# THE ASTRONEWS

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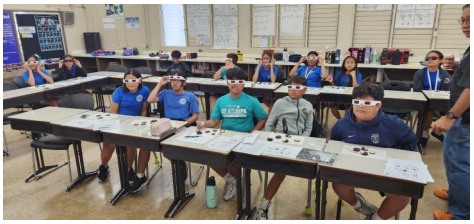
## A word from your editor by Sapavith 'Ort' Vanapruks

School year is over, the request for a school star party will surely be nothing until next fall. That does not mean we will not have a request. There will be other organizations like Boy Scouts or Girl Scouts requests come in. Your involvement will help with bringing in club membership and promoting the club.

There was a school event on Friday, 5/16/2025, at St. Joseph School between 1:00P - 3:00P. The plan was to have a classroom session on Moon Phases with Oreo cookies activity and outdoor activity to view the Sun with 2 groups of students (12 in one group and 14 in another group). However, the weather was not cooperating with us. Steven & Jim set up a 2nd laptop to explain telescope types and discuss planets movement. Students in this session also got to view terrestrial objects near school.



In the evening of Friday, 5/16/2025, Bishop Museum had a monthly "Star Tonight" at 7:00 PM. Attendees would be out around 8:00 PM to view night sky objects with HAS

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## Inside this issue:



### Upcoming Events:

- The next Board meeting is Sun., June 1st 3:30 PM. (**Zoom Meeting**)
- The next meeting is on Tue., June 3rd 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, 6/20/2025, of the month at 7:00 PM

# President's Message
# June 2025

As astronomers, we usually look up into the night sky. Sometimes we observe meteors in our own atmosphere. Other times we look at objects in our own solar system or our galaxy. Sometimes we want to look as far out and back in time as our instruments will allow.

It's easy to forget that Earth is an astronomical object, too. Just because we live on it and can examine it in exquisite detail compared to most other targets doesn't mean it is a different kind of object, just that we have a different perspective on it. We can observe and experience phenomena on Earth that occur on other planets but from a different viewpoint.

Right now we are experiencing the annual march of what we now call Lahaina Noon, the moment when the Sun is directly overhead and vertical objects cast no shadow. On Memorial Day that occurred in Honolulu, the next day in Kailua. The critical point slowly creeps northward while the Earth turns. The motion describes a spiral. Only those places exactly on the line experience a perfect Lahaina Noon, but the difference for the places between the lines is only a small fraction of a degree.

The line moves north until it reaches the tropic of Cancer (~23.5 degrees north) when summer begins, then moves south again until it reaches the tropic of Capricorn when (northern hemisphere) winter begins. However, these latitude limits are not exactly fixed. Earth's obliquity (the tilt of its rotational axis) changes slowly over time. Our Moon keeps it in a narrow range, unlike at Mars which sees much wider swings in obliquity.

Earth's obliquity varies between about 22.1 degrees and 24.5 degrees over a 41,000-year period. It is currently decreasing, and the tropic of Cancer is moving south by about 15m per year.

Earth's axis also wobbles like a spinning top. Polaris is currently only about one degree from north, but it isn't always our North Star as the axis traces a circle on the sky every 26,000 years or so. In about 12,000 years north will be closer to Vega. The tropic of Cancer was named over 2000 years ago when the Sun was in Cancer at the summer solstice. Now we should really be

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THE ASTRONEWS is the monthly newsletter of the Hawaiian Astronomical Society.  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—June 2025 by Ort

**Planets Close to the Moon**
**Times are Hawaii Standard Time**

Jun 1, 2h, Moon 1.32° NE of Mars; 71° and 70° from Sun in evening sky; magnitudes -9.3 and 1.3
Jun 18, 16h, Moon 2.98° NNW of Saturn; 87° from Sun in morning sky; magnitudes -10.0 and 1.0
Jun 18, 17h, Moon 2.19° NNW of Neptune; 86° from Sun in morning sky; magnitudes -10.0 and 7.9
Jun 21, 19h, Moon 6.8° NNW of Venus; 45° from Sun in morning sky; magnitudes -8.0 and -4.2
Jun 22, 16h, Moon 4.8° NNW of Uranus; 33° from Sun in morning sky; magnitudes -7.1 and 5.8
Jun 25, 0h, Moon 5.0° N of Jupiter; 5° and 1° from Sun in morning sky; magnitudes -4.5 and -1.9
Jun 26, 22h, Moon 2.76° NNE of Mercury; 25° from Sun in evening sky; magnitudes -6.4 and 0.2
Jun 29, 16h, Moon 0.40° E of Mars; 59° from Sun in evening sky; magnitudes -8.7 and 1.5

**Other Events of Interest**
**Times are Hawaii Standard Time**

Jun 1, 12h, Venus dichotomy (D-shape)
Jun 6, 14h, Daytime Arietid meteors; ZHR 30; 4 days after First Quarter Moon
Jun 8, 10h, Mercury 1.97° N of Jupiter; 12° from Sun in evening sky; magnitudes -1.2 and -1.9
Jun 9, 5h, Mercury, Jupiter, and M35 cluster within circle of diameter 2.66°; about 12° from the Sun in the evening sky; magnitudes -1, -2, 5
Jun 18, 15h, Moon, Saturn, and Neptune within circle of diameter 2.98°; about 86° from the Sun in the morning sky; magnitudes -10, 1, 8
Jun 22, 15h, Moon, Uranus, and the Pleiades within circle of diameter 4.84°; about 32° from the Sun in the morning sky; magnitudes -7, 6, 3
Jun 25, 0h, Moon, Jupiter, and M35 cluster within circle of diameter 5.04°; only about 2° from the Sun; magnitudes -4, -2, 5

## Planets in June

### ☿ Mercury

recently passed behind the Sun at superior solar conjunction. From Honolulu, however, it will become visible at around 19:33 (HST), 11° above your western horizon, as dusk fades to darkness.

### ♀ Venus

is visible as a morning object, having recently passed greatest elongation west. From Honolulu, it is visible in the dawn sky, rising at 03:02 (HST).

### ♂ Mars

is currently an early evening object, now receding into evening twilight. From Honolulu, it will become visible at around 19:52 (HST), 47° above your western horizon, as dusk fades to darkness.

### ♃ Jupiter

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 1° above the horizon at dusk.

### ♄ Saturn

is currently emerging from behind the Sun. From Honolulu, it is visible in the dawn sky, rising at 01:01 (HST) and reaching an altitude of 55° above the south-eastern horizon before fading from view as dawn breaks at around 05:13

### ♅ Uranus

recently passed 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 8° above the horizon at dawn.

### ♆ Neptune

is currently emerging from behind the Sun. From Honolulu, it is visible in the dawn sky, rising at 01:01 (HST) and reaching an altitude of 50° above the south-eastern horizon.

### ♇ Pluto (Dwarf Planet)

is visible in the morning sky, becoming accessible around 23:48, when it reaches an altitude of 21° above your south-eastern horizon.

### 4 Vesta (Asteroid)

is visible in the evening sky, becoming accessible around 20:14 (HST), 59° above your south-eastern horizon, as dusk fades to darkness.

# Meeting Minutes

H.A.S. Secretary

*May 6th 2025 7:30 PM (Bishop Museum Planetarium and Zoom Meeting)*
*Andy Stroble*

President Chris Peterson called the meeting to order at 7:30 pm.

President Peterson moved the approval of the April minutes, Sue Girard seconded the motion. Passed unanimously.

Reports on activities: IfA open house, Boy Scouts Onizuka Day at UH West Oahu, in-town star parties.

Attending for the first time were Daniel the Photographer, Forrest Rainz , and Kakkala Mohanan of Leeward Community College.

Our speaker for the evening was Matt Wahl, live from the Keck Telescope on Mauna Kea. His energetic presentation gave us a great overview of what astronomy is like with really big telescopes, from artificial stars in sodium layers, ACS and Adaptive optics, to how to win a Nobel prize. He also generously offered a tour to any members visiting the Big Island.

Tom Giguere reported on the recent LPSC (Lunar and Planetary Science Conference) at The Woodlands, Texas. Lots of talks, and poster sessions, and NASA speaking cautiously about the future.

School Star Party Coordinator Heather called for volunteers at an event for 6th graders at St. Joseph's in Waipahu on May 16th (Daytime).
AstroNews Editor Ort reported progress in the T-shirt arena. We may get a price break if we have a large enough of an order. He also shared some photos, partial smiley faces and Onizuka day solar viewing.

Joanne shared photos of her recent trip to Singapore and Taiwan, which naturally included visiting planetariums. Taipei's was particularly, immersive.

Meeting adjourned at 9:06 pm.
There were some 15 persons in person, and at least 7 unique non-local logins on zoom.

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

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*(Continued from page 2) President's Message*
calling it the tropic of Taurus. Astrological terms were also codified long ago and don't usually reflect the changes in Earth's axial orientation. Your "real" Sun sign probably isn't what you think it is.

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Lightning in Southeast Asia

Southeast Asia occupies the bottom two-thirds of the image. The scene is dark except for nighttime lights coming from urban areas, the white and purple glow from a thunderstorm, and green dots from fishing boats. A strip of green airglow is visible across the planet's horizon. A flash of lightning shines brighter than the lights of nearby cities in this Oct. 29, 2024, image taken by astronaut Don Pettit while aboard the International Space Station.

Image Credit: NASA/Don Pettit

***Hawaiian Astronomical Society***
***Event Calendar***

◄ May **June 2025** Jul ►

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---|---|---|---|---|---|---|
| 1<br>BoD Meeting<br>3:30pm Zoom | 2<br>  <br>1st Qtr 5:40pm | 3<br>General Meeting<br>Bishop Museum<br>7:30pm Hybrid | 4 | 5 | 6 | 7<br>Public Star Party<br>Geiger/Kahala<br>Sunset 7:12pm |
| 8 | 9 | 10<br>  <br>Full 9:43pm | 11 | 12 | 13 | 14 Flag Day<br>Public Star Party<br>Dillingham Airfield<br>Gate closes 7:00pm |
| 15 Father's Day | 16 | 17 | 18<br>  <br>3rd Qtr 9:19am | 19 Juneteenth | 20 Summer Solstice (Summer Begins)<br>Star Tonight<br>Bishop Museum | 21<br>Club Star Party<br>Dillingham Airfield<br>Gate closes 7:00pm |
| 22 | 23 | 24 | 25<br>  <br>New 5:02pm | 26 | 27 | 28 |
| 29 | 30 | Notes: | | | | |

## <<Upcoming Star Parties>>

**Public Party Geiger/Kahala June 7 — 7:12 PM**
**Public Party-Dillingham June 14 — 6:30 PM**
**Club Party Dillingham June 21 —6:30 PM**

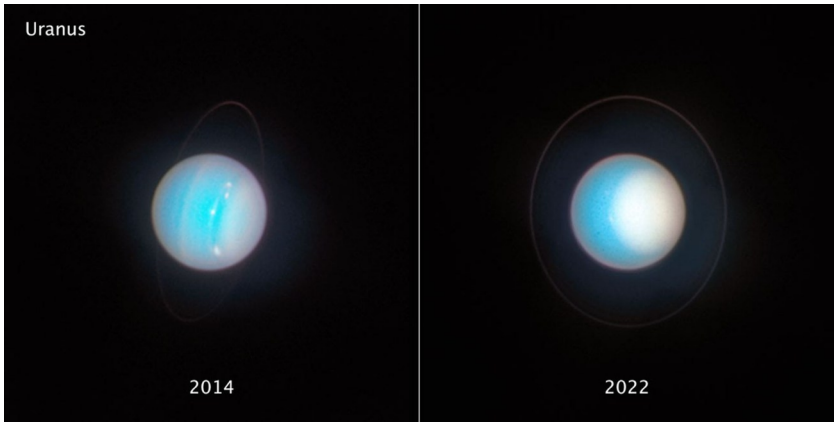
Upcoming School Star Parties

| Date | Time | Location |
|---|---|---|
| | | |
| | | |

# NASA's Night Sky Notes

## June's Night Sky Notes: Seasons of the Solar System

By: Kat Troche

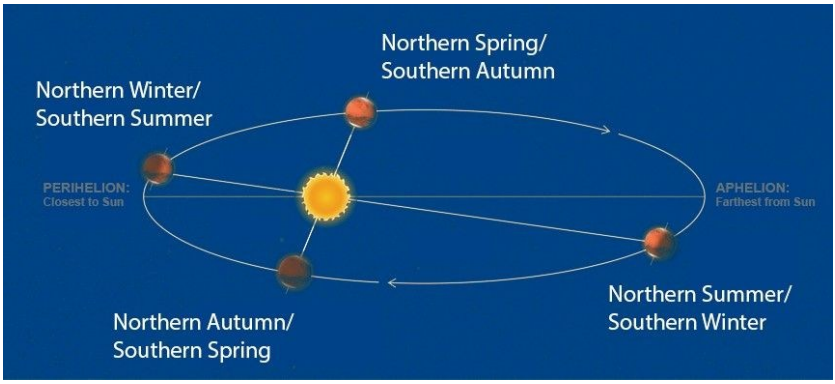



Uranus rolls on its side with an 84-year orbit and a tilt just 8° off its orbital plane. Its odd tilt may be from a lost moon or giant impacts. Each pole gets 42 years of sunlight or darkness. Voyager 2 saw the south pole lit; now Hubble sees the north pole facing the Sun. Credit: NASA, ESA, STScI, Amy Simon (NASA-GSFC), Michael Wong (UC Berkeley); Image

Here on Earth, we undergo a changing of seasons every three months. But what about the rest of the Solar System? What does a sunny day on Mars look like? How long would a winter on Neptune be? Let's take a tour of some other planets and ask ourselves what seasons might look like there.

### Martian Autumn

Although Mars and Earth have nearly identical axial tilts, a year on Mars lasts 687 Earth days (nearly 2 Earth years) due to its average distance of 142 million miles from the Sun, making it late autumn on the red planet. This distance and a thin atmosphere make it less than perfect sweater weather. A recent weather report from Gale Crater boasted a high of -18 degrees Fahrenheit for the week of May 20, 2025.




An artist's rendition of Mars' orbit around the Sun, and its seasons. Credit: NASA/JPL-Caltech

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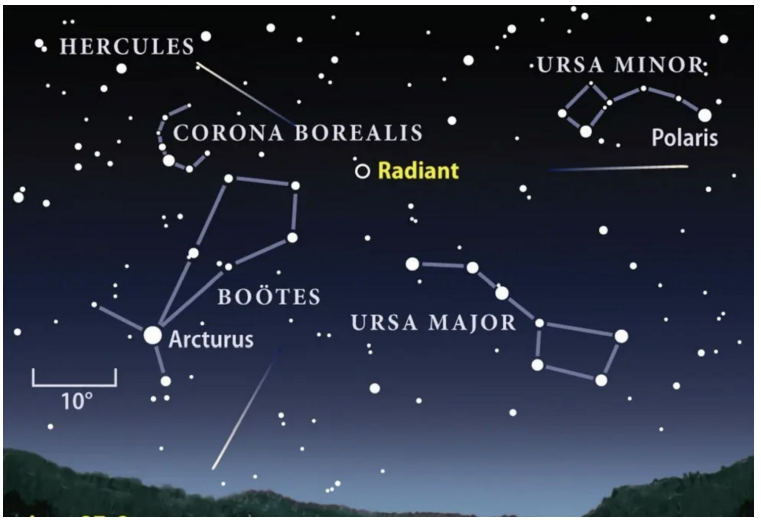
# Meteor Log—June 2025 by Tom Giguere

June is a light month for meteor observing. We focus on the June Bootids, which is typically a very weak shower that occasionally produces outbursts. This shower is known for its unexpected return of 1998 (ZHR 50 − 100+ for more than half a day). Another outburst of similar length (ZHR≈ 20−50) was observed on 2004 June 23. The return predicted in 2010 yielded a poorly established ZHR < 10 on June 23–24. Prior to 1998, only three likely returns had been detected, in 1916, 1921 and 1927 (with variable reliability). The orbit of the parent comet 7P/PonsWinnecke (orbital period about 6.3 years, last perihelion passage on 2021 May 27) currently lies around 0.23 astronomical units outside the Earth's at its closest approach. The 1998 and 2004 events resulted from meteoroids ejected from the comet in the past when the comet was in a different orbit. There are no predictions of peculiar activity published for the 2025 return. Nevertheless, the IMO encourages all observers to monitor the shower throughout the proposed period. The radiant is observable almost all night, however, since this is a summer shower, darkness is limited to about 8 hours. The radiant lies in northwestern Bootes, 15 degrees east of the second magnitude star known as Alkaid (Eta Ursae Majoris). The June-Bootids may be visible in most years around June 20−25 but with activity largely negligible except near λ□ = 92◦ (2025 June 23, 14h UT), radiating from α =216◦, δ = +38◦ which is about ten degrees south of the radiant found in 1998 and 2004 .




**Phases of the Moon** (courtesy timeanddate.com )

| First Quarter | Full Moon | Last Quarter | New Moon |
|---|---|---|---|
| June 2 | June 10 | June 18 | June 25 |

| Shower | Activity | Maximum | | Radiant | | $V_\infty$ | *r* | ZHR |
|---|---|---|---|---|---|---|---|---|
| | | Date | $\lambda_\odot$ | α | δ | km/s | | |
| Dayt. Arietids (171 ARI) | May 14 - Jun 24 | Jun 07 | 76.7° | 43° | +24° | 38 | 2.8 | 30 |
| June Bootids (170 JBO) | Jun 22 - Jul 02 | Jun 27 | 95.7° | 224° | +48° | 18 | 2.2 | Var |

The June Bootids are available for viewing this year. Tom Giguere, 808-782-1408, Thomas.giguere1@gmail.com.

## Treasurer's Report

by Peter Besenbruch

# Cash Flow - 4/10/2025 to 5/9/2025

| | |
|---|---|
| **Beginning Balance** | **$9,670.22** |
| **Money into selected accounts comes from** | |
| | |
| **Total Money In** | **$0.00** |
| **Money out of selected accounts goes to** | |
| Award<br>Subscription - Astronomy | $75.00<br>$170.00 |
| **Total Money Out** | **$245.00** |
| Difference | **-$245.00** |
| **Ending Balance** | **$9,425.22** |

Here are the financials up through May 9.

Thanks to everyone who donated, paid, or renewed.

The May Dillingham Public Star Party surprised everyone who bothered to show up, in spite of the flood advisories. The Club star party started with few clouds that became fewer as the night progressed.

Covid wastewater nation-wide figures remain low, while Oahu figures continue the increase begun since early to mid March. Hang in there; enjoy the sky, and I will not be home to do next month's treasurer's report.

Adding Dimension to Cassiopeia A

A circular-shaped pink and orange cloud of gas and dust with filaments. Stars are visible all around the cloud, and can be seen through it as well. Cassiopeia A (Cas A) is a supernova remnant located about 11,000 light-years from Earth in the constellation Cassiopeia. It spans approximately 10 light-years.

Image credit: X-ray: NASA/CXC/SAO, NASA/JPL/Caltech/NuStar; Optical: NASA/STScI/HST; IR: NASA/STScI/JWST, NASA/JPL/CalTech/SST; Image Processing: NASA/CXC/SAO/J. Schmidt, N. Wolk, and K. Arcand

# Message From Your Vice President
## June 2025

by Bill Barr

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

Webb Finds Icy Disk

This artist's concept illustration, released on May 14, 2025, shows a Sun-like star encircled by a disk of dusty debris containing crystalline water ice. Astronomers long expected that frozen water was scattered in systems around stars.

Image credit: NASA, ESA, CSA, Ralf Crawford (STScI)


Hubble Images a Peculiar Spiral

A beautiful but skewed spiral galaxy dazzles in this NASA/ESA Hubble Space Telescope image. The galaxy, called Arp 184 or NGC 1961, sits about 190 million light-years away from Earth in the constellation Camelopardalis (The Giraffe).

Image credit: ESA/Hubble & NASA, J. Dalcanton, R. J. Foley (UC Santa Cruz), C. Kilpatrick

Pretty in Pink

The spiral galaxy known as Messier 81 (M81) has a rosy tint in this June 1, 2007, composite image that incorporates data from NASA's Spitzer and Hubble Space Telescopes, and NASA's Galaxy Evolution Explorer. Discovered by the German astronomer Johann Elert Bode in 1774, M81 is one of the brightest galaxies in the night sky.

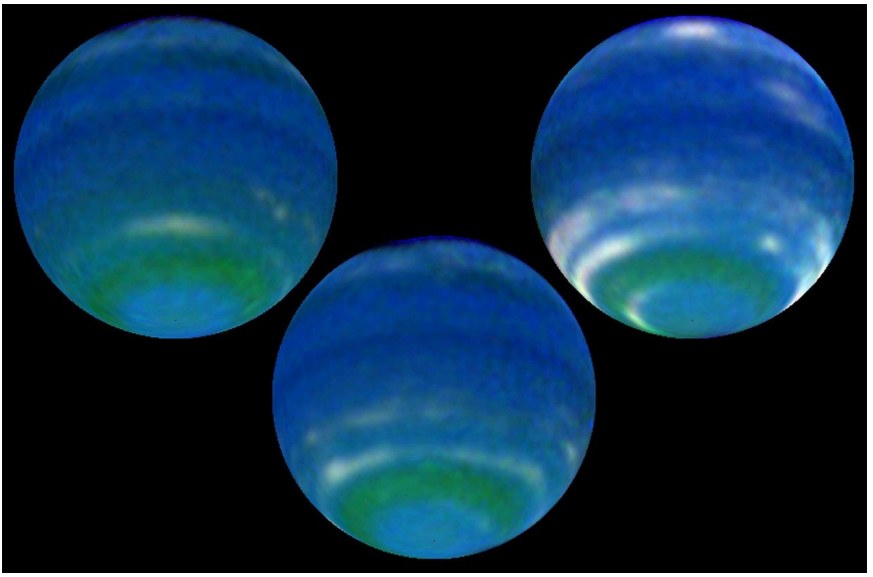
Image credit: NASA/JPL-Caltech/ESA/Harvard-Smithsonian CfA

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

## Seven Years of Summer

Saturn has a 27-degree tilt, very similar to the 25-degree tilt of Mars and the 23-degree tilt of Earth. But that is where the similarities end. With a 29-year orbit, a single season on the ringed planet lasts seven years. While we can't experience a Saturnian season, we can observe a ring plane crossing here on Earth instead. The most recent plane crossing took place in March 2025, allowing us to see Saturn's rings 'disappear' from view.

## A Lifetime of Spring



NASA Hubble Space Telescope observations in August 2002 show that Neptune's brightness has increased significantly since 1996. The rise is due to an increase in the amount of clouds observed in the planet's southern hemisphere. Credit: NASA, L. Sromovsky, and P. Fry (University of Wisconsin-Madison)

Even further away from the Sun, each season on Neptune lasts over 40 years. Although changes are slower and less dramatic than on Earth, scientists have observed seasonal activity in Neptune's atmosphere. These images were taken between 1996 and 2002 with the Hubble Space Telescope, with brightness in the southern hemisphere indicating seasonal change.

As we welcome summer here on Earth, you can build a Suntrack model that helps demonstrate the path the Sun takes through the sky during the seasons. You can find even more fun activities and resources like this model on NASA's Wavelength and Energy activity.


Another Milestone for X-59

NASA's X-59 quiet supersonic research aircraft successfully completed a critical series of tests in which the airplane was put through its paces for cruising high above the California desert – all without ever leaving the ground.

Image credit: Lockheed Martin/Garry Tice

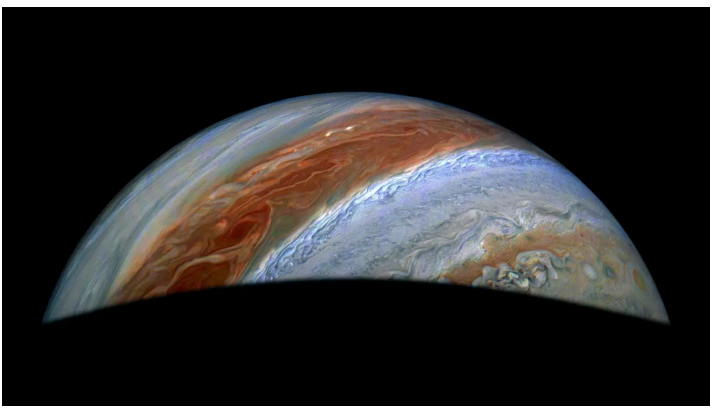
*(Continued from page 1) Editor Notes*
telescopes. Again, the weather worked against us. Sue and I ended up showing the flashing light on top on a downtown building.

As far as our Star Party is concerned, here is what was reported on Discord, the in-town public star party on Saturday, 5/3/2025, was not bad. Sue said "The sky was pretty clear but there was some high-altitude stuff. We had 4 of us and about 6-8 visitors."

Two weeks later, Saturday, 5/17/2025, the Dillingham Airfield star party was a little iffy. Sue said "Wet, rainy, puddles!!! I'm sitting here at our site. I doubt if this will clear. Rainy clouds all over." However, Andy reported later that "Goes to show. We're about to call it, but stuck it out with a half dozen guests, and lo and behold! Clean skies a little after 8. Club members stayed till Eleven." Sue added that "Lots of dew at the end though. Everything was wet." Steve mentioned that he left with the public at 9p.

This past weekend, 5/24/2025, we had 9 members out at Dillingham Airfield for the club star party. The weather was great with no dew. Many of us did astrophotography. 3 of the members left early at 10:00 PM. The rest of us left at 11:45 PM. Let's hope we have photo to show at June club 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.

Jupiter's Turbulent Atmosphere

JunoCam, the visible light imager aboard NASA's Juno spacecraft, captured this view of Jupiter's northern high latitudes during the spacecraft's 69th flyby of the giant planet on Jan. 28, 2025. Jupiter's belts and zones stand out in this enhanced color rendition, along with the turbulence along their edges caused by winds going in different directions. Image credit: Image data: NASA/JPL-Caltech/SwRI/MSSS; Image processing: Jackie Branc (CC BY)

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NASA Astronaut Anne McClain Works on Space Station

An astronaut outside of the International Space Station has one hand on a truss near a solar panel. Her other hand is by her head. Reflected in her helmet is astronaut Nichole Ayers, also in a white spacesuit, taking the photo. Earth's blue water and white clouds can be seen in the background.

Image credit: NASA/Nichole Ayers