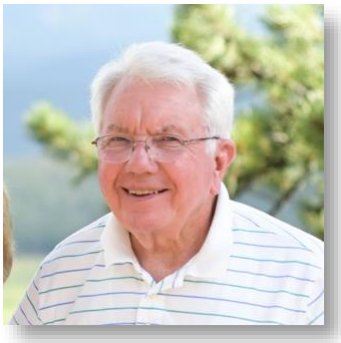
This incredible mage of Comet Olbers was taken by DMAS member Heather Johnson working with a friend on the night of July 4.
Heather performed all the post-processing to reveal this unusual corkscrew tail.

When comets approach the Sun, the Sun's heat and radiation evaporates some of the comet's gases, causing the emission of dust, electrons, ions and other volitile materials. These materials form a tail whose flow is disturbed by the pressure of the Sun's radiation. Gases are often ionized and ionized gas tails point away from the sun's radiation pressure. Dust tails often follow a very different path, sometimes caused by the spin of the comet's core, as shown above.

SAVE THESE DATES NOW!

July 28 – August 2 - **Nebraska Star Party**
August 3 – **Board of Directors meeting 5:00 p.m.**
August 3 – **Member Meeting at Ashton 6:30 p.m.**
August 11/12 – **peak of Perseid Meteor Shower**
October 3 – 6 - **Iowa Star party**
October 12 – **Astronomy Day**

August 2024 – President's Report



The Perseid Meteor shower has begun. The dates are from July 14 through September 1, 2024, with the predicted peak on the night of August 11/12. "The Perseid meteor shower is caused by debris from the comet Swift-Tuttle. Sightings of comet Swift-Tuttle have been recorded throughout history, with the comet's orbit bringing it near Earth every 133 or so years. It last entered the inner Solar System in 1992. The debris from this comet is known to cause fireballs often. Does someone want to organize a watch Party? Invite some friends and enjoy an exciting night out at Ashton!

Our Annual Picnic and accompanying program by Dean Regas was a huge success. The picnic was well attended and there was an overflow audience for the program. Thanks to Greg for arranging and coordinating this event and thanks also to Jim, JoAnn and Bruce for their assistance in greeting guests, giving tours and operating the telescopes during the event.

We have many guests interested in viewing the sky through our telescopes in the domes and under the sky outdoors. We have been a bit short on members to act as hosts to greet these guests, answer questions and offer assistance in getting access to the domes, displays, other equipment, and signing the guest book. Please consider volunteering for this important work. Let me know if you are willing to help.

We have had a series of excellent, well attended public nights recently. July 20 was no exception, The forecast was for clouds, but guests came and enjoyed touring the observatory, viewing the photo displays, conversing with staff about telescopes and astronomical topics and spotting a few objects through the telescopes during brief clearings. We were kept busy until 11 PM. It was another good night at Ashton!

Discussions are continuing about management and future planning for our Timberline property. The District Forester has prepared an outline of estimated costs and benefits of implementing a stewardship plan and the members have authorized further work toward implementing a plan. These discussions include an inventory of trees that are ready to be harvested, planting replacement trees, and possible assistance in controlling invasive species. Jim and Norm are working with the Forester on next steps and will report regularly to the membership. We are currently seeking an attorney to review plans and provide us with an opinion to assure we are following proper guidelines in our efforts to conserve and manage the property. We hope to have a recommendation soon.

The Globe at Night; (https://globeatnight.org/campaigns/) Constellation featured is Cygnus - August 26 – September 04, 2024. Find a viewing site and give it a try!

- Norm

-

The Des Moines Astronomical Society

Monthly Members' Meeting Agenda

August 3, 2024 – 6:30 P.M.

Ashton Observatory

1. Call to order–Introductions
2. Secretary's Report - Minutes
3. Treasurer's Report Financial Report- Membership Dues
4. Board Meeting Report/action
    a. Timberline Report – Recommendations
    b. Other recommended action
5. Observatory Director's Report
6. Committee Reports
    - Member Services/Ashton programs
    - Outreach/programs
    - Dark Skies
    - Electronically Assisted Astronomy
    - Radio Telescope
    - Member Comments
    - Adjourn
7. Next Meeting Date: September 7, 2024 – Ashton Observatory

The Des Moines Astronomical Society

Board of Directors Meeting Agenda

Saturday August 3, 2024 – 5:00 P.M.

Ashton Observatory

- Call to order—Introductions
- Secretary's Report – Minutes
- Observatory issues-- Equipment, Honorary member discussion/action?
- Treasurer's Report -- Budget - Membership renewal.
- Priority implementation progress – Photography Class- Other?
- Timberline Update-- Legal opinion progress-proposal-action?
- Other Business

Observatory Committee Report

August *2024 Greg Woolever, Observatory Director*

July has turned out to be pretty active. The annual picnic was well attended, and the heat wasn't as extreme as predicted. We did however offer the option of eating inside in the air-conditioned classroom. Many folks took that opportunity, so maybe that will become a new tradition.

Afterward, we had a great classroom program by our Cincinnati astronomer friend, Dean Regas. Robust attendance kept us busy. And the excitement about watching the occultation of Spica by the Moon grabbed everyone's attention. Now you see it … now you don't.

Other weekends have had great attendance even if the skies were not great. It seems the trend we are experiencing is that people find their visit to Ashton rewarding whether it's observing through telescopes or learning about the observatory and getting their astronomy questions answered. Enthusiasm is high. Responding to that is something that all DMAS members can do.

Currently there are two private groups scheduled in August. One is a husband/wife date event, and the other is a group who calls themselves Full Moon Gazers. Their mission is clear.

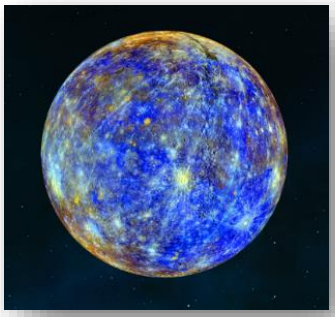
We have some maintenance issues in the west dome affecting the encoders that guide pointing. We're not sure whether matters can be resolved by replacing connectors, or it may be time to replace the cables and hand control. DMAS had actually approved the replacement option several years ago, but we have held that off by trying repair strategies so far. We love the telescope in the west, but operation of the mount has its challenges.

Thanks - Greg Woolever & the Observatory Committee: Dave Heck,
Norm Van Klompenburg, Jim VandeBerg, Greg Woolever.

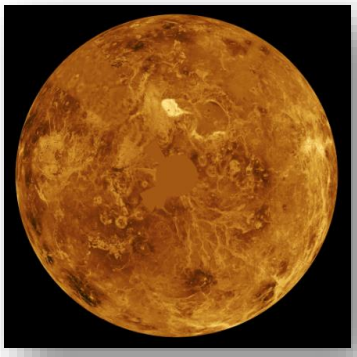
THE PLANETS FOR AUGUST 2024

By JoAnn Cogil

We are deep into the "Dog Days of Summer," the hot, humid period of summer between early July & mid to late August. These days begin at the time of year when the 'Dog Star' Sirius rises & sets with the Sun. Ancient Romans believed this very bright star gave off heat, which added to the Sun's warmth, accounting for the long stretch of sultry weather. The Romans referred to this period as "dies caniculares" or the 'days of the dog star.' Eventually it became just "dog days".



Mercury – don't mistake this tiny planet for the star Regulus on the 1st as it shines near Venus with a magnitude of 0.9. Mercury reaches inferior conjunction on the 18th when it lies directly between Earth and the Sun. Don't worry as it shines again for us to see by the end of the month as it rises about 1 ½ hours before sunrise.

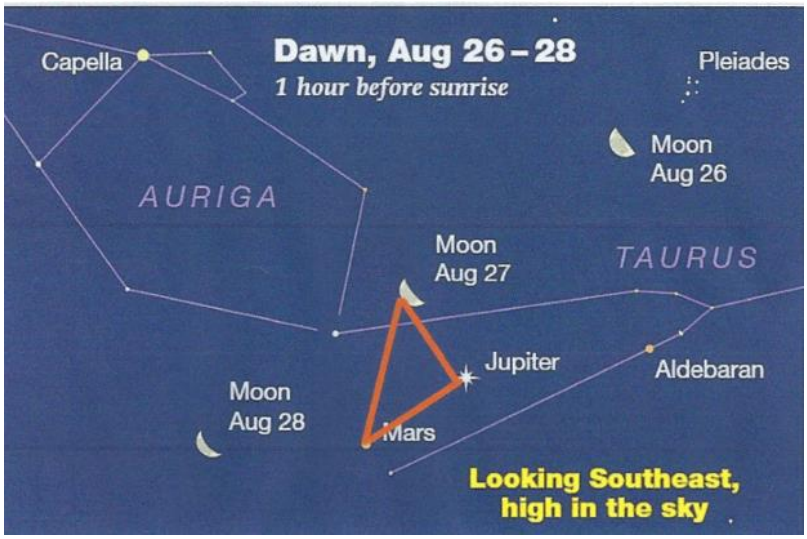


Venus – is bright in our evening sky, setting just 30 minutes after the Sun, but barely 3° above the horizon with a magnitude of -3.9. On the 5th is a conjunction of the Moon, Mercury & Venus, with the Moon just 1/2° above Venus in the W-NW sky.

Earth – Sunsets now range from 8:52 PM to 8:32 PM late in the month. Yep, the days are getting shorter, and darkness comes sooner!! Astronomical Twilight is when the sky is fully dark, beginning at 11:00 PM early in the month, to 10:25 PM late in the month. Civil Twilight is when there is still enough sunlight after sunset so only brighter night sky objects can be seen.

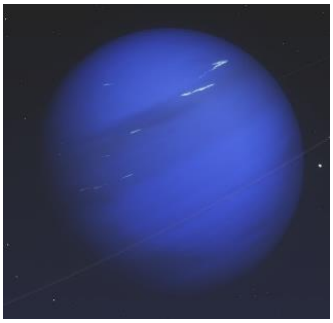
Mars – continues to move in its eastward movement, known as retrograde. This results from the different speeds at which the Earth and Mars orbit the Sun, with the Earth having a faster movement, which will position it ahead of Mars. The little red planet is still found in Taurus. **Mars will have a nice conjunction with Jupiter in the early eastern morning sky on the 14th, with them being only 0.3° apart.**

Jupiter – like Mars, it also continues an eastern movement through the sky and shines with a 0.7 magnitude. Look for this beauty between the horns of Taurus on the 3rd. Before sunrise on the 27th, we find the Moon, Mars & Jupiter together around the horns of Taurus, and form a right triangle.



Saturn – rises late in the evening, about 10 PM with a magnitude of 0.7. Oh, so bright!! By late August it rises 2 hours earlier. On the 20th, look for the planet about 1/4° above the Moon when rising in the E-SE sky.

Uranus – remains in Taurus with a magnitude of 5.7.



Neptune – can still be found in Pisces but is dim with a magnitude of 7.8.

August Moon

4th – NEW moon
12th – 1st quarter
19th – FULL moon, also a Super Moon & appears 7% larger than its median size
26th – Last quarter

This month is a **Seasonal Blue Moon**, which is a 3rd full moon of an astronomical season. Astronomical seasons are based on the Earth's position in relation to the Sun. Currently we are in 'Astronomical Summer' between the Summer Solstice of June 20th and the Autumnal Equinox of September 22nd. A Monthly Blue Moon is a 2nd full moon in a calendar month.

The moon this month is known as a "Sturgeon Moon", after the primitive fish which used to be quite abundant in North American lakes & rivers during the summer months. Sturgeons are the fish most readily caught in the Great Lakes this month. Other names for the August Moon are Corn Moon, Full Fruit Moon (Cherokee), Blackberries Moon and the Moon When All Things Ripen, from the Sioux Indians.

On August 8th, the Moon is at apogee, furthest from the Earth at 251,840 miles.

On August 21st, it is at perigee, closest to the Earth at 225,815 miles. Just a hop, skip and a jump from us! Okay, just a bit more than that.

Meteor Shower

The **Perseids** meteor shower, the most popular annual meteor shower, is happening now and peaks on August 12th, with the best viewing time being the early mornings on the 11th & 12th. We could see up to 100 meteors per hour, but with light pollution, that number could drop to only about 50 per hour. The Moon will be at its 1st quarter phase and sets about midnight, so it is possible to have excellent meteor shower viewing after midnight into the early morning hours.

The radiant is at the top of the constellation Perseus, east of the Double Cluster.

It stems from the Comet 109P/Swift-Tuttle. It was Giovanni Schiaparelli who realized in 1865 that this comet was the source of the Perseids meteor shower.

Get out your lawn chairs and just look up!!! Meteors can be seen anywhere in the night sky!

Treasurer's Report – Bruce Mumm – DMAS Treasurer

There was no meeting in July, so no financial report was presented

Secretary's Report Jim Vandeberg - DMAS Secretary

There was no meeting in July, so there are no meeting minutes

DES MOINES ASTRONOMICAL SOCIETY
PLEASE WELCOME THESE NEW MEMBERS!

JANUARY - KYLE AND CATHERINE BAILEY
JANUARY - KAREN TEGTMEYER
MARCH – ROD WILLIAMS
APRIL – PAUL CALIGIURI
APRIL – JASON HIRSCH
JULY – WADE JOHNSON
JULY – KERRY & PHILIP EGANHOUSE

July 27 Program by Observatory Director, Greg Woolever.

On Saturday, Observatory Director Greg Woolever, shared delightful examples of music that reflect human emotions about the sky above us.

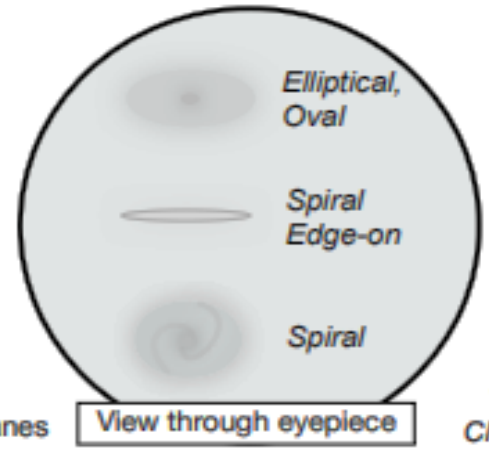
Observing Galaxies

Because galaxies are so very far away, they are typically faint. Therefore, your goals are to increase light collection and to maximize visual contrast whenever possible.

- Clear, dark skies are best.
- The larger the aperture of the telescope, the better. A four inch telescope barely reveals less than a dozen dim, indistinct glows, while an 8 inch scope picks out several dozen under the best conditions. Larger scopes begin to show internal structures such as dark dust lanes and spiral arms.

Consider these factors when observing:

- Note the general shape and apparent size of the galaxy. Is it more round than oval? Is it thin?
- If it is oval, in what direction does its major (long) axis point?
- What does the core look like? Is it star-like, or a round glow? Is it indistinct?
- Are spiral arms visible?
- For edge-on galaxies, are dust lanes visible?
- How quickly do the boundaries fade into blackness?
- Are smaller and dimmer galaxies also visible in the field?



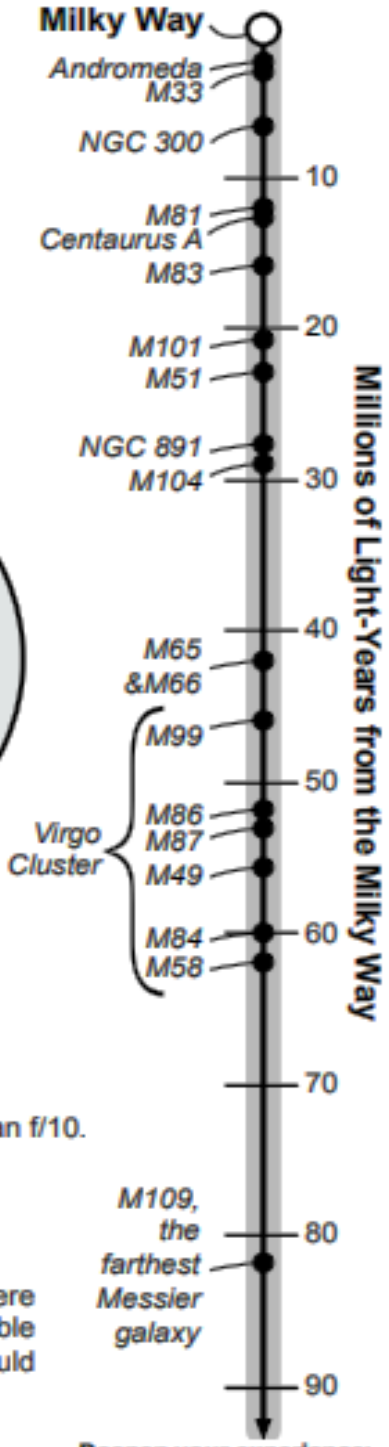
Enhance your view:

- Use averted vision.
- For better perception of small details, increase the magnification.
- To increase contrast, use a smaller focal ratio scope–f/5 is better than f/10.
- Tap the telescope tube to help bring out detail.
- Increase apparent field contrast by covering your head with a hood.

The importance of surface brightness:

The published magnitude of a galaxy refers to its brightness as if it were a point source. A galaxy, however, spreads its light over an appreciable area, making it appear dimmer than its published magnitude would suggest. As a result, it may be surprisingly difficult to discern.

Record your observations! Use a logbook, tablet, laptop, or voice recorder. Your notes are too precious to lose! You will refer to them years later.



Deepen your experience: Appreciate the distance of your target galaxy, and how long its light took to reach your eyes!

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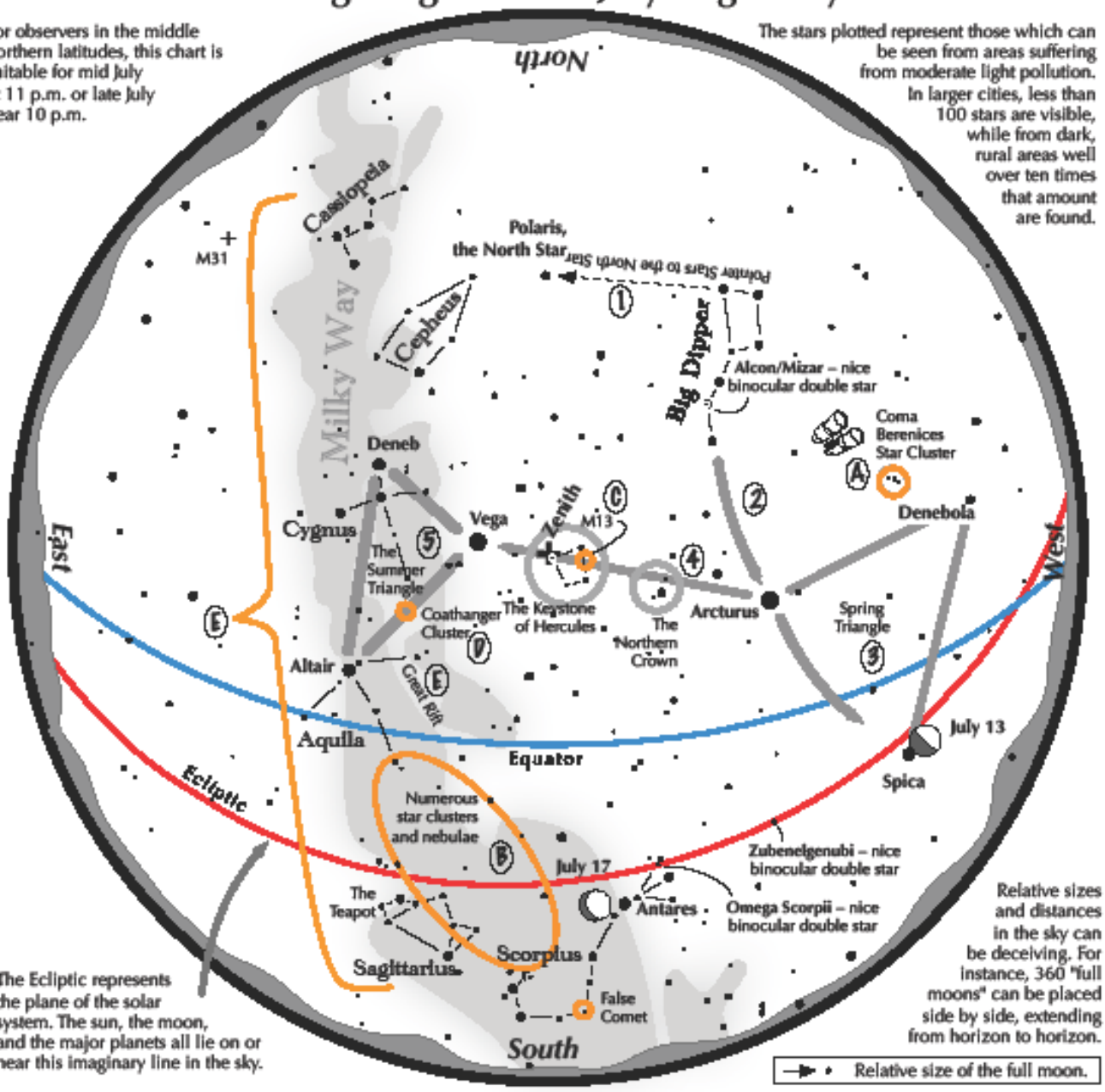
Navigating the mid July Night Sky



Navigating the mid July night sky: Simply start with what you know or with what you can easily find.

1. Extend a line north from the two stars at the tip of the Big Dipper's bowl. It passes by Polaris, the North Star.
2. Follow the arc of the Dipper's handle. It first intersects Arcturus, the brightest star in the July evening sky, then continues to Spica. Arcturus, Spica, and Denebola form the Spring Triangle, a large equilateral triangle.
3. To the northeast of Arcturus shines another star of similar brightness, Vega. Draw a line from Arcturus to Vega. It first meets "The
4. Northern Crown," then the "Keystone of Hercules." A dark sky is needed to see these two dim stellar configurations.
5. High in the East lies the Summer Triangle stars of Vega, Altair, and Deneb.

Binocular Highlights

A: Between Denebola and the tip of the Big Dipper's handle, lie the stars of the Coma Berenices Star Cluster.
B: Between the bright stars Antares and Altair, hides an area containing many star clusters and nebulae.
C: On the western side of the Keystone glows the Great Hercules Cluster, containing nearly 1 million stars.
D: 40% of the way between Altair and Vega, twinkles the "Coathanger," a group of stars outlining a coathanger.
E: Sweep along the Milky Way for an astounding number of faint glows and dark bays, including the Great Rift.

Saturday July 13 - Annual Summer Picnic!!

Special Guest Lecturer
Saturday July 13 – Dean Regas

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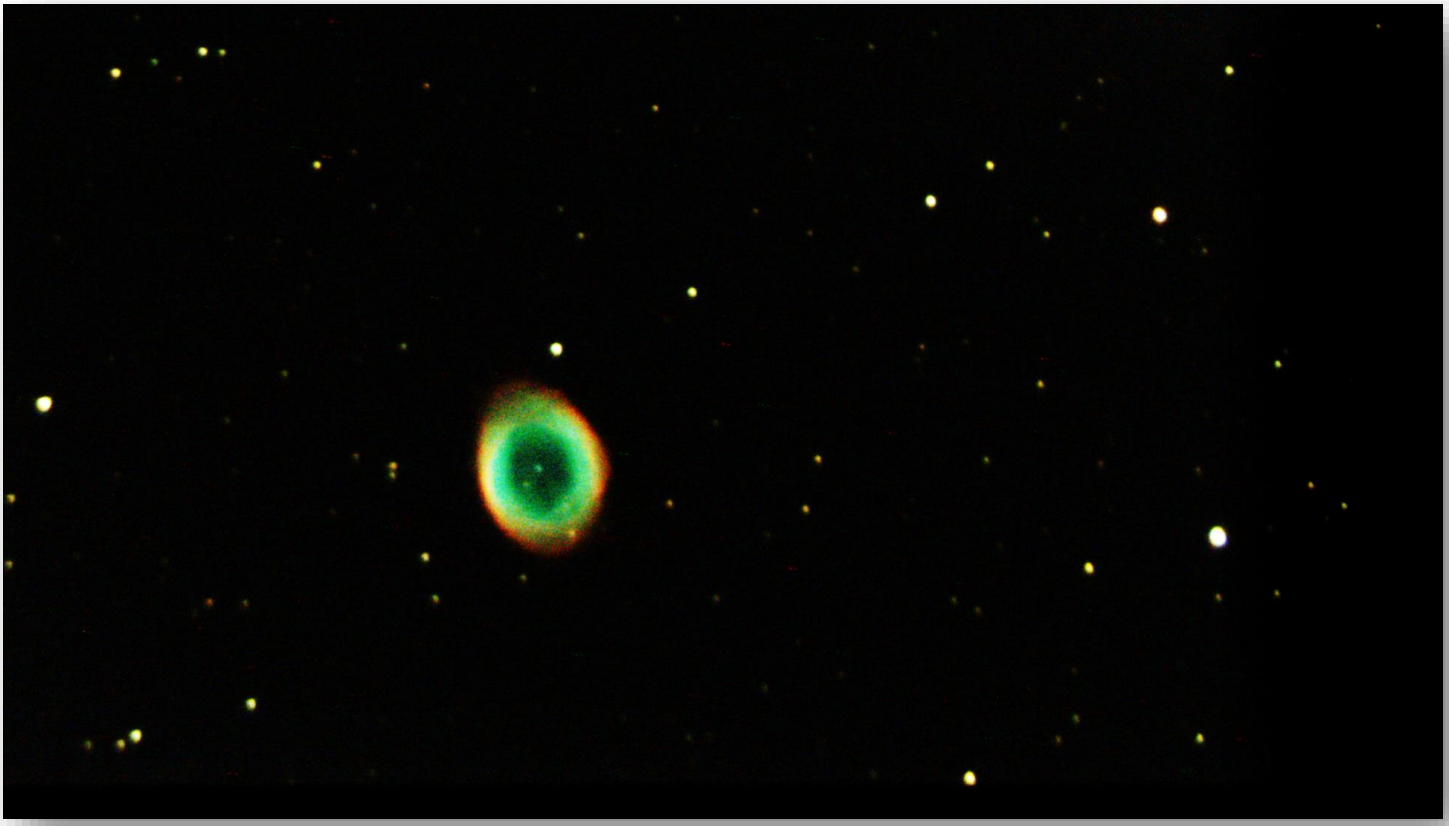
100 Things to See in the Night Sky
Dean Regas

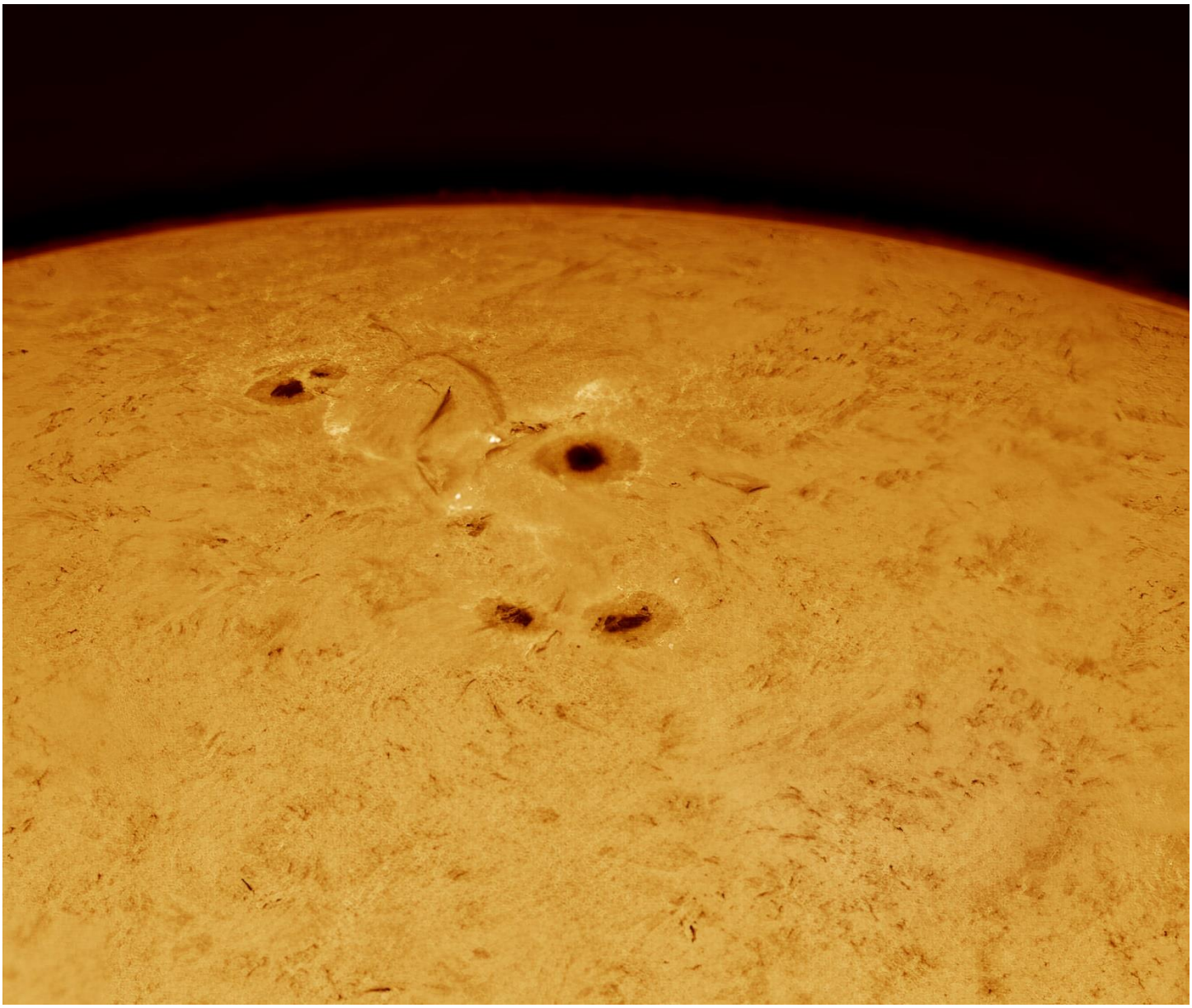
Two Minute Peek at the Ring Nebula



Stack_47frames_138s_WithDisplayStretch

Ring Nebula image taken by DMAS members Jim VandeBerg and Shawn Gehlsen

This image consists of 47 stacked frames of 2.9 seconds each for a total exposure time of two minutes and 18 seconds. The telescope used was a 10” thirty-year-old Meade SCT EMC mounted in the Ashton south dome. The camera was a ZWO290 and the image was stacked and stretched with SharpCap software. No other photo processing was done. The mount was a pier-mounted Celestron CGM, controlled by Celestron’s Plane Wave Industries software.



The Sun and Sunspots Image by DMAS member JR Paulson

Most of us forget that we are living less than 100 million miles from a raging thermonuclear reactor. That yellow-white disk drifting across the sky is a ball of seething gases 865,000 miles across and has core temperatures of 27 million degrees F. Our sun is a dwarf star like countless others among the 100 billion in the Milky Way Galaxy. It takes photons 10 million years being absorbed and re-emitted before reaching the surface.

The temperature of the photosphere is about 10,000 degrees F. It is only about 300 miles deep but displays many features. Best known are sunspots, a giant pair seen in this image. Solar magnetic fields stop hot gases from reaching the surface and therefore sunspots are cooler than their surroundings and appear dark, the umbra, and are surrounded by a slightly lighter area called the penumbra. For unknown reasons, their numbers rise and

fall over an 11-year cycle, at which time the suns' magnetic field flips its polarity. We are now nearly at the top of the cycle, solar maxima (2024). This means not only many more sunspots, but markedly more activity, storms, and mass ejections.

Galileo recorded sketches of sunspots over many months and confirmed the rotation of the sun at about 25 days, although different latitudes move at different speeds. The Chinese recorded sunspots thousands of years ago, without optical aid. The sun, when viewed either with a regular solar filter or special H- alpha narrowband filter, presents a wonderful opportunity for astronomers to make good use of the "non-night" time.

The sunspot group, AR 3664, was the source of the solar mass ejection that produced the spectacular Aurora Borealis, or Northern Lights, this May (2024). It also produced the largest Coronal Mass Ejection (CME) in 19 years. Fortunately, this one did not seriously disrupt electronic communications here on Earth.

The Rubin telescope should discover a new remote supernova about every 2 minutes or so, corresponding to some 3 million finds in the next 10 years.
– Sky and telescope June 2024 page 38

Photo Credit: Rubin Obs/NSF/AURA

L. Allen Beers reported that **Ed Ramsell** passed on July 22, 2024, at age 84.

Greg Woolever related that Ed always gave great classroom programs and was a warm and welcoming spirit when he was active. Ed also designed and built various items of custom astronomy equipment and some of those have appeared in astronomy periodicals. He was a member and regular presenter at the Des Moines Astronomical Society for many years. Memorial service planned at later date.

https://www.caldwellparrish.com/obituaries/Edward-William-Ramsell?obId=32470691

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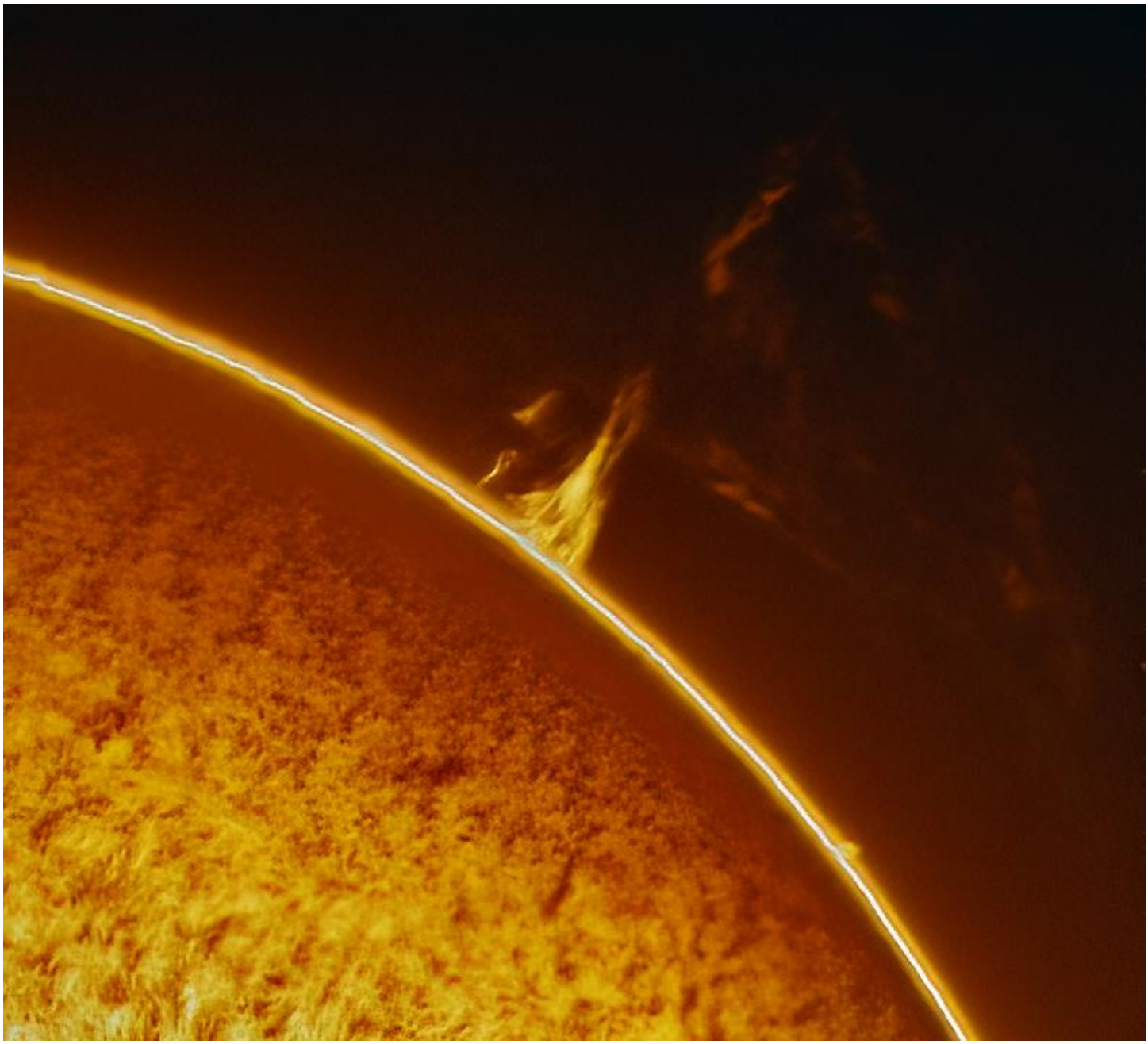


Solar Flares and Coronal Mass Ejections
Image By DMAS member JR Paulson

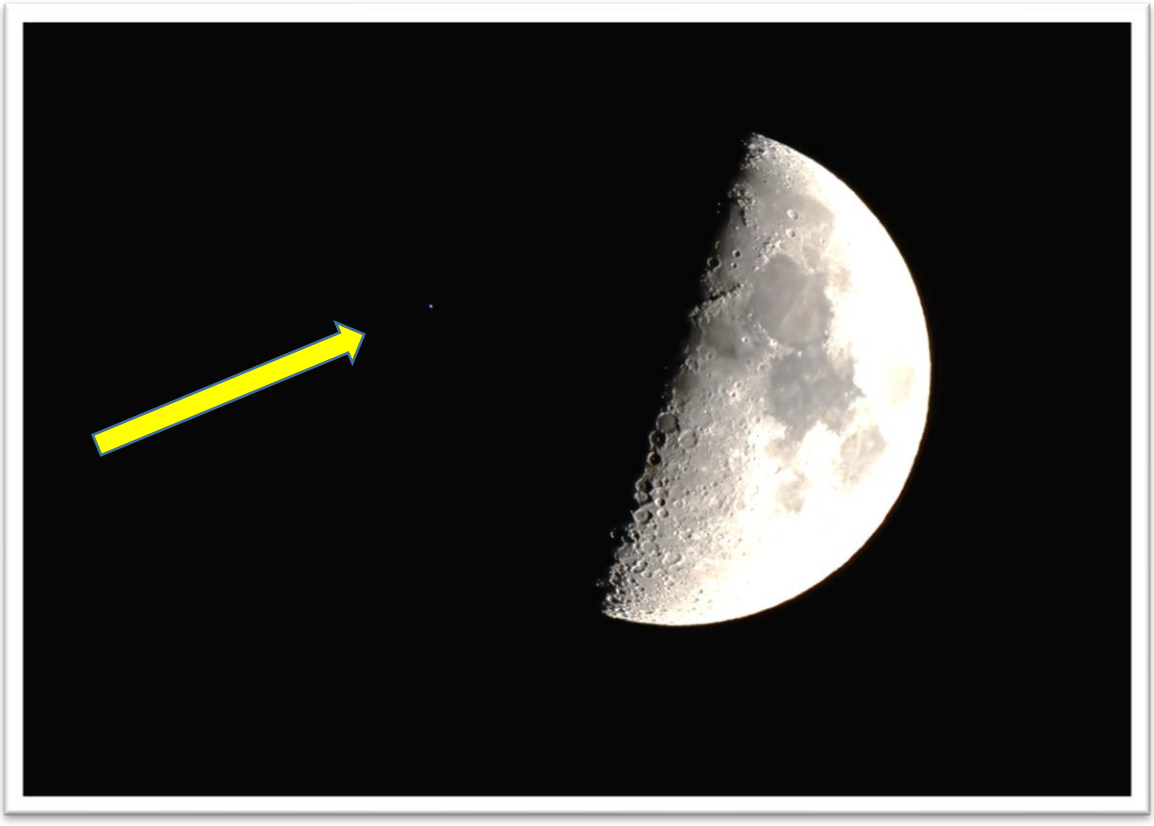
Both are born when the sun's magnetic fields explosively realign, driving energy into space. A solar flare is a brilliant flash of light. A CME is an immense cloud of magnetized particles hurled into space in a particular direction, sometimes toward Earth. The flares are short lived and disappear in a matter of hours. They are viewed on the Earth in about 8 minutes. CMEs eject huge amounts of radiation and particles into space that take from 18 hours to several days to reach the Earth. They can eject billions of tons of coronal material and carry an embedded magnetic field. These ejections are greatly

deflected and funneled toward the Earth's magnetic poles, by our strong magnetosphere producing the beautiful auroras that we see as neon lights waving in the sky. The recent CME, on May 10, 2024, was from Sunspot group AR 3664 and produced "northern lights," even in southern states not accustomed to seeing them.

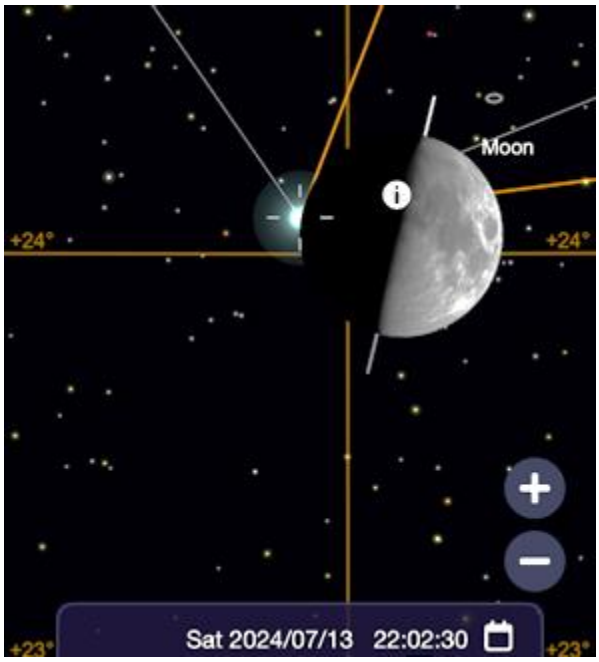
The Carrington Event was the most intense geomagnetic storm in recorded history, peaking on 1–2 September 1859 during solar cycle 10. It created strong auroral displays that were reported globally and caused sparking and even fires in telegraph stations. Solar flares and CMEs can significantly disrupt electronic devices and communication on the Earth. It is not a question of *if* another huge event will hit the Earth, but *when*.

This image of the Sun was taken with a special solar telescope which allows only a very narrow band wavelength of light (H- Alpha) to pass through to the eye or camera. It allows us to see the active layer of the Sun's surface called the chromosphere. It can capture a myriad of solar prominences and ejections. Some are short lived and last only a few hours where others can last days. This CME was imaged within a few days of the aurora peak.

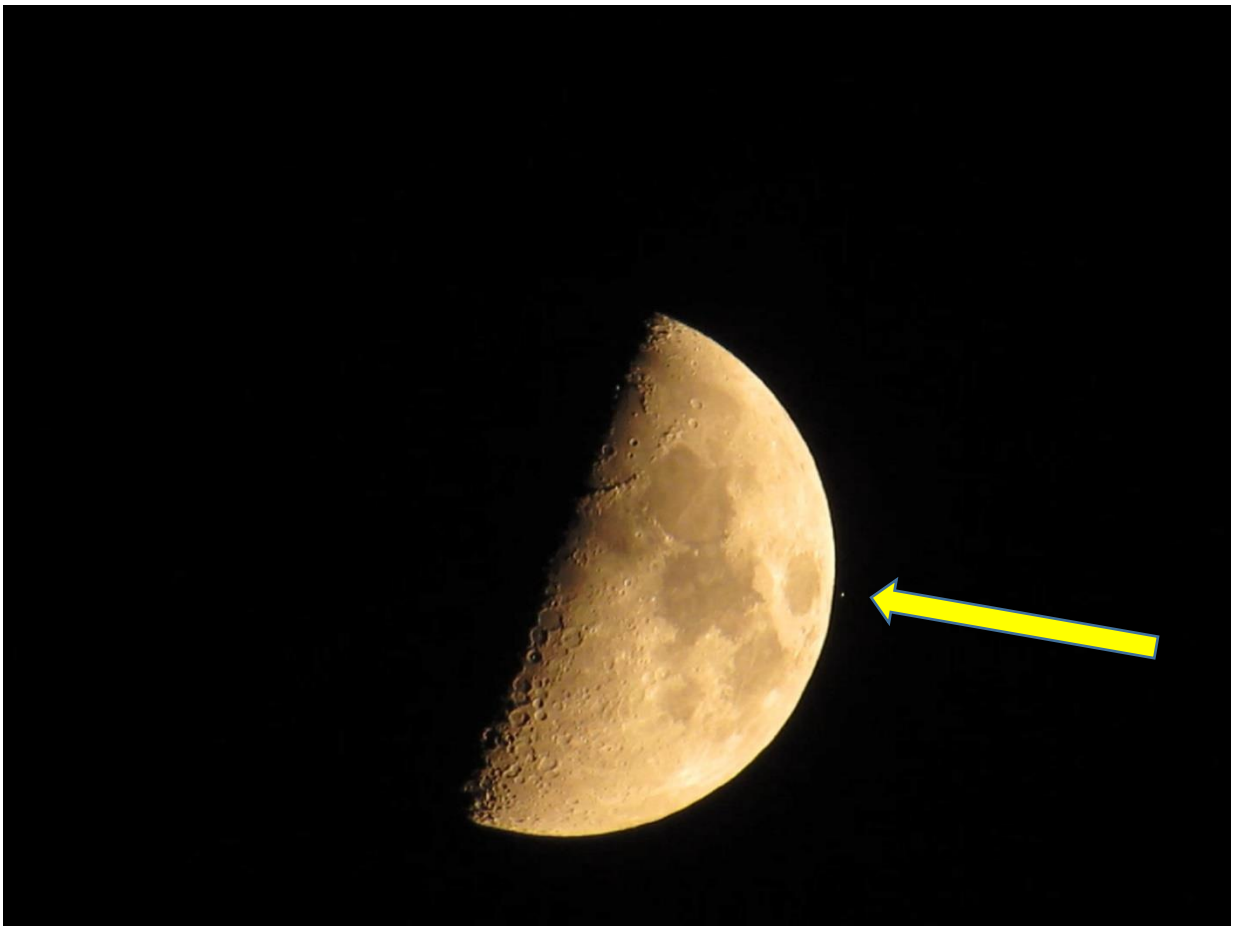
Occultation of Spica by the Moon



Occultation of Spica by the Moon July 13 by DMAS member Heather Johnson



Graphic courtesy Observatory Director, Greg Woolever



Spica re-emerging following the occultation by the moon. Image by Observatory Director, Greg Woolever. About 11:20 p.m.

Who said pigs don't fly?

The Des Moines Astronomical Society is on Facebook

Recent notices, articles and images are posted on our Facebook page. Be sure to like us when you visit our Facebook page.

This Month in DMAS History

From the StarLight Journal 25 Years Ago, August 1999

The annual July DMAS Picnic was a great success. Thanks to all members who attended and enjoyed the good fellowship. The food was delicious, the weather was beautifully mild, and the skies outstandingly clear!

Tom Bailey, Bryan Butcher, and Jim Holloway were able to locate Pluto and present it on the TV monitor. Everyone who wanted to see this 1,500-mile diameter rock, which lies over a billion miles away, had the opportunity during the picnic.

From the StarLight Journal 10 Years Ago, August 2014

DMAS Member Fred Hoffman shared that on August 16th, he saw Tomas Gonzalez Torres on NASA TV. Mr. Gonzalez Torres is one of NASA's three flight directors who lead a team of flight controllers, support personnel and engineering experts from around the world. The three also are involved in cargo and crew vehicle integration with the station and developing plans for future exploration missions. Mr. Gonzalez Torres is the son of DMAS member Tomas Gonzalez-Forestier.

One recent Sunday Jan Winter received an email asking for a private visit to Ashton that same evening – a mother wanted the visit for her daughter's birthday. Jan called Observatory Directory Greg Woolever to discuss and both agreed they could cover it.

The small group arrived at 8:00 p.m. - the birthday girl and her friend, a big sister and her friend, plus Mom. Ages appeared to be 10 -12 years.

Greg started in the classroom with a presentation on general astronomy. The young girls eagerly asked many good questions. Greg and Jan collaborated on answers.

As sun set, Greg took the group to the west dome. On this August 3rd evening the moon was 50% waxing, with Saturn close to it, giving good views of those even before the sky got dark.

While the group was in the west dome, Jan had come with an experimental arrangement of bungee cords to assist her stair-climbing efforts. Her plan worked. After finishing in the west dome, the group trooped to the east dome, where Jan had everything ready, and observing continued. At 9:40 p.m. Greg suggested the girls go to the front yard to catch a glimpse of the Space Station. As the girls watched the 5 minute pass, they asked if there were women astronauts up there. Greg wasn't sure who was there now, but assured them that women had indeed been there in the past. The group then returned to Jan in the east dome for more enthusiastic observation. It really wasn't until the next day that the nature of this last-minute visit became clear to Jan and Greg. These girls were highly interested in astronomy, and having a female guide had provided the girls with strong encouragement for their own involvement. For Greg and Jan, it was just another chance to do what they like. For the girls, it seemed it may have been a poignant experience.

DMAS Star Search Learn the sky one star at a time by DMAS member **Bruce Mumm** **June 2024**

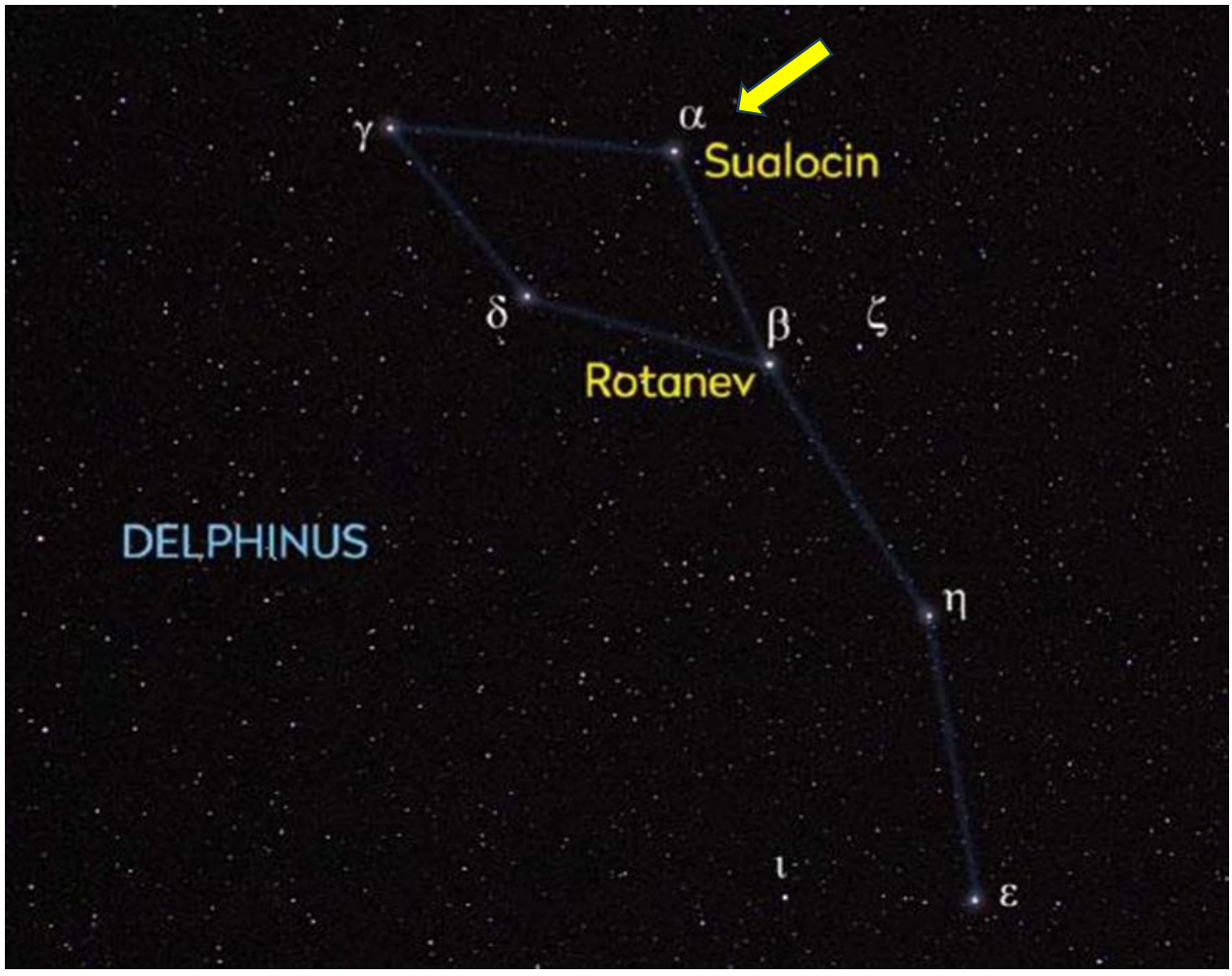
Sualocin **(swah-LOH-sin)**

Delphinus is a small but very identified constellation representing the head and neck of a bottlenose dolphin. It lies 12° to the east and slightly north of the bright star Altair (Alpha (α) Aquilae), which marks the bottom vertex of the giant Summer Triangle asterism, which is well placed at this time of year. Delphinus resembles a diamond shape with a tail. The two stars on the western side of the diamond, Alpha (α) and Beta (β) Delphini, have the unusual names of Rotanev and Sualocin.

Sualocin is a binary star with five additional companions which are most-likely just line-of-sight acquaintances. The binary star consists of Alpha Delphini Aa (Sualocin) and Alpha Delphini Ab. The pair appear close with a separation of just 0.2 arcseconds and take 17 years to complete one mutual orbit around each other. The secondary is about one-tenth as bright as the primary and of spectral class A. Aa has a spectral type B9IV, indicating it's a hot white subgiant. Despite its alpha designation, at mag. +3.8 Sualocin is the second brightest star in Delphinus after mag. +3.6 Rotanev.

Sualocin (Aa) lies at a distance of 254 lightyears and has a mass 2.8 times as great as our Sun. Its temperature is estimated at 11,340°C.

The names Sualocin and Rotanev first appeared in the Palmero star catalogue of 1814. Astronomer Thomas Webb worked out that they represent the name of an assistant to the Palmero Observatory's astronomer, Guiseppe Piazzi. The latinized name of the assistant was Nicolaus Venator; reverse the letters and you get the star names.



Your Des Moines Astronomical Society Officers, Directors & Observatory Committee – 2024

President: Norm Van Klompenburg
Vice-President: JoAnn Cogil
Secretary/ALCor: Jim VandeBerg
Treasurer: Bruce Mumm
Observatory Director: Greg Woolever

At Large Director: Derryl Barr
At Large Director: Jessica Weinreich
At Large Director: Brennan Jontz
Observatory Committee: Greg Woolever, Norm Van Klompenburg. Dave Heck, Dan Mortensen and Jim VandeBerg

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The *Starlight Journal* is the monthly newsletter of the **Des Moines Astronomical Society, Inc.** P.O. Box 111, Des Moines Iowa 50301-0111. Our Observatory is located in Ashton Wildwood Park, 8717 West 122nd Street North. Founded in 1970, we are a non-profit, 501(c)(3) organization. Our website is DMastronomy.com. More information and photos can be found on our Facebook page.

Article Deadline: Before the 21st of the month, please send your articles, photos, sketches, poems, cartoons, and news to Jim VandeBerg (FinePineCabin@gmail.com). Articles may be edited to fit the allotted newsletter space. Copyrighted material must have permission from the copyright holder. Views and opinions expressed within submissions are that of the author and not necessarily those of the Des Moines Astronomical Society, Inc.

The Purpose of our Society

- Secure the pleasure and benefits of an association of persons interested in amateur astronomy
- Promote the science of astronomy
- Encourage and promote activities of an astronomical nature
- Foster observational, computational, technical, and creative skills in various fields of astronomy
- Pursue activities with other amateurs and professionals
- Educate the public

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