www.holland-saaa.org

The Shoreline Observer
March 2025

CLUB NOTES

Dear Members,

The winter of 2024/25 has been dismal so far for observing. Skies have been gray and snowy almost all winter long, unlike the previous winter. We've only been able to hold a couple of Public Observing sessions at the Observatory since the end of October. Here's hoping for better conditions coming our way soon.

This month brings a well placed lunar eclipse that will be easily visible from our area (clear skies allowing) in the early morning hours of March 14th. The partial phase of the eclipse will begin at 1:09am EDT, and totality will start at 2:26am EDT and last 66 minutes. We look forward to seeing any pictures of the eclipse that you can capture.

Firefly Aerospace launched Blue Ghost Mission 1 from NASA's Kennedy Space Center on February 15th with a planned touchdown on the lunar surface due to occur on March 2nd. There are ten NASA instrument packages aboard the lander and an attempt will be made to image the solar eclipse from the moon during the lunar eclipse that we will observe on Earth.

We are planning a Telescope Clinic at the Hemlock Crossing Nature Center on Saturday, March 1st at 7pm. If you have an old telescope collecting dust in the back of a closet and you'd like help with collimation or getting it working again, please bring it along. Any help from members willing to assist the public by making sure their scopes are operating correctly and showing them how to use the scopes would be greatly appreciated.

I'll be presenting 'Tools for Finding Things in the Night Sky' during the regular Club meeting in the Macatawa Bay Middle School planetarium on March 13th. We'll look at apps and other programs along with some physical devices that can help in finding dim objects to observe.

Enjoy our latest newsletter and clear skies!

Barry Schoenfelner
Vice-president, SAAA

In this issue:

Calendar and Upcoming Events

Public Observing

When Weather Permitting Every FRI evening starting 8PM (note time change).

Where Hemlock Crossing Public Observatory, 8115 W Olive Rd, West Olive, MI 49460, USA

Description The observatory is open from our start time until 11 PM (weather and clear sky permitting, see note after October 14th). There are no entry fees. Please be aware that the park gate closes automatically at 8 PM sharp, therefore visitors must arrive before 8 PM to enter the park. You will be able to leave as you wish.

Visible night sky objects: planets, the Moon, deep sky objects like galaxies, star clusters and planetary nebulae.

March Club Lecture

Telescope Clinic! March 1st Did you receive a telescope for Christmas? Do you have a telescope stored inside a closet? If so, do you need help assembling and using it? Come to this workshop with your scope and we will get you all set up to enjoy the beauty of the Universe.

Looking Ahead: April Club Lecture

Spring and Summer Sky. April 5th Karl Rijkse will provide a presentation about major constellations available for viewing in the nighttime sky during the Spring and Summer months, along with additional objects such as the visible planets, the Moon and other deep space objects.

March 2025

SUN	MON	TUE	WED	THU	FRI	SAT
	24	25	26	27	28 • 7pm Public C	Mar 1 • 7pm Telesco
2	3	4	5	6	7 • 8pm Public C	8
9	10	11	12	13 • 7pm Club Me	14 • 8pm Public C	15
16	17	18	19	20	21 • 8pm Public C	22
23	24	25	26	27	28 • 8pm Public C	29
30	31	Apr 1	2	3	4 • 8pm Public C	5 • 7pm Spring

For More Information on Any Event
Please go to www.holland-saaa.org

What's in the Sky this Month: March

Provided by Peter Burkey

How NASA Missions Are Born

Voyager, Pioneer, the Curiosity Rover, the Hubble Telescope and the New Horizons space craft all have one thing in common - they were all conceived, built, and delivered to NASA by its contractors. But not all missions are alike in these ways, and not all proposed missions even make it to the drawing board. Let's take a look at the process of getting an idea into space.

I talked with Dr. Harold Reitsema, a member of the Shoreline Amateur Astronomical Association and semi-retired rocket scientist who worked on both the Kepler and New Horizons spacecraft. He explained that NASA "does science missions in two very different ways".

The first is known as a "Principal Investigator Led Mission" in which a team of knowledgeable scientists is formed, then becomes aligned with a spacecraft builder, some NASA scientists and even sometimes a NASA center, and finally puts together a complete mission design. The design includes the satellite, its instruments, who the operator will be, and how the data that comes from the spacecraft is stored and analyzed. The team then writes a proposal that was solicited by NASA through what is known as an "announcement of opportunity".

This announcement of opportunity defines a broad area of science, such as cosmology or the origin of the solar system, and anyone with an idea that fits that objective can respond with a proposal for a full mission. Proposals can therefore be quite diverse. For example, one might be for an orbiter to study the atmosphere of Jupiter while another proposes a lander on Venus. Both fall under the category of planetary exploration.

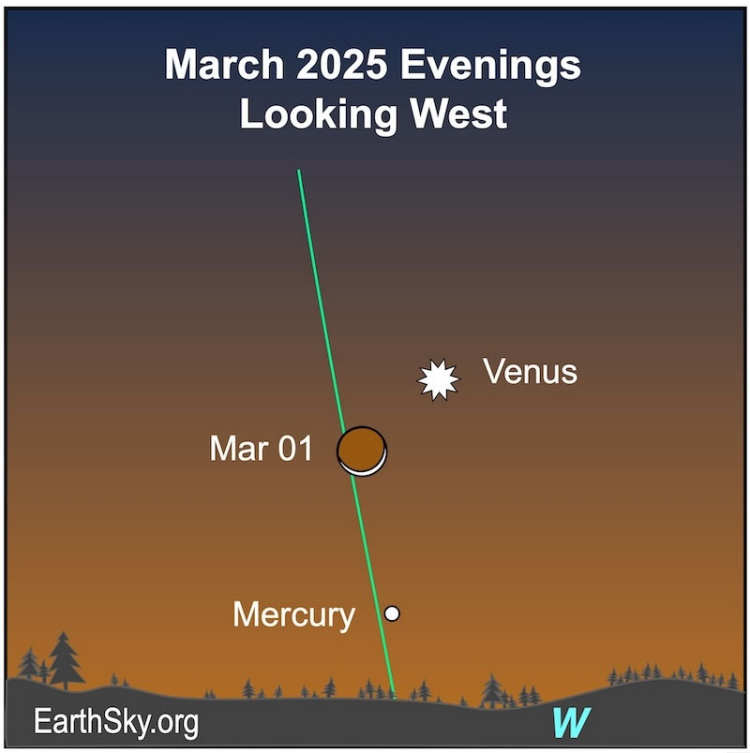
NASA then creates two panels, one that evaluates the value of the science and one that studies the risks associated with building the hardware to actually accomplish the mission's goals. The scientists submitting the proposals then approach private industries such as Lockheed or Ball Aerospace to work out the design and construction details. Often industries try to work with proposals from several teams to increase the chances of being approved since each announcement of opportunity can be met with a dozen or more proposals. The Kepler telescope and the New Horizons spacecraft were both missions of this type that Dr. Reitsema worked on for Ball Aerospace. Clearly, those proposals were accepted.

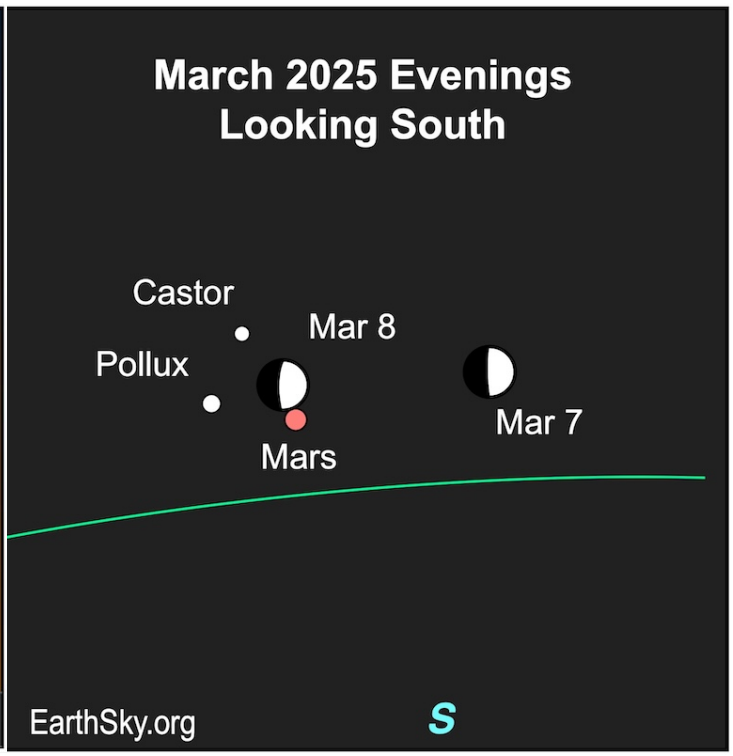
Such missions are relatively low in cost and risk. Larger, more expensive endeavors, such as the Mars Rovers or the Hubble Telescope, take a different course from conception to completion. In these cases, NASA puts out a list of requirements that a mission must meet and requests proposals from the aerospace industry that meet these requirements. The James Webb Telescope is a prime example. NASA knew they wanted to do a really big infrared telescope and it needed to be able to aim with a high accuracy, have a particular sensitivity, size, and life expectancy, and operate at extremely low temperatures. NASA then puts out a request for proposals to accomplish their mission.

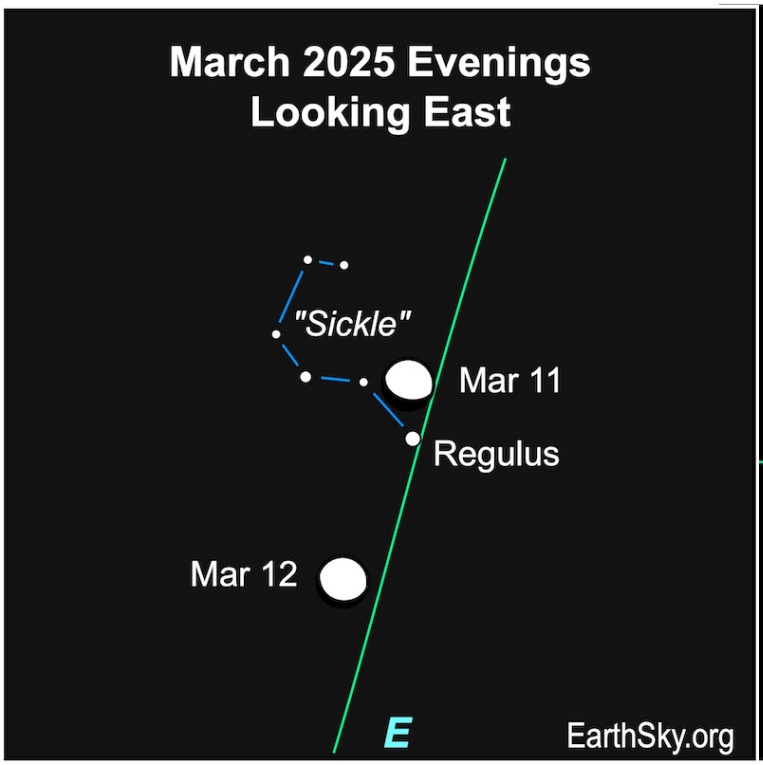
Such endeavors require vast resources so the number of proposals is limited and they almost always come from the aerospace industry. Since these missions have never been done before and often require untested or even nonexistent technologies, NASA is willing to cover certain cost overruns. Again, the Webb is a good example. Originally proposed at a cost of around $1.6 billion in 1997, it jumped to $5 billion by 2007 and now is estimated at almost $9 billion! Part of the problem was that it is very difficult to perform tests here on Earth to evaluate how it will behave in a weightless environment, with its optics near absolute zero and electronics at room temperature.

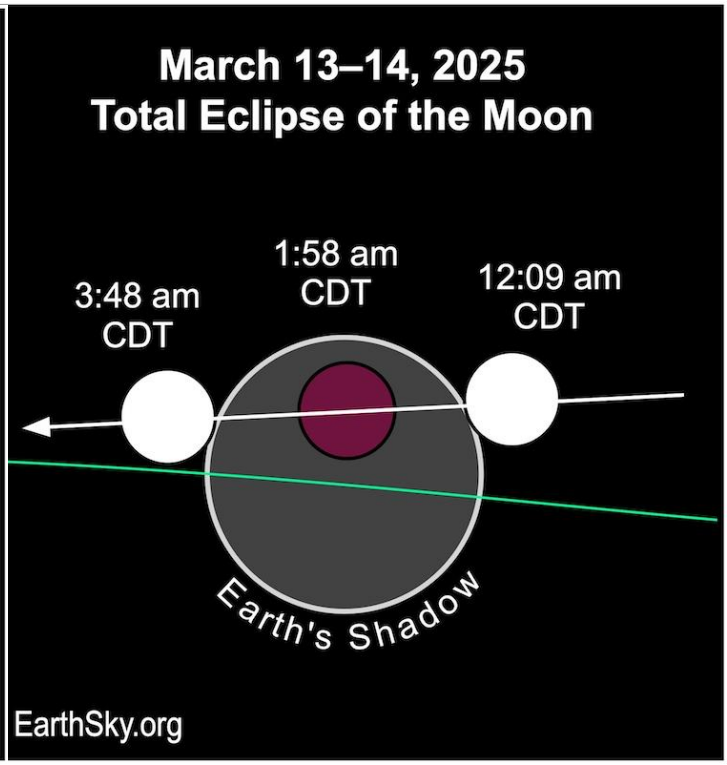
So, to summarize, missions are the result of two processes. In the first, groups propose different ideas in response to an announcement of opportunity from NASA to study a broad branch of science. In the second, proposals are submitted for specific investigations as defined by NASA. Each scenario brings us a better understanding of what's up in the sky.

What's Up in the Sky (in pictures) – March, 2025









This Month in Club History

Listening to the Universe at 21 Centimeters

On 25 March 1951, Edward Purcell and Harold Ewen discovered the 21-cm radio radiation from cold hydrogen in the galaxy. In the words of James Stanley Hey, who discovered that the Sun emits radio waves and who identified the first extragalactic radio source in Cygnus A,"The prediction of the 21 cm line radiation from neutral atomic hydrogen and its subsequent detection in 1951 was an achievement in the elegant classical manner one always imagines the course of research ought to follow."2 Today, exploration and discovery on the 21-cm band continue and the wavelength is actively pursued as the likely carrier for a transmission from an extra-terrestrial intelligence.

The existence of the 21-cm emission was predicted in a paper by Hendrik C. van de Hulst, published in 1945 while he was working toward his baccalaureate at Utrecht where Jan Oort was teaching.7 Van de Hulst's lead paragraph indirectly pointed to the discovery of extra-terrestrial radio waves by Karl G. Jansky of Bell Telephone Laboratories in 1932. "Although the existence of radio waves of extraterrestrial origin has already been known for a decade, astronomers have not yet paid much attention to them. This is partly due to the crude data thus far furnished by the observations; not much has been established other than the order of magnitude of the intensity and the rough directional dependence of the radiation. Thus, little can be expected from a detailed discussion of the observational facts."

What Star am I?

I "dog" the brightest star in the sky

(this gets you close or we're in trouble)

I'm part of a "southern triangle"

(above the southern horizon I sparkle)

At least I outshine my immediate neighbors

(in addition, I'm a double)

If you think you know the answer, send it to Peter Burkey (consult your membership directory) to either his email or cell phone. The answer will appear here next month.
Last month's answer: Betelgeuse

NASA's Photo of the Day!

https://apod.nasa.gov/apod/astropix.html features the photo of the day. Each day a different image or photograph of our fascinating universe is featured, along with a brief explanation written by a professional astronomer.

Hyperlink is hot (CTRL/CLICK)
Editor's Note: Their photos are copyrighted.

This Month in Astronomy History

March
March 2: Pioneer 10 launched - 1972
March 6: Kepler Observatory launched - 2009
March 14: Albert Einstein born - 1879; Gene Cernan born - 1934
March 18: Soviet rocket explosion at launch pad kills 50 workers - 1980
March 22: Comet Hale-Bopp passes closest to Earth - 1997
March 31: Mariner 10 makes first flyby of Mercury - 1974

Kids Corner

https://spaceplace.nasa.gov/ A place where kids and grown-ups have fun with chnology.

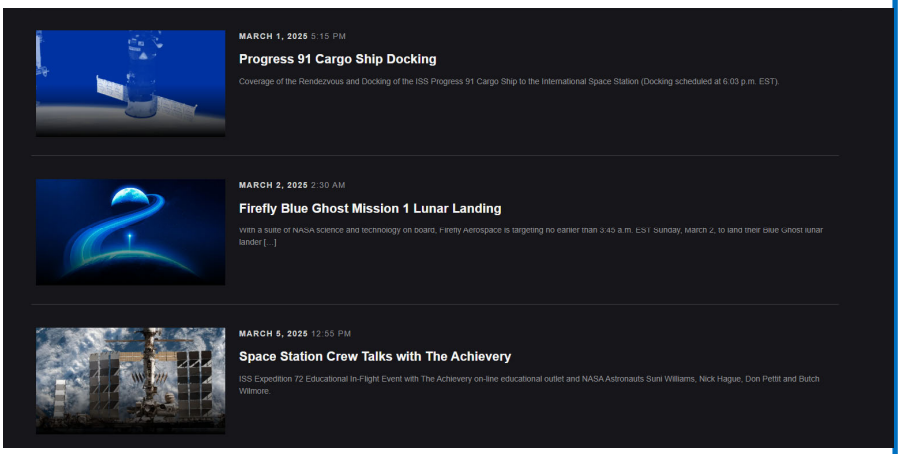
NASA Climate Kids: It's all about climate.
https://climatekids.nasa.gov/

SciJinks: It's all about weather! https://scijinks.gov/

Kids, what's happening in space?

NASA has great on-line programs!!

https://plus.nasa.gov/scheduled-events/

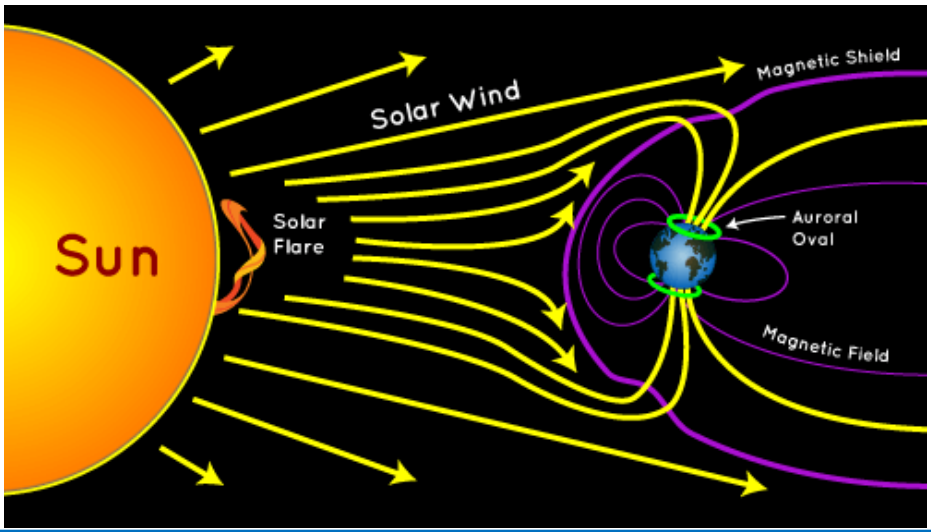


Kid's Corner Extra: Auras

From https://spaceplace.nasa.gov https://youtu.be/PgIKsuZ3RZU great video about auras!

What causes an aura to happen? What creates different colors?

Find answers to these questions, and more at the above links. Enjoy.



Club Photo: NGC 6888 Crescent Nebula

Photo by Mike Cortright

West Michigan Astronomy Swap Meet

The meet will be held on Saturday, May 17 from 10 am until 2 pm. at the Muskegon Astronomical Society observatory. Their website has a google maps location for directions. It's a free event to all. Bring anything astronomy related you want to sell or just browse around and see what others are selling, meet and chat with other West Michigan Astronomers. In case of bad weather, a rain date of Saturday May 31 will be used.

http://www.stargazing.net/mas/index.htm
702 N Maple Island Rd, (then 2, 1 miles East, Muskegon, MI 49442

Selling Equipment?

If you want to sell your telescope or other astronomy equipment, we will provide space here, on this page of our newsletter.

Any member interested in selling their astronomy equipment to other members they can do this via the Newsletter. SAAA will not be otherwise involved or responsible for any bidding/selling transactions. The member should list the asking price, a picture and phone number to be reached at in order to be contacted directly. Please send to Barb/Editor (barbwbrown@hotmail.com) seven (7) days before the end of any month in order to be included in the next month's issue.

Keyholder Schedule

Members, please see our membership roster for contact information in order to schedule for the Keyholder in order to schedule an Observatory private tour.

MAR 2-8	Barry Schoenfelner
MAR 9-15	Michael Long
MAR 16-22	James Reier
MAR 23-29	Harold Reitsema
MAR 30-APR 5	Karl Rijkse
APR 6-12	Frank Roldan

Have you missed a copy, or lost one, or just want to browse old issues of Astronomical League's *Reflector*?
Astronomical League's quarterly *Reflector* magazine:
https://www.astroleague.org/reflector/

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Previous Issues of our newsletters are found on our website at: Holland-saaa.org

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Digital copies of the Astronomical League's quarterly Reflector magazine can be found at:

https://www.astroleague.org/reflector/