

STARLIGHT JOURNAL

JULY 2025



M-100 Image by DMAS Member JR Paulson

With its clearly defined arms, the M-100 galaxy is a textbook example of what astronomers call a *grand design galaxy*. Grand design galaxies feature prominent, clearly defined spiral arms that spread out far from their cores. Just one-tenth of all spirals qualify as “grand design” galaxies. Since we are seeing it directly face-on we can more clearly see its structure. Other spirals tend to have more subtle arms. Although it is some 56 million light-years away, astronomers can even make out many individual stars and have also discovered a number of black holes in its spiral arms. Seven supernovae have been discovered in M-100.

It was first discovered in the constellation of Coma Berenices by Pierre Mechain who saw it as a fuzzy blob in 1781 and found 29 days later by Charles Messier who added it to his famous catalogue of false alarm, non-comet objects. It was over 70 years before Lord Parsons of Rosse discovered its spiral arms. William Parsons, 3rd Earl of Rosse (1800 – 1867), was an English engineer and astronomer. He built several giant telescopes.



His 72-inch telescope, built in 1845 and colloquially known as the "Leviathan of Parsonstown", was the world's largest telescope, in terms of aperture size, until the early 20th century.

It is considered a "starburst" galaxy with the strongest star formation occurring in its center nucleus. However, much of its hydrogen gas has been depleted by interactions with other

galaxies in its local group so you don't see active star-forming regions in its spiral arms. Like most large galaxies, it has dwarf satellite galaxies orbiting it. NGC 4323 and NGC 4328 (the larger) can clearly be seen in the lower part of the image. It is one of the brightest galaxies in the Virgo Cluster of galaxies and contains upwards of 400 billion stars, many with exo-planets. - JR

SAVE THESE DATES NOW!

Saturday June 28 Classroom Program "Draco's Realm" by Derryl Barr 8:00 p.m.

No Membership Meeting in July

Saturday July 12 Classroom Program "Venus" by JR Paulson 8:00 p.m.

Saturday July 12 Annual Summer Picnic 6:00 p.m.

Saturday August 2 Membership Meeting 6:30 p.m.

July 2025 – President's Report

Our viewing season this year has been fair at best. Due to the many wildfires to the north and west of us, we have had much smoke in our skies. Cloudy skies have not helped either, but we



continue with public viewing nights hoping for at least occasional moments of clear skies. Guests continue to join us on Saturday nights in the hope they

too may see some night sky objects. We have been fortunate so far to view Mars, Castor, Mizar & Alcor, a couple of globular clusters, and even an occasional galaxy.

We have had interest from a couple club members who would like to help with public viewing nights and even learning how to help in the domes. As mentioned in the past, having members help with traffic flow in the lobby as well as in & out of the domes is so beneficial. Guests have also enjoyed visiting with club members who have set up their own telescopes in the yard and having a chance to look through their scopes. Thank You to everyone who volunteers their time to make our Saturday evenings a success.

I am looking forward to our Summer Picnic on July 12th as it provides a wonderful

opportunity to see and chat with many club members. Hope you will be able to join us on this day.

Earlier this year, club members voted to approve the trade of DMAS's iOptron Cube telescope mount for a Lunt 50mm tunable solar telescope. A couple members have been working diligently to get it up and running and attached to our mount. Norm reported they have not had suitable conditions to try it but will when conditions allow.



Looking at the sun with appropriate and safe equipment is always a great experience.

The Globe at Night organization has selected 2 constellations for their July challenge. They are Hercules and Cygnus. Dates for observing are July 15-24, 2025. Learn more about this wonderful challenge at www.globeatnight.org.

Enjoy celebrating our country's finest holiday, the Fourth of July!

JoAnn

Observatory Committee Report July 2025

**Greg Woolever, Observatory
Director**

To be accurate, I'd have to say weather has not been ideal during June. Haze and Canadian forest fire smoke have dominated. Finally, the third Saturday delivered mostly clear skies with no Moon. Being the summer solstice, however, we had to wait until very late to reach full darkness. But sights were pretty good – see the shot I took with iPhone of the Milky Way. The photo does show a bit more than what naked eye could see.

When the heat index reached 100F, most of us thought visitors might not show up. Wrong. In spite of sunset coming at 9:50 p.m., visitors started arriving as early as 7:30 p.m.! Fortunately JoAnn was able to show Mars with the east dome even in daylight. And the photos in the classroom provide interest as well. It all comes combined with the lively conversation DMAS members provide. One visitor came with questions about her own telescope, and Norm sorted out the solutions.

July 12 will bring J.R. Paulson to the Saturday Public Night classroom to talk about Venus. The 4th Saturday, July 26, is still open. I would love to have one of our wonderful DMAS members step up for that date. Let me know if you are willing.

Two private groups came in June. The second group was our annual hosting of the Jasper County nature program for young people and their families, led by naturalist Katie Cantu.

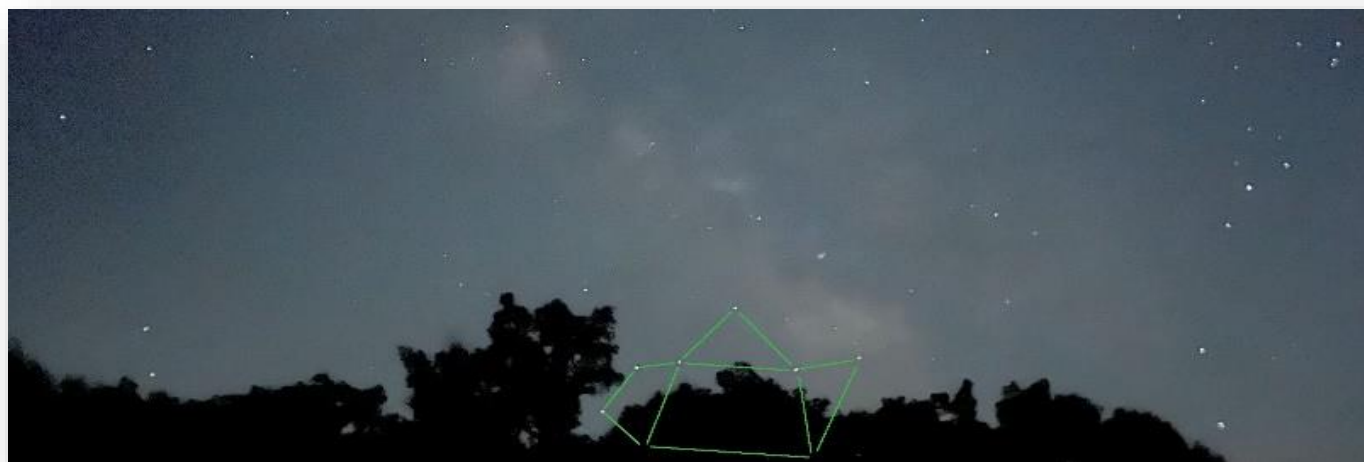


At least one group is scheduled for early in July.

The problem with control of the motor in the south dome has been partially resolved. The dome can be rotated now, but further updates will come to allow motion in both directions.

Park Officer Jerry Ratliff was able to work with a pest control service in June, who treated for insects. Bats inside the west dome are a tougher problem to overcome given the number of openings that are available. While bats are always near in the park, this is the first year they have come inside one of our domes to rest during the day. For some reason they have had no interest in the east dome. There was discussion whether building a bat house would affect population behavior, but the feeling was that it might increase the bat presence rather than limit them. We continue cleaning the dome before visitors enter.

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



The Night Sky for July 2025

By JoAnn Cogil

The Night Sky for July 2025

"There are more stars in the heavens than all the grains of sand covering the world's beaches"

- Carl Sagan



Mercury – on the 4th the little planet has its greatest eastern elongation which is its highest point above the horizon. This will provide the best time to view in the western sky just after sunset, but it will be quite low. Mercury does begin to dim as the month progresses and finishes the month as it reaches an inferior conjunction with the Sun.

Venus – has a beautiful pairing with the Pleiades on the 5th with Uranus close by. What a sight! On the 22nd we find Venus teaming up with Jupiter & a thin crescent Moon during the dawn hours.

Earth – **HAPPY 4TH OF JULY!!!**

Mars – our red planet spends time in Leo this month, low in the western sky after sunset. Mars enjoys 2 meetups with the Moon this month – on the 1st with a waxing 43% Moon and on the 27th with a thin crescent Moon. But the 27th pairing may be tough to see due to the brightness of twilight.

Jupiter – has moved to join many of the planets in the morning sky this month and rises early month about 2 hours before sunrise and later month about 45 minutes before the Sun. On the 23rd look for the Moon side-by-side with Jupiter in the eastern sky at 5 A.M.



July 22nd

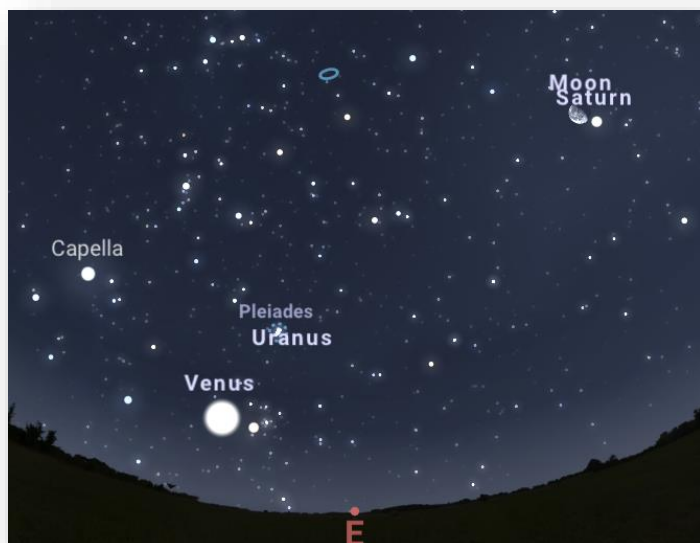
(Images credit: Stellarium)



July 23rd

Saturn – Titan, Saturn's large moon, offers two chances to see its shadow as it transits across the planet during its orbits. On the 16th at about 4 AM, there is a party happening in our eastern sky. Saturn &

the Moon are side-by-side, Venus shows brightly, and Uranus is next to the Pleiades. And we find Messier 31 (Andromeda Galaxy) close by!!



Uranus – has become an early riser now and can be found in the constellation Taurus the Bull beginning about 3 AM. It teams up nicely with Venus during the month.

Neptune – stays near Saturn this month as they both rise together about midnight. Neptune, the 8th and farthest planet from the Sun, is known as an “Ice Giant” planet and is the 4th largest planet in our Solar System with a mass 17 times our Earth. Its orbit around the Sun takes 164.8 (Earth) years. It has 14 moons and a set of at least 5 icy rings.

James Webb Space Telescope snapped the clearest view of Neptune's rings in 30 years using its Near-Infrared Camera (NIRCam) on September 21, 2022. (Image credit: NASA, ESA, CSA, STScI)

The



Moon

2nd – 1st quarter

10th – FULL at 3:36 PM CDT

17th – Last quarter

24th – NEW at 2:11 PM CDT

Our full Moon this month is known as the ‘Buck Moon’ as male buck deer begin to grow their new

antlers. Thunder Moon and Hay Moon are also names for the full moon.

On the 20th, the Moon moves through the Pleiades, but you will need to set your alarm for early morning hours.

Summer Meteor Shower Season begins in July

Southern Delta Aquarids – is considered an average meteor shower that runs from July 12th through August 23rd with the peak on July 31st. As with most meteor showers, our best viewing may be after midnight but as we just enjoyed the New Moon a few nights ago, viewing should be good.

Perseids – is rated the best of the year and begins on July 17th with its peak in mid-August.

Word – A monthly article by DMAS member Bruce Mumm

Every specialty has a specific jargon to describe unique conditions in the field; Astronomy is no different.

This month's word is:

Apex of earth's way – direction forward in earth's orbit around the sun. When the moon is at last quarter it is leading on the apex of earth's way.

Subscribe to the North Central Region Astronomical League newsletter and download archived issues at
<https://ncral.wordpress.com/newsletter-archive/>

Astronomical League

Explore these Rewarding and Educational Observing Programs

The **Astronomical League** is an umbrella organization of amateur astronomy societies. Currently their membership consists of over 330 organizations across the United States, including the **Des Moines Astronomical Society**.



Our newsletter editor, Jim VandeBerg receives the 2025 newsletter editor award at the North Central Region Astronomical League Conference in Minneapolis.

DES MOINES ASTRONOMICAL SOCIETY SUMMER PICNIC

The annual **DMAS Summer Picnic** will be Saturday, July 12 starting at 6:00 p.m. at Ashton. Bring your own ingredients to grill and non-alcoholic drinks. The charcoal grill will be fired up. Disposable plates, cups, tableware, and napkins provided. If you wish to bring a side dish to share that is up to you, but not required. This is for DMAS members and their families and guests. A program on “Venus” will be presented at 8:00 p.m. by JR Paulson followed by stargazing. See you on Saturday to renew our enduring friendships and shared love of the sky!





Milky Way image by DMAs member Heather Johnson

Here is a photo I took last weekend at Rhyolite Ghost Town which is just outside of Death Valley National Park just across the California / Nevada state line. The skies were incredibly dark!



The Milky Way and the Ghosts of Rhyolite image by DMAS member Heather Johnson

Rhyolite, Nevada, was once a booming gold rush town but quickly declined when the gold dried up, leaving behind haunting ruins. Today, it's a popular ghost town near Las Vegas, not for the promise of gold but the spooky remains holding plenty of interesting stories. Besides the fascinating history, the area has incredibly dark skies.

On June 14,
President JoAnn
Cogil provided the
classroom
program **“Milky
Way: There’s
more to it than
you see!”** This was
a fun and
informative
program!





This is a picture of DMAS member Dale Gibson's astronomy images displayed at the Drake Municipal Observatory. The public likes it because they were taken by a local citizen from an astronomy club in Iowa. – L Allen Beers

DES MOINES ASTRONOMICAL SOCIETY
PLEASE WELCOME THESE NEW MEMBERS!

January – Chris Conmy
February – Cindy Cunningham
February – Peter Steier
February – Teddy Collis (Associate)
April – Doug Deval
May – Kyle Wright
June – David Olsgaard
June – Katie Price

Drake Observatory
Spring 2025 Lecture
Series Schedule

Visitors can expect an
Astronomy lesson followed
by stargazing with expert
guidance. **Lectures begin
at 9:30 PM**, regardless of
weather. **Sky Viewing
begins at dark if sky
conditions are favorable.**
Children 15 and younger
must be accompanied by
an adult. **Admission is
free and open to all!**

Please note that public events in
the summer start at 9:30 PM, with
the gates opening at 9:00 PM



June 27th *Mystery Presentation???*
July 4th *Open Topic Discussion (part deux)*
July 11th *JWST (James Webb Space Telescope) Revisited*



M-81 Image by DMAS member JR Paulson

Messier 81 (also known as NGC 3031 or Bode's Galaxy) is a grand design spiral galaxy about 12 million light-years away in the constellation Ursa Major. The galaxy's large size and relatively high brightness also makes it a popular target for amateur astronomers. Messier 81 was first discovered by Johann Elert Bode on 31 December 1774. Thus, it is sometimes referred to as "Bode's Galaxy" or at that time, "Bode's Nebula". In 1779, Pierre Méchain and Charles Messier reidentified Bode's object, hence listed it in the Messier Catalogue.

Messier 81 and Messier 82 are considered ideal for viewing using binoculars and small telescopes.

Telescopes with apertures of 8 inches (20 cm) or larger are needed to distinguish structures in the galaxy. This image is a combination of 8 hours of luminesce (clear filter), 4 hours total through red, green, and blue filters, and 2 hours through a hydrogen alpha filter that only allows excited hydrogen crimson light into the telescope.

The galaxy's spiral arms, which wind all the way down into its nucleus, are made up of young, bluish hot stars formed in the past few million years. At its heart lies a brilliant yellow bulge—this central nucleus appears golden because it's populated by ancient stars that have been burning for billions of years. Perhaps most fascinating are the pink and red regions scattered throughout these spiral arms.

The H alpha filter data highlights the active star producing areas where stars are literally being born as we observe.

Its diameter is just a little less than that of our galaxy, at about 96,000 light-years. In the center of M81 there exists a supermassive black hole (SMBH) with a mass of about 70 million suns. It is estimated M81 has over 200 globular clusters orbiting it, similar to those gravitationally bound to the Milky Way and many other large spiral galaxies.

Gravitational interactions with nearby M-82 tens of millions of years ago have caused tremendous changes in the smaller M-82. However, this has also produced major changes in M-81, such as some sharply demarcated dust lanes and well as causing the inner core to rotate slower than the spiral arms. Finally, a small irregular dwarf galaxy is seen in the upper left of the image, Holmberg IX, which orbits M-81 much like the Magellenic Clouds do the Milky Way. M-81 and friends are part of a 34 local group of galaxies in a cluster which is closest cluster to our own local group. - JR

[This Month in DMAS History](#)

From the StarLight Journal 25 Years Ago, July 2000

Our long-lost Solar Viewing "stuff" has finally arrived. It seems like we ordered it so long ago some of you may have forgotten just what it was we ordered. What we have is a two-part filter package. A Hydrogen-Alpha front filter, which is off set in the dust cover, and a rear filter. The rear filter is adjustable to different wavelengths of light. This will allow us to view sunspots, the solar surface and prominences. It arrived on June 28th. That evening, Bryan, Tom, Jim, Harry and I tested it out. We attached the filter system to the 7" Mak. Bringing it to sharp focus takes a little doing but once past that stage it was just a spectacular sight. There were only two prominences visible but one was a beauty. It was a complete loop that we viewed at an angle. The top portion of the gas cloud was blown out and formed into the shape of a dragon's head (we all agreed on this). We didn't even get set up until after 7:00 PM and we pretty much agreed that it would probably be even better if we caught the sun at a higher spot in the sky and not quite so low. We are so happy with this new addition that we will probably order a second Hydrogen-Alpha filter to fit in the dust cap of the 12.5". On the big scope, it's going to be just awesome!

From the StarLight Journal 10 Years Ago, June 2015



June 22, 2015 Aurora over Ashton Observatory taken by Observatory Director Greg Woolever.

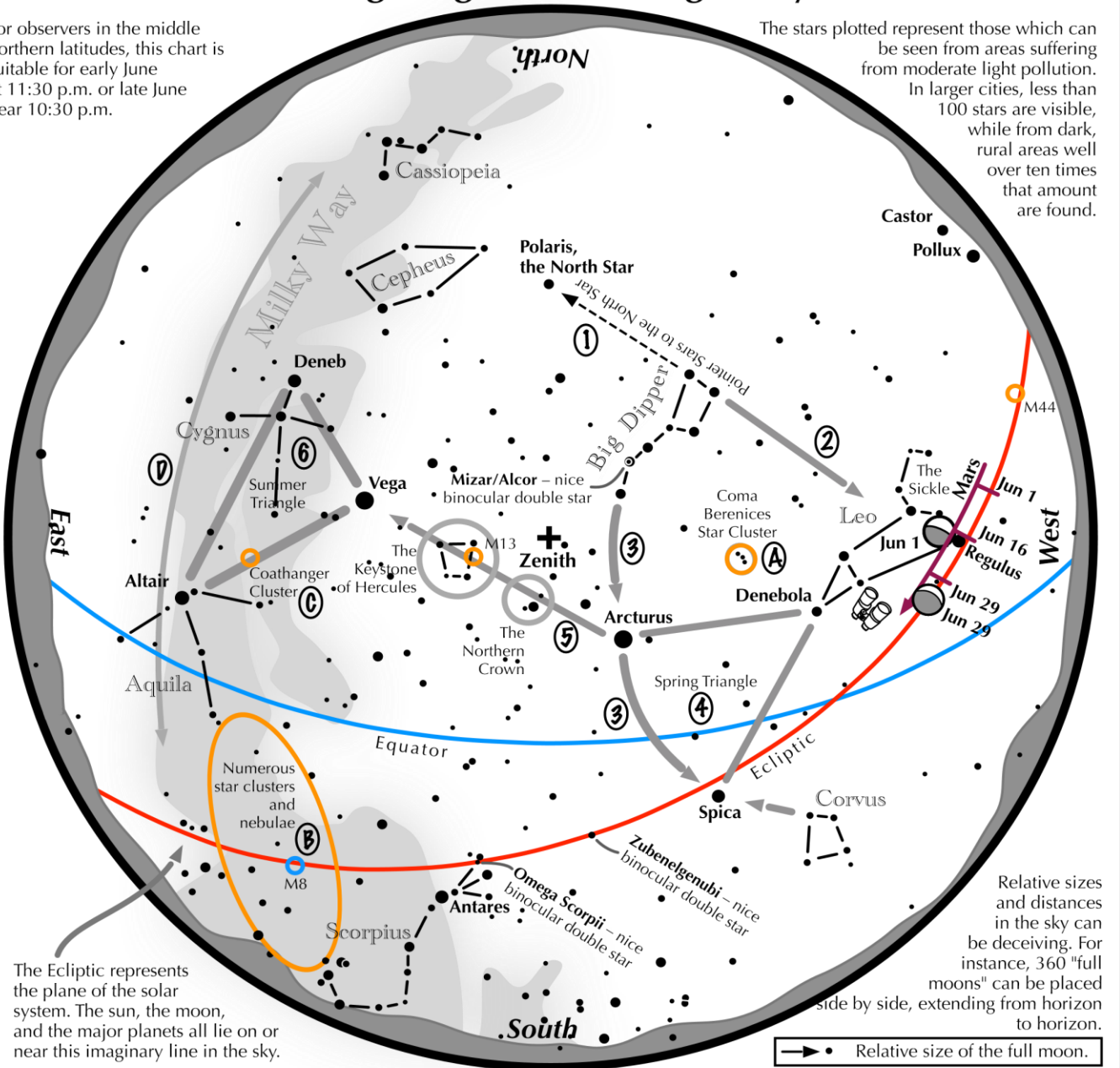


Aurora of June 22 by L. Allen Beers. Taken near Camp Dodge. Allen was alerted to the possible aurora by reading information on www.Spaceweather.com.

Navigating the June Night Sky

For observers in the middle northern latitudes, this chart is suitable for early June at 11:30 p.m. or late June near 10:30 p.m.

The stars plotted represent those which can be seen from areas suffering from moderate light pollution. In larger cities, less than 100 stars are visible, while from dark, rural areas well over ten times that amount are found.



Navigating the June 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 Draw another line in the opposite direction. It strikes the constellation Leo high in the west.
- 3 Follow the arc of the Dipper's handle. It first intersects Arcturus, the brightest star in the June evening sky, then Spica.
- 4 Arcturus, Spica, and Denebola form the Spring Triangle, a large equilateral triangle.
- 5 To the northeast of Arcturus shines another star of the same brightness, Vega. Draw a line from Arcturus to Vega. It first meets "The Northern Crown," then the "Keystone of Hercules." A dark sky is needed to see these two dim stellar configurations.
- 6 High in the east are the three bright stars of the Summer Triangle: 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 of Antares and Altair, hides an area containing many star clusters and nebulae.
- C: 40% of the way between Altair and Vega, twinkles the "Coathanger," a group of stars outlining a coathanger.
- D: Sweep along the Milky Way for an astounding number of faint glows and dark bays.

Astronomical League www.astroleague.org/outreach; duplication is allowed and encouraged for all free distribution.





Your 2025 Des Moines Astronomical Society Officers, Directors & Observatory Committee

President: JoAnn Cogil

Vice-President: Pat Meade

Secretary/ALCor: Jim VandeBerg

Treasurer: Bruce Mumm

Observatory Director: Greg Woolever

At Large Director: Norm Van Klompenburg

At Large Director: Jessica Weinreich

At Large Director: Dave Bailey

Observatory Committee: Greg Woolever, Norm Van Klompenburg, Dave Heck, and Jim VandeBerg

Contact us at: info@DMastronomy.com

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, 8755 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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