

# IAAS Monthly Astronomy Newsletter September 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!**

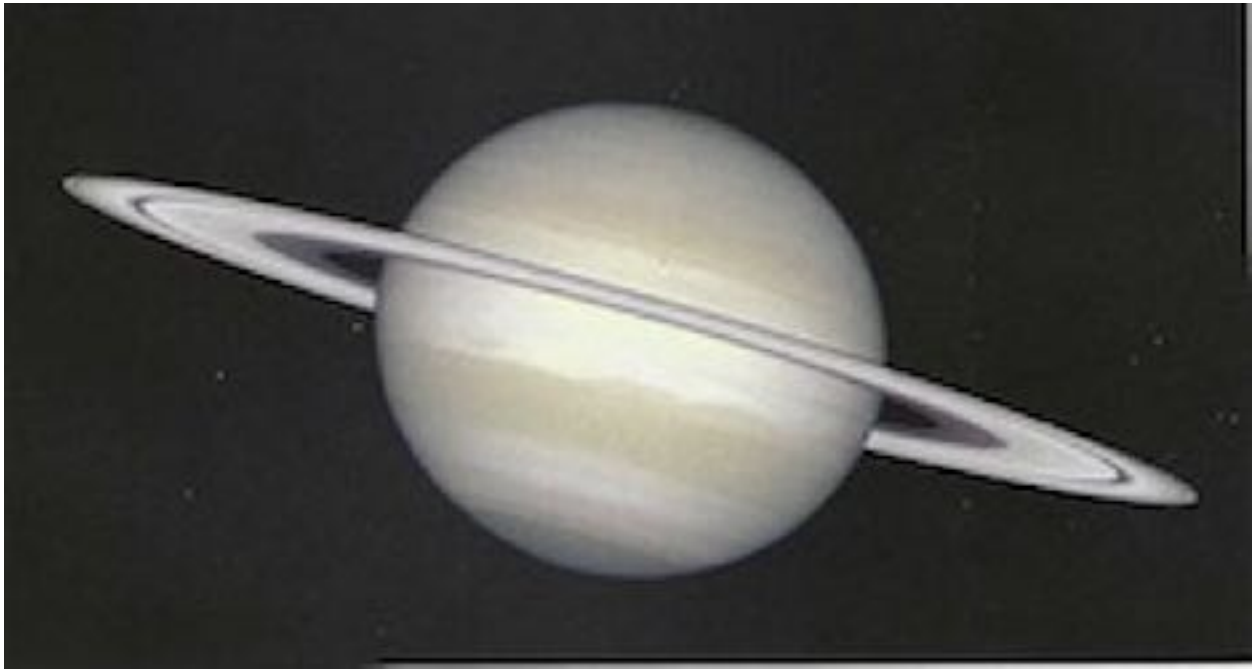
Obtain your Amateur Radio (Ham) License or your General Radio Operator's License (GROL)! Visit the [South Metro VE Team](#) website for more information. The South Metro VE Team provides test sessions by appointment only. Check the website for current information. All others interested in Amateur Radio, 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.



*"The mighty planet Saturn reaches opposition this month, showing narrow rings and plenty of moon transits. This Hubble image captured a transit of the moon Enceladus its shadow, roughly centered together above the rings." Astronomy Magazine, September 2025, p. 28. - HUBBLE HERITAGE TEAM (AURA/STSCI/NASA/ESA)*

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## The [Month At-A-Glance](#)

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

### The Moon

#### Phases:

- Full Moon occurs on the 7th.
- Last Quarter Moon occurs on the 14th.
- New Moon occurs on the 21st.
- First Quarter Moon occurs on the 29th.
  
- The Moon is at [perigee](#) (226,662 miles from Earth) on the 10th.
- The Moon is at [apogee](#) (251,996 miles from Earth) on the 26th.



#### Moon/Planet Pairs:

- Mercury passes  $1.2^\circ$  north of Regulus on the 2nd.
- The Moon passes  $0.06^\circ$  south of Pluto on the 4th.
- The Moon passes  $4^\circ$  north of Saturn on the 8th.
- The Moon passes  $3^\circ$  north of Neptune on the 8th.
- Mars passes  $2^\circ$  north of Spica on the 12th.
- The Moon passes  $5^\circ$  north of Uranus on the 12th.
- The Moon passes  $5^\circ$  north of Jupiter on the 16th.
- The Moon passes  $0.8^\circ$  north of Venus on the 19th.
- The Moon passes  $1.3^\circ$  north of Regulus on the 19th.
- Venus passes  $0.5^\circ$  north of Regulus on the 19th.
- The Moon passes  $1.1^\circ$  south of Spica on the 23rd.
- The Moon passes  $4^\circ$  south of Mars on the 24th.
- The Moon passes  $0.6^\circ$  south of Antares on the 27th.

*For reference: The Full Moon subtends an angle of  $\sim 0.5^\circ$ .*

## [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 September

"September's sky is rich with opportunities. Titan's shadow continues to transit Saturn. The ringed planet reaches opposition along with Neptune, with both worlds in the same region of the sky. Mars is descending toward solar conjunction. Uranus is a fine binocular target, while Jupiter dominates the early morning. Venus starts the month near M44, then inches closer to a conjunction with Regulus and the crescent Moon."

Astronomy Magazine, September 2025, p.28.



### Mercury

Mercury is at [superior conjunction](#) on the 13th. Mercury rises at 5:30 a.m. on the 1st. After conjunction, Mercury returns to the evening sky, setting about 7:13 p.m. by month's end. Mercury is visible about 30 minutes before sunrise just above the eastern horizon after the first week of the month, and about 30 minutes after sunset to the west during the last week of the month. Mercury moves from the [constellation](#) of [Leo](#) into [Virgo](#) shining at [magnitude](#) -1.3 on the 1st.



### Venus

Rises about 3:52 a.m. on the 1st and about 4:57 a.m. by month's end. Look for Venus to the east-southeast about an hour before sunrise. Venus moves from the constellation of [Cancer](#) into [Leo](#) shining at magnitude -3.9 on the 15th.



Watch the Moon, and Regulus line up Sept. 20 for a stunning morning spectacle. This chart shows the sky an hour before sunrise from 43° north and 10° west. Your view will differ depending on your location.



### Earth

The Autumnal [equinox](#) occurs at 2:19 P.M. EDT on the 22nd.



## Mars

Sets at 8:58 p.m. on the 1st and about 7:49 p.m. by month's end. Look for Mars low to the west in the evening about 30 minutes after sunset. Mars is in the constellation of [Virgo](#) shining at magnitude 1.6.



## Jupiter

Rises at 2:13 a.m. on the 1st and about 12:37 a.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 -2.0.

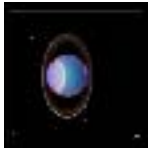


## Saturn

Is at [opposition](#) on the 21st, rising as the Sun sets. Saturn rises at 8:22 p.m. on the 1st and about 6:19 p.m. by month's end. Look for Saturn low to the east late in the evening. Saturn is at its best viewing for the year. Saturn is in the constellation of [Pisces](#) shining at magnitude 0.6.



One day before opposition, Titan and its shadow transit Saturn's equator simultaneously. Enceladus and its shadow are also transiting, but they will likely be too small and faint to pick up.



## Uranus

Is [stationary](#) on the 6th. Uranus rises at about 10:57 p.m. on the 1st and about 8:58 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 5.7.



## Neptune

Is at [opposition](#) on the 23rd, rising as the Sun sets. Neptune rises at 8:20 p.m. on the 1st and about 6:21 p.m. by the month's end. Look for Neptune low to the east late in the evening within 1° of Saturn all month. Neptune is in the constellation of [Pisces](#) shining at magnitude 7.7.



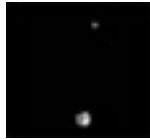
Saturn and Neptune sit close together all month. (Neptune will require a telescope and averted vision.) In early September, the Full Moon joins them.

## Dwarf Planets



### Ceres

Rises at 9:55 p.m. on the 1st and about 7:46 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 in the constellation of [Cetus](#) shining at magnitude 7.8.



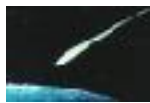
### Pluto

Rises at 5:53 p.m. on the 1st and about 3:54 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 south. Pluto is in the constellation of [Capricornus](#) shining at magnitude 15.2.

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

- "NO MAJOR [METEOR SHOWERS](#) are active in September, so we enter a

bit of a lull after the excitement of August.

Meteoritic dust from thousands of comets passing over the eons is visible before dawn as the zodiacal light, as sunlight reflecting off the dust creates a faint glow. You'll need a very dark eastern horizon with no streetlights nearby; higher elevations get a better view, too.

The zodiacal light appears as a faint cone-shaped glow aligned with the ecliptic. On September mornings well before dawn, the high angle of the ecliptic benefits views of it. The broad base of the glow is in [Leo](#) as that constellation rises, and narrows higher in the sky through [Cancer](#) and [Gemini](#). Catch it on moonless nights in the third and fourth week of September for the darkest skies." Astronomy Magazine, September 2025, p.29.



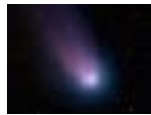
The zodiacal light appears at left, angled upward from the horizon as the winter sky rises. ALAN OVER

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/2024 E1 \(Wierzchoś\)](#) is passing through the constellation of Corona Borealis high to the west in the evening. Mid-month will be the easiest time this month to spot the comet shining around 12th to 10th magnitude. An 8 inch scope or greater and dark skies will be needed to view it.



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



- A [partial solar eclipse](#) occurs on the 21st. This eclipse is visible from [New Zealand](#), plus a thin strip of [Australia](#)'s eastern coast, various Pacific islands, and parts of [Antarctica](#).

- The longest [total lunar eclipse](#) since 2022. Totality will be visible from Australia, Asia, Africa, and Europe—around [85% of the world's population](#) has a chance to see this eclipse.

## Observational Opportunities

*(from evening to morning)*

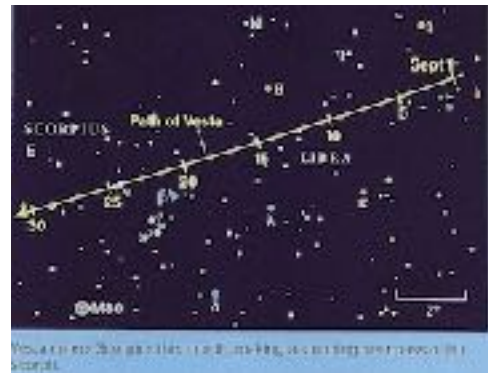
- Look for Mars in the early evening to the west.
- Look for Pluto to the south.

- Look for Saturn, Neptune and Ceres in the late evening and early morning to the south.
- Look for Uranus, Jupiter, Venus and Mercury 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 [Aquarius](#).
- **Papagena** is in the constellation of [Taurus](#).



Information about the Minor Planets can be found at the [MinorPlanet.info](#) web site.

## Ocultations



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

## 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.

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

## [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.

### **M13 - Globular Cluster in Hercules**

**Courtesy of Roy Murray (KI7PKL)**

Astrophotography with the SkyWatcher HEQ-5 and Celestron C6  
Image taken 2025



"The great Globular Cluster in [Hercules](#) is the largest globular cluster in the northern hemisphere. It's strictly a star cluster, so there's no nebulosity or dust clouds or anything like that. Just stars. I wanted to image something during a full moon, and a star cluster was something that could survive the bright, moonlit sky. And it was something different to try."

# 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.



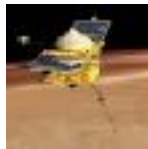
## Laboratory for Atmospheric and Space Physics

"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.

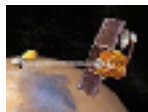


### Mars Reconnaissance Orbiter Mission

#### 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](#)

COO, Director of Aerospace Technologies, IAAS

JPL Solar System Ambassador, Colorado

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