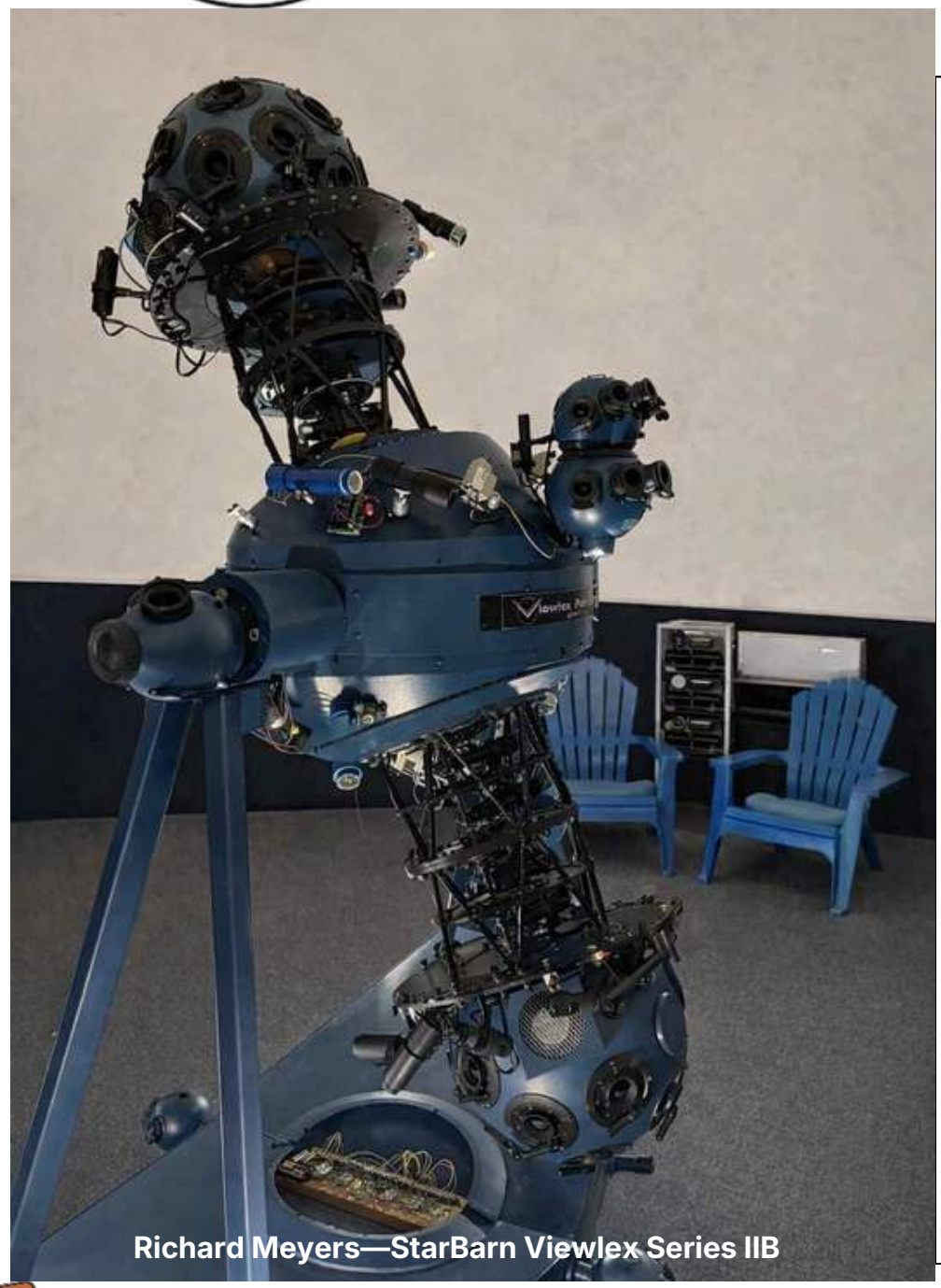
August 2026 — VOLUME 77, ISSUE #12

Monthly Newsletter

PAStimes

A Publication of the Phoenix Astronomical Society



Richard Meyers—StarBarn Viewlex Series IIB

In this newsletter you can expect:

Stu's Views

Well, as expected, our Arizona monsoon season is underway. This is one reason we do not schedule star parties during the summer months. The weather can change quickly, and cloudy skies make observing difficult. As a reminder, our lecture series will not resume until September 3rd, as the PVCC campus is not available to us during the summer months.

Here are a few Do's and Don'ts to keep in mind as you prepare for your next observing adventure.

Don't:

- Use a solar filter on your telescope until you have inspected it for holes, cracks, or openings.
- Go into the desert without telling someone where you are going and your expected schedule.
- Buy a telescope that is too large for your vehicle or too heavy for you to safely lift and set up.
- Buy a telescope from a department store. Many of these scopes can be frustrating for beginners.
- Buy a suitcase full of eyepieces. You only need a few good eyepieces and a Barlow lens to get started.
- Be afraid to ask for help. That is one of the reasons you joined PAS!

Do:

- Practice setting up your telescope at home. It makes a big difference when you are setting up in the dark.
- Create a checklist of everything you need for a remote observing trip — and use it!
- Bring plenty of water. Year-round hydration is essential when spending hours outside in the Arizona desert.
- Protect your equipment. Use covers and be prepared for rapidly changing weather conditions.
- Use red lights for night viewing (flashlights, rope lights around your tripod, and red headlamps).
- Bring bug repellent. It is a must when observing in the Arizona desert.
- Learn the night sky with your favorite astronomy app. Finding your targets becomes much easier.
- Share your hobby with family and friends.

Stuart Brachney

Clear skies everyone… See you in September!

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AUGUST 2026
UPCOMING EVENTS

Vacation Mode

MONTHLY LECTURE SERIES

Summer break

THUR

Vacation Mode

TELESCOPE WORKSHOP 101/201

Summer break

THUR

22

SATURDAY

BOOK CLUB

Battle of the Big Bang: The New Tales of Our Cosmic Origins
by Niayesh Afshordi, Phil Halper

14

FRIDAY

PRIVATE STAR PARTY

Location: 8030 Golden Spur in Carefree.
RSVP: Mike Marron at primefactory@myctl.net
Notes: Potluck and setup can begin at 6:00 pm

Vacation Mode

ASIG/ASTROIMAGING

Summer break

MON

MORE INFORMATION

For more information and to register for these events, go to the PAS Event Calendar and Registration Site. It is important to register for all events. In case of an event change or cancellation, you will be notified via email.

Phoenix Astronomical Society Members Receive Exclusive DwarfLab Discount

The Phoenix Astronomical Society is excited to announce a new partnership with Dwarf Labs and the addition of two smart telescopes to our member loaner program!

Thanks to Dwarf Labs, PAS has received:

- Dwarf 3 Smart Telescope
- Dwarf Mini Smart Telescope
- Dwarf EQ Tripod

These compact smart telescopes combine imaging, tracking, and observing capabilities in an easy-to-use system controlled by a smartphone app. They are a great way for beginners and experienced astronomers alike to explore the night sky and capture images with minimal setup.

Available Now!

Both telescopes are now available for checkout through the PAS Loaner Program. Members can experience the latest smart telescope technology before purchasing or simply enjoy a new way to observe and image the universe.

Before borrowing, we encourage members to review the setup and training videos:

Dwarf Labs YouTube Channel:

https://www.youtube.com/@dwarflabofficial

5% PAS Member Discount:

https://checkout.dwarflab.com/discount/PASAZ

Dwarf Labs has also offered educational support, product demonstrations, and special member discounts. We appreciate their support of PAS and our mission to promote astronomy education and outreach.

Clear skies!

5% Discount available here on purchases: https://checkout.dwarflab.com/discount/PASAZ

Spent Falcon 9 Rocket Stage to Strike the Moon

On August 5, 2026, at 06:35 UTC (11:35 a.m. MST), a discarded Falcon 9 upper stage — catalog object 2025-010D — is expected to slam into the Moon near the crater Einstein, on the sunlit western limb. The stage, which helped launch the Blue Ghost and Hakuto-R lunar landers back in January 2025, has spent the past year and a half drifting in a lopsided Earth orbit. Its fate was pieced together not by government tracking radar, but by amateur and survey astronomers patiently logging faint points of light month after month.

IMPACT AT A GLANCE

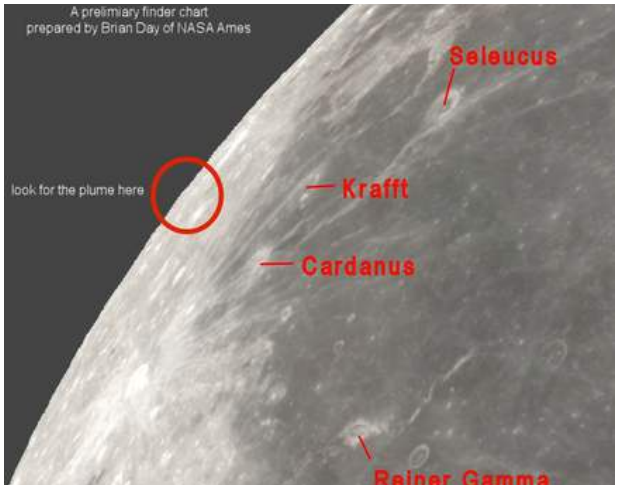
Time: August 5, 2026, 06:35 UTC (11:35 a.m. MST / 2:35 a.m. EDT)
Location: 19°N, 267°E (93°W) — near crater Einstein, lunar western limb
Speed: 2.43 km/s (5,400 mph) — striking at 31° above the horizon
Mass / Energy: ~4,900 kg; ~14.5 billion joules (roughly 3 tons of TNT)
Guideposts: Use Aristarchus and Reiner Gamma to locate craters Krafft and Cardanus, near the predicted site

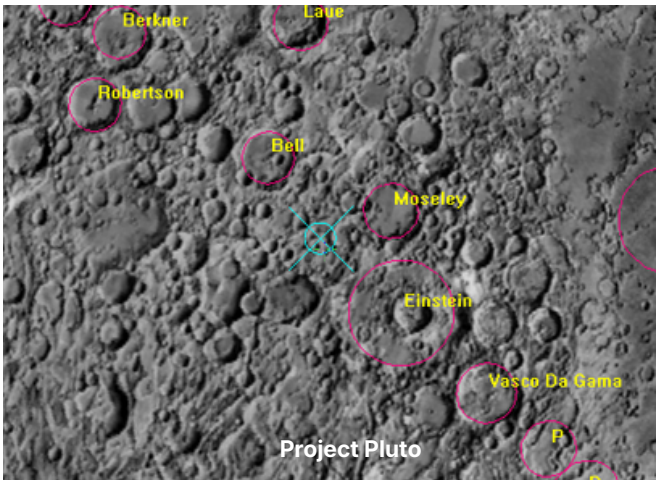
Why This One Is Different

Rocket stages and landers have hit the Moon before — the Apollo-era Saturn V stages, LCROSS in 2009, and a mystery Chinese upper stage in 2022 — but no amateur astronomer has ever convincingly captured one of these impacts in real time. This event may offer the first real chance. Orbit computations by Bill Gray (Project Pluto), refined from more than a thousand observations gathered by asteroid surveys and amateur observatories in Mississippi, Utah, Beijing, and England, currently place the impact just barely on the Moon's near side — visible, weather permitting, from the eastern half of the U.S. and Canada, and much of South America, where the Moon will be up and it will be dark.

What Observers Can Realistically Expect

Don't expect fireworks. Natural meteoroids typically strike the Moon at 10 to 70 km/s; this rocket stage will arrive at a comparatively lazy 2.43 km/s. Since impact brightness scales strongly with speed, most of the energy will go into excavating a crater rather than producing light — NASA's Bill Cook cautions the flash, if any, may last only 1/60th of a second and could be too faint to see. The ejecta plume is a longer shot but a better prize: back-of-envelope estimates suggest debris could rise about 3 km above the surface, appearing as a separation of roughly 1.5 arcseconds off the sunlit limb — right at the edge of detectability. If the impact occurs in daylight, observers are strongly encouraged to use red or near-infrared filters to suppress scattered sunlight and improve contrast, and simultaneous observations from multiple sites remain the best way to rule out cosmic-ray hits masquerading as flashes.





Where the Stars Still Run on Gears

A Visit to The Star Barn Planetarium By Richard Meyers, Editor

Tucked away in Cave Creek — the desert foothills town better known for its saloons, saguaros, and dark-ish skies — sits something you'd never expect to find in a private backyard: a fully operational, museum-grade opto-mechanical planetarium, lovingly restored and operated by Ron Walker. In a town better known for cowboy bars and trail dust, the last thing you expect to find behind a backyard gate is a machine capable of recreating the universe (Photo 1).

Photo 1: Dome photo By R Walker

At the heart of the 30-foot dome is a 1976 star projector — a Viewlex Series IIB. Minolta built the optical assemblies; Viewlex added the control electronics and imported the finished machines to U.S. planetariums. The machine is, in Ron's words, “literally a half-scale model of the famous Zeiss projector” — six feet long, weighing about a ton, and capable of projecting some 6,000 individual stars, approximately the number visible to the naked eye under dark skies. The design traces its lineage to the legendary Carl Zeiss planetarium projectors that defined professional planetariums for much of the twentieth century. While the Minolta was a more affordable alternative, its architecture clearly reflects that heritage.

Few opto-mechanical planetariums remain in regular operation.

During the 1990s and 2000s, many institutions replaced their analog projectors with full-dome digital systems. The change brought extraordinary flexibility, but it also led to the retirement of many classic star machines. The Star Barn is unusual not only because the projector survives, but because it continues to present live programs to the public.

A Machine with a History- The projector earned its keep the hard way. From 1976 until 2008, it gave twelve shows a week at its original home in Texas. When Ron acquired it in 2008, the staff there offered him every spare part they had — mostly because Viewlex's 1970s electronics had developed a terrible reputation for failing. His response was characteristically practical: “What does it take to build a power supply to drive a motor or a flashlight? It doesn't take much of anything.” He kept the handsome original control panel and quietly replaced all the electronics behind it, swapping the old tungsten bulbs for LEDs along the way — less power, and they last practically forever (Photo 2). Getting the machine under a dome of its own took longer than restoring it. Two and a half years of wrangling a building permit, then about two years of construction. But the timing worked out with almost cosmic symmetry: the projector's final show in Texas was on Friday, June 13, 2008 — and its first show in its new Arizona home was Friday, June 13, 2014. It has been running for over a decade since.

Photo 2: Modern LED lighting fixture

Why Optical Beats Video- Ask Ron why he didn't simply install a modern digital projection system, and you'll get an enthusiastic lesson in optics. Digital systems have real strengths — full-color imagery, immersive full-dome video, and the flexibility to fly anywhere in the universe on demand. But when it comes to rendering a simple, realistic star field, Ron argues optical still wins. A video projector, he points out, can never render a star smaller than one pixel — you get “globs,” not pinpoints — and it always projects some level of gray between the stars. An optical star projector works like an exquisitely precise slide projector: light shines through holes punched in metal plates, so the stars are razor sharp and the sky between them is genuinely pitch black.

The engineering inside the machine rewards close inspection. A single 500-watt lamp sits at the center of each star ball, with sixteen lens assemblies on each end aimed directly at its filament — 32 projectors in all, covering both celestial hemispheres. Small counterweighted shutters (stabilized, remarkably, with mercury weights) ride along with each projector to keep stray light out of visitors' eyes, always staying level with the horizon no matter how the machine tilts (Photo 3)

The planet projectors are equally clever. Mercury, Venus, Mars, and Jupiter ride on one end; Saturn, the Moon, and the Sun on the other. Each planet actually uses a pair of projectors, arranged so that one is always in the clear whenever the other passes behind the machine's support framework — this redundancy is necessary because the support yoke blocks certain angles during rotation, so the planet never blinks out mid-show. **Precision by Design-** Elliptical orbits are reproduced mechanically with offset drive plates and sliding slots, so Mercury and Mars visibly speed up near perihelion and slow down near aphelion, just as Kepler demands (Photo 4). Most digital systems animate this effect with software; the mechanical version makes the underlying physics feel tangible, since the speed change is a direct result of the gearing itself rather than a calculated simulation. Each final drive gear rides on three polished V-shaped supports spaced 120 degrees apart, eliminating gear play entirely. The gearing is reportedly precise enough that, even after five thousand planetarium years, nothing on the dome drifts more than one degree, which is four inches on the thirty foot dome. Ron notes, the gears show no visible wear anywhere.

Photo 3: Lens and Counterweight

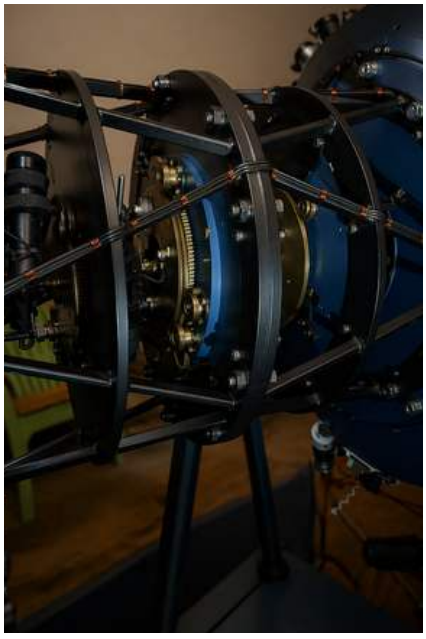


Photo 4: Planetary Gears

A Showman's Touch- Mechanical perfection alone, though, doesn't explain why visitors leave smiling. That comes from the person operating it (Photo 5). The machine may be vintage, but the shows are anything but static. Ron has kept adding his own projectors over the years — constellation outline projectors built from plastic pipe, a continent projector borrowed from a Spitz machine that he uses to explain the celestial equator, meteor and fireball effects, a spiral galaxy, satellite passes, even a Big Bang finale. When he ran out of slip rings to route power through the moving machine, he improvised with garage-door-opener radio relays, each little projector sporting its own antenna. A second machine, a Spitz A3P, stands by for special programs — including his Star of Bethlehem show, where it recreates the planetary conjunctions of 6–7 BC while the main projector handles 1–2 BC. What makes a visit memorable, though, is the presentation itself. Ron doesn't lecture; he asks questions. How long would it take to count off a million seconds? (About eleven and a half days.) A trillion? (Over 31,000 years.) If Earth were a globe one foot across, how big would the Moon be? (About 3¼ inches.) And how far away? Visitors guess a few feet — the answer is 29½ feet across the room. “Suddenly people start saying, why, there's a lot of space in space,” he laughs. The showstopper comes when he walks the audience through twilight, first showing the washed-out sky we've all grown used to — a handful of third- or fourth-magnitude stars — and then switching off the simulated light pollution to reveal the sky as it should look (Photo 6). That transformation, he says, is the wow factor that stays with people

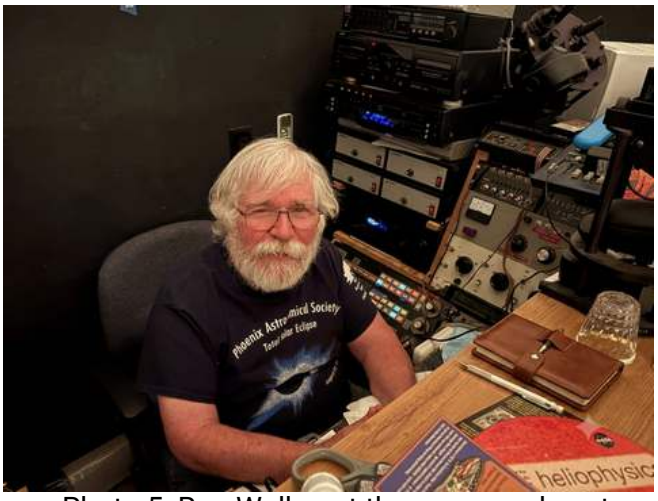


Photo 5: Ron Walker at the command center

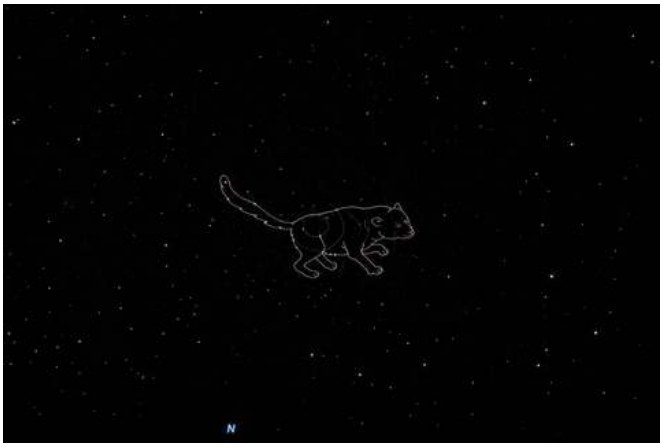


Photo 6: pin-point stars with Constellation outline

Visiting- Watching a show at The Star Barn feels less like attending a commercial planetarium and more like being invited into a lifelong astronomer's workshop. That said, a little planning is required. Schedule & RSVP. Shows run on Saturday and Sunday afternoons at 1:00 p.m., by RSVP — and RSVP’s matter, since Ron confirms seats and may make other plans if none are requested by 6:00 p.m. the day before.

Program Length & Content. This month he's offering his “Introduction to the Night Sky” program, a roughly two-and-a-half-hour tour covering everything from finding the North Star to magnitudes, light-years, and — for the right audience — a detour into quantum physics.

Accessibility & Comfort. The dome seats 28 comfortably (30 “without much trouble”) in generously-sized chairs, and it's climate-controlled year-round — Ron keeps it in the 70's even in the dead of an Arizona summer (Photo 7). Parking is close to the door, with drive-up access for anyone using a walker or wheelchair; otherwise expect a short walk of 50–150 feet over typical desert terrain. Logistics. The Star Barn is a “primitive” site with no bathroom facilities, so plan accordingly. Ron is also happy to arrange private showings for groups, out-of-town guests, or club meetings at mutually convenient times. Admission & Etiquette. Admission is free, though there's a donation jar for those so inclined — and Ron warns that all attendees must endure a 42-second “hard sell” for the gift shop. Arrive on time: once everyone is dark-adapted and the show begins, no one else will be admitted. Future plans include shorter kid-friendly programs about the animals in the sky, plus on-machine projectors for telescopic views of showpiece objects like the Orion Nebula, the Beehive Cluster, and the Andromeda Galaxy. And the machine's future looks secure: Ron's son-in law has volunteered to learn the controls and carry the tradition forward.

To RSVP or join the monthly mailing list for show dates and celestial events, visit soloist.ai/thestarbarnplanetarium or email thestarbarn@gmail.com. This visit brought back wonderful memories for me. As a kid, I was captivated by the opto-mechanical planetarium at the Hayden Planetarium in New York City — watching the stars appear across the dome and seeing the night sky come alive sparked a fascination with astronomy that has stayed with me ever since. Stepping into Ron's planetarium evokes that same sense of wonder and nostalgia. It's a reminder that, even in today's era of digital projection systems, there's something truly magical about the precision, craftsmanship, and artistry of a classic opto-mechanical planetarium that simply can't be replicated — and about one person's passion for sharing the night sky.

As Ron likes to remind his subscribers: the sky is always clear in the planetarium.

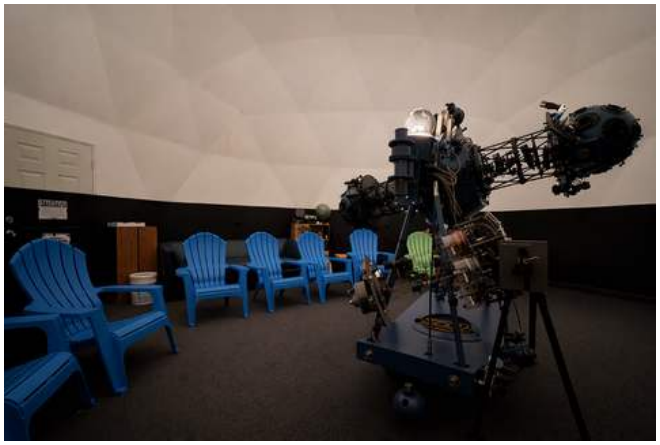


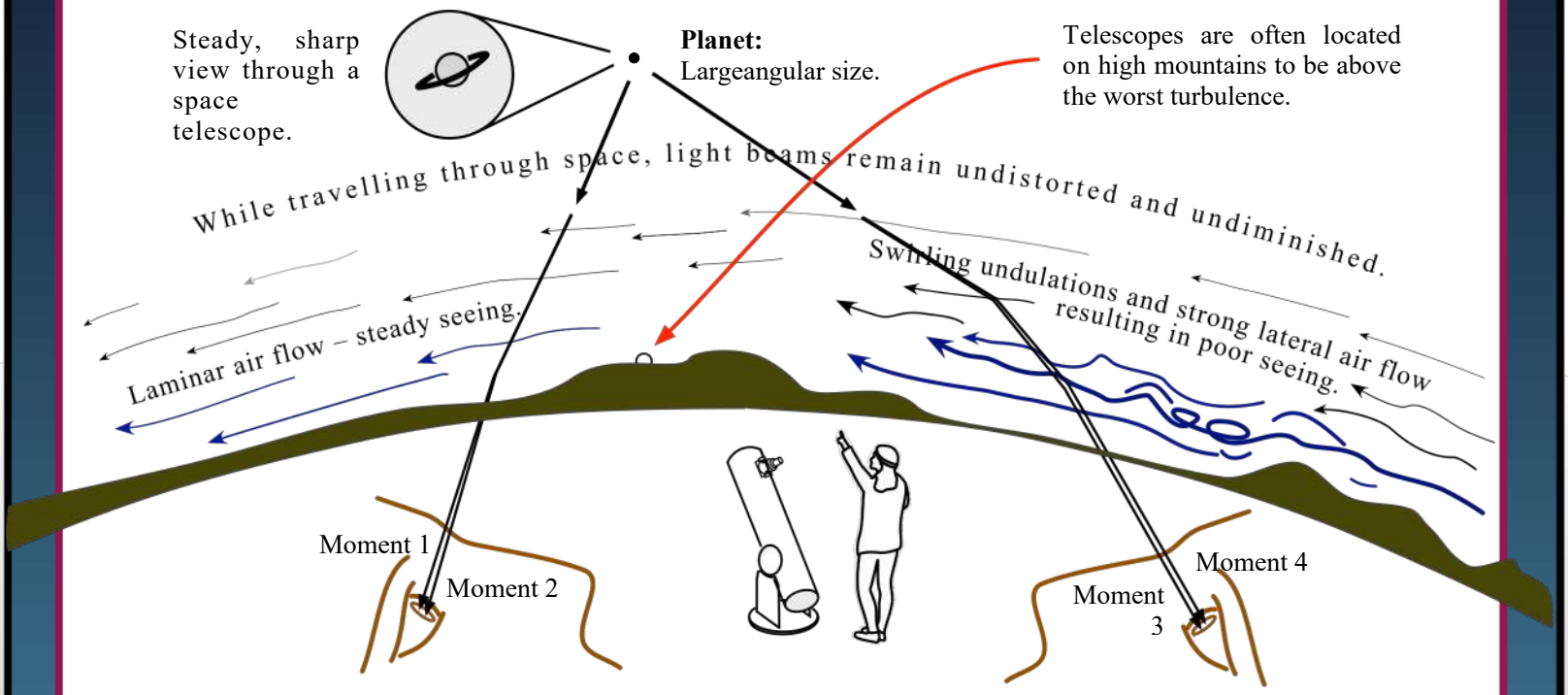
Photo 7: AC indoors environment

Photo 8: Command and Control

Planets don't twinkle

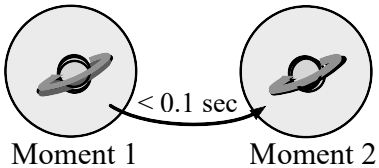
... at least under typical atmospheric conditions.
When low in the sky, and if the air is especially turbulent,
yes, planets can twinkle.

Twinkling is caused by light refracting through layers of turbulent atmosphere. Since the light path is slightly altered from moment to moment, the light beam slightly moves erratically when it enters the eye's pupil. The image, therefore, appears to "dance" slightly – i.e., twinkle. If no turbulence exists, the planet's light path doesn't deviate, and it doesn't twinkle. The seeing is then said to be excellent.



Sharp and steady

Under a very steady atmosphere, one that doesn't have much turbulence, the planet will appear very steady through a telescope.



Under most atmospheric conditions, though, planets shimmer from moment to moment when viewed under magnification.

If the turbulence is sufficiently strong, a planet twinkles to the unaided eye, and its image through a telescope will be blurred.

Lightbeam
passing through a turbulent atmosphere

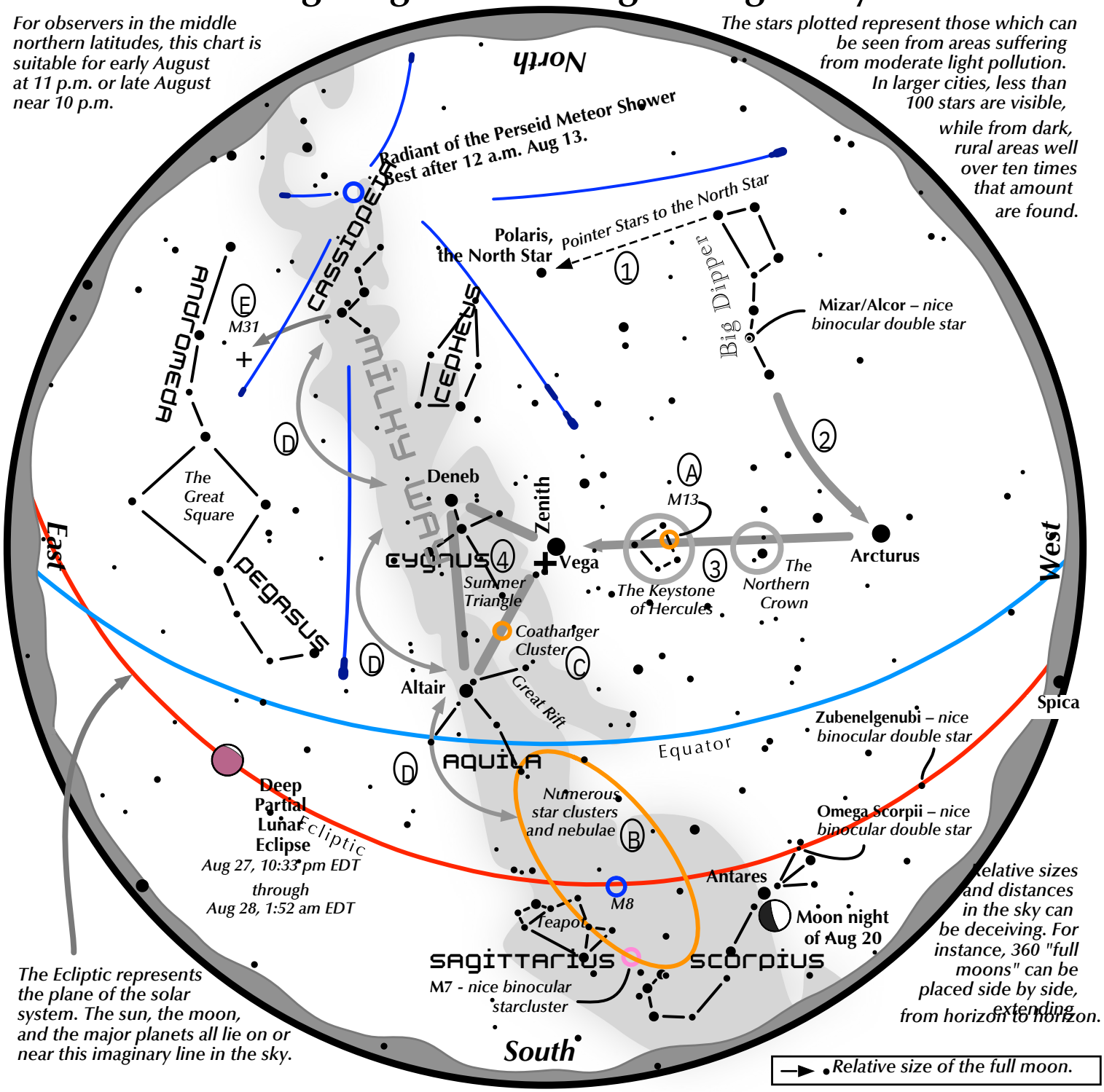
View of a twinkling planet with unaided eye	A blurred view through a telescope

Planets don't twinkle under typical atmospheric conditions. Unlike the pinpoint of stars, they exhibit a small angular area. The light path from each small portion of that area slightly distorts as it travels through turbulence in the atmosphere. As happens with starlight, the light from each small area arrives at the pupil in a slightly different position which changes constantly. But over the planet's full true area, the distortions blend together, and, as a result, the light from the planet doesn't twinkle. But, as seen through a telescope, the distortions cause it to shimmer. (However, under a very turbulent atmosphere, it is a different story! It twinkles also.)

Navigating the mid August Night Sky 2026

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

Navigating the mid August 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.*

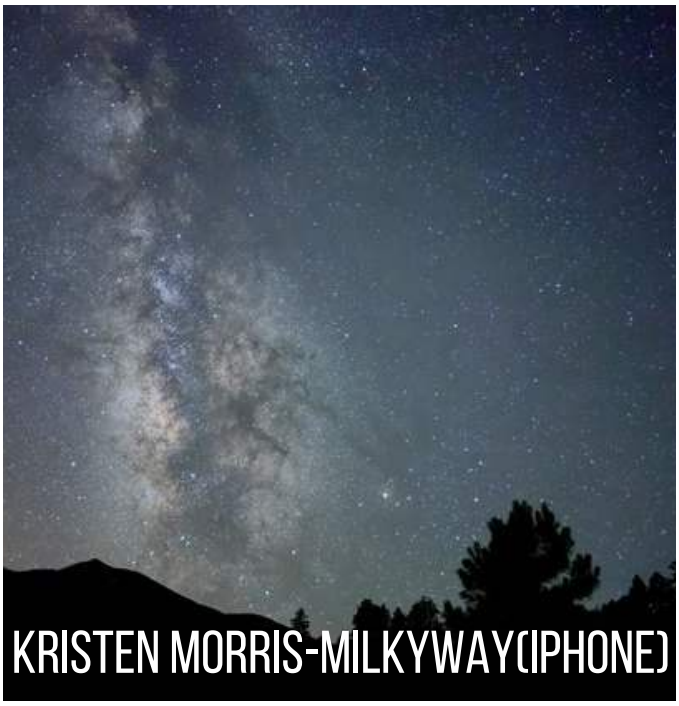
2 *Follow the arc of the Dipper's handle. It intersects Arcturus, the brightest star in the June evening sky.*

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.*

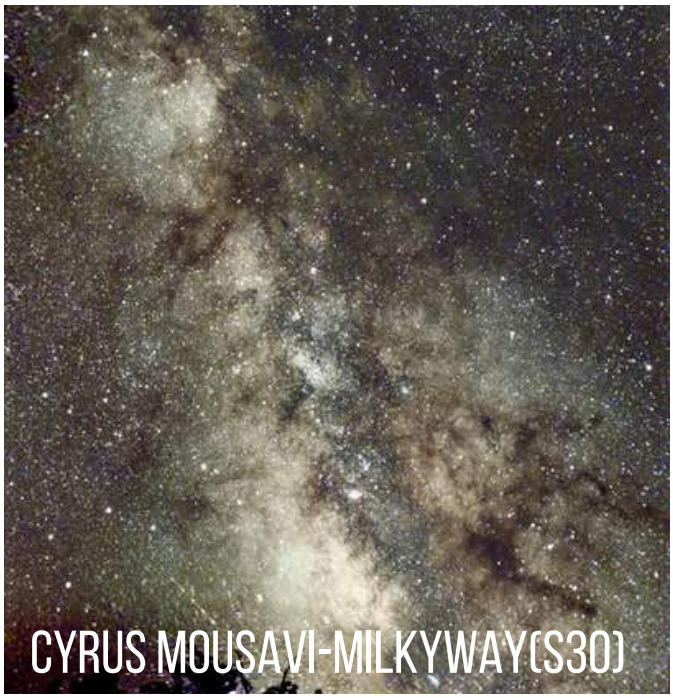
4 *High in the East lie the summer triangle stars of Vega, Altair, and Deneb.*

Binocular Highlights

A: *On the western side of the Keystone glows the Great Hercules Cluster.*
B: *Between the bright stars 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, including the Great Rift.*
E: *The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval.*

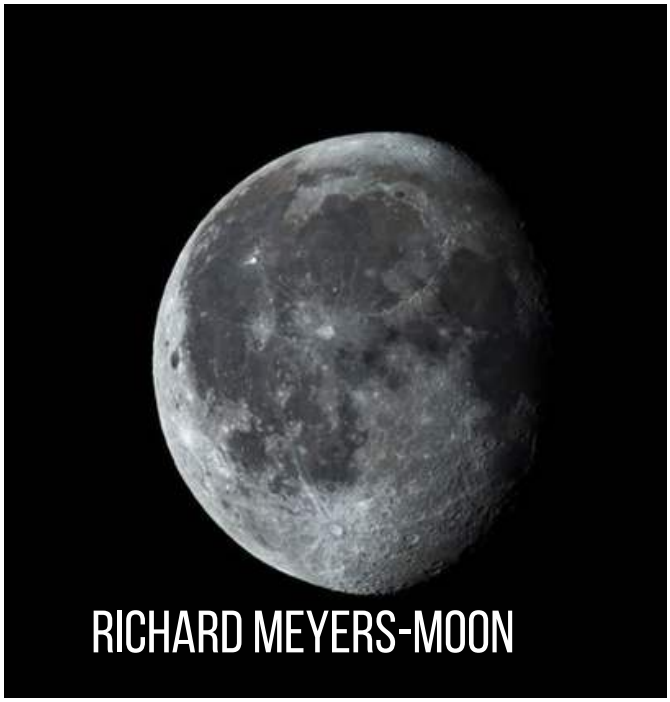


KRISTEN MORRIS-MILKYWAY(IPHONE)

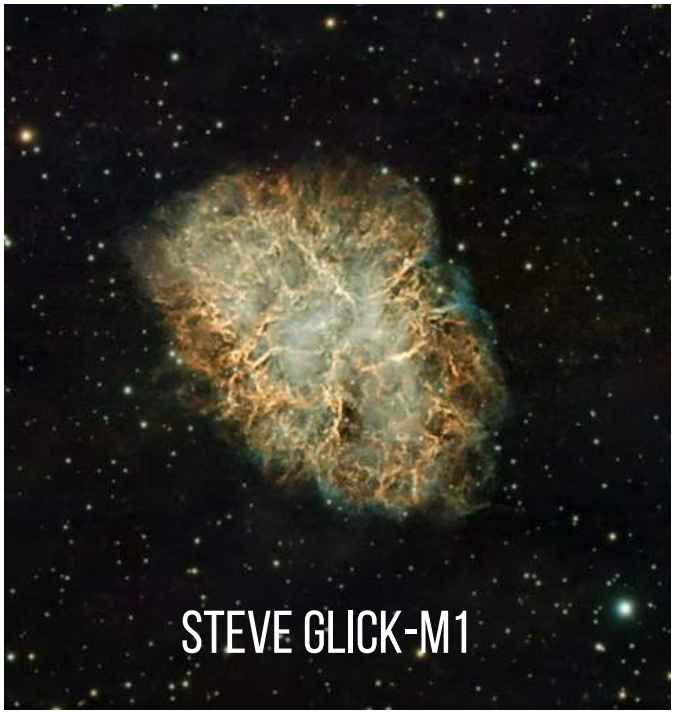


CYRUS MOUSAVI-MILKYWAY(S30)

KRIS MLAK-6 PANEL MILKYWAY MOSAIC(DSLR)



RICHARD MEYERS-MOON

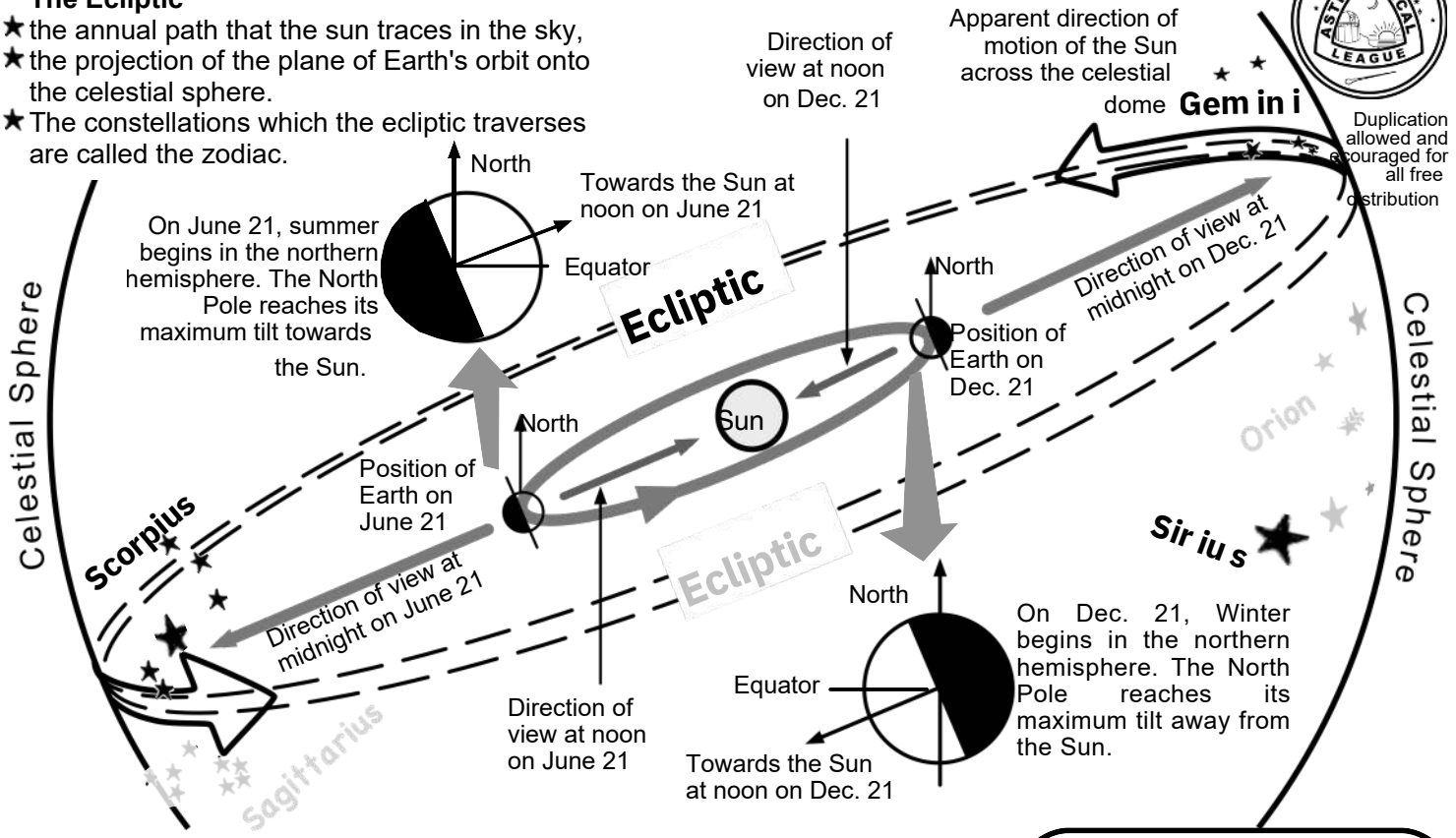


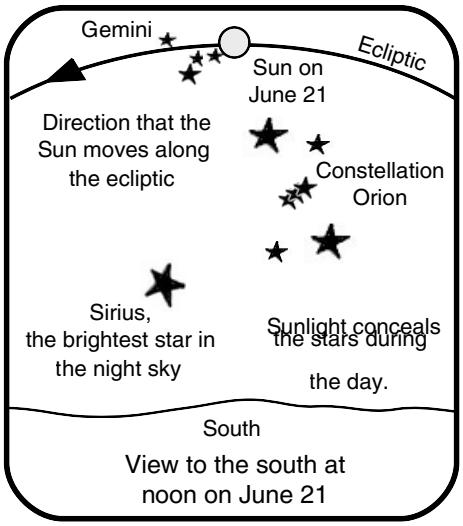
STEVE GLICK-M1

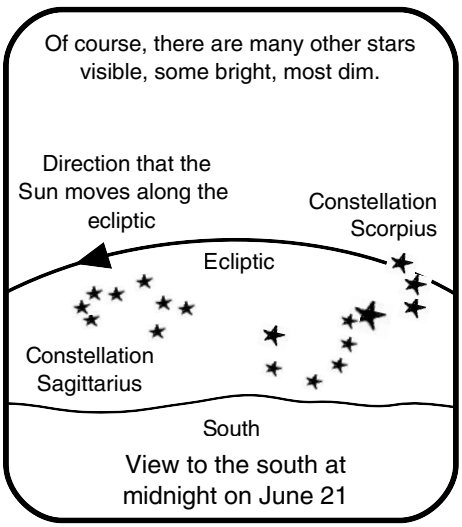
Seasons change, Stars change

The Ecliptic

- the annual path that the sun traces in the sky,
- the projection of the plane of Earth's orbit onto the celestial sphere.
- The constellations which the ecliptic traverses are called the zodiac.





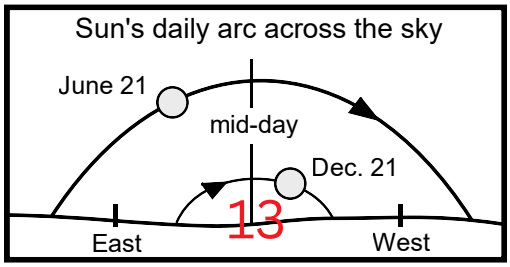


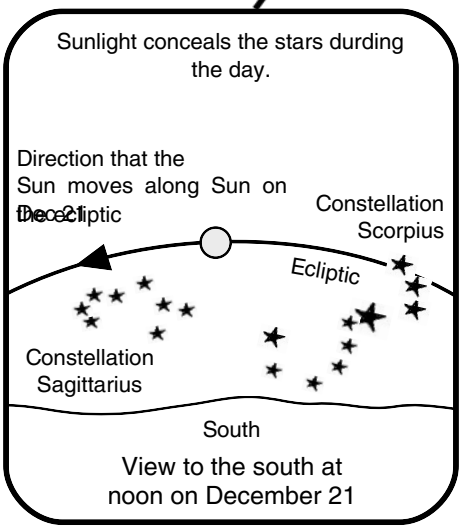
Consider that ...

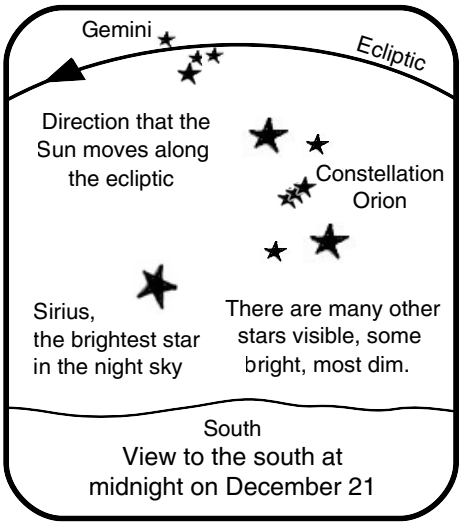
- the Sun is higher at noon in June than in December,
- the Sun is slightly farther from Earth in June than in December,
- the stars that are in the midnight December sky are the same stars in the noon June sky, and vice versa,
- the ecliptic is high at midnight in December and at noon in June, and it is low at noon in December and at midnight in June.

Also consider that ...

- theSun always lies directly on the ecliptic line, moving two of its own apparent diameters to the east each day, (The Sun's diameter is 0.5 degrees. It moves 1º each day.)
- it takes the Sun 365.25 days to complete one circuit around the ecliptic,
- and the Moon and the planets lie either on or near the ecliptic.







Used equipment for sale

Duration: Ads run for 3 months and may be renewed if submitted by the deadline and space permits. Cost: Ads are FREE for members only. Equipment Requirements: All items must be in good working order. Acceptable items include books, star charts, telescopes, eyepieces, finder scopes, binoculars, lasers, and other astronomy-related gear. Submission Details: Email the following information to editor@pasaz.org: *Make *Model *Description (Under 100 words-include a link to the manufacturer's site if available) *Price *Contact Information *Preferred Contact Method (Email or phone) *Approximate Location. PAS is not responsible for the ads and does not guarantee the quality of the items for sale. PAS reminds everyone, you purchase at your own risk, so do your research beforehand.

Posted 05/2026

MEADE ETX-LS 8" telescope for sale. Have instruction manual and 8X50 Rear Focus Viewfinder. ~~$1,400.00~~ $500 or best offer. -Judy Pester (Paradise Valley) , judyloves356@gmail.com

Posted 06/2026

Losmandy G11 Gemini 2 Level 6, OP worm gear, freshly cleaned and serviced, HD nonfolding tripod local pickup PAS member price $2,250 Andrew Stone andrews@pasaz.org

Posted 08/2026

Meade Series 6000 130mm Triplet APO.This is one of Meade's finest and is offered at a very reasonable $2,000. The scope lives in Fountain Hills, its owner is Dale @ dpc4@cox.net

NEW

SPECIAL OFFER

PAS offer: This is a first come, first served offer. Review the list. Decide what you want. Email president@pasaz.org what you want. He will set up a day/time for you to come to his location to purchase.

Bring your check payable to **Phoenix Astronomical Society** or cash … no credit cards please. **Nothing this month!**

Telescope Loan Program

PAS Telescope Loan Program- The PAS Telescope Loan Program gives active PAS members access to a range of donated telescopes and accessories. These instruments are intended to support both visual astronomy and astrophotography learning experiences.

Overview-Members can borrow from the full PAS telescope inventory. Equipment ranges from beginner-friendly setups to higher-value imaging systems, offering opportunities to explore different observing and imaging techniques.

Check-out Requirements

Some telescopes require completion of a short training program before use

Higher-value equipment may require credit card information as a security measure against loss or damage

An accessory kit (eyepieces and supporting gear) is available for all loaner telescopes when needed

Loan Period

Standard loan duration is up to one month

Extensions may be granted in special cases upon request

Pickup & Return

All equipment must be collected from the PAS storage facility

All items must be returned to the same facility by the agreed end date

How to Request a Telescope

To check out a telescope, email telescope@pasaz.org with the following information:

Your full name

PAS membership status

Preferred telescope (if known)

Intended use (visual observing or astrophotography)

Requested loan dates

NEW-Dwarf lab Mini

NEW- Dwarf Lab 3

NEW Askar 103 APO 103mm f/6.8 Triplet Refractor Telescope, with ioptron AZ Mount Pro and an advanced eyepiece kit

2 x ZWO SeeStar S50

Coronado Personal Solar Telescope (PST)

Orion SkyQuest XT-10 - 10” Dobsonian

Orion Skyquest XT-8 – 8” Dobsonian

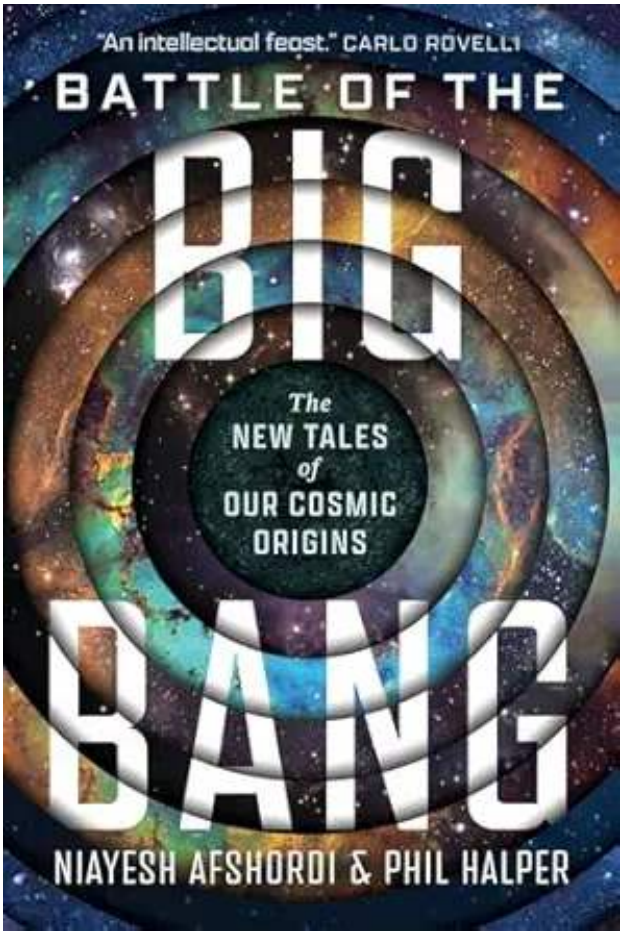
Sky-Watcher – 10” Collapsible Motorized Dobsonian

Accessory Kit #4 - Advanced Observing

Accessory Kit #5 – 1.25” Eyepieces & filters

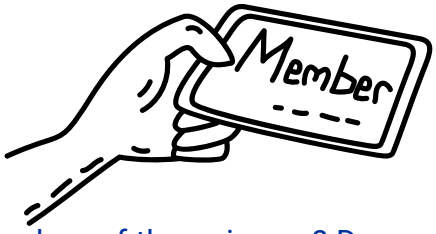
The 2026 Book Club

For more information or to join, contact Cyrus at saeidmousavi@yahoo.com



Battle of the Big Bang: The New Tales of Our Cosmic Origins
by Niayesh Afshordi (Author) & Phil Halper (Author)

By most popular accounts, the universe started with a bang some 13.8 billion years ago. But what happened before the Big Bang? And how do we know it happened at all? Here prominent cosmologist Niayesh Afshordi and science communicator Phil Halper offer a tour of the peculiar possibilities: bouncing and cyclic universes, time loops, creations from nothing, multiverses, black hole births, string theories, and holograms. Along the way, they offer both a call for new physics and a riveting story of scientific debate.



Are you fascinated by the stars and eager to explore the wonders of the universe? Do you want to connect with like-minded individuals who share your passion for astronomy?

Hi everyone! Great news. Renewing your membership is quick and easy: just visit **www.pasaz.org**, look in the left index column for "Join Our Society," click it, and you're on your way.

We now offer a year-round membership, which means you can join at **any time with no enrollment deadlines**, and you'll receive a full 12 months of benefits. If you have any questions, our Membership Manager is happy to help at membership@pasaz.org.

Benefits of PAS Membership

- Helping the Society accomplish its mission of astronomy outreach and education
- Contributing toward the Society's ability to provide college scholarships to astronomy students
- Participation on the Society's email distribution list
- Email receipt of the Society's monthly newsletter
- Participation in the Society's telescope loaner program
- Ability to serve as a teacher at the Society's telescope workshops
- Ability to serve as a mentor at the Society's star parties
- Ability to participate in the Astro Imaging Special Interest Group (ASIG)
- Ability to serve as a paid presenter in the Society's Star Tours program
- Opportunity to purchase used astronomical equipment at 50% off current value
- Access to club trips to the darkest Arizona sites and top observatories
- Connections with professional astronomers and researchers through guest lectures or workshops.
- Opportunities to hold leadership positions within the club, such as committee chairs or officers.

By becoming a member of the Phoenix Astronomical Society, you not only enhance your own astronomical journey but also contribute to a vibrant community that shares your passion. Together, let's explore the universe and inspire others to do the same.

Sign Up Now and Start Exploring the Cosmos with Us!

Phoenix Astronomical Society Contact Info

President Stu Brackney — president@pasaz.org
Vice President Mark Johnston — vicepresident@pasaz.org
Treasurer Richard Sauerbrun — treasurer@pasaz.org
Secretary Chris Ford — secretary@pasaz.org
Newsletter Editor Richard Meyers — editor@pasaz.org
Membership & Outreach

- Ruza Sabelja — Member-at-Large (mal1@pasaz.org)
- Andrew Stone — Member-at-Large (mal2@pasaz.org)
- Damon Finell — Membership Manager (membership@pasaz.org)

Programs & Events

- Andrew Stone — Star Tours Manager (startours@pasaz.org)
- Ruza Sabelja — Event Manager (events@pasaz.org)

Website & Communications

- Ed Skinner — webmaster@pasaz.org

PAS is incorporated in the state of Arizona as a non-profit, scientific and educational 501(c)(3) organization. Our newsletter PAStimes is published monthly and distributed via the Internet. All issues are available for download on our website **www.pasaz.org** . Ads for astronomy equipment are provided as a courtesy to sellers and buyers, and do not constitute any endorsement by PAS. All photos by Richard Meyers unless otherwise credited. All articles and photos are copyright by their respective authors or PAStimes.

Star Tours Team 2026

Mark Johnston
Ted Blank
Mark Savan
Andrew Stone-Star Tours Manager
Richard Sauerbrun
Stu Brackney
Roger Anzini
Peter Turner
Chris Ford
Ryder David
Alessandro Cavallaro
Richard Meyers
Damon Finell
Luke Douglas

These individuals have successfully met the qualifications to participate in Star Tours Events and receive compensation $$ for their services. 🌟