

IAAS Monthly Astronomy Newsletter February 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.

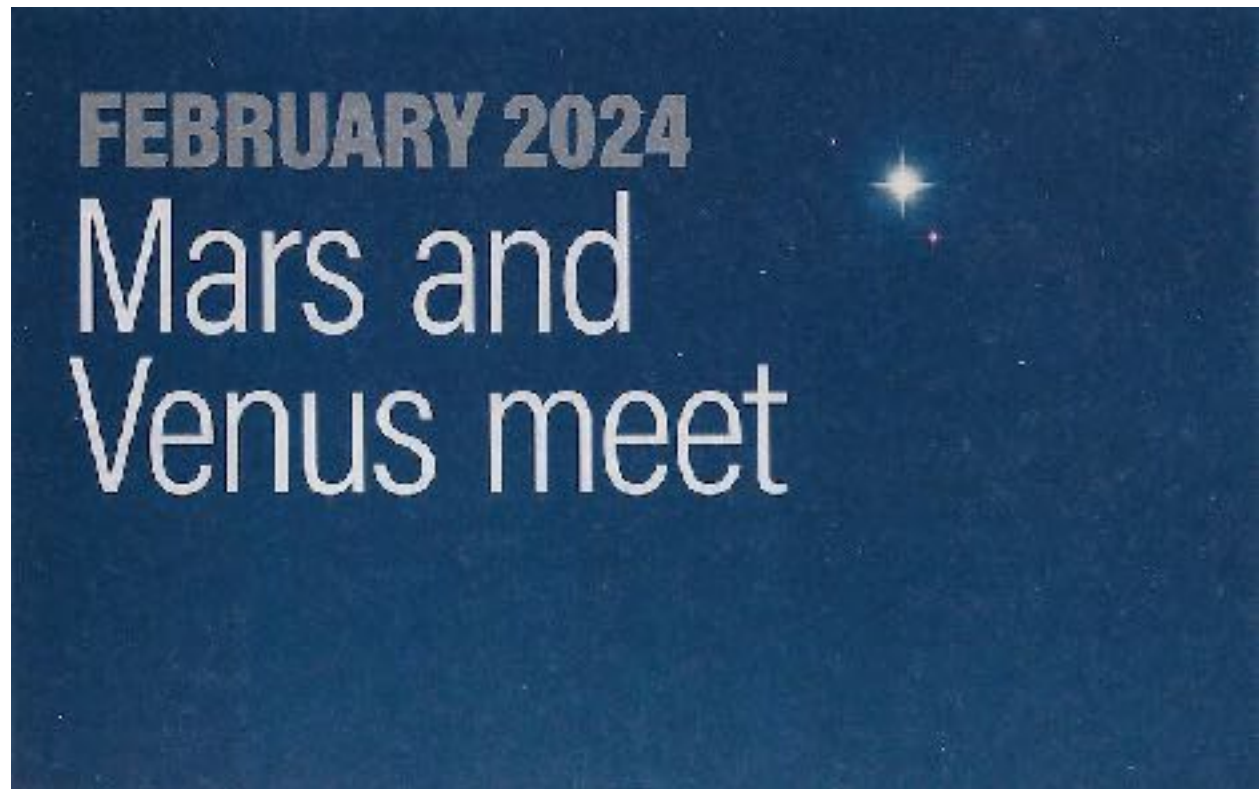
Obtain your Amateur Radio (Ham) License or your General Radio Operator's License (GROL)! Visit the [South Metro VE Team](#) website for more information. The South Metro VE Team provides test sessions by appointment only. Check the website for current information. All others interested in Amateur Radio,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



"This month's conjunction of Venus and Mars will appear similar to this 2017 image with ruddy Mars to Venus' lower right (south)." Astronomy Magazine, February 2024, p. 28. - Alan Dyer

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

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

The Moon

Phases:

- Last Quarter Moon occurs on the 2nd.
- New Moon occurs on the 9th.
- First Quarter Moon occurs on the 16th.
- Full Moon occurs on the 24th.

- The Moon is at [perigee](#) (222,506 miles from Earth) on the 10th.
- The Moon is at [apogee](#) (252,470 miles from Earth) on the 25th.



Moon/Planet Pairs:

- The Moon passes 0.6° north of Antares on the 4th.
- The Moon passes 5° south of Venus on the 7th.
- The Moon passes 4° south of Mars on the 8th.
- The Moon passes 1.8° south of Saturn on the 10th.
- The Moon passes 0.7° south of Neptune on the 12th.
- The Moon passes 3° north of Jupiter on the 15th.
- The Moon passes 3° north of Uranus on the 15th.
- Venus passes 0.6° north of Mars on the 22nd.

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 February

"Jupiter is the highlight of evening observation for anyone with a telescope. Its moons dance around the planet and intriguing transits and occultations occur. Meanwhile, Saturn is very low in twilight — you can catch it early in the month. The binocular giants, Uranus and Neptune, are visible all evening. The morning sky carries a bright Venus and the return of Mars; the two undergo a close conjunction later in February. And spy Mercury early in the month before it goes behind the Sun." Astronomy Magazine, February 2024, p. 28.



Mercury

Rises at 6:18 a.m. on the 1st. Mercury is in [superior conjunction](#) with the Sun on the 28th. After conjunction, Mercury returns to the evening sky. Mercury sets about 6:01 p.m. by month's end. Look for Mercury in the morning sky very low on the horizon about 30 minutes before sunrise during the first week or so of February. Mercury moves from the [constellation](#) of [Sagittarius](#) into [Aquarius](#) shining at [magnitude](#) -0.1 on the 1st.



Venus

Rises at 5:21 a.m. on the 1st and about 5:33 a.m. by month's end. Look for Venus to the east before sunrise. Venus is in [conjunction](#) with Mars on the morning of the 22nd, visible low on the eastern horizon about 45 minutes before sunrise. Venus moves from the constellation of [Sagittarius](#) into [Capricornus](#) shining at magnitude -3.9 on the 15th.



Earth

N/A.



Mars

Rises at 6:04 a.m. on the 1st and about 5:24 a.m. by month's end. Look for Mars low on the eastern horizon before sunrise. Mars moves from the

constellation of [Sagittarius](#) into [Capricornus](#) shining at magnitude 1.3.



Jupiter

Sets at 12:25 a.m. on the 1st and about 10:48 p.m. by month's end. By the time the Sun sets, Jupiter is visible in the south-southwest. Jupiter is in the constellation of [Aries](#) shining at magnitude -2.3.



Saturn

Sets at 7:16 p.m. on the 1st. Saturn is in [conjunction](#) with the Sun on the 28th. After conjunction, Saturn returns to the morning sky. Saturn rises about 6:38 a.m. by month's end. Try to observe Saturn soon after sunset, low on the western horizon during the first week or so of the month. Saturn is in the constellation of [Aquarius](#) shining at magnitude 0.9.



Uranus

Sets at 1:26 a.m. on the 1st and about 11:30 p.m. by month's end. Uranus follows just about an hour behind Jupiter, visible in the south soon after sunset. Uranus is in the constellation of [Aries](#) shining at magnitude 5.8.



Neptune

Sets at 8:53 p.m. on the 1st and about 7:04 p.m. by month's end. Look for Neptune following Saturn by about 2 hours in the south-southwest soon after sunset. Neptune is in the constellation of [Pisces](#) shining at magnitude 7.8.

Dwarf Planets



Ceres

Rises at 4:23 a.m. on the 1st and about 3:15 a.m. by month's end. Ceres is visible in the early morning sky to the east-southeast. Ceres is in the constellation of [Sagittarius](#) shining at magnitude 9.1.



Pluto

Rises at 6:45 a.m. on the 1st and about 4:54 a.m. by month's end. Pluto is too low and too dim to spot until the end of the month. 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

- There are a few minor [meteor showers](#) this month but none that produce rates much higher than 2-5 meteors per hour at their peaks. However, there's a possibility that observers may see a [fireball](#) or a [bolide](#) in the early hours before sunrise associated with the Beta Herculids or Delta Serpentids minor meteor showers.

From very dark locations, the zodiacal light may appear to extend up through the [Pleiades](#) in [Taurus](#).

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 north of the constellation of [Pegasus](#) shining around 8th magnitude. It may brighten to 6th magnitude or brighter next month.
- [Comet 144P/Kushida](#) is visible passing through the open cluster of the Hyades in the constellation of [Taurus](#) and should be visible with an 8-inch telescope.
- A 4-inch telescope may be able to pick out Comet [62P/Tsuchinshan](#) passing between [M87](#) and [M49](#) in the constellation of [Virgo](#).

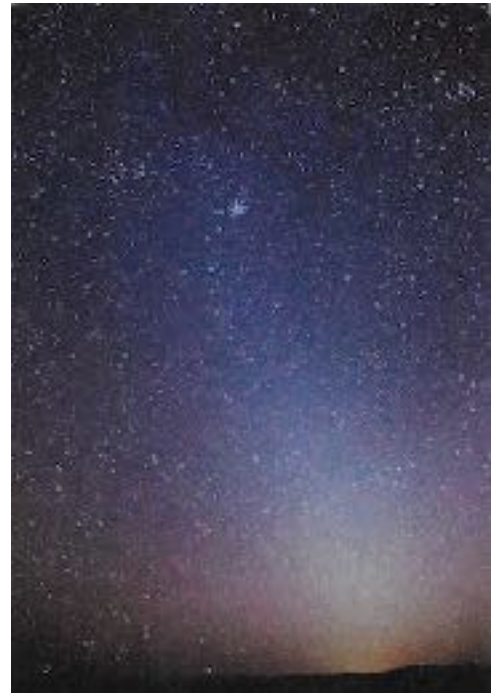


Figure 10: The path of Comet 62P/Tsuchinshan as it passes between the globular clusters M87 and M49 in the constellation of Virgo. The comet is shown as a small white dot with a long tail, passing between the two clusters. The chart also shows the constellation Virgo and the positions of M87 and M49.

- Comet **C/2021 S3 (PanSTARRS)** is visible at 7th magnitude in the southeast above the bright star Antares in the constellation of [Scorpius](#) before sunrise. Those living in the gulf states or south of the equator will have a much better chance to spot this comet.

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



Asteroids

(From west to east)

- **Vesta** is in the constellation of [Taurus](#).
- **Metis** is in the constellation of [Auriga](#).
- **Juno** is in the constellation of [Virgo](#).
- **Pallas** is in the constellation of [Ophiuchus](#).

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	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

[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](#)

January 31, 2024

NASA Puts Next-Gen Exoplanet-Imaging Technology to the Test

[Full Article & Images](#)

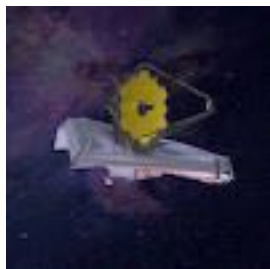
"A cutting-edge tool to view planets outside our solar system has passed two key tests ahead of its launch as part of the agency's Roman Space Telescope by 2027.

The Coronagraph Instrument on NASA's Nancy Grace Roman Space Telescope will demonstrate new technologies that could vastly increase the number of planets outside our solar system (exoplanets) that scientists can directly observe. Designed and built at the agency's Jet Propulsion Laboratory in Southern California, it recently passed a series of critical tests ahead of launch. That includes tests to ensure the instrument's electrical components don't interfere with those on the rest of the observatory and vice versa."

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

January 29, 2024

NASA's Webb Depicts Staggering Structure in 19 Nearby Spiral Galaxies

[Full Article & Images](#)

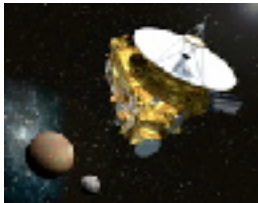
"It's oh-so-easy to be absolutely mesmerized by these spiral galaxies. Follow their clearly defined arms, which are brimming with stars, to their centers, where there may be old star clusters and – sometimes – active supermassive black holes. Only NASA's James Webb Space Telescope can deliver highly detailed

scenes of nearby galaxies in a combination of near- and mid-infrared light – and a set of these images was publicly released today.

These Webb images are part of a large, long-standing project, the Physics at High Angular resolution in Nearby Galaxies (PHANGS) program, which is supported by more than 150 astronomers worldwide. Before Webb took these images, PHANGS was already brimming with data from NASA's Hubble Space Telescope, the European Southern Observatory's Very Large Telescope's Multi-Unit Spectroscopic Explorer, and the Atacama Large Millimeter/submillimeter Array, including observations in ultraviolet, visible, and radio light. Webb's near- and mid-infrared contributions have provided several new puzzle pieces."

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

December 27, 2023

NASA's Juno to Get Close Look at Jupiter's Volcanic Moon Io on Dec. 30

[Full Article & Images](#)

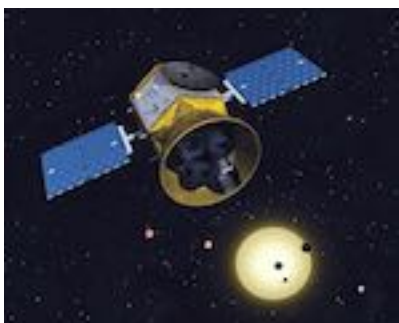
"The orbiter has performed 56 flybys of Jupiter and documented close encounters with three of the gas giant's four largest moons.

NASA's Juno spacecraft will on Saturday, Dec. 30, make the closest flyby of Jupiter's moon Io that any spacecraft has made in over 20 years. Coming within roughly 930 miles (1,500 kilometers) from the surface of the most volcanic world in our solar system, the pass is expected to allow Juno instruments to generate a firehose of data."

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 10, 2024

Discovery Alert: Earth-sized Planet Has a 'Lava Hemisphere'

[Full Article & Images](#)

"The discovery: In a system with two known planets, astronomers spotted something new: a small object transiting across the Sun-sized star. This turned out to be another planet: extra hot and Earth-sized.

Key facts: The newly-spotted planet, called HD 63433 d, is tidally locked, meaning there is a dayside which always faces its star and a side that is constantly in darkness. This exoplanet, or planet outside of our solar system, orbits around the star HD 63433 (TOI 1726) in the HD 63433 planetary system. This scorching world is the smallest confirmed exoplanet younger than 500 million years old. It's also the closest discovered Earth-sized planet this young, at about 400 million years old."

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.

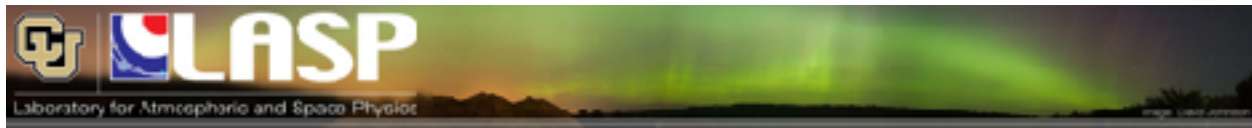
Download on Mobile Devices

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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

January 31, 2024

Teaching creative thinking in science through art: LASP artists-in-residence program hosts local elementary students

[Full Article & Images](#)

"*What connects art and science?* This was the question posed to several elementary school classes when they recently visited the Laboratory for Atmospheric and Space Physics at the University of Colorado Boulder to participate in Empty Space: A LASP Artist in Residence Program. The answer, the students learned, is creative thinking.

In October, three artists, Mario Miguel Echevarria, Alexandra Lockhart, and Clark Riley, [were selected](#) to participate in the program, which is sponsored by LASP and the [CU President's Teaching Scholars Program](#) through the Timmerhaus Fund. The six-month program enables the artists to learn about the exciting space science research and innovative engineering happening at LASP, incorporate it into their art, and help students learn about the connection between art and science."



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

January 25, 2024

After Three Years on Mars, NASA's Ingenuity Helicopter Mission Ends

[Full Article & Images](#)

"NASA has proven powered, controlled flight is possible on other worlds, just as the Wright brothers proved it was possible on Earth."

NASA's history-making Ingenuity Mars Helicopter has ended its mission at the Red Planet after surpassing expectations and making dozens more flights than planned. While the helicopter remains upright and in communication with ground controllers, imagery of its Jan. 18 flight sent to Earth this week indicates one or more of its rotor blades sustained damage during landing and it is no longer capable of flight."

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."

Four thousand Martian days after setting its wheels in Gale Crater on Aug. 5, 2012, NASA's Curiosity rover remains busy conducting exciting science. The rover recently drilled its 39th sample then dropped the pulverized rock into its belly for detailed analysis."

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

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- [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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