

# VILLAGES STAR

Newsletter of The Villages Astronomy Club

**Volume 7, Number 4**

**April 2026**

Club Website:

<http://vlgastroclub.org/>



Facebook:

<https://www.facebook.com/groups/vlgastroclub/>

## UPCOMING EVENTS

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

All members welcome to our monthly planning meeting. This month we'll be reviewing March's Astronomy Day, and planning for April's Earth Day at CEMEX.

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

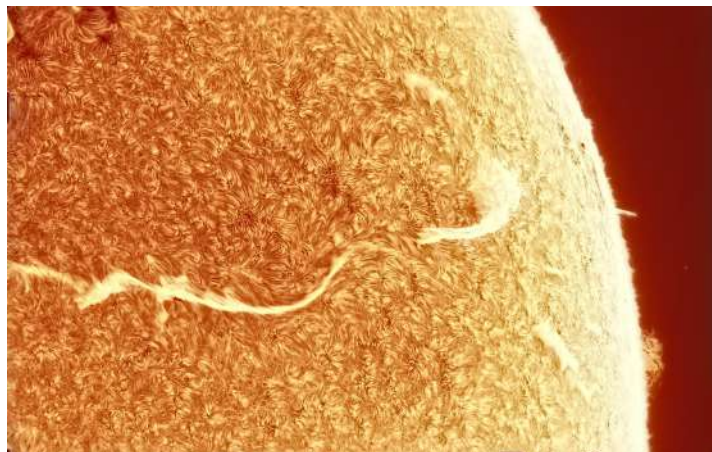
Join us as Space Academy, where we talk about the basics of space, astronomy, and astrophysics. This month we will have a presentation by Pauline Schwartz on the chemical basis of life in the universe! We will also discuss the science in the movie Project Hail Mary and recent changes to the Artemis lunar exploration program.

**Observers Workshop, April 6th, 8pm, Truman  
Rec Ctr Pavilion, 2705 Canal St.**

Join us at our monthly workshop for observers to get assistance with their instruments, learn their way around the sky, and share tips and tricks with their fellow observers, & help with Astronomical League observing programs (see them online at [astroleague.org](http://astroleague.org).)

**Location & time:** Truman Recreation

Center Picnic Pavilion, 2705 Canal Street,  
6pm-8:30pm. The picnic pavilion is behind the  
recreation center, behind the pool.



**The Sun, imaged by member Tim Connolly. The detail of the filaments shows how they are prominences as seen from above.**

**Smart Scope Meeting, Homestead Astronomy  
Park, April 15th, 7:30pm, 6227 Meggison Road**

Our Smart Scope 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!

**CEMEX Earth Day, April 18th, 10am-2pm,  
setup 9am. CEMEX Facility, 530 West Kings  
Highway, Center Hill, FL 33514**

We will have a booth at the CEMEX Earth Day event again this year, talking about our club, space exploration, and astronomy. Volunteers for the booth should arrive at 9am. Let the gate people know that you are a presenter so that you can be directed to the parking closer to the site.

If you are not working at the booth, you should park in the general attendee parking near the gate.

Volunteers will get free food and ice cream (from Grumpy's, the same folks we had out for our December meeting!)

We are expecting heightened public interest in the space program after the flight of Artemis II and the recent acceleration of the lunar exploration program, so volunteers should acquaint themselves with the basics to field those questions.

**Fruitland Park Astronomy Group, April 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, April 21st, 6:30pm:  
Ken Katta, "Exoplanets", Laurel Manor Recreation Center, 1985 Laurel Manor Drive**

Join us at Laurel Manor Rec Center, 1985 Laurel Manor Drive, at 6:30pm for a presentation by member Ken Katta about exoplanets. Learn about how we find them, determine their characteristics, and compare them against the planets in our Solar System.

Find out how common planets appear to be based on what we've learned so far, the classifications that the planets we've seen tend to fall into, and what this tells us about our system.

**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 Burt Salk

**Newsletter Contact:** [saubdy@gmail.com](mailto:saubdy@gmail.com)

**See Calendar at End of Newsletter, before star chart.**

**Club Calendar Online:**

<https://vlgastroclub.org/calendar/>

**NEWS**

**Artemis II Prepares for Launch!**

Artemis II, the mission to carry a crew of 4 astronauts around the Moon is prepared to launch with windows opening on April 1st and going through April 6th.



**The crawler-transporter returns the SLS and its mobile launch platform to LC-39B on March 20th, following repairs at the VAB. NASA image.**

Should problems prevent launch in this time frame, an additional launch opportunity

exists on April 30th, and further launch windows in May can be chosen if needed. However, at this time (March 25th), NASA is very confident of being able to launch Artemis II on its way on April 1st.



**Astronauts Jeremy Hansen (Canada), Victor Glover, Reid Wiseman, and Christina Koch will be the first humans to return to the Moon since Apollo 17 in 1972. NASA image.**

The Artemis II flight will be similar to the flight of Apollo 8 in December, 1968 in many ways. The astronauts will not land on the Moon on this mission. Instead, they will loop around the Moon in the Orion spacecraft. The trajectory they will be following will carry them farther from Earth than any flight before, setting a record for the deepest humans have traveled into space.

The flight will start with a loop around the Earth, though, while the astronauts check out their spacecraft. They will be the first astronauts to fly in Orion in space, and this Orion capsule is the first to be fully equipped with a life support system. Once the astronauts and NASA are confident that the spacecraft will be safe for the flight to the Moon and back, they will perform a Trans-Lunar Injection to send them on their way to the Moon.

Further testing of the spacecraft and navigation procedures will take place during the flight to the Moon, with 3 flight trajectory correction opportunities should they be required. The astronauts will also assess the comfort and

safety of the spacecraft during the coast.

Once they approach the Moon, they will be getting everything ready for their encounter. They will be doing a lot of photography and monitoring the effects of the lunar environment on the Orion. They will be the first humans to see the far side of the Moon since Apollo, and humans 19 through 22 to see the Moon from the other side.

Afterward, the astronauts will get a day of rest as they begin their homeward coast. The return won't be uneventful, however, as they will be practicing emergency procedures along the way as well as other tests of the Orion and its accommodations to help improve the capsule for future flights to the Moon.

Godspeed to the crew of Artemis II, who will pave the way to our new program of exploration and human occupation of the Moon!



**The crew of Artemis II poses in their Intra-Vehicular Activity (IVA) suits during a launch test. NASA image.**

NASA Artemis II website:

<https://www.nasa.gov/mission/artemis-ii/>

NASA Artemis News and Updates on X for breaking news and information prior to and during the flight:

<https://x.com/NASAArtemis>



Lunar base concept art released as part of NASA's *Ignition* announcement. NASA image.

## NASA Announces Broad New Directions in *Ignition* Announcement

NASA Administrator Jared Isaacman and other NASA Associate Administrators and Program Managers announced NASA's new direction and objectives at the *Ignition* event on March 24th. The announcements cover all the major program areas for NASA, and outline a strong focus on rapid program advancement and leadership in space.

The breadth of the announcements are too great to be covered in a single article in this newsletter, so they will be covered in an ongoing series of articles through the year.

Briefly, the announcements were:

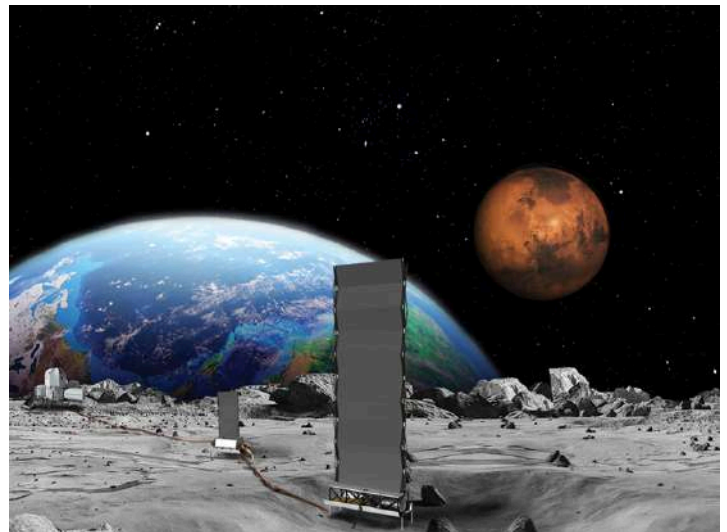
**Acceleration of the Artemis lunar exploration program**, including the addition of a Earth-orbit test flight of the lunar lander vehicles from SpaceX and Blue Origin, now called Artemis III. The lunar landing mission will now be called Artemis IV. It will be similar to Apollo 9.

**Construction of a permanently crewed lunar base**, with 6 month crew rotations, starting sometime after Artemis VI. Prior to that, crews will go to the Moon at least once per year.

**Continued US presence in Earth orbit**, extending the ISS lifetime until commercial space stations are fully up to the task of replacing it.

**Dramatic Expansion of Science & Exploration Missions** through commercial spaceflight, lunar landers for cargo and crew, and low cost science packages.

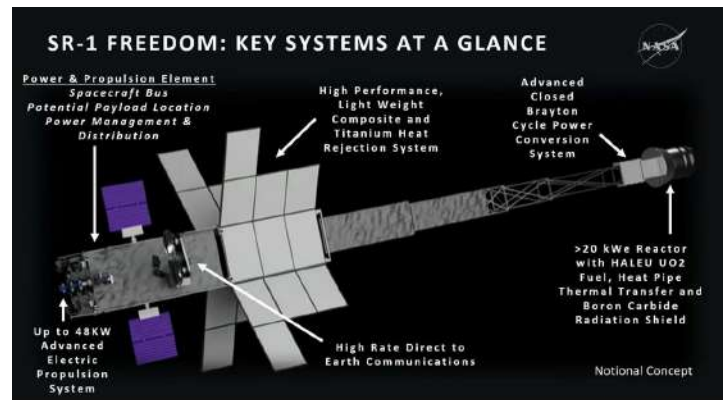
**Nuclear reactors for space propulsion and lunar surface power**, starting with a Mars mission in 2028 that will use a nuclear reactor to power its ion thrusters, and development of a surface power reactor for the Moon base.



Artist's concept of the Lunar Surface Power reactor system (LR-1), showing an outsize Mars in the background representing its role as an enabler for future Mars exploration. NASA image.

NASA Article: <https://www.nasa.gov/ignition/>

## Nuclear Mars Ship to Carry Skyfall Drones to Mars in 2028



SR-1 Freedom spacecraft, announced March 24th, will launch in 2028 to carry a flotilla of Ingenuity class drones to Mars.

As part of Jared Isaacman's presentation at the Ignition event, he announced a new Mars mission called SR-1 Freedom. SR-1 stands for Space Reactor 1, because it will carry the first operational fusion nuclear reactor into space as part of its Nuclear Electric Propulsion (NEP) drive system.

The fusion reactor will be used to create electric power for the ion engines that will take the spacecraft to Mars. Ion engines use electric repulsion to accelerate their propellant to very high velocities, making them an order of magnitude more efficient than conventional chemical rocket engines. They require a lot of electric power, though, and in parts of the solar system farther from the Sun, solar panels aren't capable of providing them with the energy they need.

The nuclear reactor will be used to provide more power than solar panels would allow, power that is not dependent on sunlight. The nuclear reactor will not be used to heat the propellants directly, as in a Nuclear Thermal Rocket (NTR) like the past Nerva rocket engine developed in the 1960s through the 1980s. So there will be no secondary radiation from the propellants expelled from the vehicle.



**Lunar Gateway Power & Propulsion Element during testing. Maxar Space Systems image.**

With a launch scheduled for December, 2028, there normally would not be time to develop the full vehicle. However, SR-1 Freedom will use

the Power & Propulsion Element of the cancelled Gateway Lunar Space Station, which has already been built. This takes advantage of hardware that has already been built for a cancelled program to speed up time to flight, and to allow the technologies used in the P&PE to be tested in spaceflight.



**Falcon Heavy Launch Vehicle. SpaceX image.**

Originally, the Gateway was planned to be launched on a Falcon Heavy carrying both the P&PE module and the habitation module. New plans for launch have not yet been announced, other than a target of Dec. 2028.

### **The Payload for Mars**

At Mars, the SR-1 Freedom spacecraft will send the Skyfall package to Mars, which will

deploy six Ingenuity-class helicopter drones which will then land themselves. Like Ingenuity, they will fly over Mars in hops, recharging themselves between flights. The drones will carry a ground-penetrating radar to let them look for subsurface water as well as other resources that would be useful to a future Mars base.



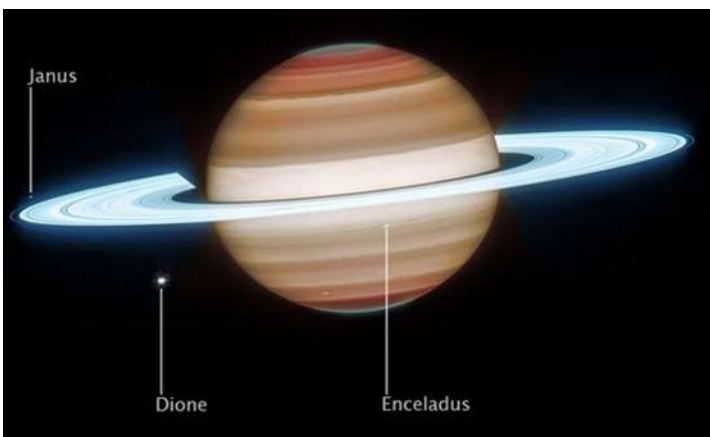
**The Skyfall package releasing its drones as it descends toward Mars. NASA image.**

Six drones will be able to cover a large area of Mars, and lessons learned from Ingenuity will let NASA extend their lives as long as possible to gain a lot of information about the Red Planet as we use the Moon to prepare for Mars exploration.

SR-1 Freedom Announcement:

[BREAKING! NASA Announces 2028 Nuclea...](#)

## JWST and Hubble Team Up on Saturn



**JWST image of Saturn in infrared light, Nov 24th, 2024. NASA/ESA/STScI image.**

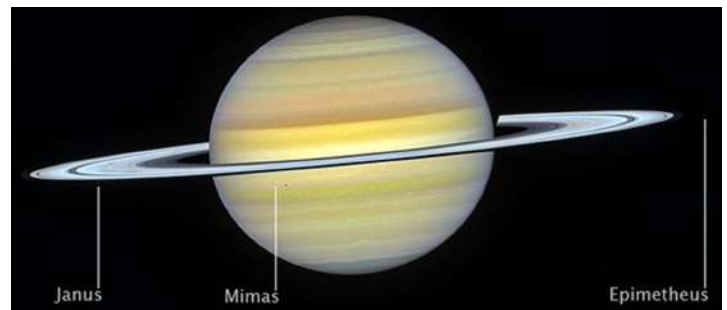
JWST and Hubble were used together to get the most detailed images yet from both the

space telescopes. Each of the two telescopes sees different features in Saturn's atmosphere, and at different depths in the atmosphere. While JWST sees the images in different wavelengths of infrared light, Hubble sees in visible light and a little bit into the infrared spectrum.

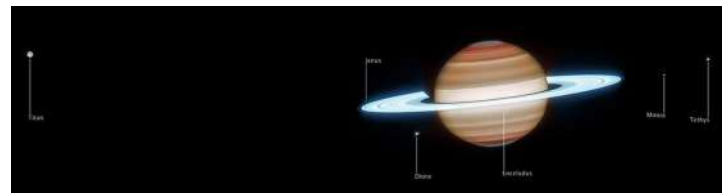
Hubble has been doing detailed studies of Saturn for over a decade as part of the OPAL program (Outer Planet Atmospheres Legacy.) The director of JWST chose to use discretionary time on the new space telescope to perform a parallel study so that the data between the two telescopes can be compared and added to each other for a deeper understanding of Saturn.

In infrared, features can be seen that are not visible to Hubble, including storm cells that are remnants of larger storms from a decade or more in the past. They are not visible as distinct features in visible light any more.

Conversely, the atmospheric influences that drive these remnant storm cells are not visible in infrared, but can be seen in the visible light images captured by Hubble. Combining the two teaches us far more about Saturn's atmosphere than we would otherwise be able to see.



**Saturn as imaged by the Hubble Space Telescope, August 22nd, 2024. NASA/ESA/STScI image.**



**Webb NIRCAM wide field image of the Saturn system, Nov. 24th, 2024. NASA/ESA/STScI image.**

Full Article: [NASA Webb, Hubble Share Most Comprehensive View of Saturn to Date](#)

## Dade Battlefield Star Party



**Entrance to Dade Battlefield Historic State Park.**

Our astronomers greeted attendees at our first star party for the Dade Battlefield State Park on Saturday, March 21st. We had volunteers Randy Gilbert, Frank MacMullan, Frank Bridge, Craig & Diane Henry, Tim Connolly, Kit Clark, Jeff Kahler showing the sky and directing the attendees as we showed the sky. The event was organized by Randy Gilbert, working with the State Park.



**The Park's Event Announcement.**

Skies were excellent, with good views of the spring constellations as well as the wintertime holdovers.



**Member Frank Bridge preparing his binoculars for the evening's observations.**



**The Henrys setting up their Schmidt-Cassegrain for the evening.**



**Frank MacMullen views the young Moon with his light bucket Dobsonian at dusk.**



**The observing site after dark.**

Horizons were good from all positions, aside from Randy's near the tree line where he tapped into the site's power. The sky was pleasantly clear and dark for the uncertain skies we've had this month.



**A look along Jeff Kahler's binocular telescope at Canis Major, Orion, and Taurus in a postcard quality sky.**

Thank you to our volunteers for making this event a great success. Hopefully we will have the opportunity to do it again!

Images for this article were provided by Tim Connolly, Craig Henry & Jeff Kahler.



**Canis Minor, Orion, and Taurus span the sky. Procyon shines bright at left, Orion and its Nebula at center, and The Hyades and Aldebaran at right.**

## IN THE SKY THIS MONTH

Also refer to the sky map on the last page.

### Lyrid Meteor Shower 2026

The Lyrid meteor shower comes between the New Moon and first quarter of the Moon this year, meaning we'll get as good a view of them this year as we will ever get.

Activity for this shower will be high from April 16th through the 22nd, providing about one meteor every 3-4 minutes on average. While the meteor rate of the Lyrids is not very high (especially in our light-polluted high humidity skies), the meteors themselves are fast and bright.

The radiant point is near Vega in Lyra, which will rise above the horizon at about 10pm EDT. It will be at its highest just before sunrise in the morning. This means that evening observers will be able to see Lyrids starting at about 10pm, with the numbers increasing the later they stay up. Early risers up before the Sun's glow tinges the horizon will see the highest rates of meteors.

The Lyrids come from debris from Comet C/1861 G1 Thatcher. When Earth passes through the dust left behind by the comet's tail, it impacts our atmosphere at high speeds, creating the 'falling stars' that mark the event.

The best tools to observe a meteor shower are a comfortable reclining seat, a clear horizon (east for evening, west for morning) and patience. The field of view of binoculars and telescopes is too small for meteors, though some opera glasses that give very wide fields of view (wider than your eyes alone) can work for the task.

### THE MOON

Full Moon, April 1st

Last Quarter, April 10th

New Moon, April 17th

1st Quarter, April 23rd

Full Moon, May 1st

## THE PLANETS

### April 1, 2026

Planet	Rise	Transit	Set
Mercury	6:15 am	12:00 pm	5:45 pm
Venus	8:10 am	3:00 pm	9:50 pm
Mars	6:20 am	12:20 pm	6:20 pm
Jupiter	12:10 pm	7:10 pm	2:10 am
Saturn	6:40 am	12:40 pm	6:40 pm

### April 15, 2026

Planet	Rise	Transit	Set
Mercury	6:00 am	11:45 am	5:30 pm
Venus	8:40 am	3:30 pm	10:20 pm
Mars	5:50 am	11:50 am	5:50 pm
Jupiter	11:20 am	6:20 pm	1:20 am
Saturn	6:00 am	12:00 pm	6:00 pm

### April 30, 2026

Planet	Rise	Transit	Set
Mercury	5:50 am	11:40 am	5:30 pm
Venus	9:10 am	4:00 pm	10:50 pm
Mars	5:20 am	11:20 am	5:20 pm
Jupiter	10:30 am	5:30 pm	12:30 am
Saturn	5:20 am	11:20 am	5:20 pm

### Lunar Occultations for April 2026

On April 6th, the Moon will occult 3rd magnitude star **Pi Scorii**, the southern star of the three stars at the head of **The Scorpion** (lower star, from our viewpoint.)

The star will disappear behind the bright edge of the Moon at 12:03am (note that this is on the night of the 5th-6th, after midnight so the official date is the 6th.) It will remain hidden for about an hour, then reappear from behind the dark side of the Moon at 1:05am.

On April 25th, first magnitude star **Regulus**, in **Leo the Lion**, will be occulted in the evening shortly after dusk.

At 8:25 or 8:26pm Regulus will disappear dramatically behind the dark edge of the Moon! It will reappear at 9:49pm from behind the bright edge of the Moon.

If you are outside The Villages, the times for these occultations will be different, or the occultations may not be visible at all if you are far from The Villages. These times have been calculated specifically for the center of The Villages.

**Jupiter** shines bright at magnitude -2.2 in Gemini this month. It has dimmed slightly since last month, and begins its march toward the western horizon. Fortunately, it is still a large 39 minutes in diameter, so it's still a great object to view through the month.

Jupiter observing information:

<https://in-the-sky.org//data/object.php?id=P5>

**Mercury** is a morning planet this month, at its highest in the pre-dawn sky on March 30th, and at greatest elongation from the Sun on April 3rd. As dawn gets earlier each morning through the month, there will be less time to catch Mercury before sunrise. Mercury will be having a loose conjunction with Neptune on April 16th, at a distance of 1 degree, 25 minutes, or about 3 times the Moon's width.



**Relative positions of Mercury & Neptune just before dawn on April 16th. Horizon at bottom.**

A wide telescope field will be needed to catch them both, but if you haven't seen Neptune in a

telescope yet, this would be a good day to get up before dawn and use Mercury as a visible guide for seeing Neptune. You will need a clear eastern horizon to see Mercury at a few minutes after 6am, before the Sun rises.

Mercury online viewing chart:

<https://in-the-sky.org//data/object.php?id=P1>

**Venus** will rise higher in our evening sky and stay up later after sunset. It shines brightly at magnitude -3.9 through the month. It starts the month at apparent size 10.6 arcsec, and grows slightly to 11.2 arcsec at month end. Its phase goes from 94% illuminated at the start of the month, making it difficult to tell from full, to 88% at month's end, when it will show its left side looking slightly clipped.

Venus online finder chart:

<https://in-the-sky.org//data/object.php?id=P2>

**Mars** is in the early morning sky, at magnitude 1.2, rising a little higher each morning. Its apparent diameter, 4.1 arc sec. shows only the largest surface features such as the southern polar cap and Syrtis Major under medium to high powers of magnification (200-350x).

Observing information for Mars:

<https://in-the-sky.org//data/object.php?id=P4>

**Saturn** joins Mars and Mercury in the pre-dawn sky this month. It starts the month low in the twilight sky, but rises away from the Sun as the month goes on. On the 20th, it will get farther away from the Sun than Mercury. A few days later it will be farther from the Sun than Mars as well. Watch it "thread the needle" between Mars and Mercury across the mornings of the 19th through 21st, as it passes the other two planets. They will be in a rough line on the 20th.

At about 16 arcsec in apparent size, it is only half its size at opposition, but still large enough for good views even at modest powers

(50-100x). The rings are continuing to open toward us.

Saturn finder chart:

<https://in-the-sky.org//data/object.php?id=P6>

**Uranus** is visible in the evening sky in Taurus southwest of the Pleiades (The Seven Sisters). At mag 5.8, it's too dim to see by eye, but it can be seen in binoculars or a telescope.

Uranus finder chart:

<https://in-the-sky.org//data/object.php?id=P7>

**Neptune** is low in the early morning sky, near Saturn. It requires a telescope to see at magnitude 7.9, and at only 2.2 arcsec, it looks more like a star than a planet.

Neptune finder chart:

<https://in-the-sky.org//data/object.php?id=P8>

## Club Calendar

Special events by The Villages Astronomy Club

Events not hosted by The Villages Astronomy Club

Notable dates with no event planned.

### March 2026

**28 Astronomy Day Homestead Rec Center.**

### April 2026

3 Exec Meeting

6 Space Academy, Observing Workshop, Truman Rec. Ctr. 2705 Canal St.

8 Lake Okahumpka Telescope Seminar Limited Event

15 Smart Scope Mtg., Homestead, 7:30pm

**18 CEMEX Earth Day, event 10a-2pm, setup TBA  
CEMEX Facility, 530 West Kings Highway, Center Hill, FL 33514**

18 Fruitland Park Observing, 5pm, 300 Shiloh St.  
Fruitland Park

21 General Meeting, Ken Katta, *Exoplanets*

### May 2026

1 Astro Exec Meeting, 11am, Fishhawk Rec Ctr, 2318 Buttonwood Ln.

4 Space Academy, Observing Workshop, Truman Rec. Ctr. 2705 Canal St.

16 Fruitland Park Observing, 5pm, 300 Shiloh St.

Fruitland Park

19 General Meeting, 6:30pm, **SeaBreeze Rec Ctr**, (note site change!) Jim Laurent, "*Can We Mine the Asteroids?*"

20 Smart Scope Meeting, Homestead Astronomy Park

Club Calendar on the web:

<https://vlgastroclub.org/calendar/>



The Flame and Horsehead Nebulas by member Bill Hillman.

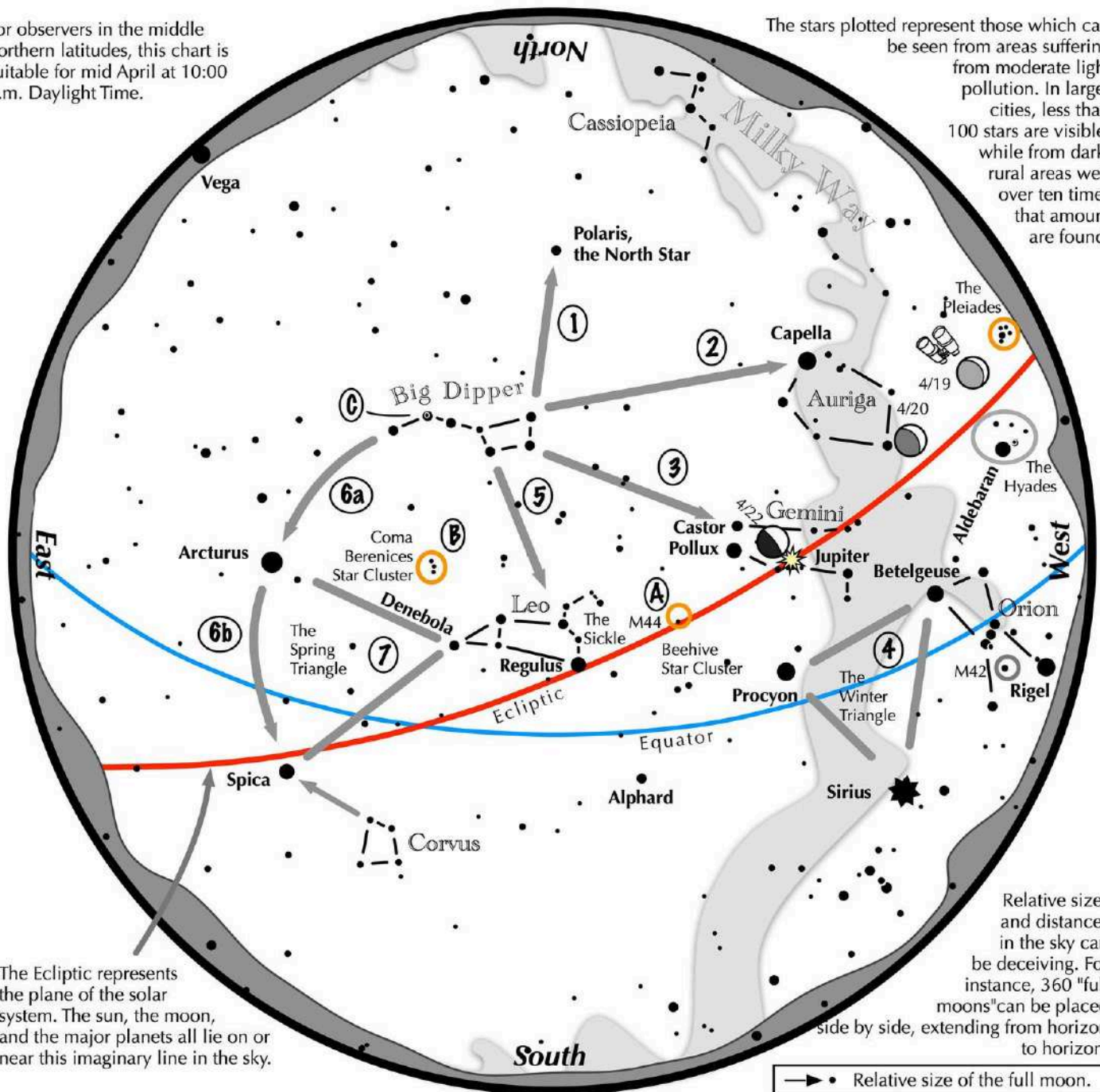
See the monthly star chart on following page:

# Navigating the mid-April Night Sky

2026

For observers in the middle northern latitudes, this chart is suitable for mid April at 10:00 p.m. Daylight Time.

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 April night sky: Simply start with what you know or with what you can easily find.

- 1 Extend an imaginary line north from the two stars at the tip of the Big Dipper's bowl. It passes Polaris, the North Star.
- 2 Draw another imaginary line west across the top two stars of the Dipper's bowl. It strikes Capella low in the northwest.
- 3 Through the two diagonal stars of the Dipper's bowl, draw a line pointing to the twin stars of Castor and Pollux in Gemini.
- 4 Look in the west-southwest for the bright Winter Triangle stars of Sirius, Procyon, and Betelgeuse.
- 5 Directly below the Dipper's bowl reclines the constellation Leo with its primary star, Regulus.
- 6 Follow the arc of the Dipper's handle. It first intersects Arcturus, then continues to Spica.
- 7 Arcturus, Spica, and Denebola form the Spring Triangle, a large equilateral triangle.

### Binocular Highlights

- A: M44, a star cluster barely visible to the naked eye, lies to the southeast of Pollux.
- B: Look nearly overhead for the loose star cluster of Coma Berenices.
- C: In the Big Dipper's handle shines Mizar next to a dimmer star, Alcor.



Astronomical League  
www.astroleague.org

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