515305&ithint=file%2cpptx&authkey=!AF6XD0MTC7-EZCU&wdo=2&cid=8925d85a245c3d35>, if you missed it.

Finally, we viewed a video from the Backyard Astronomy guy, on beginning astrophotography. Get out there!

There were approximately five persons in person, and eleven on Zoom. Meeting adjourned at 9:01 pm.

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

(Continued from page 2) - President's Messgae

On the other hand, in the Star Trek universe, we're less than 40 years from developing warp drive. If a Vulcan ambassador arrives, that will probably convince most people. May the younger members of the club live long (enough to see that day) and prosper!







NASA Interns at Johnson's Rock Yard

A NASA intern wearing a dark-colored polo shirt stands in a rocky outcrop at the aptly named "Rockyard" at NASA's Johnson Space Center in Texas as the sun sets. In the background, another intern sits on a camping chair and the sky is light greyish blue of early dusk.

Image Credit: NASA/James Blair

Hawaiian Astronomical Society
Event Calendar

February 2024						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2 Groundhog Day  3rd Qtr. 1:18 PM Jefferson ES STEM 4:00 PM -->	3 Club Party Dillingham Airfield Sunset 6:02 PM
4 BoD Meeting 3:30PM Zoom	5	6 General Meeting 7:30 PM Hybrid Bishop Museum	7	8	9  New 12:59 PM	10 Public Party Dillingham Airfield Sunset 6:06 PM
11 Super Bowl	12	13	14 Ash Wednesday / Valentine's Day	15	16  1st Qtr. 5:00 AM	17 Public Party Kahala Geiger Sunset 6:11 PM
18	19 Washington's Birthday / Presidents Day	20	21	22	23	24  Full 2:30 AM
25	26	27	28	29	Notes:	

<<Upcoming Star Parties>>

- Public Party-Dillingham February 10 — 7:00 PM**
- Club Party Dillingham February 3 —7:00 PM**
- Public Party Geiger/Kahala February 17 — 6:00 PM**

Upcoming School Star Parties

Date	Time	Location
Feb 2	4:00 PM	Jefferson Elementary School STEM Night

NASA's Night Sky Notes

Constant Companions: Circumpolar Constellations, Part I

By Kat Troche



Winter in the northern hemisphere offers crisp, clear (and cold!) nights to stargazers, along with better views of several circumpolar constellations. What does circumpolar mean when referring to constellations? This word refers to constellations that surround the north and south celestial poles without ever falling below the horizon. Depending on your latitude, you will be able to see up to nine circumpolar constellations in the northern hemisphere. Today, we'll focus on three that have gems within: Auriga, Cassiopeia, and Ursa Minor. These objects can all be spotted with a pair of binoculars or a small to medium-sized telescope.



The counterclockwise circumpolar constellations Auriga, Cassiopeia, and Ursa Minor in the night sky, with four objects circled in yellow labeled: Pinwheel Cluster, Starfish Cluster, Owl Cluster, and Polaris.
Credit: Stellarium Web

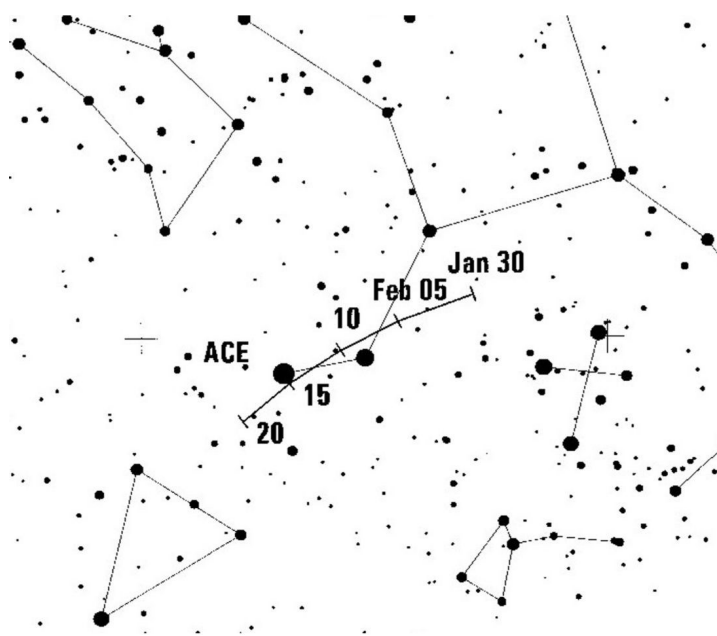
- The Pinwheel Cluster: Located near the edge of Auriga, this open star cluster is easy to spot with a pair of binoculars or small telescope. At just 25 million years old, it contains no red giant stars and looks similar to the Pleiades. To find this, draw a line between the stars Elnath in Taurus and Menkalinan in Auriga. You will also find the Starfish Cluster nearby.
- The Owl Cluster: Located in the 'W' or 'M' shaped constellation Cassiopeia, is the open star cluster known as the Owl Cluster. Sometimes referred to as the E.T. Cluster or Dragonfly Cluster, this group of stars never sets below the horizon and can be spotted with binoculars or a small telescope.
- Polaris: Did you know that Polaris is a triple star system? Look for the North Star on the edge of Ursa Minor, and with a medium-sized telescope, you should be able to separate two of the three stars. This star is also known as a Cepheid variable star, meaning that it

(Continued on page 9)

The Quadrantids (010QUA) peaking on Jan 3/4 were spoiled by bad weather for the most part. I set up the camera in the dark of the backyard and took ~650 snaps at 15 sec each, but wasn't able to capture any meteors, Quadrantids or otherwise. Please report if you were able to see any meteors for this shower.

The α -Centaurids (120ACE) 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, according to Jurgen Rendtel of the IMO. Jurgen goes on to say that the average peak ZHR between 1988–2007 was merely 6 though, coverage has frequently been extremely patchy. Significant activity was reported on 2015 February 14 (airborne observation) although there was no confirmation of an outburst predicted for 2015 February 8. An outburst during 2021

(Continued on page 10)



Phases of the Moon (courtesy timeanddate.com)

First Quarter	Full Moon	Last Quarter	New Moon
February 16	February 24	February 2	February 9

Major Shower	Activity	Maximum		Radiant		V_{∞} km/s	r	ZHR
		Date	λ	α	δ			
α -Centaurids (102 ACE)	Jan 31 – Feb 20	Feb 9	319.4°	211°	-58°	58	2.0	6

A single shower for your meteor observing pleasure! Tom Giguere, 808-782-1408, Thomas.giguere@yahoo.com; Mike Morrow, PO Box 6692, Ocean View, HI 96737

Cash Flow - 12/10/2023 to 1/9/2024

Beginning Balance	\$6,337.28
Money into selected accounts comes from	
Donation	\$62.00
Membership - Electronic	\$86.00
Membership - Family	\$8.00
Membership - Paper	\$102.00
Total Money In	\$258.00
Money out of selected accounts goes to	
Office-supplies	\$230.00
snacks	\$20.53
Subscription – Astronomy	\$34.00
Total Money Out	\$284.53
Difference	-\$26.53
Ending Balance	\$6,310.75

Here are the financials up through January 10.

Thanks to everyone who paid, renewed, and donated. The large “office supplies” payment was for the HAS post office box. In two years, the price has increased from \$176.

I want to remind people of a benefit they have if they choose an electronic membership. If you add family members to your membership form, and pay the extra \$2 per person, be sure to include the added people’s e-mail addresses. They are entitled to their own copy of the Astronews.

Finally, Covid wastewater figures increased sharply in the last month on Oahu. In fact overall Covid numbers in the United States reached the second highest levels of the pandemic, in part due to few precautions being taken. Wastewater figures are trending down on the mainland, but Hawaii figures remain high. Hospitalizations likewise are up, but still manageable (averaging in the lower 70s). Stay safe, and enjoy the stars.



Hubble Views a Vast Galactic Neighborhood

Against the blackness of space, one very large spiral galaxy and three smaller spiral galaxies are prominently visible amidst the other colorful specks of light.

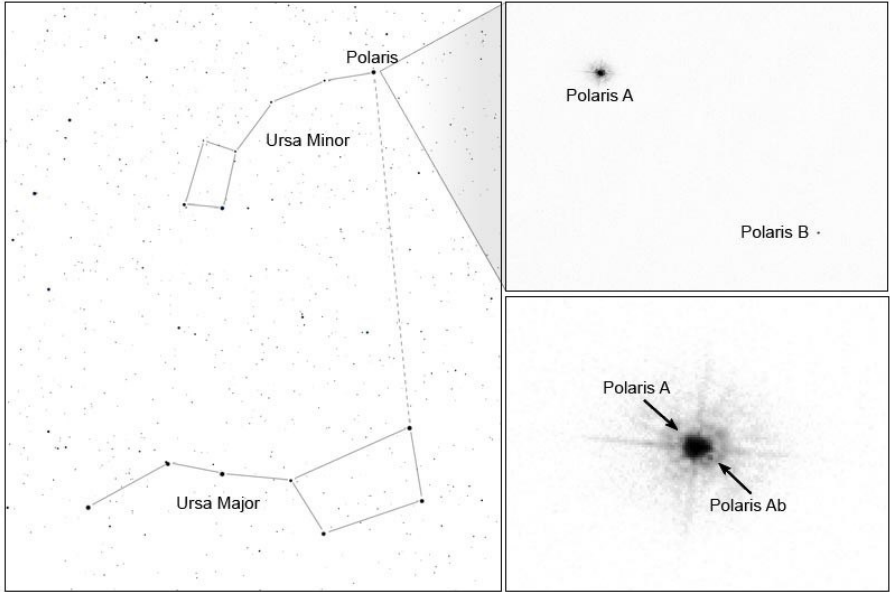
ESA/Hubble & NASA, J. Dalcanton, Dark Energy Survey/DOE/FNAL/NOIRLab/NSF/AURA; Acknowledgment: L. Shatz

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

varies in brightness, temperature and diameter. It's the closest one of its kind to Earth, making it a great target for study and conceptual art.

Polaris • α Ursae Minoris

Hubble Space Telescope • ACS/HRC



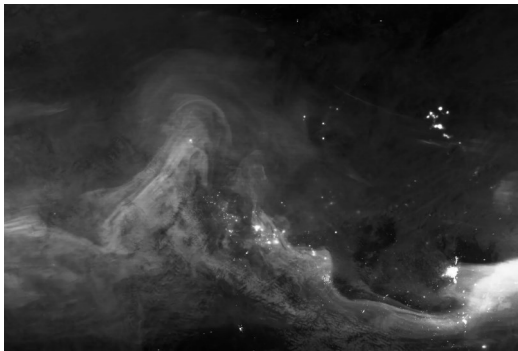
NASA, ESA, N. Evans (Harvard-Smithsonian CfA), and H. Bond (STScI)

STScI-PRC06-02a

A black and white image from the Hubble Telescope of the Polaris star system, showing three stars: Polaris A, Ab, and Polaris B.

Credit: NASA, ESA, N. Evans (Harvard-Smithsonian CfA), and H. Bond (STScI)

Up next, catch the King of the Planets before its gone for the season with our upcoming mid-month article on the Night Sky Network page through NASA's website!



An Aurora in Another Light

The aurora borealis on Nov. 5, 2023, is seen as swirls of white smoke and sparse, but bright splashes of white light against a dark background.

Image Credit: NASA/Lauren Dauphin and Wanmei Liang, NOAA

(Continued from page 7) - Meteor Log

February 13–15 associated with the γ -Crucids (1047GCR) might have been a return of the 120ACE; therefore observers should continue checking for 120ACE activity at least until February 15 also in 2024. Further data is needed to obtain information about the stream which is not clearly detectable recently by visual and video observations. The shower's radiant is nearly circumpolar for much of the southern hemisphere, and is at a useful elevation from late evening onwards. This year the maximum period falls close to new Moon.



A “Green Monster” Lurks in Star’s Debris

This image of Cassiopeia A resembles a disk of electric light with red clouds, glowing white streaks, red and orange flames, and an area near the center of the remnant resembling a somewhat circular region of green lightning. X-rays from Chandra are blue and reveal hot gas, mostly from supernova debris from the destroyed star, and include elements like silicon and iron. X-rays are also present as thin arcs in the outer regions of the remnant. Infrared data from Webb is red, green, and blue. Webb highlights infrared emission from dust that is warmed up because it is embedded in the hot gas seen by Chandra, and from much cooler supernova debris. Hubble data shows a multitude of stars that permeate the field of view.

For the first time, astronomers have combined data from NASA’s Chandra X-ray Observatory and James Webb Space Telescope to study the well-known supernova remnant Cassiopeia A (Cas A). This work has helped explain an unusual structure in the debris from the destroyed star called the “Green Monster,” because of its resemblance to the wall in the left field of Fenway Park.

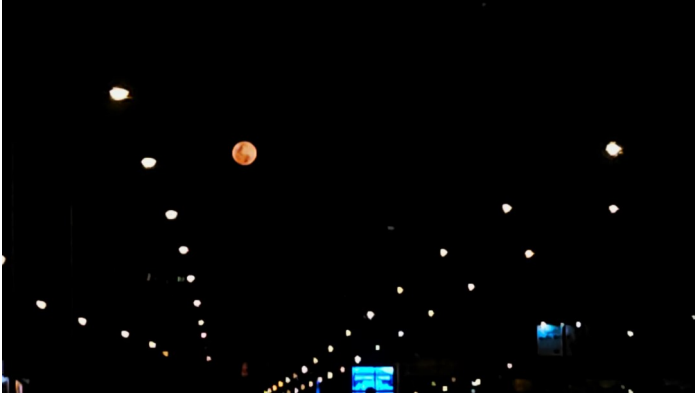
By combining the Webb data with X-rays from Chandra, researchers have concluded that the Green Monster was created by a blast wave from the exploded star slamming into mate-

(Continued on page 11)

(Continued from page 1) - word from your editor

is from Ewa Beach. Kahala had about a dozen guests with 4 members telescopes. They did manage to pull down Andromeda, but seeing was very poor.

Here is my full moon photo from Bangkok while I was heading home from an event. I used my Samsung S23 plus in Pro mode to take this photo.



So if you are observing and able to capture any night sky object. You can share it in AstroNews by email it to me at astronews@hawastsoc.org with some detail. I will post it.

(Continued from page 10) - Green Monster

rial surrounding it. Detailed analysis found that filaments in the outer part of Cas A, from the blast wave, closely matched the X-ray properties of the Green Monster, including less iron and silicon than in the supernova debris. This interpretation is apparent from the color Chandra image, which shows that the colors inside the Green Monster's outline best match with the colors of the blast wave rather than the debris with iron and silicon.

Image Credit: X-ray: NASA/CXC/SAO; Optical: NASA/ESA/STScI; IR: NASA/ESA/CSA/STScI/Milisavljevic et al., NASA/JPL/CalTech; Image Processing: NASA/CXC/SAO/J. Schmidt and K. Arcand

Learn more about the Green Monster. (<https://www.nasa.gov/image-article/nasa-telescopes-chase-down-green-monster-in-stars-debris/>)



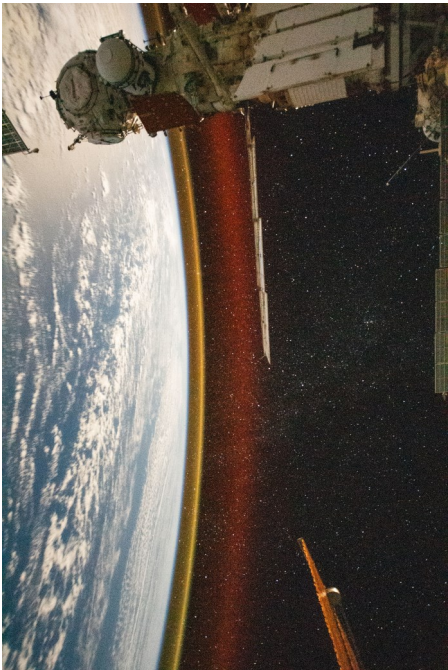
Hubble Captures a Monster Merger

Two galaxies form a teardrop, paisley-like shape at right as they collide. Other galaxies dot the darkness of space. This Hubble Picture of the Week features Arp 122, a peculiar galaxy that in fact comprises two galaxies — NGC 6040, the tilted, warped spiral galaxy and LEDA 59642, the round, face-on spiral — that are in the midst of a collision. This dramatic cosmic encounter is located at the very safe distance of roughly 570 million light-years from Earth.

Image Credit: ESA/Hubble & NASA, J. Dalcanton, Dark Energy Survey/DOE/FNAL/DECam/CTIO/NOIRLab/NSF/AURA Acknowledgement: L. Shatz



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



Earth's Atmospheric Glow

The Pacific Ocean, peppered with bands of white clouds, is seen below a starry sky from the vantage point of the International Space Station. Above the curve of the globe, a well-defined atmospheric glow of yellow-orange is visible, with an additional band of red slightly above. The space station's Nauka science module and Prichal docking module are visible on the left.

Image Credit: NASA, ESA/Andreas Mogensen