VILLAGES STAR

Newsletter of The Villages Astronomy Club

Volume 6, Number 10
October 2025

Club Website:
http://vlgastroclub.org/

Facebook:
https://www.facebook.com/groups/vlgastroclub/

UPCOMING EVENTS

Executive Directors' Meeting, Oct 3rd, 11am-12pm, Fishhawk Rec Center, 2318 Buttonwood Run

All members welcome to our monthly planning meeting. This month we'll planning our fall event schedule including the Star Party workshop for November's Observers' Workshop and Starry Starry Night in November.

Space Academy, Oct 6th, 6:30pm Truman Rec Ctr, 2705 Canal St.

Join us for discussion of basic astronomy topics and current research.

Binocular Workshop, October 6th, 7:30pm, Truman Rec Ctr Pavilion, 2705 Canal St.

Grab those binoculars you've got sitting in a drawer or closet and come out to our Binocular Workshop!

Learn to use your binoculars to view the sky. You don't need a telescope to do astronomy! Learn simple techniques to hold your binoculars steady, how to find star clusters, nebulas, galaxies, and planets with your binoculars.

We will be dedicating October's Observer's workshop to binocular astronomy, and opening it up to anyone in The Villages with a resident or guest ID, not just club members.

We will also have astronomers available for those who want help with their telescopes. So if you have a scope you want assistance with, you're still welcome to bring it.

Location & time: Truman Recreation Center Picnic Pavilion, 2705 Canal Street, 7:30pm-8:30pm. The picnic pavilion is behind the recreation center, follow the sidewalk around the pool.If you want help with a telescope or binoculars, bring them, too!

Fruitland Park Astronomy Group, Oct 18th, 5pm, 300 Shiloh Rd, Fruitland Park

Join us for an evening of observing and astronomy talk with the Fruitland Park Astronomy Group! Come to Cales Soccer Field in Fruitland Park, 300 Shiloh Road (at the corner of Shiloh Road and Dixie Avenue, north of the Fruitland Park water tower.) Enter on Shiloh Road (some GPS's will guide you to the Dixie Avenue entrance.) Gate opens at 5pm. We will stay as late as conditions permit and people are interested in observing. Bring power if required.

You can set up off your tailgate.

Public is welcome to this event, no Villages ID required! Bring family and friends to view the evening sky with our astronomers!

General Meeting, October 21st, 6:30pm: Robert Wickman, "Current Thinking on the Origin of the Universe."

Join us at Laurel Manor Rec Center, 1985 Laurel Manor Drive, at 6:30pm a presentation on the earliest history of the universe, including concepts that may reach back to before the Big Bang.

EAA Meeting, Homestead Astronomy Park, October 22nd, 6:15pm, 6227 Meggison Road

Our EAA (Electronically Assisted Astronomy) meeting is focused on using smart telescopes, telescopes with smart controllers, and astrophotography both traditional and live-stacking. If you want to know more about how smart controllers can put your astronomy in "easy mode", come and see what current devices can do!

Visual observers are also welcome to come and take advantage of the Astronomy Park while we have it open after hours. Whether you're using binoculars or a traditional type of telescope, you are welcome to come & observe.

Your Club Officers & Directors

President	Mark Graybill
Vice President	Ken Katta
Secretary	Randy Gilbert
Treasurer	Linda Meng
Space Academy	Toni Graybill
Public Relations	Jeffrey Kahler, Sr.
Directors	Craig Henry
	John Roarke

Newsletter Contact: saundby@gmail.com

See Calendar at End of Newsletter, before star chart.

Club Calendar Online:
https://vlgastroclub.org/calendar/

Upcoming Special Events:

Starry Starry Night, November 22nd

Come see the sky with our astronomers this fall! On November 22nd, we will be holding our fall Starry Starry Night event. This event is open to all who have Villages resident and guest IDs.

Come look through our astronomers' telescopes and see the sky! We will be viewing the Moon, Saturn, stars, double stars, star clusters, nebulas, and galaxies!

We will be at Everglades Recreation Center, behind the pickleball courts on the north basketball court and the soccer field. Stargazing starts at 6:30pm and goes until 8:30pm.

Recreation will be shutting off the entire center complex for us to provide more parking places for attendees of Starry Starry Night. We

will have additional parking at the baseball fields, about another 150 spaces.

We still recommend carpools and carts to those who plan to attend. We expect 800-1000 attendees in November, and the available parking spaces are about 400.

We are investigating the costs and options for a shuttle service, which will certainly be necessary for February's Starry Starry Night event, but we haven't decided if we will be doing it for this fall's event.

Objects We'll See

There will be a 3 day crescent Moon visible at the outset of observing that will set shortly after 7pm. Saturn, Uranus, and Neptune will be in the sky, There will be many star clusters, nebulas, and some bright galaxies to view at this event, conditions permitting.

Instruments

We will have visual telescopes, binoculars, and Smart Scopes at the event to show things to our guests. Visual scopes and binoculars give a personal connection to the object you're viewing, while electronic scopes bring out details our eyes can't see in Florida skies.

Astronomers

If you are interested in bringing an instrument to show the sky, we'd love to have you help us out. The more astronomers we have, the shorter the lines will be! Please contact Mark Graybill at saundby@gmail.com if you are not already on our astronomer mailing list. We welcome astronomers of all experience levels.

Our Observer's Workshop this November will be focused on showing the sky at star parties, so whether you are an experienced star party veteran or new to the experience, please plan to join us on Monday, November 3rd at 7pm to either learn or teach the skills for star parties. Don't be shy! You only need to know a few objects in the sky (even if you only practiced finding them the night before the star party!)

NEWS

Image of nearby stellar nursery Pismis 24 by JWST. NASA/ESA photo.

JWST Views Newborn Giant Blue Stars

A region of new star formation in our galaxy only 5500 light years away has been imaged by the James Webb Space Telescope, giving unprecedented views of this region that has long been of interest to astronomers studying massive stars, their formation, and effects on their nearby environment.

Taken in infrared and near infrared, the images showed a cluster of young blue stars, some of which are over 50-60 times the mass of our own Sun. The brightest star, which the spire of the nebula at the bottom of the image points toward, was at first thought to be a single star over 100 times the Sun's mass, but is now known to be a pair of stars too close together to be seen individually, thanks to spectroscopic study

showing that it is a pair of supermassive stars.

Massive blue stars have very short lives compared to smaller, less massive stars, as their nuclear reactions are much more strongly driven by their incredibly high gravity. As a result, their time as an active star is counted in the millions of years, a thousand times less than the life of a star like the Sun, which lives for tens of billions of years.

This cluster lies in the Lobster Nebula, which is itself in the constellation Scorpius.

Learn more at:
https://www.esa.int/ESA_Multimedia/Images/2025/09/Glittering_glimpse_of_star_birth

Jets emerging from a young star in nebula Sharpless 2-284 span 8 light years. NASA image.

Stellar Jets Scale with Star Size

Study of JWST images of the nebula Sharpless 2-284 near the periphery of our galaxy revealed a surprise for researchers: a young high mass star emitting giant jets of energy that give insights into the formation of heavy stars.

The jets provide a history of the star's formation and energy due to their size, shape, and length. Previously, jets had been observed from smaller stars during their formation, but it was unknown if the size and power of the jets would scale with the size of the star being formed. This find appears to confirm that the bigger the star, the bigger the jets.

This provides data on how giant stars form, where competing forces of gravity and heating work both toward and against the formation of large stars from collapsing material in clouds.

The tips of the jets have been moving away from the new star for 100,000 years, with the material laying closer being more recent. The whole gives a history of the star's energy output.

NASA Article:
https://science.nasa.gov/missions/webb/nasas-webb-observes-immense-stellar-jet-on-outskirts-of-our-milky-way/

SpaceX post on X celebrating the 30th reuse of a Falcon booster. SpaceX images.

Falcon Achieves 30th Booster Re-Use

On August 28th, SpaceX successfully reused a Falcon 9 booster for the 30th time in a Starlink launch from LC-39A at Cape Canaveral. The booster, number 1067, also accomplished the 400th droneship landing of a Falcon 9 booster by landing on A Shortfall of Gravitas in the Atlantic Ocean after sending its second stage toward

orbit.

Booster 1067 was first flown on Cargo Resupply Mission 22 on June 3rd, 2021, carrying supplies to the ISS aboard a Drago cargo vehicle.

Its second flight was equally notable, carrying NASA's Crew-3 mission astronauts to the ISS in November 2021.

Booster 1067 carried Turksat 5B a month later, then carried Crew-4 aloft in April 2022 for its second crewed mission.

In December 2024, Booster 1067 became the first booster to reach 24 flights.

This year, Booster 1067's 29th flight was the 500th flight of a Falcon 9.

And now 1067 is the first to have made 30 flights.

Booster 1067's career is not yet over, with 40 as the next major target for a Falcon 9 booster. Boosters 1062 and 1063 are other contenders with 1067 for most flights, and both are still in active service as well.

As of September 18th, Falcon 9 has flown 118 times this year with 175-180 planned for 2025. This puts its flight rate at 12-13 launches per month. By comparison, all

To date, Falcon 9 has launched over 90% of all mass to orbit this year worldwide, over 1.2 million kg or 2.7 million pounds to orbit.

Heart Nebula by member John Harper, whose Seestar 30 captured this image through hazy skies over two nights of imaging for 6hr20min total time.

IN THE SKY THIS MONTH

Also refer to the sky map on the last page.

THE MOON

Full Moon, Oct 6th
Last Quarter, Oct 13th
New Moon, Oct 21st
1st Quarter, Oct 29th
Full Moon, Nov. 5th

The Full Moon will join us during our Binocular Observing Workshop event this year, providing an easy and satisfying target for beginners. Unfortunately, it will also tend to wash out nebulas, and make star clusters less striking than they would otherwise be.

The brightest clusters visible in the early evening will still make for worthwhile viewing, and participants should revisit them on the 7th and 8th when the Moon rises later to see them better.

Globular clusters M13 and M22 will be in the northwestern and southwestern skies, respectively. M13 should show good detail in spite of the Moon's glare. M22, though brighter all together, has a softer glow with a more gradual rise in brightness from edge to center, making it easier to overlook. Its position low in the sky works against it as well.

Similarly, open clusters M6 and M7 will be low in the sky, but binoculars should catch them both as clear star clusters, one fairly tight, the other more dispersed.

Sweeping the Milky Way from Sagittarius' Teapot spout up through Ophiuschus may reveal the high surface brightness nebulas like the Lagoon, Trifid, Eagle, and Swan. None will show as dramatically as they will on a night without lunar illumination, so these, if visible, should be revisited by participants in the following days when the Moon rises later.

Continuing to follow the Milky Way up through Cygnus will give more rich star fields, as will a sweep to the left above Sagittarius into Scutum. Beyond Cygnus, in Lacerta, lies M39 which should show well as it stands alone in a

relatively empty area of sky. The wide field view of binoculars are perfect for locating this cluster, which can be harder to find in the narrower field of view of a telescope.

Mercury is up in the early evening this month, getting a bit further away from the Sun each day through the month until it reaches greatest elongation on the 28th. On October 19th, it will be within 2 degrees of Mars, visible near sunset. See it during dusk, as both planets will have set by 8pm. On October 23rd, a thin crescent Moon, Mercury, and Mars will all appear in a line around 7pm for a nice binocular sight. Mercury will be magnitude -0.6, quite bright in spite of the twilight sky it shines in, and a telescope will bring out its phase of slightly more than half illumination.

Mercury online viewing chart:
https://in-the-sky.org//data/object.php?id=P1

Venus is a morning star, shining at magnitude -4 in the predawn sky. On October 19th, in the predawn sky before that evening's conjunction, Venus and the Moon will be within 4 degrees of each other. Venus is moving toward its solar conjunction in January, and so reveals a nearly fully illuminated face.

Venus online finder chart:
https://in-the-sky.org//data/object.php?id=P2

Mars is headed toward its solar conjunction, and while it is too far and too poorly placed in the sky to observe its surface detail. However, it will be part of the early evening sky this month, with a conjunction with Mercury this month, and another in November in the twilight sky.

Observing information for Mars:
https://in-the-sky.org//data/object.php?id=P4

Jupiter rises at 12:30am at the start of this month, coming up a bit earlier each evening, until it comes into the evening sky, rising before midnight by the end of the month. At magnitude -2.2 is is bright, and its current geometry will give us on Earth good views of shadows of Jupiter's moons on its cloudtops. On several dates this month, pairs of shadows will be visible (see the October issue of Sky & Telescope for full details) with double shadows visible in the early mornings of October 4th, 11th, 18th, 20th, 25th, and 29th.

Jupiter observing information:
https://in-the-sky.org//data/object.php?id=P5

Saturn is just past opposition at the start of October, having reached opposition on September 21st. It shines at magnitude 0.6, with narrow rings as the month begins, dimming slightly as the month goes on. The disk is 19 arcsec in diameter, the rings 38 arcsec. In clear skies with good seeing, the bands and zones in its atmosphere can be seen at medium powers (75-150x). They are subtle, so good contrast is required to see them. Saturn can be very bright even in a small telescope, but a technique to bring out detail easily is to partially block the aperture of the telescope. Using your hand or your hat, put it beside the front of the scope, then slowly sweep it inward to block some of the light. By moving it in and out of the light path, you can find an optimum place where the contrast reveals surface detail on Saturn.

A neutral density filter can be used to obtain the same effect, particularly a variable neutral density filter that can be adjusted to let a specific amount of light through.

Color filters will also bring out details on Saturn. Blue and light blue filters will bring out the white bands, yellow, orange, or red color filters will make the yellow bands darker and easier to see. Dark color filters may make the rings challenging to see when they are so close to edge on, but this is the best time to focus your observations on the surface of Saturn.

Saturn finder chart:
https://in-the-sky.org//data/object.php?id=P6

Uranus is visible in the evening sky in Taurus, at magnitude 5.8, rising around dusk in October. In The Villages' suburban skies, binoculars or a telescope at low powers are needed to spot it as a pale greenish dot of 3.8 arcseconds about 3 degrees away from the Pleiades on the line from the center of the Pleiades to Tau Taurus (the star in the middle of the southern horn).

Uranus finder chart:
https://in-the-sky.org//data/object.php?id=P7

Neptune reached opposition on September 23, and is still at its opposition brightness of mag. 7.7 at the beginning of the month, only fading slightly toward month end. It lies near Saturn, only about 15 arcminutes away (about half the width of the full Moon) and so is easy to find north and slightly west of Saturn. Look for a bluish or greenish non-stellar object when using over 70 powers of magnification. Colors may be muted by sky conditions, but even with small apertures it should stand out as clearly not a star once over 100x magnification.

Neptune finder chart:
https://in-the-sky.org//data/object.php?id=P8

Ceres, shining at magnitude 7.7 in Cetusis observable in the early evening, appearing as a star-like point. Use a star chart to locate it near Theta Ceti (2° away). It will be at opposition (we are directly between it and the Sun) on October 2nd, and it will be bright all month. It is too small to see as anything other than a starlike point. Look for a finder chart at the link below.

Ceres finder chart:
https://in-the-sky.org//data/object.php?id=A1

Software Updates Upgrade Smart Scopes

Owners of smart scopes often own a better telescope than what they originally purchased thanks to software updates to their scope! All the major brands of smart scope, ZWO/SeeStar, Dwarf Labs, Unistellar, and Vaonis have released software updates that give their telescopes new features, new capabilities, and improve their images, tracking, and ease of use dramatically.

ZWO has added panorama and drizzle modes to their software, allowing images of areas larger than their field of view, and giving them the effect of having a 4K camera chip. Dwarf Labs has added overnight scheduling, noise reduction, and and multisession stacking of images. Unistellar has added to its citizen science options and a "Vivid Video" mode with better images. Vaonis has added new image processing modes, faster performance, and simplified observation scheduling.

Each brand has its strengths, but so far we haven't seen any clunkers or any buyers get left behind by the major brands. We can only hope that new brands entering the market will treat their customers as well.

Member Harry Orlind spied a solar halo, also known as a 22 Degree Ring. Formed by light shining through ice crystals in the atmosphere, the light is refracted through hexagonal crystals that form a ring around the source of light with a 22 degree radius.

Club Calendar

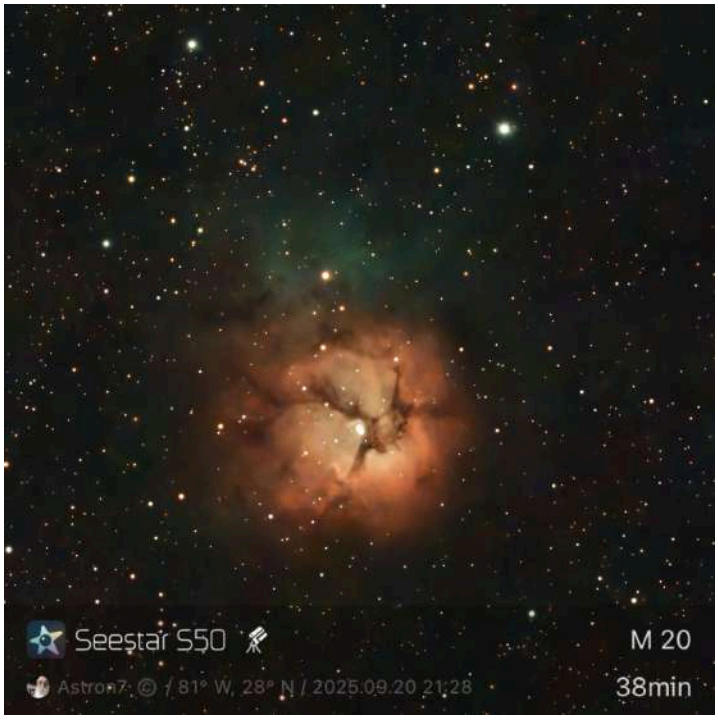
Special events by The Villages Astronomy Club
Events not hosted by The Villages Astronomy Club
Notable dates with no event planned.

October 2025
3 Exec Meeting, Fishhawk Rec Center, 11am
6 Space Academy, 6:30pm, Truman Rec Ctr, Observing Workshop/Binocular Workshop 7:30pm
18 Fruitland Park Observing, 5pm, 300 Shiloh St. Fruitland Park
21 General Meeting, 6:30pm, Laurel Manor Rec Ctr.
22 EAA Meeting, Homestead Rec Center, 6:15pm

November 2025
2 DST ENDS
3 Space Academy, 6:30pm, Truman Rec Ctr, Observing Workshop/Doing a Star Party 7pm
7 Exec Meeting, Fishhawk Rec Ctr, 11am
15 Fruitland Park Observing, 5pm, 300 Shiloh St. Fruitland Park
18 General Meeting, 6:30pm, Laurel Manor Rec Ctr, Frank Bridge, Binocular Observing
19 EAA Meeting, Homestead Astronomy Park, 5pm
22 Starry Starry Night, observing 6:30-8:30, 3 day Moon, Saturn, Uranus, Neptune, fall constellations.

December 2025
1 Space Academy, 6:30pm, Truman Rec Ctr, Observing Workshop 6pm
5 Exec Meeting, Fishhawk Rec Ctr, 11am
16 General Meeting, 6:30pm, Laurel Manor Rec Ctr, Anne Holland, NASA Ambassador, Asteroids & Comets.
17 EAA Meeting, Homestead Astronomy Park, 5pm
20 Fruitland Park Observing, 5pm, 300 Shiloh St. Fruitland Park

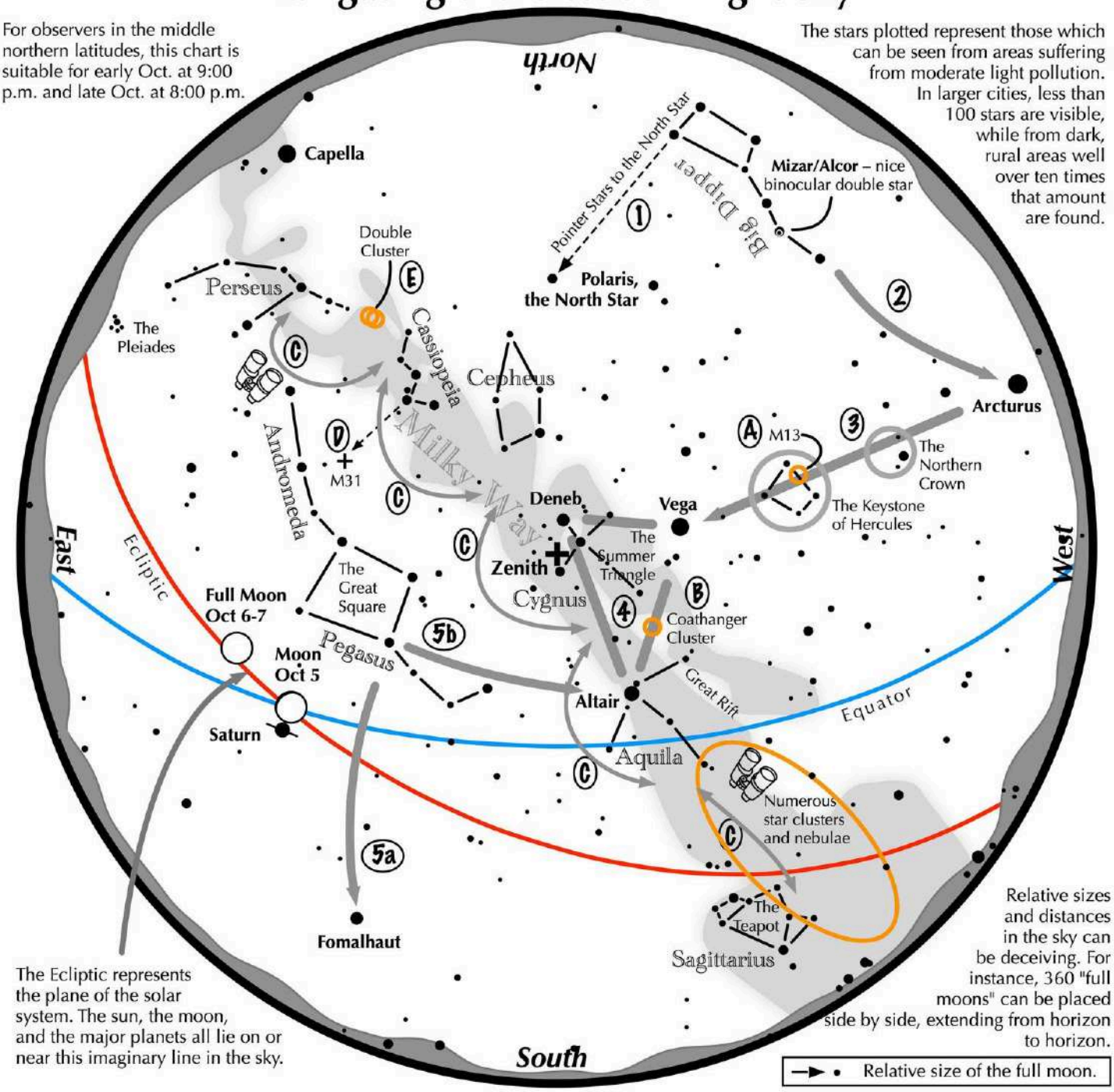
Club Calendar on the web:
https://vlgastroclub.org/calendar/



The Triffid Nebula, M 20, by John Keller. Taken at the Fruitland Park Astronomy Group meeting on Sept. 20th.

See star chart & special observing notes on following pages:

Navigating the October Night Sky



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

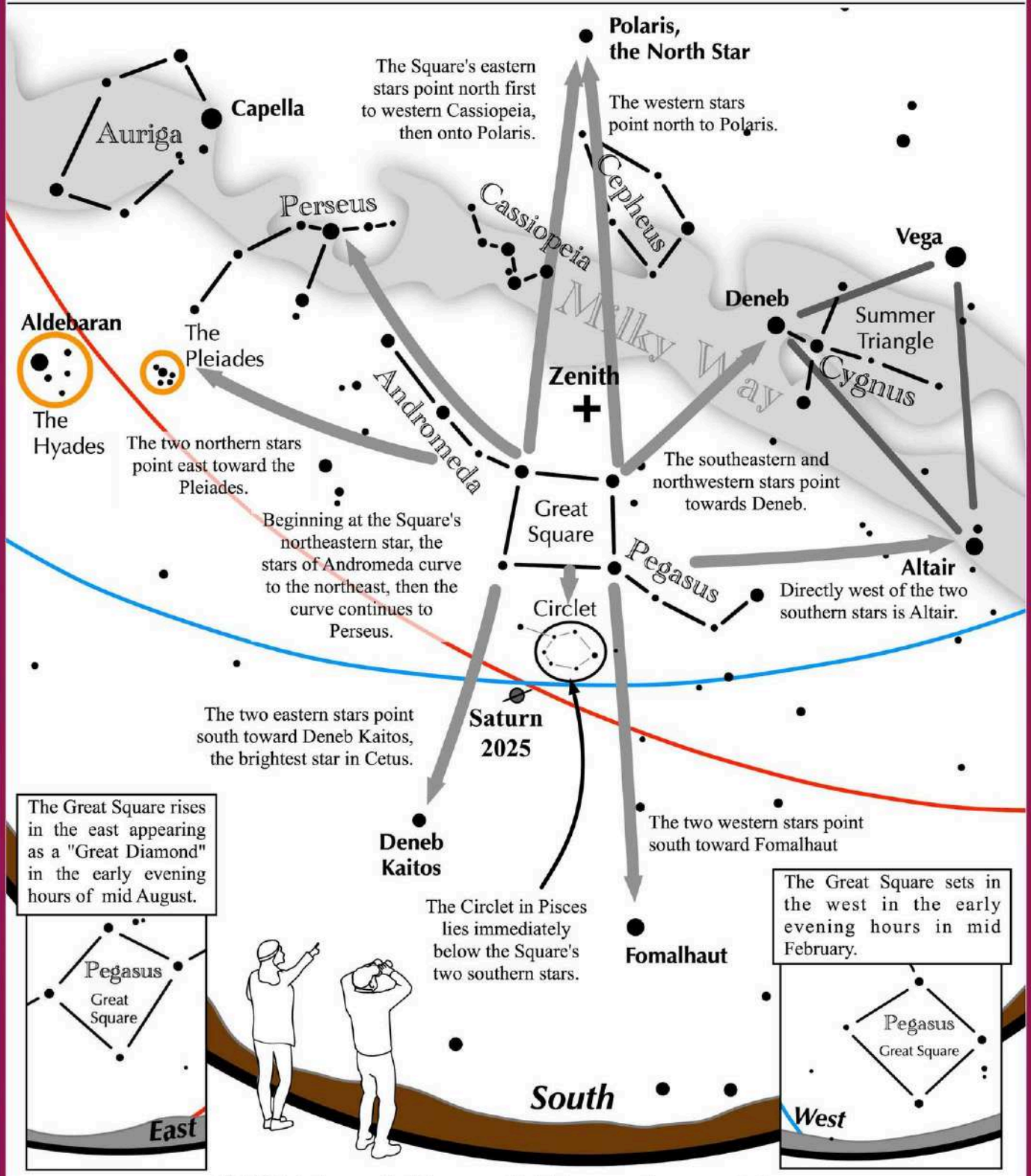
1. Extend a line north from the two stars at the tip of the Big Dipper's bowl. It passes by Polaris, the North Star.
2. Follow the arc of the Dipper's handle. It intersects Arcturus, the brightest star in the early October evening sky.
3. To the northeast of Arcturus shines another star of the same brightness, 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.
4. Nearly overhead lie the summer triangle stars of Vega, Altair, and Deneb.
5. High in the east are the four moderately bright stars of the Great Square. Its two southern stars point west to Altair. Its two western stars point south to Fomalhaut.

Binocular Highlights

A: On the western side of the Keystone glows the Great Hercules Cluster, a ball of 500,000 stars. **B:** 40% of the way between Altair and Vega, twinkles the "Coathanger," a group of stars outlining a coathanger. **C:** Sweep along the Milky Way for an astounding number of fuzzy star clusters and nebulae amid many faint glows and dark bays, including the Great Rift. **D:** The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval. **E:** Between the "W" of Cassiopeia and Perseus lies the Double Cluster.

Navigating the mid Autumn Night Sky: Great Square Guide

Befriend these four stars, slightly dimmer than those of the more famous Big Dipper, and they'll guide you on a tour of the Autumn sky.



2508