



**Peoria Astronomical Society, Inc.**

P.O. Box 10111 Peoria, IL 61612-0111  
Section of Peoria Academy of Science  
Affiliate of the Astronomical League  
[www.astronomical.org](http://www.astronomical.org)

# STARLITE

*Summer, 2022*  
**WHAT'S IN THIS ISSUE?**

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Riverfront Museum & Planetarium report  
Northmoor Schedule & Jubilee Schedule  
June night Sky & Globular Cluster Challenge



Mars landscape

### ***Officers:***

President: Dan Son, [sonshine1992@gmail.com](mailto:sonshine1992@gmail.com)  
Vice-President: Brian Bill  
Secretary: Phil Burroughs  
Treasurer: Dave Monroe, [dave.monroe@comcast.net](mailto:dave.monroe@comcast.net)

### ***Directors:***

Parliamentarian: Dave Monroe, [dave.monroe@comcast.net](mailto:dave.monroe@comcast.net)  
Nominating Chairman:  
Legal Agent: Rodney Nordstrom  
Northmoor Chairman: Dan Son, [sonshine1992@gmail.com](mailto:sonshine1992@gmail.com)  
Jubilee Chairman: Jesse Hoover

***PEORIA ASTRONOMICAL SOCIETY IS NOW ON FACEBOOK:***  
[www.facebook.com/PeoriaAstronomicalSociety](http://www.facebook.com/PeoriaAstronomicalSociety)

### ***Update your address, phone or email changes***

Please notify Dan Son at [sonshine1992@gmail.com](mailto:sonshine1992@gmail.com) if you will be getting a new mailing address, email address and/or phone number. It is important that he has your personal information correct so you will continue to receive the Starlite and the Reflector. He would also like to receive any changes to your e-mail address as this is part of his database.

If you would like to join the Peoria Astro e-group or if you have changed your e-mail address, please notify Dan Son at [sonshine1992@gmail.com](mailto:sonshine1992@gmail.com) with your e-mail address (for in-club use only – not given out to other sources). He does not need your mailing address or phone number. If you are not a member of the e-group, you may want to consider joining.

### ***NEW MEMBERS:***

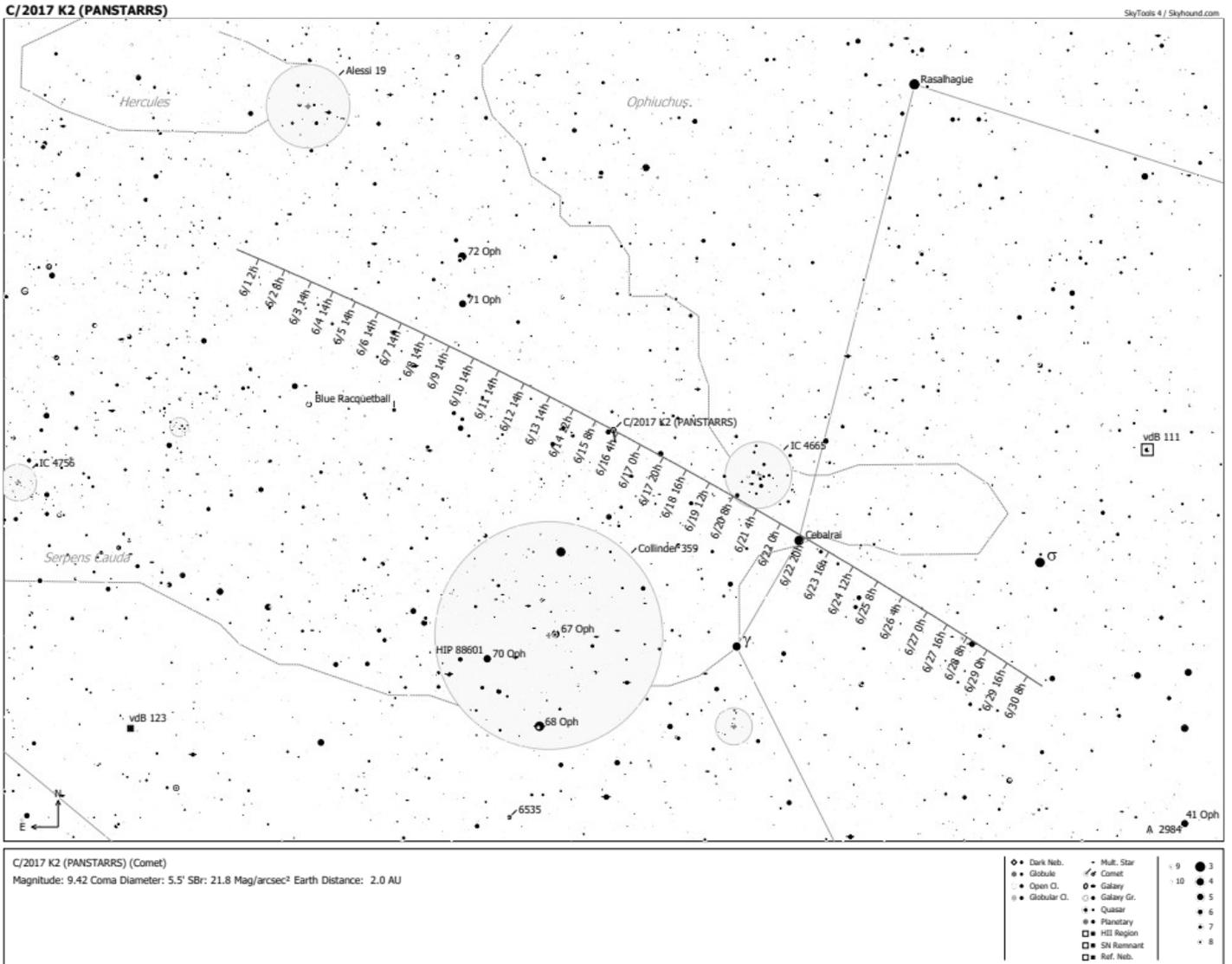
The Peoria Astronomical Society welcomes new members: **David Znavor**

### ***2022 Meteor Shower Schedule:***

The Delta Aquarids are on July 28-30 in a predawn sky. This shower will produce 10-20 per hour and this year are during new Moon, so head out to a dark sky site. The Perseid's are August 11-13 but a full Moon will interfere with viewing them this year.

## Comet Hunting:

C/2017 K2 (Panstarrs) is in Ophiuchus at magnitude 9.7 and should brighten a little by months end. Information from <https://cometchasing.skyhound.com>



Finder chart for comet c/2017 K2

## Presidential Ramblings:

Hello everyone and I hope you are having a great start to the Summer. I know it is not officially here but it is after Memorial Day. Northmoor is open for public viewing and I do appreciate the volunteers that make it happen. I hope you enjoy the work that is



going into making the Starlite and I do thank everyone who submitted articles and picture's that they took. I do enjoy going out to Jubilee and seeing a few members working and having fun getting the equipment set up to work on capturing a few photons of light for all of us to enjoy. If anyone is looking to help at Northmoor please email me and we will get you started, we can always use more volunteers. I am looking forward to a few events in the coming months, I hope to make it out to the Nebraska Star Party this July 24-29<sup>th</sup> (<https://www.nebraskastarparty.org/>) and the Illinois Dark Skies Star Party September 22-25<sup>th</sup>. I am looking for a rider to Nebraska..gas is going to kill me in a Jeep! I hope you have some great plans for the summer season and keep looking for clear skies. The winner of the spring Starlite scope giveaway was Nic Napier, hope to see that 8" coultter when all rebuilt.

## **Remembering Don Hill**

I became a member of the PAS in the late 1980's and one of my earliest memories was getting a personalized Christmas greeting from Don Hill. Every year he would highlight events of significance to himself and share it and best wishes for the new year with all of the PAS membership. At first he would attach labels to the envelopes and mail it but later he would bring the greeting to the December general meeting and pass it out checking off the names from the roster to make sure all present were included. I didn't realize it until much later that Don was a long term PAS member. He was born in Chicago but his family relocated to Peoria in 1952 when Don was in his mid-teens. His brother Richard said it was then that he showed an interest in astronomy. This was about the same time Northmoor Observatory was constructed so it was only natural that Don joined the society and he soon became a willing participant.

Early on Don and his brother helped with the painting of the Observatory walls, this was prior to the warm-up room addition. Later, after the addition, Don used the space to host a class introducing the constellations to the general public. Since he like photography it was inevitable his classes employed slides and a projector. This program was a coordinated effort between the PAS and the Peoria Park District, but Don was the primary contributor. Don also presented programs at the society's general meetings. His last presentation, I recall, was on the topic of "Time."

Throughout his membership he documented many of the society activities with his camera with some of his slide images finding their way into his Holiday greeting. Don was glad to be a PAS member and his participation should be an example for us all. Don Passed away April 13 of this year just 2 weeks shy of his 87th birthday. His PAS membership spanned almost three quarters of a century!

Respectfully,  
Brian Hakes

25 Years ago:



It's hard to believe that it was 25 years ago that Comet Hale-Bopp was in our night sky for so long and was so big. A truly once in a life time event that Eric Clifton and Greg Neaveill did it justice with this photograph using a Nikon F2 w/105mm telephoto lens on Hyper-sensitized Kodak Pro 400 film. Exposure was 7 and 10 minute exposure at f/2.5 and the negatives were stacked during printing to enhance color and contrast.

## **50 Years ago:**

SCIENCE NEWS magazine (April 29, '72) reports:

Photos of the back side of the moon show that it's surface and crust are different from the earth-facing side. John A. Wood of the Smithsonian Astrophysical Observatory says this is because the moon is more heavily bombarded on it's western edge and it's earth facing side... A computer was programmed to fire imaginary projectiles, from all angles, into a model earth-moon system. Just as insects collect on the windshield of a moving car, planetesimals collect on the moon's leading or western edge as it moves in a counterclockwise orbit. Planetesimals strike the back side of the moon in a random pattern. But those that hit the side facing earth must first pass through the earth's gravitational field. This affects them and they tend to converge or focus on the earth-facing side of the moon. Peak bombardment would have occurred somewhat west of Oceanus Procellarum. Wood suggests that such a process may have thinned the crust beneath the present Oceanus Procellarum by 20%, which would account for observed differences in topography.

## **Submission of photos / article content for the Starlite: Jesse Hoover**

If you have a photo that you would like to submit for the Starlite, please send these to Jesse Hoover [hooveje@gmail.com](mailto:hooveje@gmail.com) or Dan Son [sonshine1992@gmail.com](mailto:sonshine1992@gmail.com) along with a little write-up about the photo. Photos can be from star parties, club events, personal view, etc. Astrophotography is encouraged. Also, if you have educational content, tips, techniques, lessons learned or how-to articles with photos, we encourage that material for the Starlite. We can also put these on our Facebook page if you so desire. <https://www.facebook.com/PeoriaAstronomicalSociety>

## **The Caterpillar Matching Gifts Program: Brian Hakes**

As of July 1, 2012 the Cat matching gifts program changed. Employees/Retirees are asked to submit matching gift forms electronically via the Caterpillar Foundation website, [www.caterpillar.com/foundation](http://www.caterpillar.com/foundation). The process is easy. Once you made your gift to the PAS you can go online to the Cat Foundation website and complete the electronic form, there is no paper involved. Once the form is registered with the foundation they will notify the PAS and the treasurer will then verify the gift has been received. Because there will be no mailings, the turnaround time for the whole process will be negligible. This is especially advantageous at the end of the calendar (tax) year. This is an excellent way to support the PAS. If you can, please participate in this generous program. This is a great way to help the society and the promotion of astronomy in the greater Peoria area.

### **Reflector:**

Reflector Magazine digital edition is available for download

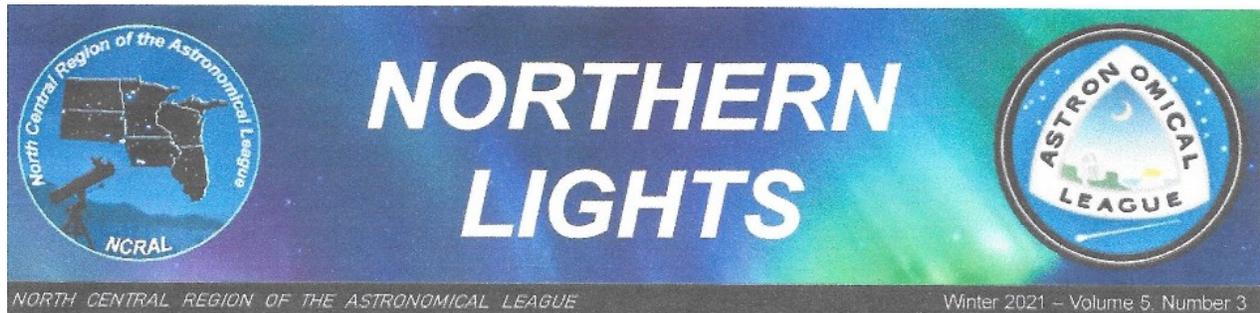
You may access an archive of digital issues from the AL website by visiting: <https://www.astroleague.org/reflector>

### **NCRAL Newsletter:**

The North-Central Region of the Astronomical League (NCRAL) is made up of member societies... the six states commonly thought of as the Upper Midwest of the USA, plus the Upper Peninsula of the state of Michigan. The PAS is a member of the NCRAL. Their Region Newsletter, also named "Northern Lights", has been resurrected and is better than ever! The latest issue's can be read on their website can be found here:

<https://ncral.wordpress.com/newsletter-archive/>

You can access the current issue and all other back issues through this link.



### **Add Your Email Address to NCRAL Member Database**

Add your email address to the NCRAL member database now so that you can get direct mailings of NORTHERN LIGHTS and important and timely announcements about Regional conferences, star parties, and so forth. Your email address will never be shared with or sold to outside entities. Sign-up takes only about a minute. You'll need to provide your name, email address, astronomy club affiliation (including at-large), and indicate if you hold particular positions within your club. Go to the following case-sensitive URL to add your information to our database: <https://goo.gl/gS8SF>

## **Program Schedule 2022– 2023 – All speakers confirmed**

**Meeting Time 7:00 p.m. CST/CDT (note new time)**

**Meeting in the Dome Planetarium at the Peoria Riverfront Museum (speakers via Zoom) Again please note the new time we will be starting..7pm.**

October 5, 2022 NASA & Planetary Defense

Rob Landis, NASA

Planetary defense entails detecting, monitoring, understanding, and mitigating near-Earth objects, also known as NEOs. NEOs are small objects in our solar system such as asteroids and comets that come close to and could pose a threat to Earth.

November 2, 2022 Dean Regas, Cincinnati Public Observatory.

Archaeoastronomy + Historic Midwestern Observatories

December 7, 2022 2022's biggest astronomy news – the ongoing stories

Dr. Shannon Schmoll PhD, Abrams Planetarium, MSU

January 4, 2023 No Meeting in January

February 1, 2023 New Full Dome Show

March 1, 2023

observe

The October 14, 2023 Eclipse + Sharing of members' plans to

April 5, 2023

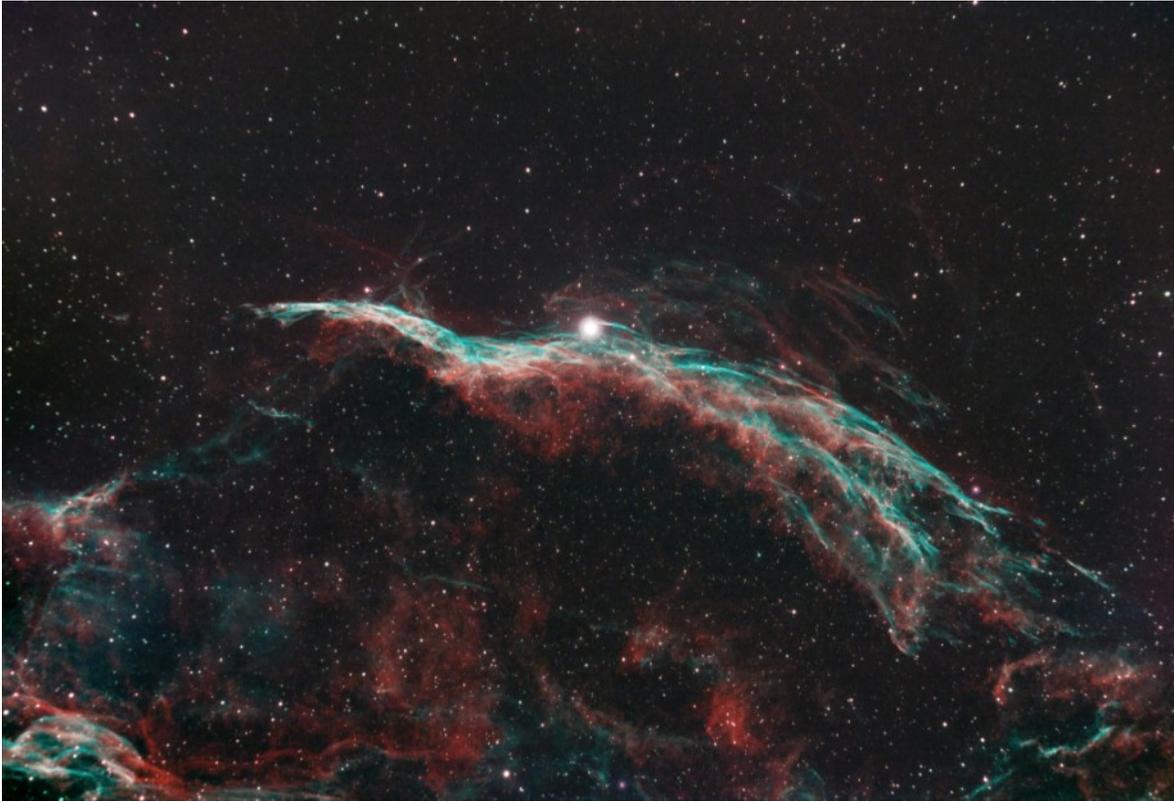
Titan! Dr. James Dire

May 3, 2023

Astro-Jeopardy II Brian Bill

**Inclement weather notice:** Monitor email (e-group), local radio stations or PAS Facebook Page if a program, board meeting, viewing, or star party may be canceled due to weather. If we determine a risk in the weather, the Society will cancel the event. If we host an event and you feel the weather or road conditions are questionable, please take the safest actions and do not attend the event.

***Photos from Members***



by Nic Napier of Western Veil using TMB 105mm f6.2 scope ZWO ASI 294MC Pro camera



by Jim Carroll of Lunar Eclipse



Subhasis Mukherjee of Trifid Nebula using Orion 8 astrograph



by Larry Reeves of the Moon



by James Armstrong of M97 & M108



by James Dire Markarian's Chain. All taken with Sky-Watcher Evolux82ED, 82mm f/6.45 refractor with SBIG ST-2000XCM CCD camera 2 hour exposure

## Looking Up:

Of special interest this summer is a chance to see all the planets in the sky at the same time. Many people do not realize that they can see the planets and when looking up mistake them for bright stars. Without the aid of cell phones and television, early civilizations turned to the stars for their entertainment. Fixed groups of stars (constellations) became the main characters in the stories they created. Eventually it was observed some of the stars seem to be moving in and out of the constellations. These wandering stars were brighter than most of the other stars and were given special roles in their stories such as Mars (the god of war), Venus (the goddess of love and beauty) or Jupiter (king of the gods). Early astronomers and mathematicians eventually discovered these wandering stars were moving around the sun which accounted for their apparent random (retrograde) motion and designated them as planets. Once again science spoiled a good story.



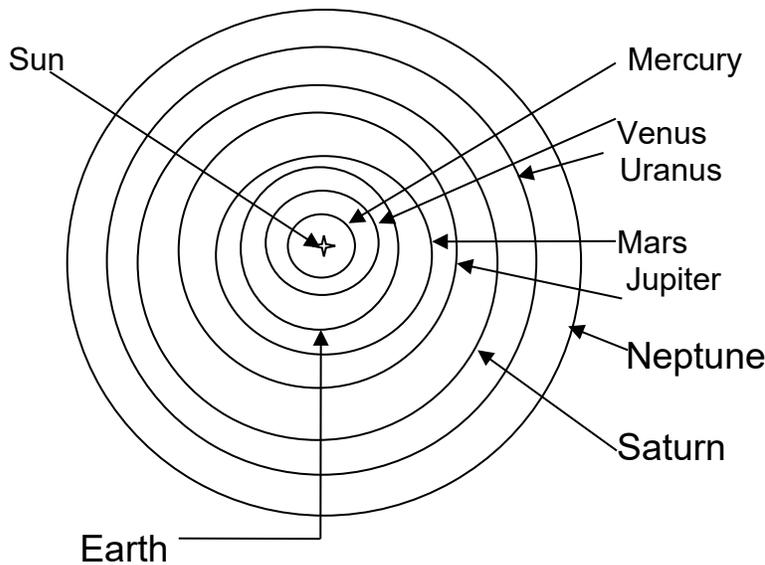
The sky, looking south

Starting on June 24th at about 4:30 am until sunrise all 8 planets (9 for senior citizens) will be visible. In the diagram above the planets appear to be strung out like a parade across the sky starting with Saturn high in the southern sky down to Mercury and Venus on the eastern horizon. Uranus and Neptune will only be visible in a telescope but staring at 11:30pm on the 23rd, first Saturn will appear in the eastern sky. As the hours tick by and the earth turns to the east the other planets in the line will appear with Mercury rising above the horizon just before dawn, about 5:30am. The dates in the diagram show the phase of the moon on those days. ON June 18th to June 23 the brightness of the moon will make it difficult to see all the planets and after the 26th, Mercury and eventually all the other planets will disappear as the sun rises in the east.

Over the centuries this star pattern has occurred and invariably groups of people (cults) will predict the end with massive tides that will flood the earth. Between March 25 and April 26th in 1981 a planet alignment within two degrees of a straight line caused several cults predicted Armageddon and began to prepare for the end. I have

to wonder what did they say when the sun came up the next day. "Maybe next year" comes to mind (familiar phrase uttered by Chicago sports fans). But do not worry about this time because the planet alignment on June 24th is less than perfect as seen from space in the second diagram below.

All the planets orbit the sun in a counter clockwise motion and are gathered to the right of the earth as seen from above. If the planets were on gathered to the left of the earth we would see the planets aligned in the evening sky with Mercury in the west just after sunset. Then we would not have to get up early to see the parade of the planets.



The solar system from above

## **The Planetarium Report by Renae Kerrigan**

The Peoria Riverfront Museum Planetarium thanks to Eric Clifton for assisting at our Lunar Eclipse Viewing event. This low key observing event hosted 74 guests, who enjoyed looking at the Moon, seeing a planetarium show and the Apollo 11 film in our Giant Screen Theater.

We have new shows at the planetarium this summer! Come see "Unseen Universe" which is all about the ways astronomers observe the universe in wavelengths of light that are invisible to our eyes. Starting Memorial Day weekend, we will also be offering a live show "Universe of Light" which is about similar concepts, and will feature an interactive infrared camera. This show compliment's the museum's main exhibition this summer, "Creatures of Light: Nature's Bioluminescence"

## Northmoor Hosting Schedule Dates for 2022

Date:	Keyholder	Helper 1	Helper 2
<b>June 11</b>	Gerald Horst	Brian Bill	Rodney Nordstrom
June 18	Bob Pauer	Dave Grebner	Elias Samaha
June 25	Phil Burroughs	Jesse Hoover	John Crow
July 02	John Lyle	Trent Widmer	Brandt Bechtold
July 09	Dan Son	Rodney Norstrom	Brian Austin
<b>July 16</b>	Bob Pauer	Elias Samaha	Jesse Hoover
July 23	Gerald Horst	Larry Reeves	John Crow
July 30	Dan Son	Trent Widmer	Brian Bill
Aug 06	Sheldon Schafer	John Manney	Dave Grebner
<b>Aug 13</b>	Phil Burroughs	Brian Austin	Elias Samaha
Aug 20	John Lyle	Brian Bill	Dave Grebner
Aug 27	Sheldon Schafer	Brandt Bechtold	Phil Burroughs
Sept 03	Terry Bachler	Rodney Nordstrom	Larry Reeves
<b>Sept 10</b>	John Lyle	Dave Grebner	Trent Widmer
Sept 17	Bob Pauer	Jesse Hoover	John Manney
Sept 24	Phil Burroughs	John Lyle	Brian Austin
Oct 01	Terry Beachler	Rodney Nordstrom	Larry Reeves
<b>Oct 08</b>	Gerald Horst	Trent Widmer	John Manny
Oct 15	Dan Son	Elias Samaha	Brandt Bechtold

*If you have a conflict with any dates, let me know as early as possible and ask the Northmoor group for help to switch dates with another member. Everyone has 4 dates this year with 22 weekends and Bold print is full Moon weekend. Thanks Everyone.*

2022 Jubilee Maintenance Schedule		
(May 7th 2022 to Oct 1st 2022)		
May 7th	Jesse Hoover	Gary Bussman
May 14th	Eric Clifton	Gary Bussman
May 21st	Brandt Bechtold	Jon Crow
May 28th	Steve Russell	Dan Son
June 4th	Jesse Hoover	Gary Bussman
June 11th	Eric Clifton	Brian Bill
June 18th	Brandt Bechtold	Jon Crow
June 25th	Steve Russell	Dan Son
July 2nd	Jesse Hoover	Jon Crow
July 9th	Eric Clifton	Brian Bill
July 16th	Dan Son	Brandt Bechtold
July 23rd	Jon Crow	Steve Russell
July 30th	Brian Bill	Eric Clifton
Aug 6th	Jesse Hoover	Gary Bussman
Aug 13th	Brian Bill	Brandt Bechtold
Aug 20th	Jon Crow	Steve Russell
Aug 27th	Dan Son	Eric Clifton
Sept 3rd	Jesse Hoover	Gary Bussman
Sept 10th	Brian Bill	Brandt Bechtold
Sept 17th	Jon Crow	Steve Russell
Sept 24th	Jesse Hoover	Dan Son

**Responsibilities:**

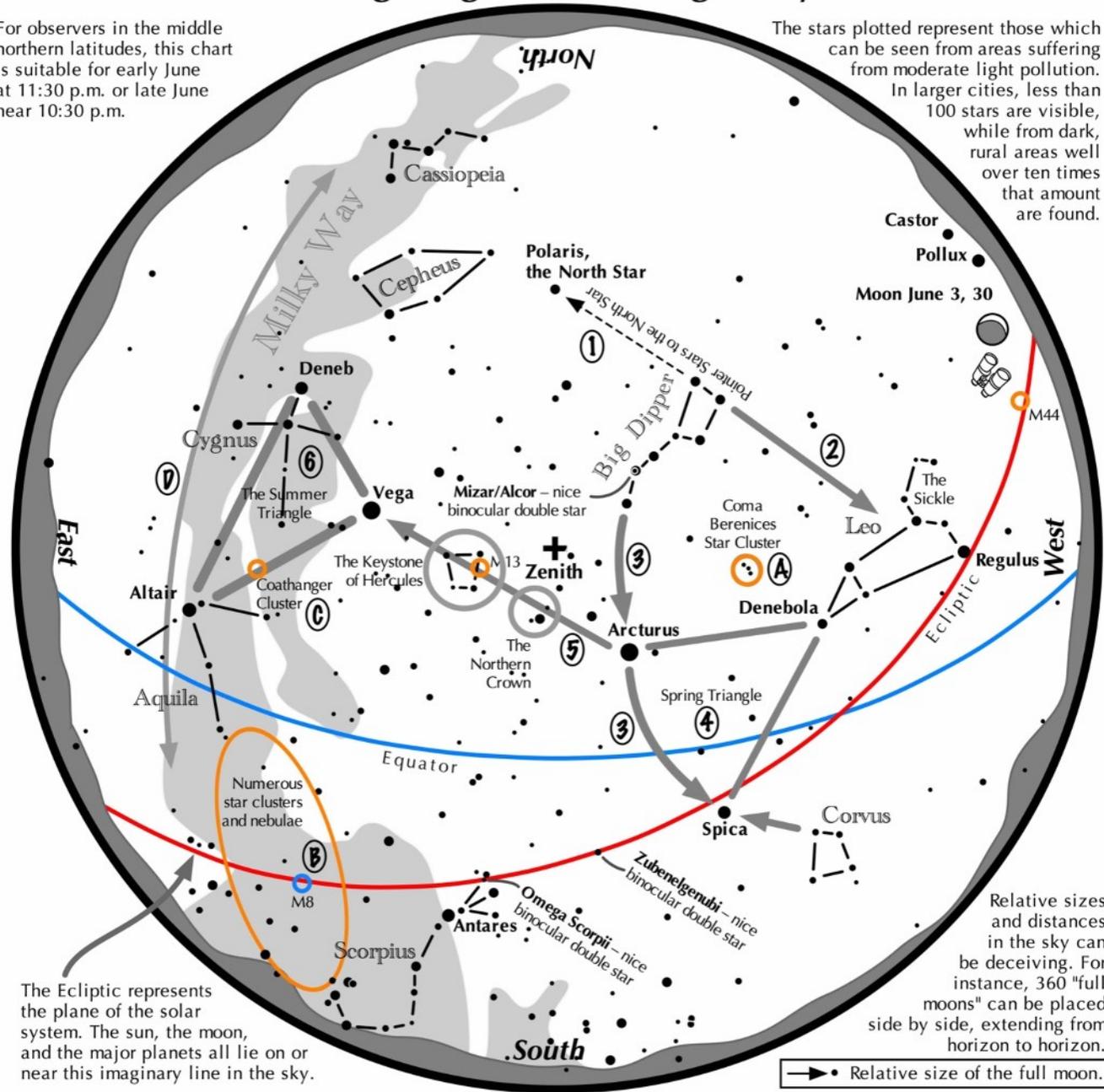
- \* Check each building to ensure security of equipment.
- \* Sweep floors, mow lawn and trim around buildings, blow or sweep off grass clippings from walkways.
- \* Mowing once a week will help prevent clumping and the need to sweep up clumps.
- \* Bring gas to top off mower tank. Currently there is no line trimmer at Jubilee.
- \* Since only two people are scheduled each week, it is imperative they ensure that someone goes to Jubilee and perform scheduled tasks.
- \* Please notify me of any schedule conflicts or problems with the equipment.

**Jesse Hoover: 309-258-0343**

# 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.



The Ecliptic represents the plane of the solar system. The sun, the moon, and the major planets all lie on or near this imaginary line in the sky.

Relative sizes and distances in the sky can be deceiving. For instance, 360 "full moons" can be placed side by side, extending from horizon to horizon.

→ • Relative size of the full moon.

## 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.



# Globular Cluster Challenge



The distribution of globular clusters in our galaxy is often described as resembling "bees buzzing around the galactic hive," with clusters moving every which way, circling the galactic center. (At its center lurks a super massive black hole – the Queen bee, perhaps?)

This perception gives the impression that all globular clusters are alike, just as all the busy worker bees are alike. That is not the case. Globulars come in different sizes, contain different stellar concentrations and distributions, and some are not really concentrated and compact, but more dispersed.

June through September are the most convenient months before midnight to spy the largest number of these grainy globes of light. In "light" of this, the Astronomical League is issuing a Globular Cluster Observing Challenge for this summer. Simply observe and note any twelve or more globular clusters on the list in the Ophiuchus/Sagittarius region of the sky. Share your quarry with someone who normally wouldn't give these galactic bees a second thought.

Astronomical League members who complete the Challenge will receive a certificate through email commending their achievement.

**<https://www.astroleague.org/content/al-observing-challenge-special-observing-award>**



*Sketches by Cindy Krach,  
12.5 inch Reflector,  
various magnifications*