



## June 2024

Grand Strand Astronomers  
Monthly Events

General Membership Meeting:  
Thursday June 20 @ 7:00 pm  
Meeting: VIA Zoom.

Please see email or Facebook for link

Observing Session: June 8, 2024 @ 8:00 pm  
Location: Hampton Plantation  
Gates open @ 6:00 pm



# ASTROGATOR

## Grand Strand Astronomers

An Astronomical Journal of the Grand Strand Astronomers of the Greater Myrtle Beach Area  
GSA Founded on September 24, 2020



**Lagoon Nebula**

Photography by Ken Legal

## Grand Strand Astronomer's Social Media

[Grand Strand Astronomer's Website](#)



[Grand Strand Astronomer's Facebook](#)



### GSA Leadership



**Executive Officer**  
Ian Hewitt

**Treasurer**  
John Defreitas

Photograph  
not available  
at this time



**Secretary**  
Gerald Drake

**Social Media  
Corrodinator**  
Denise Wright

Photograph  
not available  
at this time



**Newsletter  
Corrodinator**  
Tim Kelly

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## Photograph of the Month

By Ken Legal

The shot of the Lagoon nebula (M8) in SAG, I took on May 11, 2024 last night (actually early this morning) from my backyard patio in Myrtle Beach.

### Details:

6" f/5.9 Newtonian reflector on AVX mount

Canon 60Da camera, unguided

Astronomik UHC filter

80 minutes total exposure, 30-sec subs

ISO 2000

DeepSkyStacker

GIMP for post-processing

I actually had more than 100 minutes of frames, but occasional gusts of surprisingly strong wind ruined 50 of them (25 minutes worth).

## Call For Volunteers

Tim Kelly

Grand Strand Astronomers are looking for volunteers to help with the social media platforms such as Facebook, YouTube and Twitter if the need arises. Presently Facebook needs a new face lift and be brought up to present time activities. Our website can also use some TLC and someone responsible to keep it updated with club activities and astronomy related items. If anyone would like to help in these categories, please contact Ian Hewitt at the email address below.

We are looking for new and older club members to help contribute articles for the GSA Newsletter. You can be a novice level, medium level, or a experienced level astronomer. Knowledge such as types and location of numerous stars, nebula or galaxies to share with other club members. GSA would like to provide topics for all level of members and non-members that are both hands-on projects and educational sharing. You can either write you own or use one already written and published. See Megan's, Chris' and Gerald's contributions for self written articles. See Tim's contributions for an example of non-written subject matter or from a written artical from another person. Please provide the title, name of the originator and website link that the original article can be found. You will not be required to submit articles every month, however every second or third month would be nice and a benifit to all members and non-members. Please send articles to [t.m.kelly349@outlook.com](mailto:t.m.kelly349@outlook.com)

## Grand Strand Astronomers - Membership

Grand Strard Astronomer's welcomes new member: Theodore Bittner.

## GSA Telescope Loaner Program

Did you know our club has telescopes available for loan? They are Dobsonians that were donated to the club when we first started. These are available for club members to use at no charge. All you have to do is take care of them and return them if someone else wants to borrow one. The first one is an Orion XT 8. It's in great shape. It gives beautiful views of the moon, planets, and galaxies. Comes with accessories that include a 2X Barlow, 25mm eyepiece, 9mm eyepiece, and laser collimator tool. The other one is an Orion Skyquest XT 10 with Orion's IntelliScope computerized object locator. It includes more than 14,000 objects in its database so you'll be able to locate those dim galaxies. Should be hours of fun. Accessories are included. Both of these are begging to be used. Send us an email if you're interested in borrowing one.

## GSA Monthly Newsletter Articles

Tim Kelly

Grand Strand Astronomer's is looking for individuals who would like to participate in submitting newsletter articles dealing with anything astronomy. We can not rely on the same four (4) members to write and send in articles month after month. New thoughts and ideas make for good reading and beneficial growth for the club and the public of the Greater Myrtle Beach area.

One member's simple advancement could just be what a newbie is looking for to get over a hurdle that has been impeding their progress forward. The expertise by many members can be a form of mentoring.

Examples of articles to submit are:

- How did you get interested in astronomy
- What was or is your first telescope
- What is your favorite go-to objects
- Astrophotography
  - When did you start photographing
  - What lessons did you experience during your learning process
  - Submit older photographs taken along with equipment settings
  - Older pictures can be sent in for the first page "Photograph of the Month"
- What is your goal to achieve astronomically
- Explain your personal growth, and journey through this beautiful hobby
- Favorite internet reading stop-off. Send in articles with originator's name and the website hyperlink
- How do you find a galaxy, a nebula, asteroid or comet in the vast reigns of the universe.

I am asking all members to contribute to the expanding of knowledge, enthusiasm, and love of amateur astronomy to new members within our club, and to other who are not members yet, but contemplating in joining Grand Strand Astronomer's. I would rather have too many articles than not enough to make a great newsletter. This is our club and our newsletter.

Please let me know if you are willing to participate in submitting newsletter articles. You can send articles or emails to [t.m.kelly349@gmail.com](mailto:t.m.kelly349@gmail.com)

## Grand Strand Astronomers

By Gerald Drake

We had a Zoom meeting on the 23rd of May at 7:00 pm with a special speaker, Dr. Jeannette Myers of Francis Marion University.

Before the meeting started, we had an open discussion about getting more observing events going in our area, sunspot activity, and astro imaging software.

The meeting was lightly attended. Members of the Low Country Stargazers joined in our meeting which was great.

After going live with YouTube, Ian welcomed everyone to the May meeting of the Grand Strand Astronomers. Observing has been difficult, but in April we had a good session at Hampton Plantation with good sky conditions. Our next outing at Hampton will be June 8 (Saturday).

It is time again to elect officers for our club. The positions are Executive Officer, Treasurer, and Secretary. Please submit your nomination for these positions by e-mail to [gsastronomers@gmail.com](mailto:gsastronomers@gmail.com). Elections will be held in June, either at the next meeting or electronically.

Ian introduced Dr. Jeannette Myers who is a professor of Astronomy and Physics. Dr. Myers gave a brief biography which includes a Ph.D. in Astrophysics, Clemson University, Clemson, South Carolina, 2003; M.S. in Physics, Clemson University, Clemson, South Carolina, 1999;

B.S. in Astronomy and Physics, Mankato State University, Mankato, Minnesota, 1996; coordinator of the Astronomy Program at Francis Marion University; and director of the Dooley Planetarium. A grant from NASA in 2014 allowed Dr. Myers to update the planetarium and add additional equipment.

In their astronomy program, they emphasize the use of Dobsonian and refractor telescopes that are not electronically controlled. The students are encouraged to use star maps and visual observing as a part of the program. They must identify 64 of the

## May 2024 Meeting Recap

88 constellations manually.

Dr. Myers has a wide background that includes solar and observational astronomy. Most of the solar observing is done with the universities' 5" refractor.

A brief background of our sun: It is a G2 dwarf star that is about 4.6 billion years old with a temperature of about 10,000 degrees F. Its energy mass is balanced against gravity, so it is stable.

Solar observing includes monitoring surface changes in the sun. The level of activity ranging from low to high, appears to be on an 11-year cycle. This is not exact. In 2022 there were no sunspots observed, but in 2014 there were many. Right now, we are in a high-activity state.

Sunspots occur when magnetic field lines suppress the flow of energy in the sun creating a relatively cooler spot on the sun's surface. There are many shapes to these with classifications. Observing the chromosphere, you can see a granulation pattern and indicators that the sun's activity is building up. Coronal loops can be seen when the magnetic fields force plasma out into the chromosphere. Coronal mass ejection is when this plasma escapes the sun's gravity and is ejected into space. Solar flares occur when the magnetic fields get twisted and snap. When that happens a mass of plasma is ejected into space. Not all of these ejections are pointed toward the earth. When they are, they carry the charged particles thrown through space toward our atmosphere.

Our magnetic field protects us, but the poles have holes in the field and the particles find their way through. When these charged particles enter our atmosphere, they interact with the elements causing them to excite and release energy. We see that energy in various colors of light (auroras) according to the elements. Green is the most common color in auroras and is produced when charged particles collide with oxygen molecules in altitudes of about 100 to 300 km. If they collide in higher elevations (300 to 400 km) they will produce red auroras. Blue and purple come from interaction with hydrogen and helium molecules, and so on.



On May 10, 2024; there was an aurora that was observable pretty far south. The observed sunspot activity increased from May 2 to May 10. On May 3 there was a dramatic change with more prominent and larger sunspots. During this buildup of activity, there was a merging of sunspots causing a twisting of the magnetic field. One sunspot became very large and a discharge was observed by satellite. The charged particles took 22 hours to reach Earth's atmosphere. Dr. Myers shared a video of what the aurora from this looked like. Note that this large sunspot is rotating with the sun. It will point toward Earth again in 21 days. It will be interesting to see if we can another aurora from it.

Geometric storms are rated in severity from G1 to G5 where G5 is considered extreme. The one that hit us starting May 10 was a G5, but there were no power outages from it. Will we have another large one? We don't know. In 1859 a huge storm hit and charged telegraph lines in the US. On March 13, 1989, a large geometric storm took out the power grid in Quebec. Now we watch for these and make preparations by monitoring the sun for activity.

There is a numbering system for the observed sunspots. The large sunspot mentioned earlier is AR3664 and will be coming back around. Geometric storms can occur regardless of high or low activity. Large storms are not isolated to high-activity periods. The past 2 years have been very busy for solar activity, but we do not know if we have hit the peak in the cycle or if we are still climbing. The chances of seeing another geometric storm in our lifetime are good. We do not know what causes the variation in the cycle. To see the current active sunspots and their assigned number, visit: [spaceweather.com](https://spaceweather.com). We have been counting sunspots since the 1700's. Now we have satellites that watch for them.

Most auroras are seen over the Canadian Midwest, which is closer to the geomagnetic pole area.

A question was asked about what radiation is found in these storms. The answer is Gamma and X-rays. Predominately it is X-rays that are hitting the upper atmosphere; however, the density of material in our layers of atmosphere blocks this energy from coming through to us.

Other questions were asked about the age of our sun and its relation to sunspots. Dr. Myers stated there seems to be no relation. The cycle of sunspot activity varies between 9 to 11 years

There were other questions about observing and finding dark skies. Dr. Myers mentioned that if you go closer to Marion, SC you can find some rural areas where the sky is darker. NC has some dark skies, but when you get into the Appalachian Mountains, the weather gets iffy.

The live stream was ended at this point.

Everyone shared their appreciation for a great and informative presentation.

If you have questions, you may contact Dr. Myers by email at [jmyers@fmarion.edu](mailto:jmyers@fmarion.edu)

I highly recommend you watch the YouTube video of this meeting and presentation at: [https://www.youtube.com/live/ZMMAY-LZx7k?si=0vW3LN\\_4sxZFLfQS](https://www.youtube.com/live/ZMMAY-LZx7k?si=0vW3LN_4sxZFLfQS)



## ZOOM Presentation on Dragonfly by Dr. Turtle

Mike Lyons

Dr. Zibi Turtle of Johns Hopkins Applied Physics Lab met with the Lowcountry Stargazers on April 18 to give a presentation on NASA's upcoming New Frontiers mission, Dragonfly, is a rotorcraft lander designed to perform in situ investigation of the chemistry and habitability of Saturn's largest moon, Titan.

The only moon in the solar system with a dense atmosphere, Titan has abundant complex carbon-rich material on its icy surface, and there have been opportunities for these organics to have mixed with liquid water on the surface in the past, and potentially with the liquid-water ocean within Titan's interior. As a result, Titan is a singular destination to seek answers to fundamental astrobiology questions about the habitability of other worlds in our solar system and prebiotic chemical processes like those that led to the development of life here on Earth.

Dragonfly takes advantage of Titan's dense atmosphere and low gravity to fly from place to place, exploring diverse geological settings to sample and measure detailed compositions of surface materials and observe Titan's geology and meteorology.

During its ~3-year mission, Dragonfly will make multidisciplinary science measurements at a few dozen landing sites to characterize Titan's habitability and determine how far organic chemistry has progressed in environments that have provided key ingredients for life.

See the Zoom meeting by clicking CTR/Right Mouse.

<https://cofc.zoom.us/rec/share/4KYL4MdH6p7sU0n26HpBRw4R2zl8gUtBnbXbFgtS6QHOM9kyJKnpeCUCoHi1zwwC.4A9GPKfDumbgyZbL?startTime=1713480451000>

**Passcode: [haD96?#H](#)**

## Dragonfly

Marty Dunn

The below hyperlink provides information on the Zoom lecture "Dragonfly". It was an enjoyable demonstration presented by DR. Zibi Turtle. This NASA site might be what members need to learn more on the flights and exploration across Saturn's Moon Titan.

<https://dragonfly.jhuapl.edu/What-Is-Dragonfly/>



Artist's impression of the Dragonfly rotorcraft-lander on the surface of Titan, Saturn's largest moon and a major target in NASA's quest to assess habitability and search for potential signs of life beyond Earth



Artist's impression of Dragonfly soaring over the dunes of Saturn's moon Titan. NASA has authorized the mission team to proceed on development toward a July 2028 launch date.

## Astronomical League Manuals for Observing

Tim Kelly

The Astronomical League offers a number of manuals that are useful and informative to those pursuing various Observing Programs. To see information on what manuals are available and which one might help you with your observing.

<https://www.astroleague.org/observing-manuals-to-assist-your-observing/>

### Introduction

This page includes links to the many manuals that are available in the AL Store. We hope you will take advantage of them to help you on your Observing Journey. They are full of useful information about the objects and how to find them.

Links change over time, and this web page is loaded with links. If one does not work, you can navigate to the AL Store through the AL Website. Most manuals and guides can be found under the heading of Observing Manuals. Some can be found under the heading of Books and Calendars. Please let Aaron Clevenson know if you notice any broken links at [aaron@clevenson.org](mailto:aaron@clevenson.org)

### Manuals to Help You Get Started in the Hobby

These manuals are useful if you are just starting out. This would include the Sky Puppy Observing Program (10 and under), the Youth Astronomer Observing Program (17 and under), and Beyond Polaris Observing Program (any age).

#### A Pathway to the Stars:

[https://store.astroleague.org/index.php?main\\_page=product\\_info&cPath=1&products\\_id=157&zenid=8kki55gfb00m0qrc6uk43m0bg4](https://store.astroleague.org/index.php?main_page=product_info&cPath=1&products_id=157&zenid=8kki55gfb00m0qrc6uk43m0bg4)

#### Exploring the Starry Realm:

[https://store.astroleague.org/index.php?main\\_page=product\\_info&cPath=1&products\\_id=167&zenid=8kki55gfb00m0qrc6uk43m0bg4](https://store.astroleague.org/index.php?main_page=product_info&cPath=1&products_id=167&zenid=8kki55gfb00m0qrc6uk43m0bg4)

### Manuals Useful to Any Observer

#### Math for Amateur Astronomers:

[https://store.astroleague.org/index.php?main\\_page=product\\_info&cPath=2&products\\_id=5&zenid=ojmd7h83hfh4la4n219blo6427](https://store.astroleague.org/index.php?main_page=product_info&cPath=2&products_id=5&zenid=ojmd7h83hfh4la4n219blo6427)

#### A Visual Observing Journal:

[https://store.astroleague.org/index.php?main\\_page=product\\_info&cPath=2&products\\_id=153&zenid=ojmd7h83hfh4la4n219blo6427](https://store.astroleague.org/index.php?main_page=product_info&cPath=2&products_id=153&zenid=ojmd7h83hfh4la4n219blo6427)

#### An Imaging Observing Journal:

[https://store.astroleague.org/index.php?main\\_page=product\\_info&cPath=2&products\\_id=154&zenid=ojmd7h83hfh4la4n219blo6427](https://store.astroleague.org/index.php?main_page=product_info&cPath=2&products_id=154&zenid=ojmd7h83hfh4la4n219blo6427)



## Individual Observing Programs

**Binocular Messier Observing Program** – Messier Beginner’s Guide:

[https://store.astroleague.org/index.php?main\\_page=product\\_info&cPath=1&products\\_id=6&zenid=ojmd7h83hfh4la4n2l9blo6427](https://store.astroleague.org/index.php?main_page=product_info&cPath=1&products_id=6&zenid=ojmd7h83hfh4la4n2l9blo6427)

**Carbon Star Observing Program** – Carbon Stars Observing Guide:

[https://store.astroleague.org/index.php?main\\_page=product\\_info&cPath=1&products\\_id=72&zenid=ojmd7h83hfh4la4n2l9blo6427](https://store.astroleague.org/index.php?main_page=product_info&cPath=1&products_id=72&zenid=ojmd7h83hfh4la4n2l9blo6427)

**Galaxy Groups and Clusters Observing Program** – GGC Manual:

[https://store.astroleague.org/index.php?main\\_page=product\\_info&cPath=1&products\\_id=1&zenid=ojmd7h83hfh4la4n2l9blo6427](https://store.astroleague.org/index.php?main_page=product_info&cPath=1&products_id=1&zenid=ojmd7h83hfh4la4n2l9blo6427)

**Globular Cluster Observing Program** – Globular Cluster Observing Manual:

[https://store.astroleague.org/index.php?main\\_page=product\\_info&cPath=1&products\\_id=2&zenid=ojmd7h83hfh4la4n2l9blo6427](https://store.astroleague.org/index.php?main_page=product_info&cPath=1&products_id=2&zenid=ojmd7h83hfh4la4n2l9blo6427)

**Herschel 400 Observing Program** – Herschel 400 Observing Manual:

[https://store.astroleague.org/index.php?main\\_page=product\\_info&cPath=1&products\\_id=163&zenid=ojmd7h83hfh4la4n2l9blo6427](https://store.astroleague.org/index.php?main_page=product_info&cPath=1&products_id=163&zenid=ojmd7h83hfh4la4n2l9blo6427)

**Herschel II Observing Guide** – Herschel II Observing Guide:

[https://store.astroleague.org/index.php?main\\_page=product\\_info&cPath=1&products\\_id=10&zenid=ojmd7h83hfh4la4n2l9blo6427](https://store.astroleague.org/index.php?main_page=product_info&cPath=1&products_id=10&zenid=ojmd7h83hfh4la4n2l9blo6427)

**Jupiter Observing Challenge** – Observing Jupiter:

[https://store.astroleague.org/index.php?main\\_page=product\\_info&cPath=1&products\\_id=160&zenid=ojmd7h83hfh4la4n2l9blo6427](https://store.astroleague.org/index.php?main_page=product_info&cPath=1&products_id=160&zenid=ojmd7h83hfh4la4n2l9blo6427)

**Local Galaxy Group and Galactic Neighborhood Observing Program** – LGG Observing Manual:

[https://store.astroleague.org/index.php?main\\_page=product\\_info&cPath=1&products\\_id=166&zenid=ojmd7h83hfh4la4n2l9blo6427](https://store.astroleague.org/index.php?main_page=product_info&cPath=1&products_id=166&zenid=ojmd7h83hfh4la4n2l9blo6427)

**Mars Observing Program** – Mars Observing Guide:

[https://store.astroleague.org/index.php?main\\_page=product\\_info&cPath=1&products\\_id=161&zenid=ojmd7h83hfh4la4n2l9blo6427](https://store.astroleague.org/index.php?main_page=product_info&cPath=1&products_id=161&zenid=ojmd7h83hfh4la4n2l9blo6427)

**Messier Observing Program** – Messier Beginner’s Guide:

[https://store.astroleague.org/index.php?main\\_page=product\\_info&cPath=1&products\\_id=6&zenid=ojmd7h83hfh4la4n2l9blo6427](https://store.astroleague.org/index.php?main_page=product_info&cPath=1&products_id=6&zenid=ojmd7h83hfh4la4n2l9blo6427)

**Meteor Observing Program** – Meteor Observing Guide:

[https://store.astroleague.org/index.php?main\\_page=product\\_info&cPath=1&products\\_id=162&zenid=ojmd7h83hfh4la4n2l9blo6427](https://store.astroleague.org/index.php?main_page=product_info&cPath=1&products_id=162&zenid=ojmd7h83hfh4la4n2l9blo6427)

**Planetary Nebula Observing Program** – Planetary Nebula Observing Guide:

[https://store.astroleague.org/index.php?main\\_page=product\\_info&cPath=1&products\\_id=12&zenid=ojmd7h83hfh4la4n2l9blo6427](https://store.astroleague.org/index.php?main_page=product_info&cPath=1&products_id=12&zenid=ojmd7h83hfh4la4n2l9blo6427)

**Sky Puppy Observing Program** – Sky Puppy Observing Manual and Workbook:

- Contact Aaron Clevenson at [aaron@clevenson.org](mailto:aaron@clevenson.org) for free copies.

**Universe Sampler Observing Program** – Universe Sample Guide:

[https://store.astroleague.org/index.php?main\\_page=product\\_info&cPath=1&products\\_id=14&zenid=ojmd7h83hfh4la4n2l9blo6427](https://store.astroleague.org/index.php?main_page=product_info&cPath=1&products_id=14&zenid=ojmd7h83hfh4la4n2l9blo6427)

## What's Up: June 2024 - Skywatching Tips

NASA

Tim Kelly



Sky chart showing the planets' Saturn, Mars, and Jupiter forming a diagonal line across the morning sky in late June.

NASA/JPL-Caltech

Click for YouTube  <https://science.nasa.gov/solar-system/skywatching/whats-up-june-2024-skywatching-tips-from-nasa/>

### Planets rule the a.m., and what's that bright light?

Saturn and Mars meet up with the Moon, Jupiter returns at dawn, and tips for identifying some common objects seen in the sky.

#### Highlights:

**All month** – All the planetary action continues to be in the morning sky, with Saturn and Mars rising in the early morning hours. They are joined later in the month by Jupiter.

**June 2** – In the hour before sunrise, reddish Mars hangs just beneath the crescent Moon. Find the pair low in the east with Saturn lurking nearby, toward the south.

**June 3** – The crescent Moon sits beneath Mars in morning twilight. Look for them low in the eastern sky.

**June 6** – New moon

**June 21** – Full moon

**June 24** – Jupiter is now visible low in the east before sunrise. Look for the bright planet around 10 degrees above the horizon this final week of June, forming a line with Mars and Saturn that stretches toward the south.

**June 27** – Look for the Moon rising in the east with Saturn around midnight. By dawn this morning, you'll find them high in the southern sky. They appear super close together – close enough to appear in the same field of view through binoculars.

"Planet Parade" note: Some online sources have shared excitement about a "parade of planets" visible in the morning sky in early June (June 3 in particular). In reality, only two of the six planets supposedly on display (Saturn and Mars) will actually be visible. In early June, Jupiter and Mercury will be at or below the horizon in morning twilight and not visible; Uranus and Neptune are far too faint to see without a telescope, especially as the morning sky brightens. The closest thing to a planet parade will be June 29, when Saturn, the Moon, Mars, and Jupiter will line up across the morning sky. This arrangement persists into July, and we'll talk more about that lineup in the next "What's Up" video.

### Transcript

What's Up for June? Saturn and Mars meet up with the Moon, Jupiter returns at dawn, and tips for identifying some common objects seen in the sky.

On June 2nd in the hour before sunrise, reddish Mars hangs beneath the crescent Moon. Find the pair low in the east with Saturn lurking nearby. The following morning, on June 3rd, the Moon has moved so that it sits beneath Mars.

During the last week of June, giant Jupiter re-emerges as a morning planet, after passing behind the Sun, from our point of view on Earth, over the past couple of months. By June 24th, you can find it about 10 degrees above the horizon as the morning sky begins to brighten. It climbs a little higher each morning after that as July approaches.

Then on June 27th, look for the Moon with Saturn. The pair rise around midnight, and by dawn you'll find them high in the southern sky. They appear super close together this morning – close enough to appear in the same field of view through binoculars.



Sky chart showing the pre-dawn sky on June 3, with Saturn, Mars, and the crescent Moon. NASA/JPL-Caltech.

When you spot bright or moving objects in the night sky, it might not be immediately clear what you're looking at. Is that a planet, or just a bright star? Is it a satellite, or maybe just an airplane? Here are a few quick tips on how to tell the difference.

First, there are five planets that are easily observed with the unaided eye. Of these, two planets – Venus and Jupiter – can sometimes appear incredibly bright, like shining beacons in the

The big tipoff that you're looking at a star and not a planet is that planets tend to shine steadily, whereas stars twinkle. Stars are so far away that they're just points of light,

and ripples in our atmosphere easily distort them, causing the familiar flicker. The planets are relatively closeby, being here in our solar system. Through binoculars or a telescope, instead of a single point, planets show us a tiny disk or crescent that's illuminated by the Sun. So even though they appear star-like to the eye, the light from a planet is coming from a slightly more spread-out area, making planets appear more constant in brightness. Both planets and stars rise in the east and set in the west, and they move very slowly across the sky during the night.

But what if you see an object that's moving? Distant aircraft are usually pretty easy to identify, because they follow a slow, steady path that's straight or gently curving. They have exterior lights that flash in a regular pattern, often including a red beacon.

Satellites tend to be most visible in the hour or so after dark or before dawn, when it's night here on the surface, but the satellites are high enough in the sky to be illuminated by sunlight. They're generally fainter than aircraft, and move in slow, very steady, very straight paths. They might briefly flare in brightness, but they don't have lights that blink.



The International Space Station traces its path across the twilight sky over a California desert landscape.

NASA/Preston Dyches

The International Space Station is an exception, because it's very bright, and is often visible for long enough to observe the curving path of its orbit. But it doesn't have flashing lights you can see from the ground, and it does something else satellites do: Satellites often fade out of view as they travel into Earth's shadow, or fade into view as they emerge. And occasionally you might see a train of satellites moving slowly and silently in formation.

One other sight that's sometimes confusing is rocket launches that happen soon after sunset or before sunrise. Similar to spotting satellites, this is when it's darker here on the ground, but launching rockets climb high enough to be illuminated by sunlight. When rockets launching at these times of day get really high in altitude, their exhaust can be brilliantly illuminated, and sometimes you might even see spiral or circular shapes that slowly grow and then dissipate, as a spent rocket stage empties its propellant into space.

With so much to see in the night sky, it's helpful to be familiar with some of these common sights, so you can get on with your skywatching and investigate whatever mysteries and wonders you're in search of.

Here are the phases of the Moon for June.

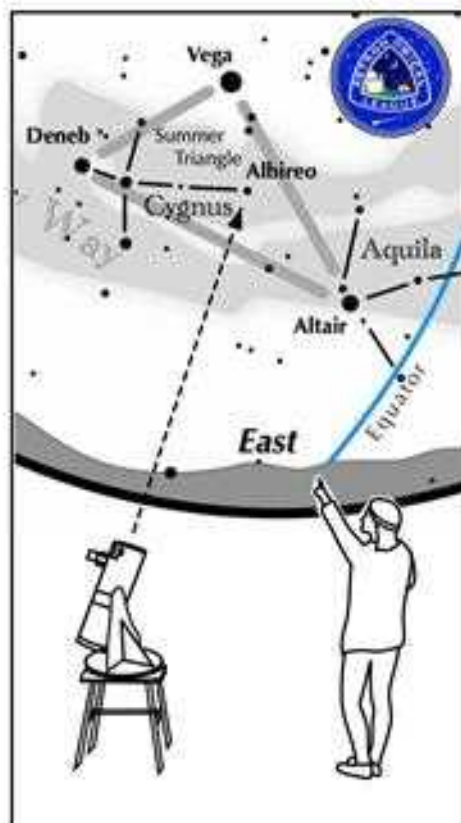


The phases of the Moon for June 2024.  
NASA/JPL-Caltech



# 2024-June-Beta-Cygni

Tim Kelly



## Other Suns: Beta Cygni (Albireo)

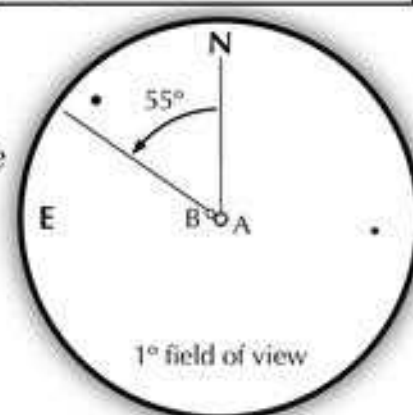
### How to Beta Cygni on a June evening

Look in the east for the Milky Way and Cygnus. The Northern Cross shape of Cygnus lies in a horizontal position. The southernmost star of the Cross is Beta, also known as Albireo.

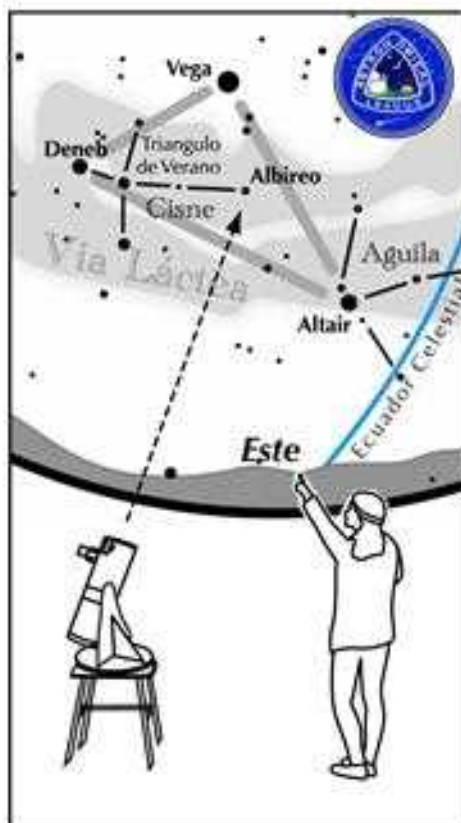
#### Beta Cygni

- A-B separation: 35 sec
- A magnitude: 3.4
- B magnitude: 4.7
- Position Angle: 55°
- A & B colors: orange, blue

Suggested magnification: >30x  
Suggested aperture: >2 inches



Try 10x50 binoculars to separate Albireo.



## Otros Soles: Beta Cygni (Albireo)

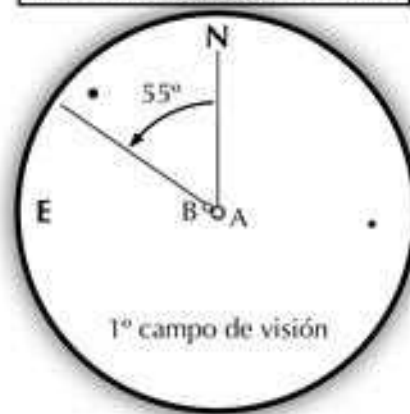
### Cómo encontrar a Beta Cygni en una tarde de junio

Mire hacia el este en busca de la Vía Láctea y el Cisne. La forma de Cruz del Norte de Cisne se encuentra en posición horizontal. La estrella más al sur de la Cruz es Beta, también conocida como Albireo.

#### Beta Cygni

- A-B separación: 35 sec
- A magnitud: 3.4
- B magnitud: 4.7
- PA: 55°
- A & B color: naranja, azul

Ampliación sugerida: >30x,  
Apertura sugerida: >50 mm

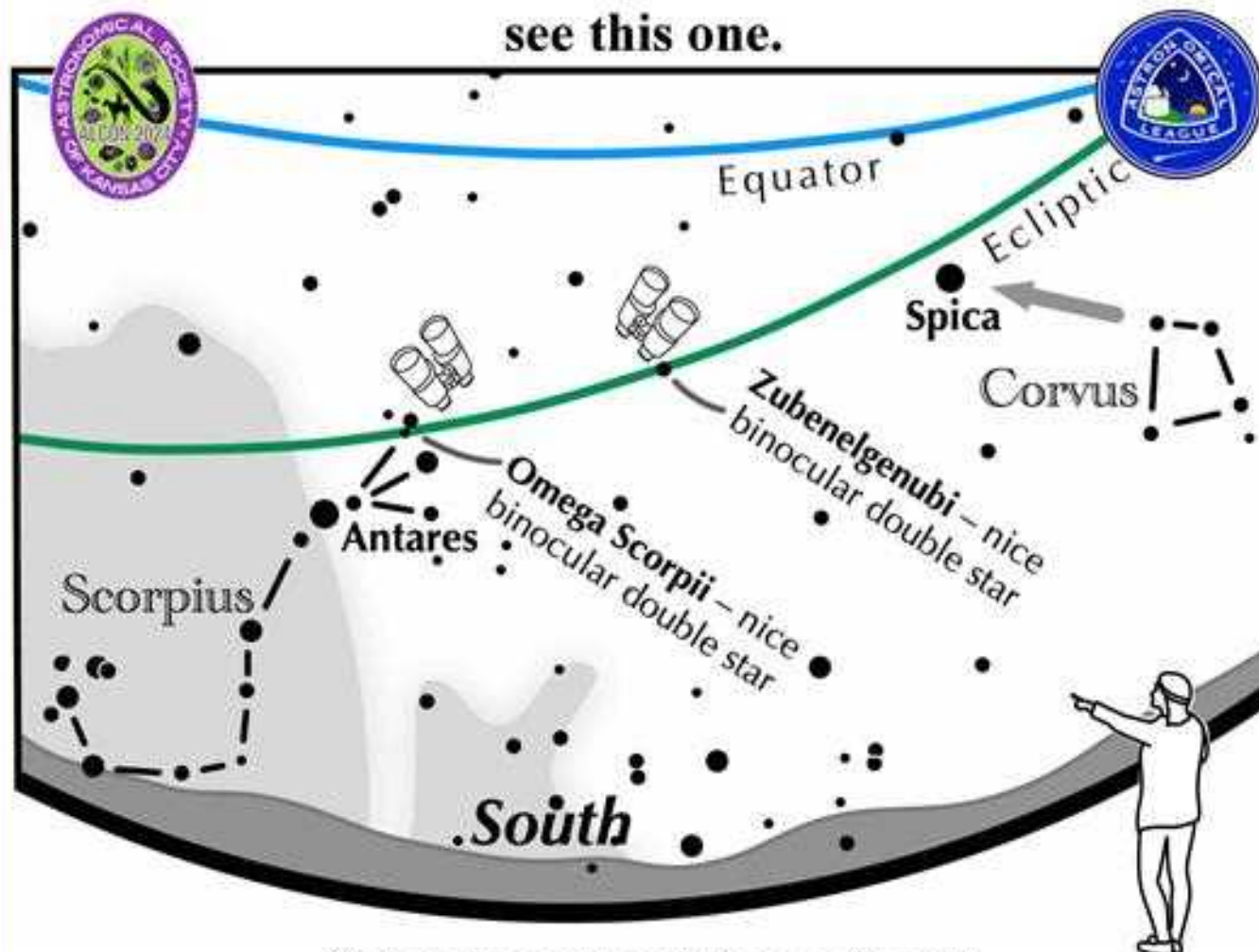


Usa 10x50 binoculares para separar Albireo.

## 2024-June-Zuben-Omega-Sco

Tim Kelly

If you can see only one celestial event this June,  
see this one.

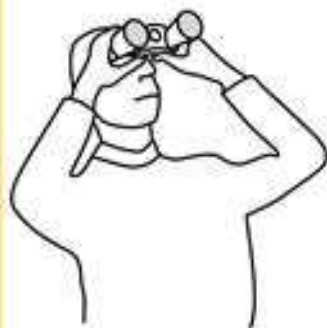


### *Zubenelgenubi and Omega Scorpii, two easy binocular double stars.*

Throughout June ninety minutes after sunset, look low in the south for the bright stars Spica and Antares.

- Almost mid-way between them shines the moderately bright star Alpha Librae, also called Zubenelgenubi.
- Aim binoculars at it and two stars will be seen.
- To Antares' right are the three "claw" stars of Scorpius. Directly below the uppermost claw, Graffias – or Beta Scorpii – is Omega Scorpii.
- Binoculars will easily show two 4th magnitude stars, Omega 1 and 2, separated by nearly a full moon width. The two Omega's are a chance line of sight pair. They are not gravitationally bound to each other.

*The keen-eyed skywatcher will discern two stars when gazing at both Zuben and Omega.*



Enhance the scene –  
use binoculars!



# Interactive Sky Chart

Year Month Day Hour Minute  
2024 June 15 0000 0000



And remember to always look up!