

# IAAS Monthly Astronomy Newsletter

## March 2024



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 0200 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.

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 (seen here near center during its best 2023 evening elongation) reaches its best evening elongation of 2024 this month." Astronomy Magazine, March 2024, p. 28. - Alan Dyer*

## **In This Newsletter...**

The Month At-A-Glance	4
The Moon	4
Phases:	4
Moon/Planet Pairs:	4
The Planets & Dwarf Planets	5
Planetary Highlights for March	5
Mercury	5
Venus	5
Earth	5
Saturn	6
Uranus	6
Neptune	6
Dwarf Planets	6
Ceres	6
Pluto	6
Astronomical Events	7
Meteor Showers	7
Comets	7
Eclipses	8
Observational Opportunities	8
Asteroids	8
Occultations	9
Member Meteor Sightings	9
Subscriber Gallery	10
Planetary/Lunar Exploration Missions	11
JPL Latest News	11
James Webb Space Telescope	11
Juno	12
TESS	12
Mars Missions	14
JMARS	14
LASP	15
MAVEN	15
Mars Science Laboratory - Curiosity	16
Mars Reconnaissance Orbiter Mission	17
Mars Missions Status	17
Astronomy Links and Other Space News	18
Colorado Astronomy Links	18
Radio Astronomy Links	18
More Astronomy Links	18
Acknowledgments and References	18
Subscription Information	18
Keep looking UP!	18

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

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

### The Moon

#### Phases:

- Last Quarter Moon occurs on the 3rd.
  - New Moon occurs on the 10th.
  - First Quarter Moon occurs on the 17th.
  - Full Moon occurs on the 25th.
- 
- The Moon is at [perigee](#) (221,764 miles from Earth) on the 10th.
  - The Moon is at [apogee](#) (252,460 miles from Earth) on the 23rd.



#### Moon/Planet Pairs:

- The Moon passes  $0.3^\circ$  north of Antares on the 3rd.
- The Moon passes  $4^\circ$  south of Mars on the 7th.
- The Moon passes  $3^\circ$  south of Venus on the 8th.
- The Moon passes  $4^\circ$  north of Jupiter on the 13th.
- The Moon passes  $3^\circ$  north of Uranus on the 14th.
- Venus passes  $0.3^\circ$  north of Saturn on the 21st.
- The Moon passes  $0.3^\circ$  north of Antares on the 30th.

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

[Experts Pick the Top Stargazing Events for 2024](#)

# 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.

*(All times are local unless otherwise noted.)*

## Planetary Highlights for March

"The evening sky of springtime hosts Mercury, Jupiter, and Uranus. It's a good last chance to catch the richness of the jovian atmosphere, plus a few interesting events involving the Galilean moons. Venus dominates the morning sky, visible in brightening twilight, while Mars and Saturn progressively come into view late in the month. And if we're lucky, Comet 12/P Pons-Brooks might put on a good show for binoculars as it crosses [Andromeda](#), [Pisces](#), and [Aries](#)." Astronomy Magazine, March 2024, p. 28.



### Mercury

Is at greatest eastern [elongation](#) (19°) on the 24th when it reaches its best appearance for the year. Mercury sets at 6:01 p.m. on the 1st and about 8:42 p.m. by month's end. Look for Mercury in the evening sky very low on the western horizon about 30 minutes after sunset. Mercury moves from the [constellation](#) of [Aquarius](#) into [Pisces](#) shining at [magnitude](#) -1.2 on the 15th.



### Venus

Rises at 5:33 a.m. on the 1st and about 6:12 a.m. by month's end. Look for Venus low to the east before sunrise. Venus moves from the constellation of [Capricornus](#) into [Pisces](#) shining at magnitude -3.9 on the 15th.



### Earth

[Daylight Saving Time](#) begins at 2 a.m. local time on the 10th for most of the U.S. The [Vernal Equinox](#) occurs at 11:06 p.m. EDT on the 19th.



### Mars

Rises at 5:24 a.m. on the 1st and about 5:27 a.m. by month's end. Look for Mars low on the eastern horizon before sunrise. Mars moves from the constellation of [Capricornus](#) into [Aquarius](#) shining at magnitude 1.2.



## Jupiter

Sets at 10:48 a.m. on the 1st and about 10:16 p.m. by month's end. By the time the Sun sets, Jupiter is visible in the southwest. Jupiter is in the constellation of [Aries](#) shining at magnitude -2.1.



On March 14, most U.S. observers can catch Ganymede (Jovian satellite) emerge from behind Jupiter only the space of about 10 minutes. Meanwhile, it is coming in for a transit. Call it a late better west, certainly this field of view.

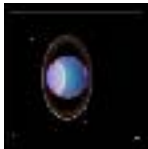


## Saturn

Rises at 6:38 a.m. on the 1st and about 5:45 a.m. by month's end. Try to observe Saturn just before sunrise, low on the eastern horizon during the last half of the month. Saturn is in the constellation of [Aquarius](#) shining at magnitude 1.0.



On March 27, spotting Saturn before sunrise will be a challenge -- but you can see it right before sunrise as a guide.



## Uranus

Sets at 11:30 p.m. on the 1st and about 10:34 p.m. by month's end. Uranus follows less than an hour behind Jupiter, visible in the southwest soon after sunset. Uranus is in the constellation of [Aries](#) shining at magnitude 5.8.



## Neptune

Is in [conjunction](#) with the Sun on the 17th. Neptune sets at 7:04 p.m. on the 1st. After conjunction, Neptune returns to the morning sky, rising about 6:16 a.m. by month's end. Look for Neptune soon after sunset, low on the western horizon during the first few days of March. After that, Neptune is lost in the twilight glow of the evening and morning skies. Neptune is in the constellation of [Pisces](#) shining at magnitude 7.8.

## Dwarf Planets



## Ceres

Rises at 3:15 a.m. on the 1st and about 2:52 a.m. by month's end. Ceres is visible in the early morning sky to the southeast. Ceres is in the constellation of [Sagittarius](#) shining at magnitude 9.0.



## Pluto

Rises at 4:54 a.m. on the 1st and about 3:55 a.m. by month's end. Pluto is visible to the southeast before dawn. 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

- There are a few minor [meteor showers](#) but none that produce rates much higher than 2-5 per hour, except the Gamma Normids that extend over the period of March 11 to 21, with the maximum occurring on March 16. The maximum rate reaches about 5-9 meteors per hour.



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 12P/Pons-Brooks](#) passes through the constellation of [Andromeda](#) into [Pisces](#), visible through binoculars about 90 minutes after local sunset about 15° above the western horizon. It may brighten to 6th magnitude or brighter later in the month.
- Comet [144P/Kushida](#) is visible passing through the lower part of the constellation of [Gemini](#) shining around 8th magnitude.
- Comet [62P/Tsuchinshan](#) is passing through the [Virgo](#) cluster of galaxies.
- Comet [C/2021 S3 \(PanSTARRS\)](#) is visible at 7th magnitude in the southeast running up the [Great Rift](#) in the constellation of [Aquila](#) before sunrise.



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.
- A [penumbral lunar eclipse](#) occurs on the 25th.

## Observational Opportunities

*(from evening to morning)*

- Look for Mercury, Jupiter, Uranus and Neptune in the evening.
- Look for Venus, Mars, Saturn and Ceres in the morning.



### Asteroids

(From west to east)

- **Vesta** is in the constellation of [Taurus](#).
- **Juno** is at [opposition](#) on the 3rd in the constellation of [Leo](#).

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.

## 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>

## [Subscriber Gallery](#)

I have created a web page containing images taken and submitted by subscribers to the email newsletter, check-ins to the Colorado Astronomy Net and readers of the online newsletter and some of my own images. Any one wishing to submit their images to the gallery, please let me know. 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.

### Trifid Nebula ([M20](#))



**Image Courtesy of James Paulson (VE6CKY) - [Wildcat Astronomy](#)**

**Taken:** Summer of 2022

**Location:** Medicine Hat, Alberta, Canada

**Camera:** Asi533mc, 30 x 2 minutes subs

**Telescope:** Meade SN6, EQ6 Pro mount, autoguiding

**Processing:** Asiair Pro, AstroPixel Processor, Photoshop

# 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).

[JPL Latest News](#)

**February 26, 2024**

### **NASA's Planetary Radar Images Slowly Spinning Asteroid**

[Full Article & Images](#)

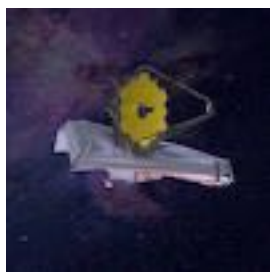
**"During the close approach of 2008 OS7 with Earth on Feb. 2, the agency's Deep Space Network planetary radar gathered the first detailed images of the stadium-size asteroid.**

On Feb. 2, a large asteroid safely drifted past Earth at a distance of about 1.8 million miles (2.9 million kilometers, or 7 ½ times the distance between Earth and the Moon). There was no risk of the asteroid – called 2008 OS7 – impacting our planet, but scientists at NASA's Jet Propulsion Laboratory in Southern California used a powerful radio antenna to better determine the size, rotation, shape, and surface details of this near-Earth object (NEO). Until this close approach, asteroid 2008 OS7 had been too far from Earth for planetary radar systems to image it."

Read the latest news and discoveries from JPL's dozens of active space missions exploring Earth, the solar system and worlds beyond.

[Past, Present, Future and Proposed JPL Missions](#)

For special JPL programs and presentations in your area visit the [JPL Solar System Ambassador](#) web site.



### **James Webb Space Telescope**

**February 22, 2024**

### **Webb Finds Evidence for Neutron Star at Heart of Young Supernova Remnant**

[Full Article & Images](#)

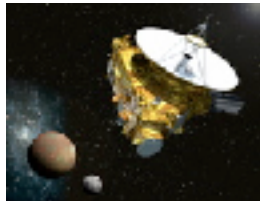
"NASA's James Webb Space Telescope has found the best evidence yet for emission from a neutron star at the site of a recently observed supernova. The supernova, known as SN 1987A, was a core-collapse supernova,

meaning the compacted remains at its core formed either a neutron star or a black hole. Evidence for such a compact object has long been sought, and while indirect evidence for the presence of a neutron star has previously been found, this is the first time that the effects of high-energy emission from the probable young neutron star have been detected.

Supernovae – the explosive final death throes of some massive stars – blast out within hours, and the brightness of the explosion peaks within a few months. The remains of the exploding star will continue to evolve at a rapid rate over the following decades, offering a rare opportunity for astronomers to study a key astronomical process in real time."

More 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** **February 2, 2024** **Io, Ready for Its Close-Up**

[Full Article & Images](#)

**"On Saturday, Feb. 3, the Juno spacecraft will sail past Jupiter's "tortured moon," following up a close flyby on Dec. 30, when it captured unprecedented images and data.**

Juno's encounter with Io was the closest since a visit by the Galileo spacecraft in October 2001. And Juno is scheduled to make another pass Feb. 3, studying the most volcanically active world in the solar system, only a bit larger than Earth's Moon. Io is caught in a tug-of-war between Jupiter's powerful gravity and the smaller pull from two neighboring moons, churning its insides and creating eruptions and lakes of lava that cover its surface. See where Juno is now, or sail along with the spacecraft during its Feb. 3 flyby, using NASA's 3D interactive, [Eyes on the Solar System](#)."

Images from NASA's [JunoCam](#).

More information on the Juno mission is available at [Juno](#) and [Mission Juno](#).

The public can follow the mission on [Facebook](#) and [Twitter](#).



### **TESS** **January 31, 2024** **Discovery Alert: A 'Super-Earth' in the Habitable Zone'**

[Full Article & Images](#)

**"The discovery: A "super-Earth" ripe for further**

investigation orbits a small, reddish star that is, by astronomical standards, fairly close to us – only 137 light-years away. The same system also might harbor a second, Earth-sized planet.

**Key facts:** The bigger planet, dubbed TOI-715 b, is about one and a half times as wide as Earth, and orbits within the "conservative" habitable zone around its parent star. That's the distance from the star that could give the planet the right temperature for liquid water to form on its surface. Several other factors would have to line up, of course, for surface water to be present, especially having a suitable atmosphere. But the conservative habitable zone – a narrower and potentially more robust definition than the broader "optimistic" habitable zone – puts it in prime position, at least by the rough measurements made so far. The smaller planet could be only slightly larger than Earth, and also might dwell just inside the conservative habitable zone."

For more news and information on the TESS mission, visit the [Latest Tess News](#) page.

[Past, Present, Future and Proposed JPL Missions.](#)

# 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

February 15, 2024

**Empty Space: A LASP Artist in Residence Exhibition opens at the Boulder Public Library**

[Full Article & Images](#)

"More than 100 people braved the snowy weather to attend the opening reception of *Empty Space: A LASP Artist in Residence Exhibition* at the Boulder Public Library's Canyon Gallery on Saturday afternoon, February 10. Community members were invited to view the work from artists, including a live dance performance and poetry reading. The event also featured a discussion with LASP researchers and the artists on how science and art are intertwined.

The exhibition is the culmination of work from the *Empty Space: A LASP Artist in Residence Program*, sponsored by LASP and the CU President's Teaching Scholars Program through the Timmerhaus Fund, which supports faculty activities that promote public understanding of the value of CU degrees. The \$30,000 award to David Brain, a researcher at LASP and chair of the Astrophysical & Planetary Science department, enabled three professional artists to learn over the last six months about the exciting space science research and innovative engineering happening at LASP."



### MAVEN

December 11, 2023

**NASA's MAVEN Observes the Disappearing Solar Wind**

[Full Article & Images](#)

"In December 2022, NASA's MAVEN (Mars Atmosphere and Volatile Evolution) mission observed the dramatic and unexpected "disappearance" of a stream of charged particles constantly emanating off the Sun, known as the solar wind. This was caused by a special type of solar event that was so powerful, it created a void in its wake as it traveled through the solar system.

Due to this event, MAVEN's measurements at Mars showed that the number of particles making up the solar wind dropped significantly. Without the pressure of the solar wind, the Martian atmosphere and magnetosphere expanded by thousands of kilometers.

MAVEN is the only asset currently at Mars able to simultaneously observe both the Sun's activity and the response of the Martian atmosphere to these solar influences."

Visit [LASP](#) and [MAVEN](#) for more information.



## **Mars 2020 - Perseverance**

**February 29, 2024**

**Bunsen Peak Piques Interest**

[Full Article & Images](#)

"Perseverance has continued its traverse west through the [Margin unit](#). As the rover drives, images and data are obtained using instruments such as Mastcam-Z, Navcam, and SuperCam to track any changes in the chemistry or appearance of the rocks.

Along the way, the science team used these images to pick out an exciting rock named Bunsen Peak. This rock was intriguing because it stands tall among the surrounding terrain and has some interesting surface texture on its left face, as seen in the image above. Another feature of the rock that stood out in the image was the near vertical face directly in front of the rover. A vertical face piques the interest of the science team for a couple of reasons: first, a vertical face of a rock could give a cross-sectional view of any chemical or physical layering that might be occurring in the rock. Second, a vertical face is usually less dust-covered, which is good news for our scientific instruments!"

Learn more about the [Mars 2020 \(Perseverance\) mission](#).



## **Mars Science Laboratory - Curiosity**

**December 28, 2023**

**NASA's Curiosity Rover Captures a Martian Day, From Dawn to Dusk**

[Full Article & Images](#)

*"Videos from the rover show its shadow moving across the Martian surface during a 12-hour sequence while Curiosity remained parked."*

When NASA's Curiosity Mars rover isn't on the move, it works pretty well as a sundial, as seen in two black-and-white videos recorded on Nov. 8, the 4,002nd Martian day, or sol, of the mission. The rover captured its own shadow shifting across the surface of Mars using its black-and-white Hazard-Avoidance Cameras, or Hazcams."

Visit the [Mars Science Laboratory](#) page.



## **Mars Reconnaissance Orbiter Mission**

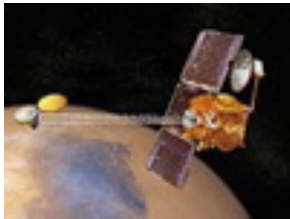
**December 18, 2023**  
**Ice Flows on Mars**

[Full Article & Images](#)

"When NASA's Curiosity Mars rover isn't on the move, it works pretty well as a sundial, as seen in two black-and-white videos recorded on Nov. 8, the 4,002nd Martian day, or sol, of the mission. The rover captured its own shadow shifting across the surface of Mars using its black-and-white Hazard-Avoidance Cameras, or Hazcams."

### **MARS RECONNAISSANCE ORBITER HIRISE IMAGES**

View all of the archived [HiRISE](#) images.  
More information about the [MRO](#) mission is available online.



## **Mars Odyssey Orbiter**

**November 28, 2023**  
**NASA Orbiter Snaps Stunning Views of Mars Horizon**

[Full Article & Images](#)

*"The Odyssey orbiter captured clouds and dust in the Red Planet's skies, along with one of its two tiny moons.*

Astronauts often react with awe when they see the curvature of the Earth below the International Space Station. Now Mars scientists are getting a taste of what that's like, thanks to NASA's 2001 Mars Odyssey orbiter, which completed its 22nd year at the Red Planet last month.

The spacecraft captured a series of panoramic images that showcases the curving Martian landscape below gauzy layers of clouds and dust. Stitched end to end, the 10 images offer not only a fresh, and stunning, view of Mars, but also one that will help scientists gain new insights into the Martian atmosphere."

### **DAILY MARS ODYSSEY THEMIS IMAGES**

Thermal Emission Imaging System ([THEMIS](#)) web site.

Visit the [Mars Odyssey Mission](#) page.

### **Mars Missions Status**

New Mars missions are being planned to include several new rover and sample collection missions. Check out the [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

Last modified: March 01, 2024