IAAS Monthly Astronomy Newsletter October 2025

The International Association for Astronomical Studies provides this newsletter as a service for interested persons worldwide.

This newsletter is published on the World Wide Web at The Home of KIØAR - and is received nationally and internationally. Download the PDF formatted version of the newsletter.

An Open Invitation - For amateur radio operators and scanner enthusiasts around the world, please join the Colorado Astronomy Net on the Rocky Mountain Radio League's **K1DUN** repeater on **449.450 MHz** or other digital and analog repeaters, Allstar nodes, Echolinks, DMR and internet links connected to the SKYHUBLINK system. The net meets on Tuesday nights at 7 P.M. Mountain Time (US) (Wednesday at 0100 GMT). Connecting to the SkyHubLink system has expanded our coverage in the U.S., Canada and internationally. All Amateur radio operators worldwide are welcome. Anyone may listen to the net. The RMRL provides a "Live Audio Feed" using Broadcastify.

The Colorado Astronomy Net is now on YouTube!! All are welcome to join us Tuesday evenings!

Obtain your Amateur Radio (Ham) License or your General Radio Operator's License (GROL)! Visit the South Metro VE Team website for more information. The South Metro VE Team provides test sessions by appointment only. Check the website for current information. All others interested in Amateur Radio, check out the Amateur Radio Relay League website to find out more information about becoming an Amateur Radio operator.

The Colorado Astronomy Net and the IAAS are on Facebook page. Be sure to "Like" us.

Donate to the IAAS!
Your contributions are tax deductible.
Thank you for your support!

Excerpts from JPL mission updates are provided as a public service as part of the JPL Solar System Ambassador / NASA Outreach program.

"Mercury (top) and Mars appear in a patch of clear sky near the top of this photo during their 2024 conjunction. This month brings another meeting of the two planets." Astronomy Magazine, October 2025, p. 28. - GIANNI TUMINO

In This Newsletter...

The Month At-A-Glance

The current month's calendar displaying the daily astronomical events.

The Moon

Phases:

- Full Moon occurs on the 6th.
- Last Quarter Moon occurs on the 13th.
- New Moon occurs on the 21st.
- First Quarter Moon occurs on the 29th.

- The Moon is at perigee (223,581 miles from Earth) on the 8th.
- The Moon is at apogee (252,553 miles from Earth) on the 23rd.

Moon/Planet Pairs:

- The Moon passes 0.05° south of Pluto on the 1st.
- Mercury passes 1.9° north of Spica on the 2nd.
- The Moon passes 4° north of Saturn on the 5th.
- The Moon passes 3° north of Neptune on the 6th.
- The Moon passes 5° north of Uranus on the 10th.
- The Moon passes 4° north of Jupiter on the 13th.
- The Moon passes 1.2° north of Regulus on the 16th.
- The Moon passes 4° south of Venus on the 19th.
- Mercury passes 2° south of Mars on the 21st.
- The Moon passes 5° south of Mars on the 23rd.
- The Moon passes 2° south of Mercury on the 23rd.
- The Moon passes 0.5° south of Antares on the 24th.
- Jupiter passes 7° south of Pollux on the 27th.
- The Moon passes 0.1° north of Pluto on the 29th.
- Venus passes 4° north of Spica on the 31st.

For reference: The Full Moon subtends an angle of ~0.5°.

Calendar of All Astronomical Events 2025

Weekly Rocket Report

Courtesy of "The Rocketman" Ed W6RDZ
Updated Weekly on Tuesday evenings
prior to the Colorado Astronomy Net

The Planets & Dwarf Planets

Planetary Reports are generated by "TheSkyX" software. These reports provide predicted data for the planets on the first of each month for the current year. The rise and set times for the Sun and the Moon for each day of the month as well as meteor shower radiants are also included in the reports. These reports have been optimized for the Denver, Colorado location, however, the times will be approximate for other locations on Earth.

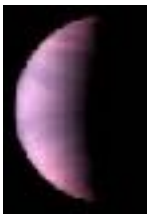
(Times are Mountain Time (MST/MDT) unless otherwise noted. Times will vary slightly depending on your location.)

Planetary Highlights for October

"October's longer nights bring two transits of Titan across Saturn, while Io and Europa tango together across Jupiter three times. Mercury and Mars make a brief evening appearance, and Venus dominates the morning sky. Plus, the fine Orionid meteor shower occurs during the dark of the Moon." Astronomy Magazine, October 2025, p.28.

Mercury

Mercury is at greatest eastern elongation (24°) on the 29th. Mercury sets at 7:13 p.m. on the 1st and about 6:55 p.m. by month's end. Mercury is visible about 30 minutes after sunset just above the western horizon. Mercury moves from the constellation of Virgo into Scorpius shining at magnitude -0.1 on the 31st.



Venus

Rises about 4:57 a.m. on the 1st and about 6:06 a.m. by month's end. Look for Venus to the east about an hour before sunrise. Venus moves from the constellation of Leo into Virgo shining at magnitude -3.9 on the 15th.

Earth

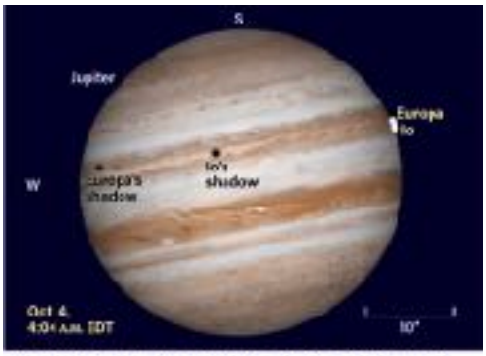
N/A.

Mars

Sets at 7:49 p.m. on the 1st and about 6:50 p.m. by month's end. Look for Mars low to the west in the evening about 30 minutes after sunset. Mars moves from the constellation of Virgo into Libra shining at magnitude 1.5.

Jupiter

Rises at 12:37 a.m. on the 1st and about 10:43 p.m. by month's end. Look for Jupiter to the south in the early morning hours before dawn. Jupiter is in the constellation of Gemini shining at magnitude -2.2.



Io and Europa overlap (with smaller Europa appearing in front) as the two moons begin a transit of Jupiter on Oct.4. Ganymede lies east of Jupiter and Callisto lies to the west, outside the field of view shown here.

Saturn

Rises at 6:19 p.m. on the 1st and about 4:13 p.m. by month's end. Look for Saturn low to the east in the evening sky. Follow Saturn across the sky all night long. Saturn moves from the constellation of Pisces into Aquarius shining at magnitude 0.7.

Uranus

Rises at about 8:58 p.m. on the 1st and about 6:53 p.m. by month's end. Look for Uranus to the southeast in the late evening. Uranus is in the constellation Taurus shining at magnitude 5.6.

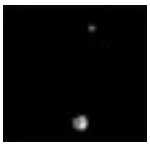
Neptune

Rises at 6:21 p.m. on the 1st and about 4:17 p.m. by the month's end. Look for Neptune low to the east in the evening just northeast of Saturn all month. Neptune is in the constellation of Pisces shining at magnitude 7.7.

Dwarf Planets

Ceres

Is at opposition on the 2nd, rising as the Sun sets. Ceres rises at 7:46 p.m. on the 1st and about 5:24 p.m. by month's end. Ceres can be spotted low to the south near midnight when it is highest in the sky. Ceres is at its best viewing for the year this month. Ceres is in the constellation of Cetus shining at magnitude 7.7.



Pluto

Is stationary on the 14th. Pluto sets at 1:14 a.m. on the 1st and about 11:09 p.m. by month's end. The best time to spot Pluto will be in the late evening when it is highest in the sky to the southwest. Pluto is in the constellation of Capricornus shining at magnitude 15.3.

As always, good luck at spotting Neptune, Ceres and Pluto, a large telescope and dark skies will be needed.

Constellation information provided by Go Astronomy.

Astronomical Events

Meteor Showers

- **The Draconids** - This shower is associated with periodic comet Giacobini-Zinner. The duration may extend from October 6 to 10, though the point of maximum is very sharply defined within a 4-hour interval on October 9, but the annual maximum hourly rates are not consistent. The radiant rarely produces any recognizable shower except during years especially close to the parent comet's perihelion passage. The meteors are slow and tend to be relatively faint. They are generally yellow.

- **The Orionids** - The duration of this meteor shower extends from October 15 to 29, with maximum occurring on (the morning of) October 21. The maximum hourly rate is usually about 20 and the meteors are described as fast.

- **The Southern Taurids** - This meteor shower is active from September 10 to November 20. Maximum occurs on the morning of October 10. Maximum hourly rate is 5 meteors per hour. The meteors are described as bright and move more

slowly than typical meteors, making them prime subjects for imaging and viewing.

For more information about Meteor Showers, visit Gary Kronk's Meteor Showers Online web page.

Meteor Shower Radiant Report

Meteor Scatter (or Meteor burst communications) -- "is a radio propagation mode that exploits the ionized trails of meteors during atmospheric entry to establish brief communications paths between radio stations up to 2,250 kilometres (1,400 mi) apart." Tune your shortwave or your HF amateur radio to 54.310 MHz USB CW and see if you can hear any pings. Try other frequencies as well... 6m FT8 digital - 50.313 Mhz & 50.276 Mhz, JP-65 digital mode and the carrier frequencies of the lower VHF bands for TV channels 2, 3 & 4.

Meteor Rx How-To by Terry Bullett (WØASP).

Comets

- Comet C/2025 A6 (Lemmon) is passing through the constellations of Canis Venatici and Boötes low to the west during the last two weeks of the month, shining around 8th magnitude. A 3 inch scope or greater and dark skies will be needed to view it.

This chart shows the path of Comet Lemmon from Oct. 13 to 23. Note that only deep-sky objects 8th magnitude or brighter are shown. You can find a second chart covering the comet's path for the rest of the month in the online version of this article at Astronomy.com.

For information, orbital elements and ephemerides on observable comets visit Observable Comets.

For more information about Comets, check out Gary Kronk's 6-volume series of books on Cometography.

Eclipses

- No solar eclipse activity this month.
- No lunar eclipse activity this month.

Observational Opportunities

(from evening to morning)

- Look for Mars and Mercury in the early evening to the west.
- Look for Pluto in the early evening to the southwest.
- Look for Saturn, Neptune and Ceres in the late evening and early morning to the south.
- Look for Uranus, Jupiter and Venus in the morning to the east.

Asteroids

(From west to east)

- **Vesta** is in the constellation of Libra.
- **Pallas** is in the constellation of Aquila.
- **Julia** is in the constellation of Aquarius.
- **Hebe** is in the constellation of Piscis Austrinus.
- **Papagena** is in the constellation of Taurus.

Information about the Minor Planets can be found at the MinorPlanet.info web site.

Occultations

Information on various occultations can be found at the International Occultation Timing Association's (IOTA) web site.

This chart shows the sky above the Midwestshortly before the Moon begins

The Moon occults the Pleiades on the 9th.

Member Meteor Sightings

In this section I will post meteor, fireball, etc sightings that have been published on the American Meteor Society's web site. I want to make this an active section of the web pages and newsletter and would like to publish the links to member sightings. If you have any published sightings, please provide me with the links and I will post them here for all to enjoy.

Event ID	Date/Time	Location	Observer	Link
3871-2015	2015-11-13 01:55 MST	CO	Charles N	3871a
3587-2015	2015-11-22 17:38 MST	CO	Kevin S	3587aw
3829-2015	2015-12-05 18:06 MST	CO	Burness A	3829a
986-2020	2020-02-21 22:20 MST	CO	Lukas S	986
3716-2020	2020-07-24 23:22 MDT	CO	Lukas S	3716
4774-2021	2021-08-13 21:57 MDT	UT	Lukas S	4774
7044-2021	2021-10-28 20:37 MDT	CO	Burness A	249058
6763-2022	2022-10-06 05:56 CDT	OK	Mike C	6763
5300-2023	2023-09-11 22:04 MDT	CO	Lukas S	5300
578-2024	2024-01-28 23:05 MST	CO	Lukas S	578
2864-2025	2025-05-19 20:29 PDT	NV	Kenneth T	375753

Subscriber Gallery

I have created a web page containing images taken and submitted by subscribers (or special images) to the email newsletter, check-ins to the Colorado Astronomy Net and readers of the online newsletter and some of my own images. Anyone wishing to submit their images to the gallery, please send me an email. The images must be taken by the submitter and be astronomy related. Please include a description and your information so that I can give proper credit to your work. I will post the most recent submissions here.

M8 - The Lagoon Nebula

Courtesy of Roy Murray (KI7PKL)
Astrophotography with the SkyWatcher HEQ-5
and SVBONY SV550 80mm Refractor
Image taken July 2025

"The Lagoon Nebula, M8, is located in the southern sky in the constellation of Sagittarius, and darts between the treetops during the evenings of early summer. I only got just under two hours on this one, as it had to dodge the treetops as well as the moon, making it elusive."

Planetary/Lunar Exploration Missions

(Excerpts from recent mission updates)

JPL Latest News

The Latest from Space

The Origin of JPL (a Youtube video-1 Hour 29 minutes).

James Webb Space Telescope

Information on the James Webb Space Telescope mission is available at The James Webb Space Telescope website.

The public can follow the mission on Facebook, Twitter and YouTube.

Juno

Information on the Juno mission is available at Juno and Mission Juno.
Images from NASA's JunoCam.
The public can follow the mission on Facebook and Twitter.

TESS

Information on the TESS mission can be found on the Latest Tess News page.

Past, Present, Future and Proposed JPL Missions

For special JPL programs and presentations in your area visit the JPL Solar System Ambassador web site.

Mars Missions

Be A Martian

Mars website mobile version is here!
Simply type
http://mars.jpl.nasa.gov
into your mobile browser.

Mars on the Go! NASA Be A Martian Mobile App

If you want the latest news as it happens, try out the "Be A Martian" app.
Download on Mobile Devices
Android | iPhone | Windows Phone

JMARS

JMARS is an acronym that stands for Java Mission-planning and Analysis for Remote Sensing. It is a geospatial information system (GIS) developed by ASU's Mars Space Flight Facility to provide mission planning and data-analysis tools to NASA's orbiters, instrument team members, students of all ages, and the general public.

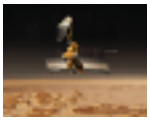
Laboratory for Atmospheric and Space Physics
"The Laboratory for Atmospheric and Space Physics (LASP) at the University of Colorado Boulder (CU) began in 1948, a decade before NASA. We are the world's only research institute to have sent instruments to all eight planets and Pluto.

LASP
Visit the LASP website for latest news and information.

MAVEN
Visit the MAVEN website for latest news and information.

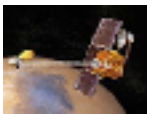
Mars 2020 - Perseverance
Visit the Mars 2020 (Perseverance) mission website for mission information and news updates.

Mars Science Laboratory - Curiosity
Visit the Mars Science Laboratory website for mission information and news updates.



Mars Reconnaissance Orbiter Mission

Mars Reconnaissance Orbiter HIRISE Images
View all of the archived HiRISE images.
More information about the MRO mission is available online.



Mars Odyssey Orbiter
Daily Mars Odyssey THEMIS Images
Thermal Emission Imaging System (THEMIS) web site.
Visit the Mars Odyssey Mission website for mission information and news updates.

Mars Missions Status
New Mars missions are being planned to include several new rover and sample collection missions. Check out the NASA Mars Exploration web page.

Astronomy Links and Other Space News

(If you have a link you would like to recommend to our readers, please feel free to submit it.)

Colorado Astronomy Links

Radio Astronomy Links

More Astronomy Links

Acknowledgments and References

Much of the information in this newsletter is from "Astronomy Magazine" (Kalmbach Publishing), JPL mission status reports, "Meteor Showers - A Descriptive Catalog" by Gary W. Kronk and other astronomical sources that I have stashed on my book shelves.

The author will accept any suggestions, constructive criticisms, and corrections. Please feel free to send me any new links or articles to share as well. I will try to accommodate any reasonable requests. Please feel free to send questions, comments, criticisms, or donations to the email address listed below. Enjoy!

Subscription Information

- Email Newsletter archives.
- Full documentation of the online administration system.
- The latest version of the newsletter.

Keep looking UP!

73 from KIØAR
Created by Burness F. Ansell, III
Email

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JPL Solar System Ambassador, Colorado
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