

# THE ASTRONEWS



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August 2024

[www.hawastsoc.org](http://www.hawastsoc.org)

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

Our long time member,  
Mike Marrow, passed  
away on July 15, 2024.  
More information in Me-  
teor Log section by Tom.



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. Fall semester is around the corner. Request from school and other organizations such as Boy Scouts & Girl Scouts will surely be coming in. The "3rd Friday monthly evening Planetarium 2024" at Bishop Museum on August 16th, 2024, from 6:00 PM - 9:00 PM is still going on (Full Moon). So, if you have a telescope and the event is in your area, please sign up and help.

Public Star Party on July 6th at Dillingham Airfield was busy. Weather was good for a bunch of girl scouts. I heard there were over 40 visitors there. The week after in-town star party was so so. It was a little cloudy. Geiger had 3 telescopes setup. We had about 7 visitors. Not sure about Kahala. The July 27 club star party was canceled. Weather was bad.

At July "3rd Friday monthly evening Planetarium" on Friday, 7/19/2024, we had better weather in July than June. Visitors were able

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## Upcoming Events:

- The next Board meeting is Sun., Aug 4<sup>th</sup> 3:30 PM. **(Zoom Meeting)**
- The next meeting is on Tue., Aug 6<sup>th</sup> 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, 8/16/2024, of the month at 7:00 PM

*(Continued on page 10)*

# President's Message

## August 2024

As I write this, the 2024 Olympics are underway. The world's best athletes are pushing the limits of what a human body is capable of achieving. Watching them, I decided to investigate some of the most extreme examples in astronomy. What is nature capable of? My research comes from Wikipedia.

Estimates of the largest possible radius for a star range from around 1500 to 1800 times that of the Sun. (For comparison, the orbit of Saturn is a bit more than 2000 solar radii.). The largest star discovered to date is the red supergiant WHO G64, located in the Large Magellanic Cloud. Its size is 1,540 solar radii. However, there are transient events that can temporarily result in much larger stars. Luminous red nova AT2017jfs in NGC 4470 is thought to have reached 33,000 solar radii. At the other end, neutron stars, although more massive than the Sun, can be as small as about 20 km. An even denser type of star, known as a quark star, is thought to be represented by PSR B0943+10, a pulsar 2,000 light years away with a radius of only 2.6 km.

Size doesn't equal mass, though. The mass limit for stable (though relatively short-lived) stars is thought to be about 150 solar masses, although some think that stars formed early in the history of the universe could have reached 300 solar masses, and R136a1 in the LMC has been measured at 215 solar masses. It is thought to have formed through a merger of stars.

Another measure of stars is their luminosity. The brightest stars have an absolute magnitude of about -12. This makes them more than 5 million times as bright as the Sun.

Galaxies are a little harder to pin down since they are collections of stars rather than discrete bodies, but estimates can be made. Luminous supergiant elliptical galaxy ESO 383-76 has a major axis diameter of 1,764,00 light years. The most distant galaxy observed is JADES-GS-z14-0 with a redshift ( $z$ ) of 14.32.

There are even more astronomical objects than events in the Olympics, but that's all the room I have for now. Just like for athletic events, any of these records could be broken tomorrow. Stay tuned.

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# Observer's Notebook—August 2024 by Ort










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

- Aug 5, 12h, Moon, Venus, and Regulus within circle of diameter 2.66°; about 17° from the Sun in the evening sky; magnitudes -5, -4, 1
- Aug 5, 14h, Moon 1.57° NNE of Venus; 18° and 17° from Sun in evening sky; magnitudes -5.6 and -3.9
- Aug 5, 21h, Moon 6.8° NNE of Mercury; 21° and 20° from Sun in evening sky; magnitudes -5.9 and 1.7
- Aug 20, 17h, Moon 0.44° N of Saturn; 161° from Sun in morning sky; magnitudes -12.3 and 0.7; occultation
- Aug 21, 13h, Moon 0.74° N of Neptune; 150° from Sun in morning sky; magnitudes -12.0 and 7.8
- Aug 25, 16h, Moon, Uranus, and the Pleiades within circle of diameter 5.31°; about 94° from the Sun in the morning sky; magnitudes -10, 6, 3
- Aug 27, 2h, Moon 5.6° N of Jupiter; 76° from Sun in morning sky; magnitudes -9.6 and -2.3
- Aug 27, 15h, Moon 5.3° N of Mars; 70° from Sun in morning sky; magnitudes -9.2 and 0.8

## Other Events of Interest Times are Hawaii Standard Time

- Aug 8, 16h, Moon at apogee; distance 63.55 Earth-radii
- Aug 11, 14h, Perseid meteors; ZHR 100; 1 day before First Quarter Moon
- Aug 14, 6h, Mars 0.31° N of Jupiter; 66° from Sun in morning sky; magnitudes 0.8 and -2.2
- Aug 18, 16h, Mercury at inferior conjunction with the Sun; 0.616 AU from Earth; latitude -6.94°
- Aug 20, 14h, Moon at perigee; distance 56.47 Earth-radii
- 1 August: Waning crescent Moon lies near M35 after rising (am)
- 5 August: Jupiter, Mars and Aldebaran form a right-angled triangle (am)
- 9 August: Double shadow transit of Jupiter (am)
- 12 August: Peak of the Perseid meteor shower
- 21 August: Saturn occulted by the Moon (am)

## Planets in August

<p> <b>Mercury</b></p> <p>will soon pass in front of the Sun at inferior solar conjunction. From Honolulu, it is not readily observable since it is very close to the Sun, at a separation of only 8° from it.</p>	<p> <b>Venus</b></p> <p>recently passed behind the Sun at superior solar conjunction. From Honolulu, however, it will become visible at around 19:15 (HST), 10° above your western horizon, as dusk fades to darkness.</p>	<p> <b>Mars</b></p> <p>is currently emerging from behind the Sun. From Honolulu, it is visible in the dawn sky, rising at 01:16 (HST) and reaching an altitude of 57° above the eastern horizon before fading from view as dawn breaks at around 05:36.</p>
<p> <b>Jupiter</b></p> <p>is currently emerging from behind the Sun. From Honolulu, it is visible in the dawn sky, rising at 01:15 (HST) and reaching an altitude of 61° above the eastern horizon before fading from view as dawn breaks at around 05:53.</p>	<p> <b>Saturn</b></p> <p>is currently approaching opposition and is visible as a morning object. From Honolulu, it is visible in the morning sky, becoming accessible around 21:10, when it reaches an altitude of 11° above your eastern horizon.</p>	<p> <b>Uranus</b></p> <p>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 71° above the eastern horizon before fading from view as dawn breaks at around 05:12.</p>
<p> <b>Neptune</b></p> <p>is currently approaching opposition and is visible as a morning object. From Honolulu, it is visible in the morning sky, becoming accessible around 22:30, when it reaches an altitude of 21° above your eastern horizon.</p>	<p> <b>Pluto (Dwarf Planet)</b></p> <p>is visible from soon after it rises, at 20:51, until soon before it sets at 08:56.</p>	<p> <b>1—Ceres (Asteroid)</b></p> <p>is visible in the evening sky, becoming accessible around 19:55 (HST), 33° above your south-eastern horizon, as dusk fades to darkness.</p>

*July 2<sup>nd</sup>, 2024 7:30 PM (Bishop Museum Planetarium and Zoom Meeting)*

*Andy Stroble*

Meeting called to order at 7:30pm by President Chris Peterson.  
Minutes of previous meeting unanimously adopted.

School star parties. Request to participate in Lacey Veach Day.  
Parking fee at Bishop Museum has increased.

Ryan Aipa of Kamehameha School Maui, winner of the HAS Special Award in the 2024 Hawaii State Science & Engineering Fair, presented his project, “KIC 9832227 Proto Red Nova Candidate”. Ryan plans to attend St. Martin’s College after he graduates.

China’s Chang’e 6 achieved sample returns from the Moon. Jupiter’s GRS may not be the same spot observed by Cassini.

Ort shared photos of Sol, star trails, and a moonshot of M57, not to mention the Strawberry Moon.

Shane shared shots of M27, the Dumbell Nebula, and the Iris Nebula, Pillars of Creation, and M45 and the Sombrero Galaxy. Plus a picture of the Milky Way taken with an iPhone from Mauna Kea. And more.

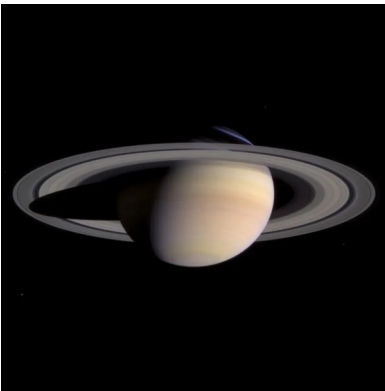
Strobles shared their latest quest for the legendary dark skies of southern Utah, with some astrophotography (Dwarf II and otherwise) and a report on a star party at Capitol Reef National Park.

Tom reported that Member Mike Morrow entered the hospital. We wish him our best.

Peter treated us to more things that go “boom”, especially the rocket engine testfire that accidentally became a launch when the clamps failed. It’s not exactly “clamp science”.

Meeting adjourned at 9:01 pm.  
There were 12 persons in person, and 15 zoom logins.

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



Cassini Sees Saturn

The Cassini-Huygens spacecraft captured this last “eyeful” of Saturn and its rings on March 27, 2004, as it continued its way to orbit insertion. This natural color image shows the color variations between atmospheric bands and features in the southern hemisphere of Saturn, subtle color differences across the planet’s middle B ring, as well as a bright blue sliver of light in the northern hemisphere – sunlight passing through the Cassini Division in Saturn’s rings and being scattered by the cloud-free upper atmosphere.

Image Credit: NASA/JPL/Space Science Institute

# Hawaiian Astronomical Society Event Calendar

August 2024						
← Jul						Sep →
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3 Club Party Dillingham Airfield Gate Close 7 PM
4  New 1:13 AM BoD Meeting 3:30 PM Zoom	5	6 General Meeting Bishop Museum 7:30 PM Hybrid	7	8	9	10 Public Party Geiger/Kahala Sunset 7:04 PM
11	12  1st Qtr 5:18 AM	13	14	15	16 3rd Friday 6 - 9 PM Planetarium Bishop Museum	17
18  Full 8:25 AM Sturgeon Moon	19	20	21	22	23	24 Public Party Dillingham Airfield Gate Close 7 PM
25  3rd Qtr 11:25 PM	26	27	28	29	30	31

## <<Upcoming Star Parties>>

**Club Party Dillingham August 3 —7:00 PM**  
**Public Party Geiger/Kahala August 10 — 7:00 PM**  
**Public Party-Dillingham August 24 — 7:00 PM**

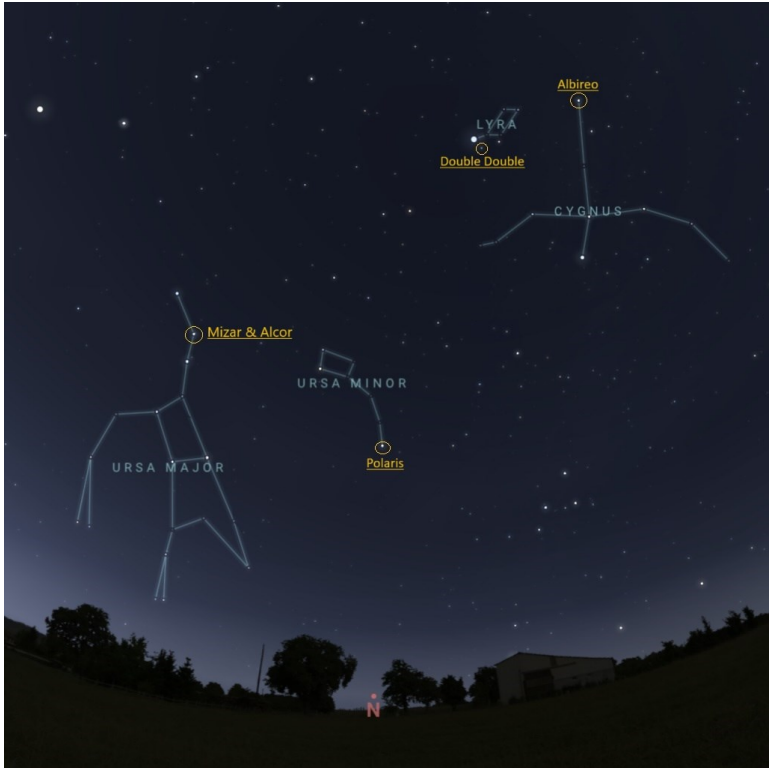
### Upcoming School Star Parties

Date	Time	Location



By Kat Troche

During the summer months, we tend to miss the views of Saturn, Jupiter and other heavenly bodies. But it can be a great time to look for other items, like globular star clusters such as Messier 13, open star clusters such as the Coma Star Cluster (Melotte 111), but also [double stars](#)!



Mid-August night sky constellations with the following multiple star systems highlighted: the Double Double in Lyra, Albireo in Cygnus, Polaris in Ursa Minor, Mizar and Alcor in Ursa Major. Credit: Stellarium Web

### What Are Double Stars?

If you have seen any movies or read any books that refer to having two suns in the sky, that would be a double star system. These star systems typically come in two types – binary and optical doubles. Binary stars are two stars that are gravitationally bound and orbit each other, and optical double stars only appear to be close together when viewed from Earth, but in

*(Continued on page 9)*

Plenty of meteor news this round... some good, some sad. First the sad news, founder of Meteor Group Hawaii, Mike Morrow passed away on July 15th, 2024. I have been digging into Mike’s history a bit and with my initial findings it’s clear that he has contributed much to amateur astronomy in general, and meteor observing in particular. He has been a member of HAS for over 50 years (exact date TBD) and was the original author of the Meteor Log (this article). I think his main contribution was inspiring many club members to get involved with meteor observing. We have a very active group that observes major and minor showers and will continue the tradition with the Perseid meteor shower this month. Prior to the cell phone era, he obtained his ham radio license and used this tool to communicate with other members observing on other islands. Radio frequencies were also used to “observe” meteors at night and during the daylight hours. Mike will truly be missed by all. Services will be held on Friday, August 23rd and HAS members will be welcome to attend, pls contact me for specific details.



*(Continued on page 11)*

Michael Joseph Morrow, 86, of Ewa Beach, Hawaii passed away on July 15, 2024. He was born in Philadelphia, Pennsylvania on August 24, 1937, to Joseph Morrow and Lillie Willner. He leaves behind his beloved daughter Malia Morrow, a wonderful son-in-law Sean Sherwood, and adoring grandson Kona Morrow.

**Family Remembrance**

AUG 23. 11:00 AM - 12:00 PM (hst)

Church of Jesus Christ of Latter Day Saints - Ewa Beach  
91-1154 North Road Ewa Beach, HI 96706

**Funeral Service**

AUG 23. 12:00 PM - 1:00 PM (HST)

Church of Jesus Christ of Latter Day Saints - Ewa Beach  
91-1154 North Road Ewa Beach, HI 96706

**Interment**

AUG 23. 3:00 PM (hst)

Valley of the Temples Memorial Park  
47-200 Kahekili Highway Kaneohe, HI 96744

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

First Quarter	Full Moon	Last Quarter	New Moon
August 12	August 19	August 25	August 4

Shower	Activity	Maximum		Radiant		V <sub>∞</sub> km/s	r	ZHR
		Date	λ	α	δ			
η-Eridanids (191 ERI)	Jul 31- Aug 19	Aug 08	135°	41°	-11°	64	3.0	3
Perseids(007 PER)	Jul 17- Aug 24	Aug 12	140°	48°	+58°	59	2.2	110
κ-Cygnids (012 KCG)	Aug 03- Aug 25	Aug 17	144°	286°	+59°	23	3.0	3
α-Aurigids (206 AUR)	Aug 28- Sep 05	Aug 31	158.6°	91°	+39°	66	2.5	6

Observe the Perseids after midnight the Moon won’t bother you! For more info contact: Tom Giguere, 808-782-1408, Thomas.giguere@yahoo.com.

# Cash Flow - 6/10/2024 to 7/9/2024

<b>Beginning Balance</b>	<b>\$6,733.73</b>
<b>Money into selected accounts comes from</b>	
Membership – Electronic	\$80.00
<b>Total Money In</b>	<b>\$80.00</b>

<b>Money out of selected accounts goes to</b>	
Astronomical League	\$424.00
<b>Total Money Out</b>	<b>\$424.00</b>
Difference	-\$344.00

<b>Ending Balance</b>	<b>\$6,389.73</b>
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Here are the financials up through July 9.

Thanks to everyone who paid, or renewed. The large expenditure is due to our yearly payment to the Astronomical League. How do we benefit? In part everyone receives a subscription to the Reflector Magazine. We also get access to liability insurance (for which we pay separately).

Covid wastewater figures range from moderately high to very high, and the trend has been down over most of Oahu. Be careful out there, as school starts now. Remember to mask indoors, or in a crowd.



Apollo 11 Lifts Off

55 years ago on July 16, 1969, NASA's Apollo 11 spacecraft launched from the agency's Kennedy Space Center in Florida, as seen in this photo. Astronauts Neil Armstrong, Michael Collins, and Buzz Aldrin were aboard.

Apollo 11's primary mission objective was to fulfill a national goal set by President John F. Kennedy on May 25, 1961: perform a crewed lunar landing and return safely to Earth before the decade ended. Additional flight objectives included scientific exploration by the lunar module (LM) crew, deployment of a television camera to transmit signals to Earth, and deployment of a solar wind composition experiment, seismic experiment package, and a Laser Ranging Retroreflector. During the exploration, Armstrong and Aldrin were to gather samples of lunar-surface materials for return to Earth. They also were to extensively photograph the lunar terrain, the deployed scientific equipment, the LM spacecraft, and each other, both with still and motion picture cameras.

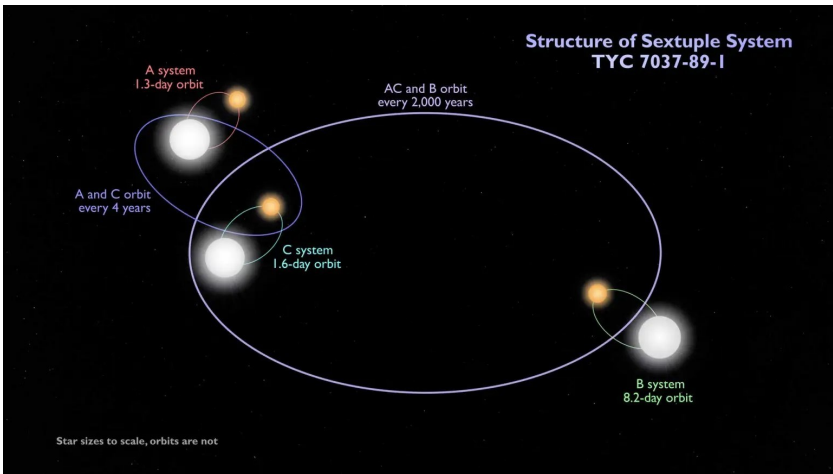
Image credit: NASA



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

reality, are extremely far apart from another, and are not affected by each other's gravity. With a small telescope, in moderately light polluted skies, summer offers great views of these stellar groupings from the Northern Hemisphere:

- **Double Double:** also known by its technical name, Epsilon Lyrae, this multiple star system appears as one star with naked eye observing. But with a small telescope, it can be split into 'two' stars. A large telescope reveals Epsilon Lyrae's secret – what looks like a single star is actually a quadruple star system!
- **Albireo:** a gorgeous double star set – one blue, one yellow – in the constellation Cygnus.
- **Polaris:** while technically a multiple star system, our North Star can easily be separated from one star to two with a modest telescope.
- **Mizar and Alcor:** located in the handle of the Big Dipper, this pair can be seen with the naked eye.



This schematic shows the configuration of the sextuple star system TYC 7037-89-1. The inner quadruple is composed of two binaries, A and C, which orbit each other every four years or so. An outer binary, B, orbits the quadruple roughly every 2,000 years. All three pairs are eclipsing binaries. The orbits shown are not to scale. Credit: NASA's Goddard Space Flight Center

Aside from looking incredible in a telescope or binoculars, double stars help astronomers learn about measuring the mass of stars, and about stellar evolution. Some stars orbit each other a little too closely, and [things can become disastrous](#), but overall, these celestial bodies make for excellent targets and are simple crowd pleasers.

Up next, learn about the Summer Triangle's hidden treasures on our mid-month article on the [Night Sky Network](#) page.

*(Continued from page 1) Editor Notes*

to see 98% gibbous Moon and enjoy it. However, Moon was just too bright to show anything else.

On Monday, 7/15/2024, at 12:37 PM, was the 2nd Lahaina Noon of this year. I stepped outside my office to take photos and video of the event. I will show the video at the meeting.

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](mailto:astronews@hawastsoc.org) with some detail. I will post it. Clear Night everyone.



Two Years Since Webb's First Images: Celebrating with the Penguin and the Egg

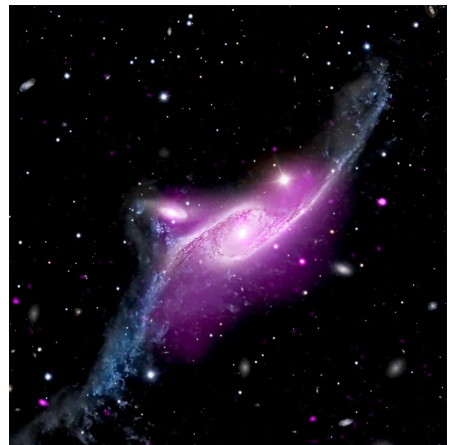
Arp 142, two interacting galaxies, observed in near- and mid-infrared light. At left is NGC 2937, nicknamed the Egg. Its center is the brighter and whiter. There are six diffraction spikes atop its gauzy blue layers. At right is NGC 2936, nicknamed the Penguin.

Image Credit: NASA, ESA, CSA, STScI

#### Chandra Sees the Peacock's Galaxy

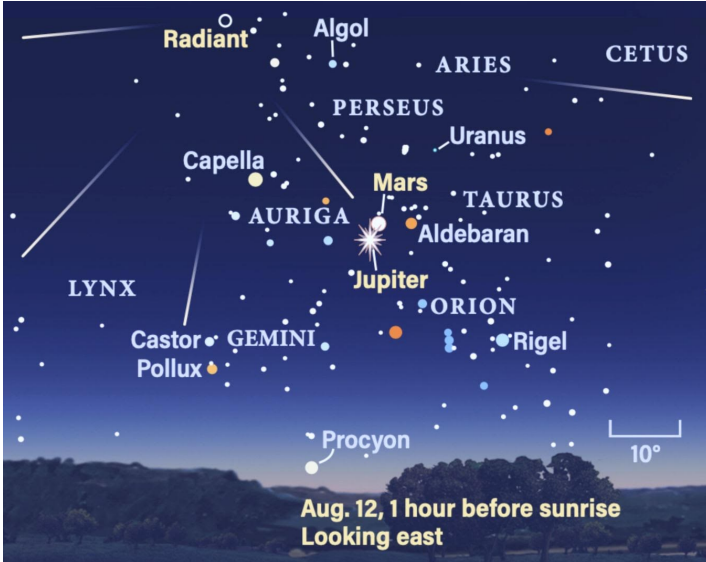
In this composite image, a large spiral galaxy has some of its superheated gas stolen by a smaller, nearby neighbor. Centered in the frame, NGC 6872 is a large spiral galaxy with two elongated arms that stretch toward our upper right and lower left.

Image credit: X-ray: NASA/CXC/SAO; Optical: NASA/ESA/STScI; Image Processing: NASA/CXC/SAO/J. Schmidt, L. Fratcare, and J. Major



(Continued from page 7) - Meteor Log

Perseids(007 PER) - Great year for the Perseids, time to get out to a dark location and check them out. The orbital period of the Perseid parent comet 109P/Swift-Tuttle is about 130 years. The Perseids produced strong activity from a primary maximum throughout the 1990s. Enhanced activity was last observed in 2016 due to passages through separated dust trails. A filament crossing occurred on 2018 August 12 around 20h UT ( $\lambda \approx 139.^\circ 79$ ) at the predicted position. (A filament is thought to be an accumulation of meteoroids in a mean-motion resonance.) High activity well after the main peak has been reported during some recent returns. On 2021 August 14, shortly after 08hUT ( $\lambda \approx 141.^\circ 48$ ), a sharp increase of the ZHR— more than 100 above the basic level – was observed by different techniques. This was about 1.5 days after the nodal maximum and about 0.7 days after the lesser late maxima in 2018 and 2020. Nothing similar has been observed during the 2022 return. The first quarter Moon will set around midnight, thus the early morning hours are best for viewing.



Perseid meteor shower radiant together with Mars and Jupiter in the morning sky.  
Credit: Astronomy.com/Roen Kelly.



Explorers on the Moon: Apollo 11 Landing

On July 20, 1969, astronauts Neil Armstrong and Buzz Aldrin landed on the Moon in the lunar module “Eagle.” Afterward, Aldrin posed for this photo, taken by Armstrong, beside the United States flag.

Image credit: NASA



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Hubble Images a Classic Spiral

This NASA/ESA Hubble Space Telescope image treats viewers to a wonderfully detailed snapshot of the spiral galaxy NGC 3430 that lies 100 million light-years from Earth in the constellation Leo Minor.

Image credit: ESA/Hubble & NASA, C. Kilpatrick