



the Skyscraper

vol. 48 no. 03
March 2021

AMATEUR ASTRONOMICAL SOCIETY OF RHODE ISLAND * 47 PEEPTOAD ROAD * NORTH SCITUATE, RHODE ISLAND 02857 * WWW.THESKYSCRAPERS.ORG

In This Issue:

- 2 Night Sky Network 2020 Outreach Awards
- 3 March Astronomical Highlights & "X" Marks the Spot
- 4 February Reports
- 5 My Binocular Mount Project
- 6 Vesta: A Look Back
- 6 Finding Vesta
- 8 NASA Night Sky Notes:
- 8 Taking the Dog Stars for a Springtime Walk: Sirius and Procyon!
- 9 The Sun, Moon & Planets in March
- 10 Lenticular Galaxy in Ursa Major: NGC 2685
- 12 Starry Scoop

Seagrave Observatory is closed until further notice.

Due to the outbreak of coronavirus, Seagrave Memorial Observatory will remain closed to the public until further notice.

Phases of the Moon

Last Quarter Moon
March 6 01:36

New Moon
March 13 10:21

First Quarter Moon
March 21 14:40

Full Worm Moon
March 28 18:48

Behind the Scenes of *Sky & Telescope's* Science Articles

An Online Presentation by Camille M. Carlisle
Saturday, March 6, 7:00pm EST via Zoom

Contact Steve Hubbard (cstahhs@gmail.com) for Zoom Meeting link and information.

Each month, Sky & Telescope publishes an array of in-depth articles, including stories on the latest research in astronomy. How do these articles come together? In this talk, Science Editor Camille Carlisle will give you the inside scoop on S&T's science journalism, from how she and her colleagues find article ideas and authors to the (sometimes grueling) editing and fact-checking process, as well as illustration creation. If you've ever wondered what goes into creating the stories that appear in S&T and your other favorite science magazines — or even if you've never thought about it before — here's your chance to find out.

Upcoming Presentations

Saturday, April 3

David Iadevaia: Small Radio Telescopes for Amateur Astronomy

Saturday, May 1

Seth Shostak: SETI Institute

Saturday, June 5

Charlie Warren: 25 Years of *Amateur Astronomy Magazine*



Monthly Presentation Videos on YouTube

With our monthly meetings going virtual this year, we have begun to record and publish, with permission, our monthly Zoom presentations on the Skyscrapers YouTube channel. Go to the URL below to view recent presentations.

<https://www.youtube.com/channel/UCEZ5Un0-Sly0DXsSrUAxONg>



Night Sky Network 2020 Outreach Awards

by Linda Bergemann

Each year the NASA Night Sky Network recognizes member organizations that are actively engaged in outreach activities. For the second time, Skyscrapers has been awarded with special Night Sky Network Star pins to acknowledge the members who brought us this recognition.

This year's pin design was inspired by the appearance of Comet C/2020 F3 (NEOWISE) in our skies during the spring of 2020. Comets in particular have inspired stargazers for thousands of year, and the pin design is intended to inspire us to share

the wonders of the skies with future generations.

As we all know from experience, 2020 was a difficult year for outreach. But, we are fortunate to have dedicated members who kept the mission of Skyscrapers alive.

Skyscrapers is pleased to present the Night Sky Network 2020 Outreach Award to three members for their hard work and commitment to education: James Crawford, James Hendrickson and Francine Jackson.

Jim Crawford, our head trustee, worked

hard to repair and upgrade our facilities at Seagrave Memorial Observatory so we will be ready to greet visitors once again when COVID-19 restrictions are lifted.

Jim Hendrickson and **Francine Jackson** continued to educate the public by hosting several "Starry, Starry Nite" observing events at Chase Farm Park in Lincoln during September and October 2020.

They each received a pin and a certificate to show our appreciation.

Thank you Jim, Francine and Jim, for your time and talents!



The Skyscraper is published monthly by Skyscrapers, Inc. Meetings are held monthly, usually on the first or second Friday or Saturday of the month. Seagrave Memorial Observatory is open every Saturday night, weather permitting.

Directions

Directions to Seagrave Memorial Observatory are located on the back page of this newsletter.

Submissions

Submissions to *The Skyscraper* are always welcome. Please submit items for the newsletter no later than **March 15** to Jim Hendrickson, 1 Sunflower Circle, North Providence, RI 02911 or e-mail to jim@distantgalaxy.com.

E-mail subscriptions

To receive *The Skyscraper* by e-mail, send e-mail with your name and address to jim@distantgalaxy.com. Note that you will no longer receive the newsletter by postal mail.

President

Steve Siok

1st Vice President

Steve Hubbard

2nd Vice President

Ian Dell'Antonio

Secretary

Sue Hubbard

Treasurer

Kathy Siok

Members at Large

Francine Jackson

Laura Landen

Matt Ouellette

Trustees

Jim Crawford

Bob Janus

Outreach Chairperson

Linda Bergemann

Observatory Committee Chairperson

Jim Crawford

New Member Steward

Tracy Prell

Librarian

Dave Huestis

Assistant Librarian

Weston Ambrose

Historian

Dave Huestis

Editor

Jim Hendrickson

Astronomical League Correspondent (ALCor)

Jeff Padell

March Astronomical Highlights & “X” Marks the Spot

by Dave Huestis

As a native Rhode Islander, I should be accustomed to the ever-changing weather. The phrase, “If you don’t like New England weather, wait a minute” is well deserved. When I was finishing this column on January 22, 18 days saw temperatures above normal, with only four days normal. I’m not complaining. (I was already tired of the snow after that Halloween storm dumped about six inches up here in Pascoag. Then there was the December 16-17 storm that dumped 8-10 inches.) Then on January 23rd the temperature dropped like a rock. That “wait-a-minute” moment had arrived.

After the Winter Solstice on December 21, I reveled in the knowledge that at least daylight hours would be getting longer. Unfortunately, February and March can historically be our snowiest months. As we “March” into Spring hopefully the last vestiges of wintery conditions will soon be behind us so we can more comfortably enjoy the beauty of the heavens.

I want you to begin March with an observing challenge. On the 6th during morning twilight around 5:45 a.m., look towards the east-southeast about five degrees above the horizon. In an arc stretching to the upper right, you will find Mercury, Jupiter and Saturn. You will need an unobstructed view of this area of the sky. The accompanying graphic shows what to expect. Next, extend that arc higher into the dawn sky and you’ll also encounter the last quarter Moon. This celestial gathering will make an interesting sky scene, so try capturing an image or two.

Though not astronomical, Sunday, March 14 at 2:00 a.m. is an important date and time to remember. Because of an archaic ritual, most United States families will be setting their clocks ahead one hour from EST (Eastern Standard Time) to EDT (Eastern Daylight Time). It is called Daylight Saving Time, and though nothing changes astronomically, by so doing we experience more daylight hours in the evening. Forgetting to reset your clocks may result in missing an event by an hour. Been there. Done that!

Since the Winter Solstice (northern hemisphere) occurred back on December 21, the Sun has journeyed northward, rising higher and higher into our sky. On Saturday, March 20, a person standing on

the Earth’s equator will see the Sun directly overhead (zenith) at local noon. This event is called the Vernal Equinox, or Spring. Here in Rhode Island (at approximately 42 degrees north latitude), at noon the Sun will be only just 48 degrees above the southern horizon. Fortunately, as the year progresses and the Sun’s migration northward in our sky continues, the Sun reaches its highest elevation of just over 71.5 degrees off the southern horizon at local noon on the Summer Solstice, June 20 this year.

Throughout the years of penning this column, I have provided observing guides to various features on our lunar neighbor. The Moon’s constantly changing phase presents opportunities to view a wide variety of surface detail. See this link to a prior column on the Moon’s phases: www.theskyscrapers.org/the-moon-its-just-a-phase-its-going-through. Because the phase changes over time due to the Sun angle, detail observed for a specific feature changes as well.

Today I am going to concentrate on two features that present themselves just a few hours before first quarter Moon, which in March occurs on the 21st. During this phase the right half of the lunar disk is illuminated. The “line” that delineates the sunlit moonscape from the unlit portion is called the terminator, which indicates the sunrise point. If you were to stand on the lunar surface anywhere along this line you would see the Sun rising above the horizon.

The lunar topography includes moun-

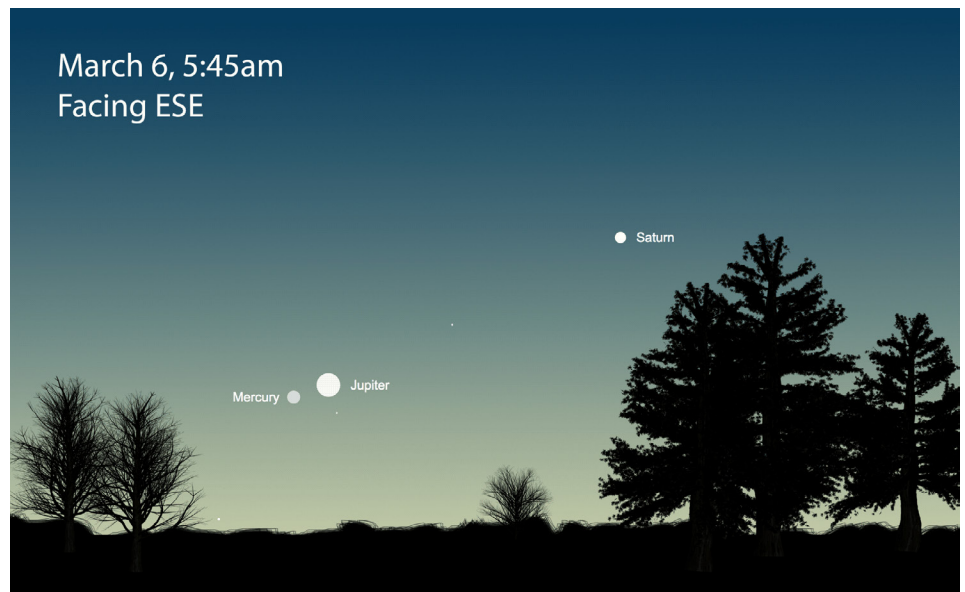
tains, craters, valleys and seas. So, at times the tallest mountains or crater rims may be receiving their first rays of sunlight, whereas nearby valleys or crater floors may still be in darkness.

But did you know that this process can create the appearance of letters on the lunar landscape? The most prominent one is the Lunar X. Glenn Chaple, an *Astronomy* magazine columnist, a long-time friend of *Skyscrapers*, and a frequent contributor to our monthly newsletter, wrote the following in a 2012 column for us.

“It results when light from the rising sun first strikes an elevated area formed by the conjunction of four craters near the crater Werner...I decided to see the Lunar X for myself. Peering into the eyepiece, I was amazed at how readily visible the “X” was. How had I missed it? How, for that matter, had legions of other amateur astronomers failed to see it, or at least announce its existence? Although it appears on a number of early lunar photographs, the Lunar X wasn’t formally introduced to the public until 2004 when it was described by Canadian amateur astronomer David Chapman in an issue of *SkyNews Magazine*. Perhaps the Lunar X was lost in the overwhelming amount of detail the first quarter moon presents.”

See this wonderful animation: https://youtu.be/cwwJoQ-7_-E

I don’t know whether Glenn’s question on why the “X” had not been previously re-



ported has ever been explained. Sounds like an interesting research project for someone.

The Lunar X is best observed with even a small telescope during a four-to-six-hour window before first quarter. The evening of March 20 provides the best viewing opportunity. After sunset, approximately 7:00 p.m. EDT, use the animation referenced above to guide you to Lunar X's approximate location. At that time the gradual appearance of "X" may already be underway. According to Sky and Telescope Magazine, the "pattern should be most prominent

from around 8:00 to 9:00 p.m. EDT. Note: Visibility of the "X" feature occurs each lunar month, however the timing may favor the Far East or Europe.

And if observing one letter on the lunar surface isn't enough, at the same time you can view the Lunar V. This feature also straddles the terminator. Reference the animation once again to see where it is located in position relative to the "X." Since the "V" is a little larger than the Lunar X, the pattern will persist even after the "X" disappears as the sunrise point progresses across

the Moon's surface.

See the accompanying images taken by Scott MacNeill, Director of Frosty Drew Observatory, in 2019.

Good luck in lettering in lunar topography.

Keep your eyes to the skies.



Dave Huestis is Skyscrapers Historian and has been contributing monthly columns to local newspapers for nearly 40 years. See more at <http://theskyscrapers.org/dave-huestis>



February Reports

Skyscraper Executive Committee Meeting via Zoom

Tuesday February 10, 2021 at 7PM

Meeting called to order by Steve Siok at 7:03 PM.

Present: Steve Siok, Kathy Siok, Steve Hubbard, Sue Hubbard, Linda Bergemann, Francine Jackson, Jim Crawford, Bob Janus, Jim Hendrickson, Jeff Padell, Laura Landon, Ian Dell'Antonio Total : 12

Announcement from Linda Bergemann: Congratulations to the 2020 NSN Outreach Awardees: Francine Jackson and Jim Hendrickson for the Chase Farm events, and to Jim Crawford for "working behind the scenes" at Seagrave Observatory. They were each mailed a certificates and pin provided by the Night Sky Network.

Future monthly Meeting Dates: Steve Hubbard set dates for summer meetings: Saturday July 10th (to avoid the July 4th holiday) and Saturday August 14 (to avoid Stellafane). It is hoped that Skyscrapers will be able to resume in person meetings during the summer, but this still uncertain.

AstroAssembly 2021- Scheduled for Saturday October 2, 2021

Membership Updates: Kathy Siok re-

ports that 4 people joined just last week. Total membership to date: 142. Bob Janus will reach out to the new members in the N. Scituate area.

"Dark Skies in Scituate" Update: Laura Landon and Matt Ouellette hope to investigate encouraging the town of Scituate to become a dark sky town. They will report any progress at future meetings.

Elections for 2021- Steve Siok will assemble a nominating committee for the 2021 board.

Annual Reports: Kathy Siok will be working on the annual reports and asking members of the executive committee for input.

Future of Skyscrapers: Steve Siok and EC members had a general discussion about the immediate and future plans for the society. Right now, we are getting thru the pandemic with our popular monthly Zoom meetings. As we look to the future, we will need to think about reopening plans (immediate concern) as well as to look at longer term issues such as our niche in the Rhode Island astronomical community and membership needs. Suggestions were made concerning our new and current members. Each new member could be contacted by

phone in addition to the welcome emails sent by Linda Bergemann. Also, that we should learn more about current member's skills and interests. To start, Linda B. will email all members and ask them to update their profiles in NSN. Also perhaps a survey could be sent out to the membership. We will be discussing additional short range concerns and start to design a process to look at a 5 year perspective. More discussion will follow at future meetings.

Next Executive Committee Meeting: Monday March 15, 2021 at 7PM via Zoom.

Adjourned: 8:20PM

Respectfully submitted,

Sue Hubbard-Secretary

New Members Welcome to Skyscrapers

Roger Sinnott
of Norwell, MA

James Meltzer
of West Warwick, RI

My Binocular Mount Project

by Bill Weber

Hi Folks,

I just want to say HI and to share with you my recently completed rework of my binocular mount.

I have had an astronomical binocular 20X x 80mm for several years but have not made much use of them other than for observing the moon. The binoculars are fitted to a parallelogram mount attached to a heavy duty tripod. The advantage of a parallelogram mount is that the binocular stays on target even when the binocular is raised or lowered. This feature has proven very useful at star parties and outreach events. I would set the binoculars on the moon and then everyone, adults and children could take turns without my having to constantly recenter the moon. Now, the binoculars are attached to the mount using a simple L bracket at the end of the mount with a screw knob to lock the binoculars in their altitude position by compression. This arrangement has a lot of slippage making it difficult to accurately hold the binoculars in position while tightening the lock knob. This problem is merely annoying when observing a large target like the moon but becomes a major issue when searching for dim, deep sky objects.

Since I want to begin the Astronomical League's Messier Object Binocular Observing Program which requires submission of detailed observation data with sketches, I needed a mount that balances the binoculars in front of my eyes leaving hands free for sketching and allows easy movement in altitude and azimuth to occasionally reacquire the object.

After considerable web research, I found a promising design that I could adapt for attaching to the existing mount. After measurements and making a 1:1 sketch up, I made the wood parts from 1" x 2" red oak and assembled them with brass screws. The bearing screws are 1/4" stainless steel machine screws with nylon insert anti-back off nuts. The counterweight for the altitude axis was made using a 1/2" iron floor flange, a 1/2" x 12" black iron pipe nipple; a 2lb hand weight secured to the pipe nipple with stainless steel hose clamps and a bicycle hand bar grip was added to the pipe as a grip. The binoculars are attached to a 1/8" piece of aluminum using the captive screw that came with the binoculars. It was necessary to add additional mass to the

parallelogram counterweight and I used a 5lb barbell weight with a 2lb hand weight whip tied to the barbell weight using paracord. The result is a mount that has 5 axes of movement: 0 to 90° in altitude and about 150° in azimuth at the binocular; raise and lower the parallelogram; rotate the parallelogram through 360° in azimuth; and raise or lower the entire mount at the tripod. I added a bracket to the binocular for hold-

ing a smart phone so that I could use a smart phone sky chart. The pictures show the finished mount. The mount moves easily with a light touch, has no noticeable backlash and stays steady on target. However, it is sensitive to level so it is necessary to carefully level the tripod. The pictures show the finished mount.

I am looking forward to clear skies and warmer temperatures.



Vesta

A Look Back

by Francine Jackson

When the Titius-Bode “mathematical concept” (a way to determine the distance to the planets from the Sun) came into prominence in the late 1700s, it was realized that it accounted for a planet to be situated between Mars and Jupiter. This came to fruition on January 1st, 1801, when Giuseppe Piazzi found it, and it was eventually named Ceres. But, then a funny thing happened in 1802: On March 28th of that year, Heinrich Olbers found another planet there, named Pallas. And, in 1804, yet another body was found in this neighboring region: Juno, on September 1st, 1804, by Karl Harding. Finally, on March 29th 1807, Heinrich Olbers located yet another body, name Vesta, once again, within the same area.

That ended the discoveries of objects until 1845, when amateur astronomer Karl Ludwig Hencke located Astrea (he also discovered Hebe two years later). By then, it was understood that there wasn't a single planet between Mars and Jupiter – there were many more, and, in fact, many more kept being found. It's not actually known when all these objects stopped being called plan-

Finding Vesta

by Jim Hendrickson

The planet bonanza of the past several months is now over. Jupiter & Saturn have passed behind the Sun and are now early morning objects. Venus is now passing behind the Sun (superior conjunction is on March 26) on the way to becoming an evening star once again, and Mars has faded from prominence as it mingles with the brighter stars of the Winter Hexagon.

Even our ice giants are moving out of view, with Neptune heading towards conjunction on March 11 and Uranus moving lower in the west.

With the big and bright planets mostly out of view in our evening skies this month, we can turn towards the asteroid belt for our current object of interest.

Vesta is the second largest object in the asteroid belt, surpassed only by dwarf planet Ceres. Orbiting the Sun at an average distance of 2.36 AU, Vesta is the brightest of the main belt asteroids, and is easy to observe

ets, but it is believed that Charles Burney, Jr., as early as 1802, proposed the term asteroid to astronomer William Herschel at a meeting of the Royal Society. Although these are all solid bodies, they were named because of their rather bright, “starlike” appearance, as “asteroid” translates to “starlike.”

Of the now hundreds of thousands of asteroids (sometimes also called planetoids or minor planets), there is only one that occasionally is bright enough to be seen with the naked eye, although not in a city. Like the planet Uranus, 4 Vesta can brighten to a mid 5th magnitude at times. It is also the second most massive body in the asteroid belt region (after Ceres), although it is only a quarter as massive as Ceres.

We're very fortunate in that NASA's Dawn mission visited both Ceres and Vesta. Beginning with Vesta in 2011 – how many of us recall the “Vesta Fiesta” in honor of

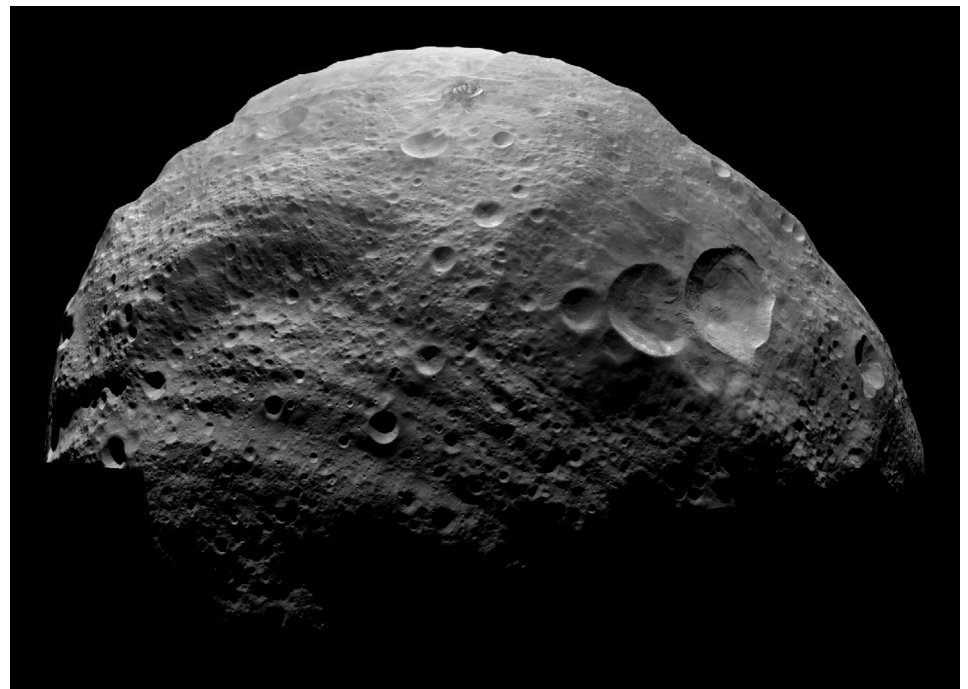
the amazing images that were returned to Earth, showing it as a white, rocky body. To learn more about Dawn's mission, and the results of its tours of the two largest asteroids in the neighborhood, try dawn.jpl.nasa.gov or any site that highlights the unbelievable work done by this incredible craft.

We're mentioning Vesta because, elsewhere in this newsletter, Jim Hendrickson will be informing you that Vesta is in a great, and fairly easy-to-locate, area of the sky for the next several months. Right now, it is skirting the constellation Leo, the Lion. But, let Jim zero in on the location for you.



Francine Jackson is a NASA Solar System Ambassador, writes the weekly newsletter for Ladd

Observatory See more at <http://theskyscrapers.org/francine-jackson>



Mosaic of the asteroid Vesta from the Dawn spacecraft. Images 0006121, 0006122, 0006123, 0006124 taken by the Framing Camera on August 23, 2011 from an altitude of 2747 kilometers and with a resolution of about 250 meters per pixel. NASA / JPL / MPS / DLR / IDA / Daniel Macháček

once you know where to look for it.

With a synodic period of just under 17 months, Vesta has five oppositions approximately every seven years. Owing to its eccentric orbit, not all apparitions of Vesta are the same. The distance between Earth and Vesta during successive apparitions can vary significantly, ranging from 1.59 AU to as close as 1.14 AU. Much like Mars, this difference in distance is quite noticeable. Although Vesta is much too small to be resolved as a disk in most ground-based telescopes, its brightness and the angular

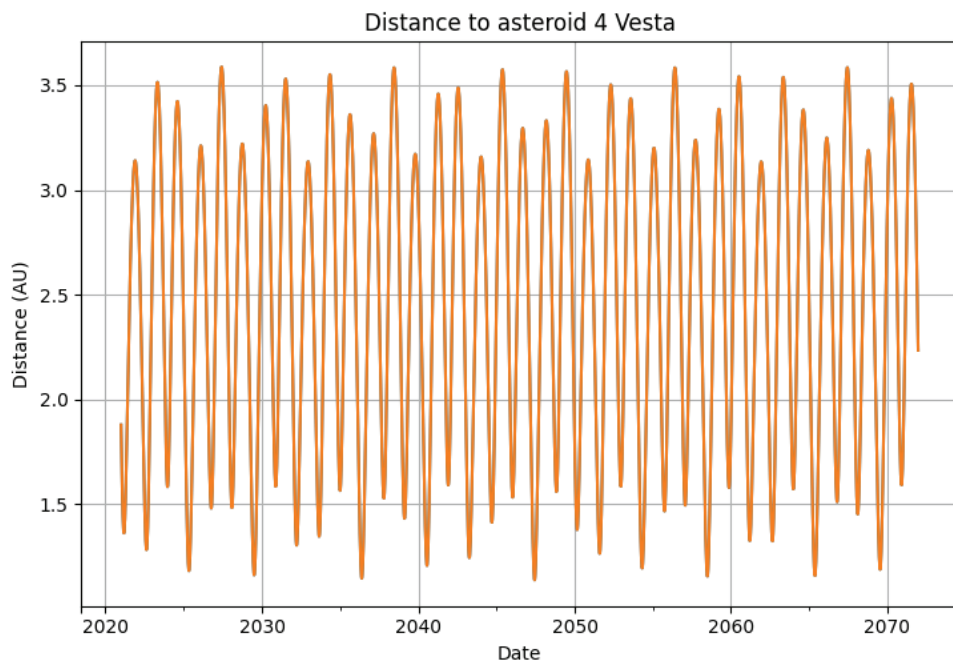
distance of sky it covers over a given period of time are the most observable properties. During the closest apparitions, Vesta can shine as bright as magnitude 5.4 in our sky, bright enough to be visible to the unaided eye under dark sky conditions.

In 2021, Vesta reaches opposition on March 4, and is closest to Earth on March 9, when it will be at a distance of 1.361 AU. This is a “middle-range” apparition, as seen by the chart. In the few days close to opposition, Vesta is as bright as magnitude 5.8, which is about as bright as Uranus, so if

you've had success tracking Uranus, you'll find Vesta just as easily. However, Vesta will appear starlike with no discernable color even in the largest telescopes, unlike Uranus, which will resolve as a tiny blue-green orb even in relatively small telescopes under high magnification.

With no visual distinction from background stars, the easiest way to identify Vesta is to observe it on successive nights, and note the change in its position relative to the background stars. And this year Vesta is quite easy to find, as it can be seen looping through the hindquarters of Leo, relatively close to some bright stars. At midnight on March 9, when Vesta is closest and brightest, it is conveniently located along a line connecting Chertan (theta Leonis) to Zosma (delta Leonis), about $\frac{1}{4}$ of the distance between the two stars.

Another simple way to identify Vesta is to take an image of Leo on two separate nights. Any camera will do the trick, as long as you can set exposure controls, and place or mount it to something steady, no tracking required. Even most phone cameras should be able to capture it. Once you have your two images, you can compare them to identify the moving object. You can even



align and combine them to create a "blink" animation, demonstrating the motion of Vesta.

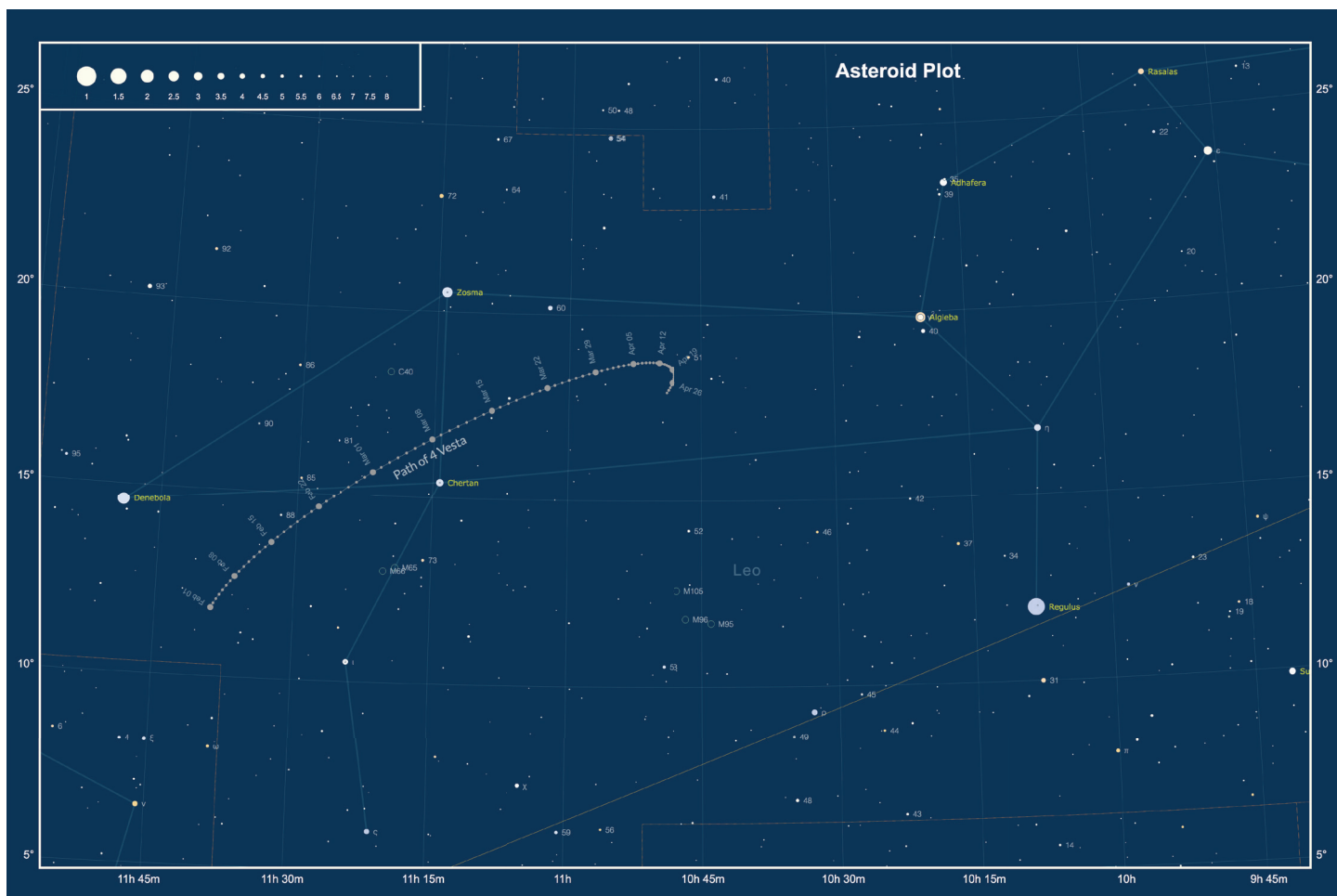
If you don't manage to see Vesta at its closest approach, keep watching it over the next several weeks as Leo gets higher in the evening sky. Scan Leo with binoculars each time you're out, and note the position of the dimmer stars within lion's asterism. You

should be able to easily identify the moving object. That's Vesta.

Good luck, and have fun exploring the asteroid belt.



Jim Hendrickson is newsletter and web editor and has been a member for 20 years. See more at <http://theskyscrapers.org/jim-hendrickson>



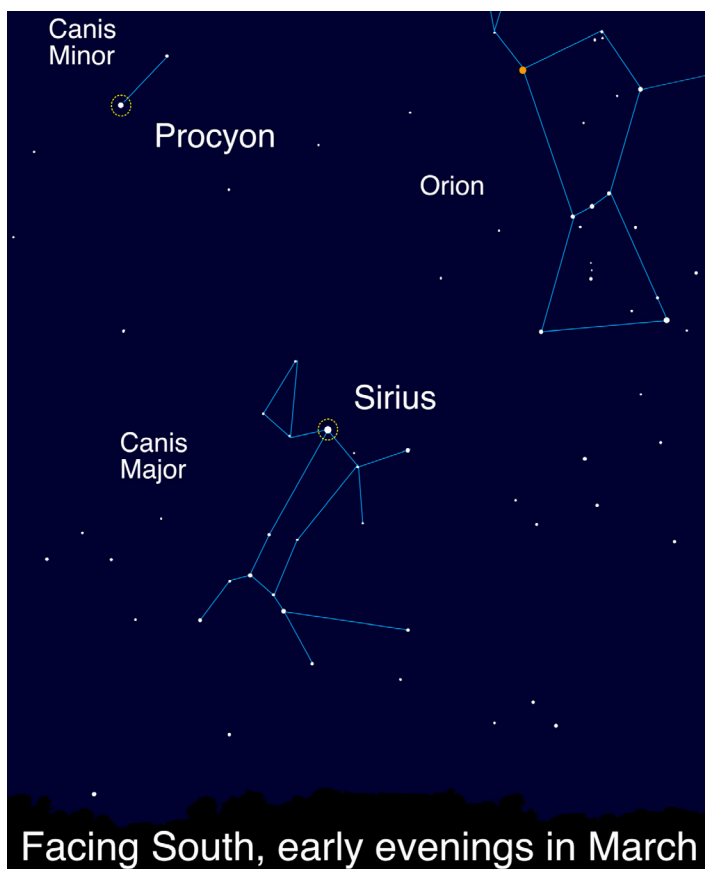
Taking the Dog Stars for a Springtime Walk: Sirius and Procyon!

By David Prosper

March skies feature many dazzling stars and constellations, glimmering high in the night, but two of the brightest stars are the focus of our attention this month: Sirius and Procyon, the dog stars!

Sirius is the brightest star in the nighttime sky, in large part because it is one of the closest stars to our solar system at 8.6 light years away. Compared to our Sun, Sirius possesses twice the mass and is much younger. Sirius is estimated to be several hundred million years old, just a fraction of the Sun's 4.6 billion years. Near Sirius - around the width of a hand with fingers splayed out, held away at arm's length - you'll find Procyon, the 8th brightest star in the night sky. Procyon is another one of our Sun's closest neighbors, though a little farther away than Sirius, 11.5 light years away. While less massive than Sirius, it is much older and unusually luminous for a star of its type, leading astronomers to suspect that it may "soon" - at some point millions of years from now - swell into a giant star as it nears the end of its stellar life.

Sirius and Procyon are nicknamed the "Dog Stars," an apt name as they are the brightest stars in their respective constellations - Canis Major and Canis Minor - whose names translate to "Big Dog"



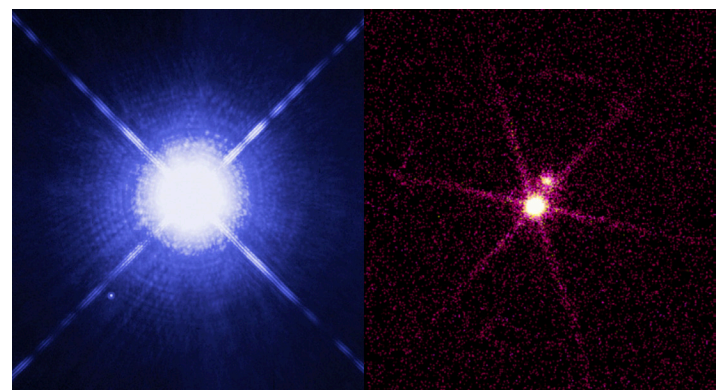
Sirius and Procyon, the loyal hunting dogs of nearby Orion the Hunter! What other stories can you imagine for these stars? Learn about "Legends in the Sky" and create your own with this activity: <https://bit.ly/legendsinthesky> Image created with assistance from Stellarium.

and "Little Dog." Not everyone sees them as canine companions. As two of the brightest stars in the sky, they feature prominently in the sky stories of cultures around the world. Sirius also captures the imaginations of people today: when rising or setting near the horizon, its brilliance mixes with our atmosphere's turbulence, causing the star's light to shimmer with wildly flickering color. This vivid, eerie sight was an indication to ancient peoples of changes in the seasons, and even triggers UFO reports in the modern era!

Both of these bright stars have unseen companions: tiny, dense white dwarf stars, the remnants of supermassive companion stars. Interestingly, both of these dim companions were inferred from careful studies of their parent stars' movements in the 1800s, before they were ever directly observed! They are a challenging observation, even with a large telescope, since their parent stars are so very bright that their light overwhelms the much dimmer light of their tiny companions. The white dwarf stars, just like their parent stars, have differences: Sirius B is younger, brighter, and more energetic than Procyon B. Careful observations of these nearby systems over hundreds of years have helped advance the fields of: astrometry, the precise measurement of stars; stellar evolution; and astroseismology, the study of the internal structure of stars via their oscillations. Discover more about our stellar neighborhood at nasa.gov!



This article is distributed by NASA Night Sky Network. The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!



Sirius A and B imaged by two different space telescopes, revealing dramatically different views! Hubble's image (left) shows Sirius A shining brightly in visible light, with diminutive Sirius B a tiny dot. However, in Chandra's image (right) tiny Sirius B is dramatically brighter in X-rays! The "Universe in a Different Light" activity highlights more surprising views of some familiar objects: <http://bit.ly/different-light-nsn> NASA, ESA, H. Bond (STScI), and M. Barstow (University of Leicester) (left); NASA/SAO/CXC (right)

The Sun, Moon & Planets in March

This table contains the ephemeris of the objects in the Solar System for each Saturday night in March 2021. Times in Eastern Standard Time (UTC-5) through March 13, Daylight Saving Time (UTC-4) after March 13. Ephemeris times are for Seagrave Observatory (41.845N, 71.590W).

Object	Date	RA	Dec	Const	Mag	Size (")	Elong	Phase(%)	Dist(S)	Dist(E)	Rise	Transit	Set
Sun	6	23 07.1	-5 40.0	Aqr	-26.8	1934.7	-	-	-	0.99	06:12	11:57	17:43
	13	23 32.9	-2 55.6	Psc	-26.8	1931.0	-	-	-	0.99	06:00	11:55	17:51
	20	23 58.5	-0 09.6	Psc	-26.8	1927.3	-	-	-	1	06:48	12:53	18:59
	27	0 24.0	2 35.8	Psc	-26.8	1923.6	-	-	-	1	06:36	12:51	19:06
Moon	6	16 55.1	-22 51.4	Oph	-12.0	1900.3	91° W	51	-	-	01:30	06:10	10:46
	13	23 19.8	-10 02.5	Aqr	-6.5	1808.0	7° W	0	-	-	06:31	12:15	18:09
	20	4 40.0	21 42.4	Tau	-11.4	1802.3	72° E	35	-	-	10:34	18:21	02:13
	27	11 04.4	11 06.3	Leo	-12.7	1964.8	155° E	95	-	-	17:52	00:28	06:52
Mercury	6	21 23.7	-15 41.9	Cap	0.3	7.2	27° W	56	0.46	0.94	05:09	10:14	15:19
	13	21 55.8	-14 05.0	Cap	0.1	6.5	26° W	66	0.47	1.04	05:07	10:19	15:31
	20	22 32.7	-11 21.1	Aqr	0.0	6.0	24° W	74	0.46	1.13	06:06	11:29	16:52
	27	23 13.0	-7 35.7	Aqr	-0.2	5.6	20° W	81	0.44	1.21	06:05	11:42	17:20
Venus	6	22 50.4	-8 54.6	Aqr	-3.8	9.9	5° W	100	0.73	1.71	06:09	11:41	17:14
	13	23 22.9	-5 33.7	Aqr	-3.8	9.9	4° W	100	0.73	1.72	06:02	11:46	17:31
	20	23 55.0	-2 05.4	Psc	-3.8	9.8	2° W	100	0.73	1.72	06:54	12:50	18:48
	27	0 26.8	1 26.1	Cet	-3.8	9.8	1° E	100	0.73	1.72	06:45	12:55	19:05
Mars	6	3 54.5	21 47.7	Tau	1.0	6.2	75° E	90	1.59	1.51	09:16	16:43	00:11
	13	4 11.8	22 36.2	Tau	1.1	5.9	73° E	90	1.60	1.58	09:02	16:33	00:04
	20	4 29.5	23 18.2	Tau	1.2	5.7	70° E	91	1.06	1.65	09:49	17:23	00:58
	27	4 47.5	23 53.0	Tau	1.2	5.5	67° E	91	1.61	1.71	09:37	17:14	00:51
1 Ceres	6	0 30.8	-4 53.5	Cet	9.1	0.3	21° E	100	2.93	3.83	07:34	13:19	19:04
	13	0 40.6	-3 41.6	Cet	9.1	0.3	17° E	100	2.92	3.86	07:12	13:01	18:51
	20	0 50.5	-2 30.2	Cet	9.0	0.3	13° E	100	2.92	3.88	07:50	13:43	19:38
	27	1 00.5	-1 19.7	Cet	9.0	0.3	10° E	100	2.92	3.89	07:28	13:26	19:24
Jupiter	6	21 21.5	-16 04.5	Cap	-1.8	33.2	28° W	100	5.07	5.93	05:07	10:10	15:13
	13	21 27.6	-15 36.6	Cap	-1.9	33.5	33° W	100	5.07	5.87	04:43	09:48	14:53
	20	21 33.5	-15 09.1	Cap	-1.9	33.9	39° W	100	5.07	5.81	05:20	10:27	15:33
	27	21 39.2	-14 42.2	Cap	-1.9	34.3	44° W	100	5.07	5.73	04:56	10:05	15:13
Saturn	6	20 46.2	-18 27.7	Cap	0.7	15.4	37° W	100	9.98	10.76	04:41	09:34	14:27
	13	20 49.1	-18 17.1	Cap	0.7	15.5	43° W	100	9.98	10.68	04:16	09:09	14:03
	20	20 51.8	-18 07.1	Cap	0.8	15.6	49° W	100	9.97	10.60	04:50	09:45	14:39
	27	20 54.3	-17 57.9	Cap	0.8	15.8	56° W	100	9.97	10.50	04:24	09:20	14:15
Uranus	6	2 22.3	13 42.6	Ari	5.8	3.5	52° E	100	19.76	20.36	08:17	15:09	22:02
	13	2 23.4	13 48.5	Ari	5.8	3.4	45° E	100	19.76	20.45	07:50	14:43	21:36
	20	2 24.7	13 54.8	Ari	5.9	3.4	39° E	100	19.76	20.53	08:23	15:17	22:10
	27	2 26.0	14 01.6	Ari	5.9	3.4	32° E	100	19.76	20.60	07:57	14:50	21:44
Neptune	6	23 26.6	-4 46.1	Aqr	8.0	2.2	5° E	100	29.93	30.91	06:29	12:14	17:59
	13	23 27.5	-4 39.9	Aqr	8.0	2.2	2° W	100	29.93	30.92	06:02	11:47	17:33
	20	23 28.5	-4 33.7	Aqr	8.0	2.2	9° W	100	29.93	30.91	06:35	12:21	18:07
	27	23 29.5	-4 27.6	Aqr	8.0	2.2	15° W	100	29.93	30.89	06:08	11:54	17:40
Pluto	6	19 53.7	-22 11.7	Sgr	14.4	0.2	49° W	100	34.23	34.87	04:05	08:42	13:19
	13	19 54.3	-22 10.7	Sgr	14.4	0.2	56° W	100	34.24	34.78	03:38	08:15	12:52
	20	19 54.9	-22 10.0	Sgr	14.4	0.2	63° W	100	34.24	34.68	04:11	08:48	13:25
	27	19 55.4	-22 09.5	Sgr	14.4	0.2	70° W	100	34.25	34.58	03:44	08:21	12:58

Lenticular Galaxy in Ursa Major: NGC 2685

by Glenn Chaple for LVAS

Mag: 11.3, Size: 4.6' X 2.5'

This month's Observer's Challenge, NGC 2685, is a lenticular galaxy with a twist. It has a ring of stars, gas, and dust that runs perpendicular to the plane of the main galactic disk. Such rarities are known as polar ring galaxies. These cosmic oddities are likely a result as a collision or gravitational interaction between two galaxies, one of which is lenticular. The appearance of the whorls surrounding NGC 2685 give it the nick-name the "Helix Galaxy"

Those with computer-controlled scopes will find NGC 2685 at coordinates RA 8h 55m 34.8s, Dec +58° 44' 03.9". If you locate deep sky objects via the star-hop method,

begin your search at the 3rd magnitude star Muscida (omicron [o] Ursae Majoris), shown in upper right of Chart A. Aim your telescope midway between Muscida and 5th magnitude 17 Ursae Majoris (Chart B), and you should come across a pair of stars of magnitude 6 and 7 that are about a degree apart. Chart C shows the location of NGC 2685 between these two stars.

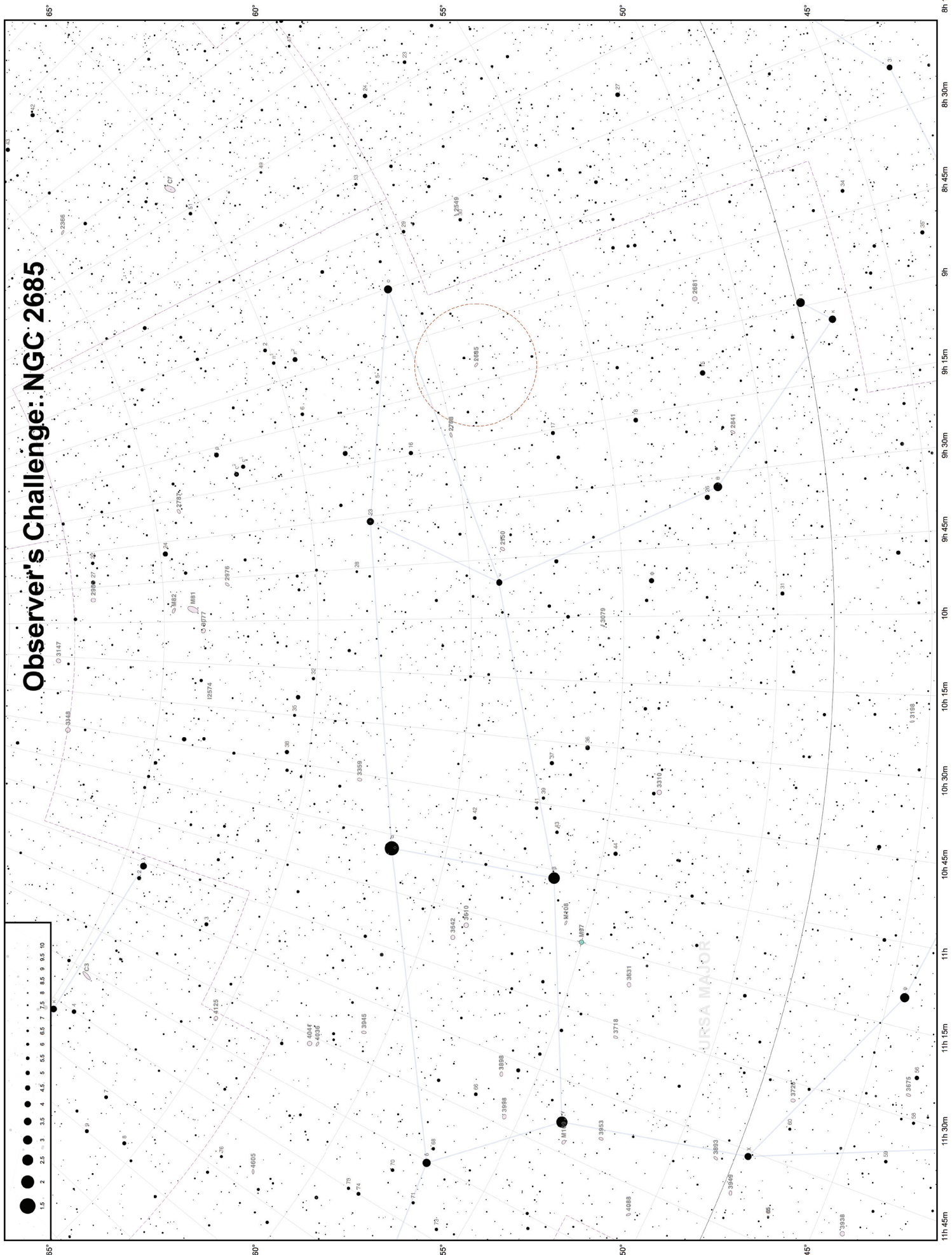
NGC 2685 was discovered by the German astronomer Wilhelm Tempel on August 18, 1882. Studies indicate a distance of around 40 million light years and a visual diameter of some 50,000 light years- about half that of the Milky Way.

The purpose of the Observer's Challenge is to encourage the pursuit of visual observing. It is open to everyone who is interested. If you'd like to contribute notes, drawings, or photographs, we'll be happy to include them in our monthly summary. Submit your observing notes, sketches, and/or images to Roger Ivester (rogerivester@me.com). To find out more about the Observer's Challenge or access past reports, log on to rogerivester.com/category/observers-challenge-reports-complete.



NGC 2685 Image by Mario Motta, MD (ATMoB) Taken with 32-inch f/6.5 telescope with ZWO ASI6200 camera, 3 hours imaging, using RGB and Lum filters, processed in Pixinsight.

Observer's Challenge: NGC 2685



STARRY SCOOP

Editor: Kaitlynn Goulette



WHAT'S UP

March brings us milder weather, later sunsets, and for those of us in the Northern Hemisphere, the spring equinox. With daylight saving time upon us mid-month, so is the Messier Marathon. This marathon runs from the 13th into April. Throughout these nights, astronomers have the opportunity to observe all 110 Messier objects in a single session. This list of objects was compiled during the 1700s by French astronomer Charles Messier.

During March, you might be able to glimpse the zodiacal light extending upwards from the western horizon if you have a dark sky. This dim triangle-shaped glow is caused by the sun's light bouncing off countless dust particles found in our solar system. Early spring is a good time to observe this in the evening sky because the ecliptic is positioned at a higher angle to the western horizon.

March 13th marks the 240-year anniversary of Sir William Herschel's discovery of Uranus. This was the first planet found using a telescope, which is very important because it began the search for other planets throughout our solar system. This led to the discovery of Neptune, Pluto, and many dwarf planets that are not visible to the unaided eye.

On March 17th we celebrate the 10-year anniversary of NASA's MESSENGER spacecraft successfully orbiting Mercury. The probe orbited this small planet for more than four years before crash landing on it in April 2015. Throughout that time, MESSENGER studied Mercury's geology, magnetic field, and chemical composition. This was a major feat because Mercury is very close to the sun, which makes it difficult for a spacecraft to sustain a stable orbit.

This month our two largest gas giants return to the morning sky. Just before sunrise, look to the east to find Saturn and Jupiter. They will appear to be the brightest starlike objects in that region of the sky. For the first week or so of March, Mercury will be joining these planets. Mercury is noticeably higher above the horizon than usual because on the 6th, it reaches its greatest western elongation. Adding to this spectacle, the crescent moon joins these planets on the 9th and 10th.

MARCH'S SKY

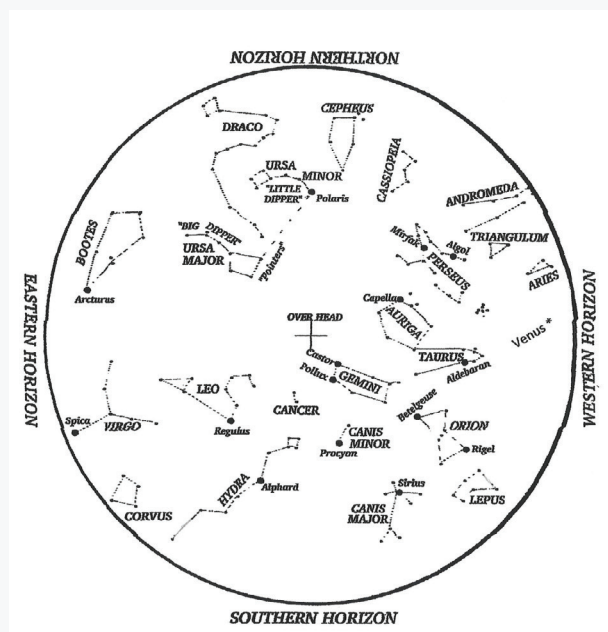
6: Mercury at Greatest Western Elongation

13: New Moon

14: Daylight Saving Time Begins

20: March Equinox

28: Full Moon



Credit: Roger B. Culver

Hold star map above your head and align with compass points.

OBSERVATIONS

Clear skies have not been too common recently, but I've managed to get under the stars a few times. It's also been cold and I find myself having to retreat indoors to warm up about every 20 minutes. This may not allow my eyes to fully adapt to the dark, but it beats getting frostbite.

One of my favorite recent observations is NGC 2392 in the constellation Gemini. This planetary nebula, discovered by Sir William Herschel in 1787, is called the Eskimo Nebula because when viewed through a telescope, it resembles a face wrapped in a hooded parka. Another planetary nebula I observed was NGC 2022 in Orion. Unlike the Eskimo, this observation was faint and difficult to see. A double-star observation that is worth mentioning is Lamda Orionis, also known as Meissa. I split this double star using high power to reveal the beautiful contrasting colors of its components, one orange and the other blue.

On several not-so-clear nights, I shifted my efforts to observing the moon, because even small gaps in the clouds allow for moongazing. The great thing about the moon is that there are new features to view every night because of the terminator, or day/night line where long shadows emphasize detail. On various evenings, I observed some of my favorite features in stunning resolution. I mostly used 188x, because it provided a good view without overly amplifying the atmospheric turbulence.



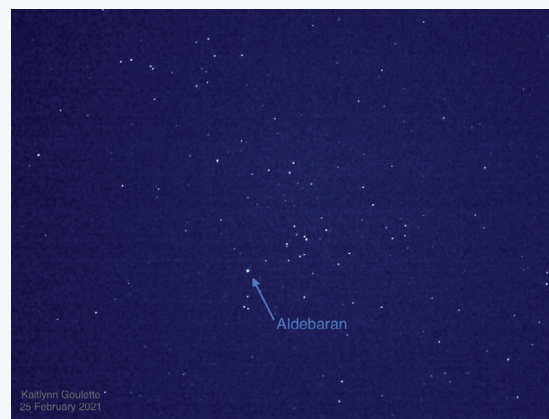
The purpose of the Starry Scoop is to communicate current astronomy and space events. If you want to share your observations or get digital copies of the Starry Scoop, contact starryscoop@gmail.com. The Starry Scoop is now on Facebook. Clear skies!

OBJECT OF THE MONTH

This month's featured object is the Hyades star cluster in Taurus the Bull. The Hyades has been known since ancient times and is connected to many ancient myths and legends.

This object contains hundreds of stars. At a distance of about 150 light-years, the Hyades is one of the nearest open clusters to the earth. All of these stars have the same age, origin, and motion through space. Along with the four main bright stars of the Hyades cluster, the star Aldebaran adds even more beauty, and together they form the V-shaped asterism that outlines the head of Taurus the Bull. Aldebaran is a red-giant star and marks the eye of the bull, but is completely unrelated to the Hyades cluster. We associate Aldebaran with this star cluster because, from our perspective, they're in the same line of sight.

To the unaided eye, this cluster appears as a V-shaped pattern, spanning about 5 degrees in the sky. The use of a telescope or binoculars will reveal many more stars, including colorful double stars. You can find the Hyades high in the southwest sky just after the sun has set. Good luck!



The Hyades
Photo by Kaitlynn Goulette

Directions to Seagrave Memorial Observatory

From the Providence area:

Take Rt. 6 West to Interstate 295 in Johnston and proceed west on Rt. 6 to Scituate. In Scituate bear right off Rt. 6 onto Rt. 101. Turn right onto Rt. 116 North. Peeptoad Road is the first left off Rt. 116.

From Coventry/West Warwick area:

Take Rt. 116 North. Peeptoad Road is the first left after crossing Rt. 101.

From Southern Rhode Island:

Take Interstate 95 North. Exit onto Interstate 295 North in Warwick (left exit.) Exit to Rt. 6 West in Johnston. Bear right off Rt. 6 onto Rt. 101. Turn right on Rt. 116. Peeptoad Road is the first left off Rt. 116.

From Northern Rhode Island:

Take Rt. 116 South. Follow Rt. 116 thru Greenville. Turn left at Knight's Farm intersection (Rt. 116 turns left) and follow Rt. 116. Watch for Peeptoad Road on the right.

From Connecticut:

- Take Rt. 44 East to Greenville and turn right on Rt. 116 South. Turn left at Knight's Farm intersection (Rt. 116 turn left) and follow Rt. 116. Watch for Peeptoad Road on the right.
- or • Take Rt. 6 East toward Rhode Island; bear left on Rt. 101 East and continue to intersection with Rt. 116. Turn left; Peeptoad Road is the first left off Rt. 116.

From Massachusetts:

Take Interstate 295 South (off Interstate 95 in Attleboro). Exit onto Rt. 6 West in Johnston. Bear right off Rt. 6 onto Rt. 101. Turn right on Rt. 116. Peeptoad Road is the first left off Rt. 116.



47 Peeptoad Road
North Scituate, Rhode Island 02857