THE ASTRONEWS

HUI KILOLANI

Volume 75, Issue 10

October 2025

www.hawastsoc.org

A word from your editor by Sapavith 'Ort' Vanapruks

Bill is still off island. We have no guest speaker for October. However, I have a guest speaker lined up for November. Check Page # for more info. AS for this month, please prepare your photos to share.

The 2025 - 2026 school year is here, the request for a school star party has started to come in. There will also be other organizations like Boy Scouts or Girl Scouts requests that come in also. Your involvement will help with bringing in more club memberships and promoting the club.

There was no school event in September. The only event we did beside the scheduled star parties was Bishop Museum's Star Tonight on Friday, 9/19/2025. There were 2 groups attending The Stars Tonight. 4 HAS members were there (Ort, Sue, Andy, & Hiroko). Weather was not quite cooperating this evening. We were able to show Saturn for a little while (1st group attendees)

September was not a good month for star parties. There was no report for September 13 Dillingham Airfield public star party. The weather for Club Star Party on September 20 & In-town star party on September 27

(Continued on page 11)

Inside this issue:

Upcoming Events:

- The next Board meeting is Sun., Oct 5th 3:30 PM. (**Zoom Meeting**)
- The next meeting is on Tue., Oct 7th 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, 10/17/2025, of the month at 7:00 PM.

President's Message
October 2025

NASA's Perseverance rover has spotted a rock on Mars that displays characteristics consistent with, and difficult to explain without, the presence of ancient life there. Does this prove there was life on Mars? Well, we've been here before. A Martian meteorite found in Antarctica in 1996 showed features apparently consistent with the presence of life. However, after much study, the consensus of scientists was that the features were abiotic in origin.

Some of the characteristics of the recently discovered rock, called Cheyava Falls, are consistent with an abiotic origin as well, but not under the conditions thought to exist when the characteristics formed. Additional study might provide a better understanding. Perseverance has drilled a sample of the rock to add to its cache of samples that it has collected in anticipation of a sample return mission that has been discussed for decades. If the mission is approved and succeeds in returning the samples, the superior equipment in Earth-based laboratories could shed additional light on the origin of these characteristics. Before that can happen, there will be time to consider ways that these features could have arisen without living organisms. Much thought will probably go into that possibility.

If it turns out that living organisms are the most likely cause of the characteristics, the search for other signs of ancient life on Mars will surely intensify. One might expect missions to be designed specifically to search for signs of ancient life, both where it might have existed at the time the Cheyava Falls rock was deposited and where it might have retreated underground as conditions at the surface changed. How long might life have persisted on Mars? Could it still exist today?

An important possibility to rule out would be a kind of reverse panspermia. A large asteroid impact with the early Earth might have produced meteorites that travelled to Mars carrying life or its components. Discovering life on Mars that originated on Earth wouldn't advance our understanding of the origin of life very much, but it would still be a spectacular finding. If life arose independently on Mars, however, that would greatly boost the odds that life is abundant in the universe.

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

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—October 2025 by Ort

Planets Close to the Moon
Times are Hawaii Standard Time

Oct 5, 15h, Moon 3.3° NNW of Saturn; 164° from Sun in evening sky; magnitudes -12.4 and 0.7
Oct 5, 20h, Moon 2.48° NNW of Neptune; 167° from Sun in evening sky; magnitudes -12.5 and 7.8
Oct 9, 21h, Moon 5.2° N of Uranus; 136° from Sun in morning sky; magnitudes -11.7 and 5.6
Oct 13, 15h, Moon 4.2° NNE of Jupiter; 87° from Sun in morning sky; magnitudes -10.0 and -2.2
Oct 19, 9h, Moon 3.3° SSW of Venus; 19° from Sun in morning sky; magnitudes -5.8 and -3.9
Oct 23, 1h, Moon 4.3° SSW of Mars; 22° and 21° from Sun in evening sky; magnitudes -6.0 and 1.5
Oct 23, 6h, Moon 2.18° S of Mercury; 24° and 23° from Sun in evening sky; magnitudes -6.2 and -0.2

Other Events of Interest
Times are Hawaii Standard Time

Oct 1, 18h, Dwarf planet 1 Ceres at opposition in longitude; magnitude 7.6
Oct 5, 16h, Moon, Saturn, and Neptune within circle of diameter 3.83°; about 166° from the Sun in the evening sky; magnitudes -12, 1, 8
Oct 7, 14h, Draconid meteors; ZHR 5; 1 day after Full Moon
Oct 9, 20h, Moon, Uranus, and the Pleiades within circle of diameter 5.20°; about 136° from the Sun in the morning sky; magnitudes -12, 6, 3
Oct 19, 11h, Mercury 1.96° SSW of Mars; 22° from Sun in evening sky; magnitudes -0.2 and 1.5
Oct 20, 14h, Orionid meteors; ZHR 20; 1 day before New Moon
Oct 23, 1h, Moon, Mercury, and Mars within circle of diameter 4.30°; about 22° from the Sun in the evening sky; magnitudes -6, 0, 1
Oct 24, 16h, Moon 0.62° SE of Antares; 39° and 38° from Sun in evening sky; magnitudes -7.4 and 1.0

Planets in October

☿ 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 no higher than 7° above the horizon at dusk

♀ Venus

will soon pass behind the Sun. From Honolulu, however, it is visible in the dawn sky, rising at 04:57 (HST) – 1 hour and 27 minutes before the Sun.

♂ 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 no higher than 13° above the horizon at dusk.

♃ Jupiter

is currently emerging from behind the Sun. From Honolulu, it is visible in the dawn sky, rising at 23:57 (HST) and reaching an altitude of 84° above the eastern horizon before fading from view as dawn breaks at around 06:10.

♄ Saturn

recently passed opposition. From Honolulu, it is visible in the evening sky, becoming accessible around 18:34 (HST), 24° above your eastern horizon, as dusk fades to darkness.

♅ Uranus

is currently visible as a morning object. From Honolulu, it is visible in the morning sky, becoming accessible around 21:50, when it reaches an altitude of 21° above your eastern horizon.

♆ Neptune

recently passed opposition. From Honolulu, it is visible in the evening sky, becoming accessible around 18:59 (HST), 28° above your eastern horizon, as dusk fades to darkness.

♇ Pluto (Dwarf Planet)

is visible in the evening sky, becoming accessible around 18:59 (HST), 45° above your southern horizon, as dusk fades to darkness.

⚳ 1 Ceres (Asteroid)

is visible between 19:33 and 03:41. It will become accessible at around 19:33, when it rises to an altitude of 21° above your eastern horizon.

Meeting Minutes

H.A.S. Secretary

September 2nd 2025 7:30 PM (Bishop Museum Planetarium and Zoom Meeting)
Andy Stroble

President Chris Peterson commented that the seasons are changing, and noted the recent Black Moon, technically the third new moon in a season, kind of the dark equivalent of a Blue Moon. A lunar eclipse September 7-8 will not be visible from our Islands. Approval of the July meeting minutes was postponed, due to the electronic Astronews only being distributed 10 minutes earlier.
President Chris moved that Leilani Gamboa be elected as the School Star Party Coordinator. Motion seconded by Sabina, passed unanimously. Mark will be assisting Leilani in learning the ropes. We have upcoming School star parties at Pearl City Highlands Elementary, and at Iolani School, as well as at Waiawa.

Attending for the first time were Roberta Gomes and Mark Looper

Vice president Bill announce that the club has a donated Meade LX-55 for sale, that needs some work. And he will be giving a evaluation of the Pegasus "Smart Eye" in the future.

Mark displayed massive Pentax telephoto camera lens he recently acquired.

Steven Chun exhibited results of narrow-band monochrome imaging, and applying the Hubble palette, for example M8 (Lagoon Nebula) with 2 hours of exposure each for SII, Hα, and OIII channels.

Shane recorded a meteor trail even though he never saw the object that made it. And he shared images of the Soap Bubble Nebula and the Wall in NGC7000, as well a time-lapse. Strobles presented a slide show of a trip to the Big island, with no Kilauea lava show, but some imaging from Mauna Loa (and Mauna Kea). Sabina shared a variety of images, Veil and Lagoon Nebula, and the Milky Way shot with a Pixel 9 phone. Ort shared a slideshow of the airshow at K-bay, featuring the Blue Angels. President Chris commented that we live in Golden Era of astrophotography, and the Club is better off because of it, and thanked all presenters.

Meeting adjourned at 8:58
There were some persons in person, and at least 12 unique non-local logins on zoom.

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

Circular Star Trails

On July 26, 2025, NASA astronaut Nichole Ayers took this long-exposure photograph – taken over 31 minutes from a window inside the International Space Station's Kibo laboratory module – capturing the circular arcs of star trails.

Image credit: NASA/Nichole Ayers

Hawaiian Astronomical Society
Event Calendar

◄ Sep **October 2025** Nov ►

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
5 BoD Meeting Zoom 3:30 PM	6  Full Moon 5:47PM	7 General Meeting Planetarium 7:30P Hybrid	8	9	10	11 Public Star Party Dillingham Airfield **Gate Closes 6P**
12	13 Columbus Day  3rd Qtr 8:12AM	14	15	16	17 The Stars Tonight Bishop Museum 7:00P - 8:00P	18 Club Star Party Dillingham Airfield **Gate Closes 6P**
19	20	21  New Moon 2:25AM	22 Star Party Halemano ES	23	24	25 Public Star Party Geiger & Kahala Sunset 5:59PM
26	27	28	29  1st Qtr 6:20AM	30	31 Halloween	Notes:

<<Upcoming Star Parties>>

Public Party-Dillingham October 11 — 5:45 PM
Club Party Dillingham October 18 —5:45 PM
Public Party Geiger/Kahala October 25 — 5:59 PM

Upcoming School Star Parties

Date	Time	Location
10/22/2025	6:00 PM	Halemano Elementary School

NASA's Night Sky Notes

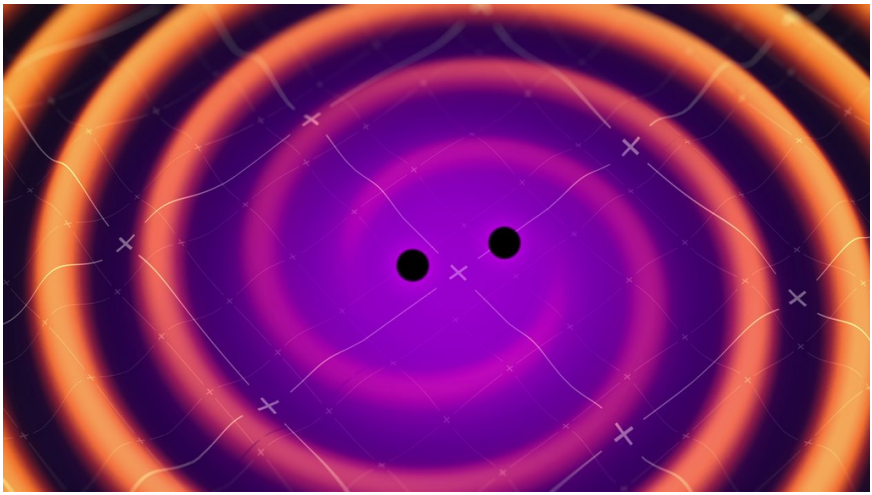
October's Night Sky Notes: Let's Go, LIGO!

By Kat Troche

September 2025 marks ten years since the first direct detection of gravitational waves as predicted by Albert Einstein's 1916 theory of General Relativity. These invisible ripples in space were first directly detected by the Laser Interferometer Gravitational-Wave Observatory (LIGO). Traveling at the speed of light (~186,000 miles per second), these waves stretch and squeeze the fabric of space itself, changing the distance between objects as they pass.

Waves In Space

Gravitational waves are created when massive objects accelerate in space, especially in violent events. LIGO detected the first gravitational waves when two black holes, orbiting one another, finally merged, creating ripples in space-time. But these waves are not exclusive to black holes. If a star were to go super-nova, it could produce the same effect. Neutron stars can also create these waves for various reasons. While these waves are invisible to the human eye, this animation from NASA's Science Visualization Studio shows the merger of two black holes and the waves they create in the process.



Two black holes orbit around each other and generate space-time ripples called gravitational waves in this image.
Credit: NASA's Goddard Space Flight Center Conceptual Image Lab

How It Works

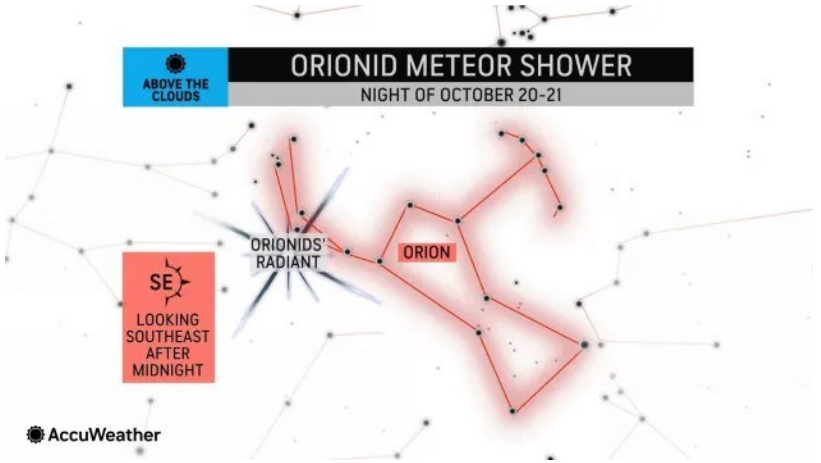
A gravitational wave observatory, like LIGO, is built with two tunnels, each approximately 2.5 miles long, arranged in an "L" shape. At the end of each tunnel, a highly polished 40 kg mirror (about 16 inches across) is mounted; this will reflect the laser beam that is sent from the observatory. A laser beam is sent from the observatory room and split into two, with equal parts traveling down each tunnel, bouncing off the mirrors at the end. When the beams return, they are recombined. If the arm lengths are perfectly equal,

(Continued on page 10)

Meteor Log—October 2025 by Tom Giguere

The Orionids (008 ORI) are a medium strength shower that sometimes reaches high strength activity. In a normal year the Orionids produce 10-20 shower members at maximum. In exceptional years, such as 2006-2009, the peak rates were on par with the Perseids (50-75 per hour). Recent displays have produced low to average displays of this shower.

The Orionids may also provide several lesser maxima and sometimes the activity may be similar for several consecutive nights centred on the main peak. In 1993 and 1998, a submaximum about as strong as the normal peak was detected on October 17/18 from Europe. In 2025, the new moon will provide ideal conditions for observing this shower.



Phases of the Moon (courtesy timeanddate.com)

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

Shower	Activity	Maximum		Radiant		V_∞	r	ZHR
		Date	$\lambda_\odot$	α	δ	km/s		
Oct. Camelopard. (281 OCT)	Oct 05 - Oct 6	Oct 05	192.58°	164°	+79°	47	2.5	5
Draconids (009 DRA)	Oct 06 - Oct 10	Oct 08	195.4°	262°	+54°	20	2.6	5
δ-Aurigids (224 DAU)	Oct 10 - Oct 18	Oct 11	198°	84°	+44°	64	3.0	2
ε-Geminids (023 EGE)	Oct 14 - Oct 27	Oct 18	205°	102°	+27°	70	3.0	3
Orionids (008 ORI)	Oct 02 - Nov 07	Oct 21	208°	95°	+16°	66	2.5	20
Leo Minorids (022 LMI)	Oct 19 - Oct 27	Oct 24	211°	162°	+37°	62	3.0	2

This is the year to see an Orionids (008 ORI) as the Moon greatly affected last year's shower. For more info contact: Tom Giguere, 808-782-1408, Thomas.giguere1@gmail.com.

Treasurer's Report

by Peter Besenbruch

Cash Flow - 8/10/2025 to 9/9/2025

Beginning Balance	**$9,336.29**
Money into selected accounts comes from	
Donation	$8.00
Membership - Electronic	$180.00
Membership - Family	$16.00
Membership - Paper	$78.00
Subscription - Astronomy	$34.00
Total Money In	**$316.00**
Money out of selected accounts goes to	
Snacks	$23.71
Total Money Out	**$23.71**
Difference	**$292.29**
Ending Balance	**$9,628.58**

Here are the financials up through September 9. Thanks to everyone who renewed.

Covid wastewater Oahu figures have dropped to "moderate," reversing an increase begun early to mid March. The lowest levels are found in Ewa Beach. Let's hope the levels keep dropping for a bit.

Hang in there, and enjoy the sky.

Shining Pismis 24

NASA's James Webb Space Telescope captured this sparkling scene of star birth in an image released on Sept. 4, 2025. Called Pismis 24, this young star cluster resides in the core of the nearby Lobster Nebula, approximately 5,500 light-years from Earth in the constellation Scorpius.

Image credit: NASA, ESA, CSA, STScI

Message From Your Vice President
September 2025 by Bill Barr

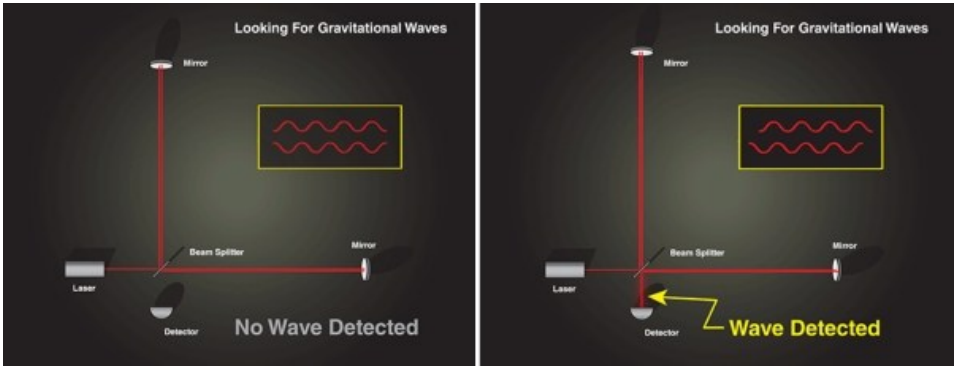
Sales of used equipment are suspended until late-summer. If there's something you're interested in, be sure to email and it will be held for you.

Larry Denneau
Institute for Astronomy, University of Hawai`i
Interstellar Object 31/ATLAS
7:30pm Tuesday November 4 @ Bishop Museum Planetarium. Talk begins @ 7:45pm.

The UH-operated ATLAS telescope system scans the dark sky around the world each night to search for asteroids that might threaten the Earth. In the last year, ATLAS has made two notable discoveries:, the interstellar comet 31/ATLAS, only the third discovered object to have an origin outside our solar system, and asteroid 2024 YR4, an object that has a 1 in 25 chance of hitting the Moon on Dec 22, 2032. In this talk, Larry will describe how ATLAS finds these objects, what we have learned about them so far, and what the future holds for these objects and the ATLAS system.

ATLAS CO-PI and senior software engineer Larry Denneau was the chief software architect of the Pan-STARRS moving object processing system (MOPS) and adapted it to ATLAS. MOPS is a software package that automatically identifies solar system objects (in particular hazardous asteroids) in the ATLAS and Pan-STARRS data streams. Larry has been poking at computer keyboards since the early 80s and received his B.S.E.E. from the University of Arizona, whereupon he quickly escaped academia. His software career has spanned projects ranging from surface metrology for the semiconductor industry, medical scheduling, geophysical instrumentation, and a dot-com Internet startup that actually turned a profit. Now back in academia, Larry received a Ph.D. in astrophysics from Queen's University Belfast and has enthusiastically joined the effort to protect the earth from dangerous asteroids.

(Continued from page 6) NASA's Night Sky Notes
the light waves cancel out in just the right way, producing darkness at the detector. But if a gravitational wave passes, it slightly stretches one arm while squeezing the other, so the returning beams no longer cancel perfectly, creating a flicker of light that reveals the wave's presence.



Still images of how LIGO (Laser Interferometer Gravitational-Wave Observatory) detects gravitational waves using a laser, mirrors, and a detector. You can find the animated version here. Image Credit: NASA

The actual detection happens at the point of recombination, when even a minuscule stretching of one arm and squeezing of the other changes how long it takes the laser beams to return. This difference produces a measurable shift in the interference pattern. To be certain that the signal is real and not local noise, both LIGO observatories — one in Washington State (LIGO Hanford) and the other in Louisiana (LIGO Livingston) — must record the same pattern within milliseconds. When they do, it's confirmation of a gravitational wave rippling through Earth. We don't feel these waves as they pass through our planet, but we now have a method of detecting them!

Get Involved

With the help of two additional gravitational-wave observatories, VIRGO and KAGRA, there have been 300 black hole mergers detected in the past decade; some of which are confirmed, while others await further study.

While the average person may not have a laser interferometer lying around in the backyard, you can help with two projects geared toward detecting gravitational waves and the black holes that contribute to them:

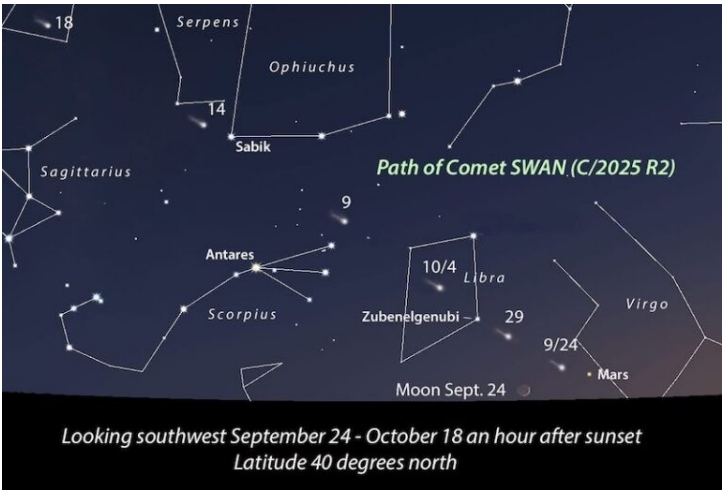
- Black Hole Hunters: Using data from the TESS satellite, you would study graphs of how the brightness of stars changes over time, looking for an effect called gravitational microlensing. This lensing effect can indicate that a massive object has passed in front of a star, such as a black hole.
- Gravity Spy: You can help LIGO scientists with their gravitational wave research by looking for glitches that may mimic gravitational waves. By sorting out the mimics, we can train algorithms on how to detect the real thing.

You can also use gelatin, magnetic marbles, and a small mirror for a more hands-on demonstration on how gravitational waves move through space-time with JPL's Dropping In With Gravitational Waves activity!

(Continued from page 1) A word from your editor
was not great. We could only show Moon at Geiger Park. We had 4 visitors looking through our sidewalk telescope setup.

There was something new in the sky. It was called comet Swan25B. It is a long-period comet discovered on 11 September 2025 by Vladimir Bezugly through SWAN imagery. It came to perihelion one day after discovery on 12 September 2025 at a distance of 0.5 AU (75 million km) from the Sun. The comet will make its closest approach to Earth at a distance of 0.26 AU (39 million km; 24 million mi) on 20 October 2025. It will cross the celestial equator on 3 November 2025. (JPL Horizon SWAN) Let's hope that it gets brighter when it is close to earth.

Left—Comet C/2025 R2 (SWAN) from 9/15/2025 by Ort using Canon 90D and 200mm Lens..
Right—Comet C/2025 R2 (SWAN) from 9/24/2025 by Ort using Dwarf 3
Bottom—Path of Comet C/2025 R2 (SWAN)



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.

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

Dinner is Served!

Dinnertime fare on the International Space Station takes center stage in this Aug. 15, 2025, photo. One tray features shrimp cocktail on whole grain wheat crackers, while the other holds sushi made with seaweed, Spam, tuna, and rice. Both trays are secured with Velcro strips to keep them stable inside the Unity module's galley. The shrimp and crackers are held in place by condiments, while the sushi stays put thanks to surface tension from its moisture.

Image credit: NASA/Jonny Kim