

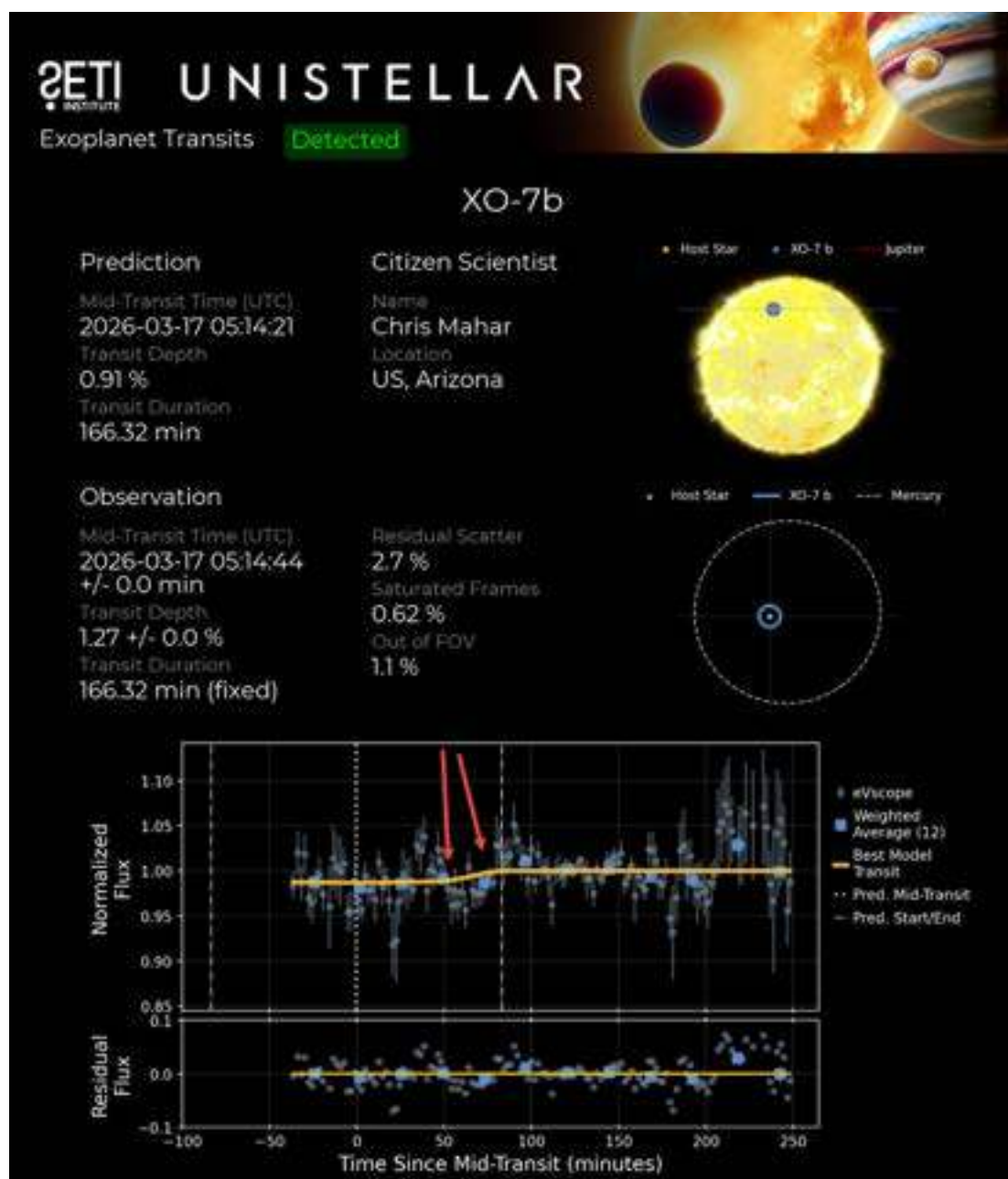
April 2026

Monthly Newsletter



PASTimes

A Publication of the Phoenix Astronomical Society



Chris Mahar—Detected a planet around another star. Unistellar Equinox smart scope

In this newsletter
you can expect:

[Message From the President](#)

[Reading the Stars:
The Hertzsprung-
Russell Diagram](#)

[Elections](#)

[See One Event](#)

[Navigating the Night Sky](#)

[Wolf 359](#)

[Member Images ,
Book Review and
much more](#)



2 – Monthly Lecture Series: Mars Missions-Tasha Coelho
| 16– Telescope Workshop

| 19 – Book Club | 25-Public Star Party | 27 – ASIG Meeting



A loud shout of thanks to two of our Bright Stars members Sam Johnson and Tristen Love who helped with our last event on March 5th, the Pizza Social. Bright Stars...that is the name of a new volunteer group here at PAS. They lend a hand at various events, helping set up signs, hand out literature, answer questions and even direct traffic at our star parties. Interested in helping? Contact Ruzasabelja@pasaz.org. Thanks.

Annual PAS election of officers: Yep, it's that time of year when we prepare for our annual election. On April 3rd you should have received an email explanation of our election process. Soon after, on April 6th you will receive a nomination form, where you can nominate a member or yourself for a position on the board of directors. My personal request for everyone, please get involved in the process and, if you wish, become a candidate. Election results will be announced at our May 21st meeting.

Kitt Peak PAS Members Trip: We are going back to Kitt Peak National Observatory. As you know, our last trip was hindered by foul weather. We are going back on April 25th. This is a member-only (with family) event. Still time to sign up: <https://bookwhen.com/memberonly/e/ev-smz73-20260425173000>
For information about Kitt Peak: <https://kpno.noirlab.edu>

PAS Historian: I'm still looking for a volunteer to help with the wonderful history of this organization. Interested? Contact me: stuartbrackney@pasaz.org

Redundancy: Sometimes this word is used to describe backup plans or systems. We, PAS, need backup people for our leadership team, should they become unavailable. To continue meeting the needs of our members we are asking some of you to contact me on how you can become a "backup."

Stuart Brackney



Table Of Contents

Upcoming Events	3
Lecture	4
Recap	5
Outreach	6
Star Tours\International	7
Science Fair	
Feature Articles (When Stars Go Out\Eclipse)	8-9
See One Event	10
ASIG	11
Night Sky	12
Member Images	13
Cosmic Classroom	14
Astronomy Websites	15
For Sale	16
Telescope Loan	17
Book Review	18
Membership	19
Contact	20

APRIL 2026 UPCOMING EVENTS



2

THUR

MONTHLY LECTURE SERIES

Tash Coelho from the Mars Rover team:
Collaborator on Mastcam and Mastcam-Z



16

THUR

TELESCOPE WORKSHOP

101/201

101 What to buy
201 How to operate your telescope\$.



19

SUNDAY

BOOK CLUB

Sean Carroll's Something Deeply Hidden:
Quantum Worlds and the Emergence of
Spacetime (2019)



25

SATURDAY

PUBLIC STAR PARTY

Our Star Parties are held at one of our public
star party sites which have an excellent view of
the night sky. Parties begin before sunset so
equipment setup may be completed in the
daylight.



27

MON

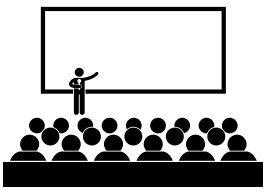
ASIG/ASTROIMAGING -

MEMBERS ONLY

Are you passionate about capturing the beauty of
the cosmos? Whether you're a beginner or an
experienced astrophotographer, now is the
perfect time to join

**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.



April Lecture:

Speaker: Tash Coelho, Mars Rover team

Collaborator on Mastcam and Mastcam-Z, the camera systems aboard NASA's Curiosity and Perseverance rovers, at Arizona State University's School of Earth and Space Exploration. Co-designer of the Mars Yard at the Space Analog for the Moon and Mars (SAM) at University of Arizona's Biosphere 2. Pilot and scuba diver.

Topic: Mars Missions

A look at the latest milestones, discoveries, and imagery from active and future Mars missions.



NEW LOCATION

All of our PAS events at Paradise Valley Community College are now being held in **Building Q room 120A**. This is the former Maricopa County Library building south of the PVCC athletic fields on 32nd street.



Here's a recap of last month's Meeting

Pizza Party by Richard Meyers

It was a well-attended event with a great turnout. We raffled off several prizes during the event, which added a lot of excitement and engagement for everyone who attended. In addition to the raffle, we also held a telescope auction that generated great interest and participation. Both activities helped make the event more interactive and enjoyable while also supporting our program and future events. It was also a great opportunity for everyone to spend time together and get to know each other better, which made the event even more meaningful.



Saturday, April 25, 2026 | 5:30 - 10:00 PM
Kitt Peak National Observatory Visitor
Center, Kitt Peak National Observatory,
Tucson AZ 85634

PAS 2026 Election of Officers

All active members will receive an email with a link to our 2025 Nomination Form. By submitting this form, you may nominate yourself or another PAS member for each of the Board of Director's offices. We thank all PAS Members for taking the time to vote in this election.



April 6th - Nomination forms are sent via email to all active PAS members
April 13th - Nomination submission deadline
April 23rd - Voting ballots sent via email to all active PAS members
April 30th - Voting submission deadline
May 21st - Results of vote are announced at the Monthly Lecture Series meeting

Summary of Outreach Events



Star Tours & Outreach events March

- 4th Hopi Elementary
- 11th Tavan Elementary
- 14th Star Party
- 20th Sonoran Trails Middle School
- 24th OMNI Resort
- 26th Desert Mountain
- 27th Dynamite Montessori
- 28th Fountain Hills Dark Sky Festival



Photo by Stu Brackney



Photo by Stu Brackney



Photo by Stu Brackney



StarTours by Andrew Stone

Objects to View in April 2026						
Object Name	Object Type	Constellation	Visual Magnitude	Apparent Size	Rise Time	Set Time
Jupiter	Planet	Gemini	-2.7	45" (disk)	12:00 PM	2:00 AM
M42 (Orion Nebula)	Emission Nebula	Orion	4	60' x 60'	11:30 AM	12:30 AM
NGC 2392 Eskimo Nebula	Planetary Nebula	Gemini	9.2	0.8'	11:30 AM	1:30 AM
NGC 3242 Ghost of Jupiter	Planetary Nebula	Hydra	7.3	25"	4:00 PM	2:30 AM
M104 Sombrero	Galaxy	Virgo	8	9' x 4'	8:30 PM	7:30 AM
M51 Whirlpool	Galaxy	Canes Venatici	8.4	11' x 7'	6:00 PM	8:30 AM
M65, M66, NGC 3628 Leo Triplet	Galaxies	Leo	9.3, 8.9, 10.2	9' x 2' & 9' x 4'	2:30 PM	5:00 AM
M81 & M82 Bode's Galaxy	Galaxies	Ursa Major	6.9 & 8.4	21' x 10' & 11' x 4'	Circumpolar	Circumpolar
M3	Globular Cluster	Canes Venatici	6.1	18'	6:30 PM	8:00 AM
M5	Globular Cluster	Serpens	5.6	23'	10:00 PM	10:00 AM
M13 Hercules	Globular Cluster	Hercules	5.8	20'	9:30 PM	11:00 AM
Double Cluster (NGC 869/884)	Open Cluster	Perseus	4.3 & 4.4	30'	Circumpolar	Circumpolar
M35	Open Cluster	Gemini	5.3	28'	11:00 AM	2:00 AM
M37	Open Cluster	Auriga	5.6	24'	11:00 AM	2:00 AM
M41	Open Cluster	Canis Major	4.5	38'	12:30 PM	10:30 PM
M44 Beehive Cluster	Open Cluster	Cancer	3.1	95'	1:30 PM	4:00 AM
M45: Pleiades	Open Cluster	Taurus	1.6	1.5°	9:30 AM	11:00 PM
NGC 457: Owl Cluster	Open Cluster	Cassiopeia	6.4	13'	Circumpolar	Circumpolar
NGC 2362 Tau Canis Majoris Cluster	Open Cluster	Canis Major	3.8	5'	1:30 PM	11:00 PM
Achird Eta Cassiopeiae	Double Star	Cassiopeia	3.5 / 7.5	12'	Circumpolar	Circumpolar
Castor	Double Star	Gemini	1.6	5"	11:00 AM	2:00 AM
Beta Monocerotis	Triple Star	Monocerotis	4.7, 5.2, 6.1	5"	11:30 AM	11:00 PM

**HELP
NEEDED**

Science Judges needed for International Science Fair – Phoenix Wed May 13

Regeneron ISEF 2026 - Phoenix, Arizona: The world's largest STEM conference is in Phoenix this year. The Regeneron International Science and Engineering Fair (ISEF) will be at the Phoenix Convention Center, May 9-15, 2026. The Regeneron International Science and Engineering Fair (Regeneron ISEF) is the world's largest and most prestigious STEM competition for high-school students (5000 students from over 50 countries are expected), bringing together top young researchers from around the globe to present original scientific and engineering projects. More than 1000 judges are needed to determine the winners of the 2026 Regeneron ISEF. The main day judges are needed is Wed May 13. The prize-award day is Thurs May 14. More than 500 general volunteers are needed across a spectrum of activities. Learn more about serving as a Grand Award judge or general volunteer: <https://www.societyforscience.org/isef/>

STELLAR ASTROPHYSICS · BEGINNER GUIDE

Reading the Stars: The Hertzsprung-Russell Diagram

by Richard Meyers

Imagine being handed a photograph of a crowd and asked: can you tell how old everyone is just from how they look? A tall, broad-shouldered person with a full beard is probably not twelve. A small child with bright eyes is probably not eighty. You'd be reading physical clues -- size, color, energy -- to infer age and stage of life. That is exactly what astronomers do with stars, and they do it with a single chart.

The tool they use is the Hertzsprung-Russell diagram, or H-R diagram (**Figure 1**), one of the most powerful charts in all of science. Plot enough stars on it and patterns leap out immediately -- not because someone arranged them that way, but because the laws of physics force stars into predictable families based on what they are made of, how massive they are, and how far along they are in their lives.

In the early 1900s, Ejnar Hertzsprung in Denmark and Henry Norris Russell in the United States independently noticed something surprising. When you plot a star's temperature against its brightness, the results are anything but random. Stars cluster into tight bands and groups, as reliably as humans cluster by age in a school photograph. That discovery changed astronomy forever -- suddenly a single snapshot of a star's color and brightness could tell you its mass, its age, and its eventual fate.

WHAT THE TWO AXES MEAN:

The horizontal axis shows surface temperature, but with one twist that trips up almost every beginner: it runs backwards. The hottest stars -- blazing at over 30,000 degrees K -- sit on the left side of the diagram. The coolest, glowing at around 3,000 degrees K, sit on the right. This reversal is a historical convention that stuck, so always read temperature right to left.

Temperature also controls color in a way you can see with the naked eye. The hottest stars glow blue-white, like the arc of a welder's torch. Mid-range stars like our Sun shine yellow-white. The coolest stars burn a deep, ruddy red -- the same reason a heating element on a stove glows orange before it gets truly hot.

The vertical axis shows luminosity -- the total energy a star pours out in all directions every second, measured against our Sun as the baseline. One step up the scale is not a little brighter; the axis is logarithmic, meaning each major division represents a factor of ten. A star near the top of the diagram might be pouring out a million times more energy than the Sun. A star near the bottom might manage only a ten-thousandth as much.

Together, these two axes create a map. And like any good map, it turns out that most of the territory is not randomly occupied. (**Figure 2**)

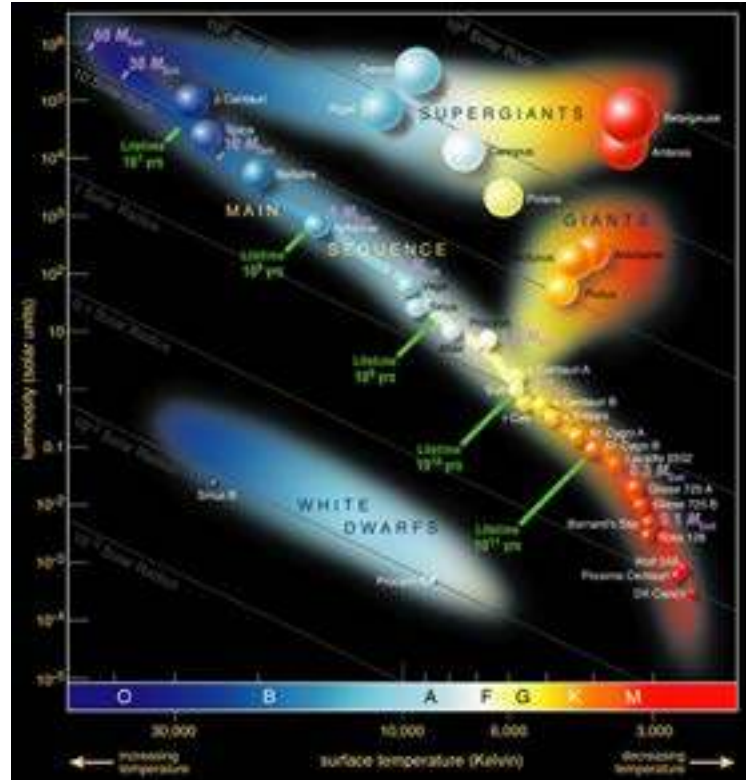


FIGURE 1 — The Classic H-R Diagram Credits:ESO

Quick Reference — H-R Diagram Regions

- **Upper-Left** — Blue Supergiants: Hottest, most luminous stars. Short lives ending in spectacular supernovae. Examples: Rigel, Spica.
- **Diagonal Band** — Main Sequence: Stars fusing hydrogen — the stable lifetime phase. Our Sun sits halfway along this band.
- **Upper-Right** — Red Giants & Supergiants: Old, expanded stars that have left the Main Sequence. Examples: Betelgeuse, Aldebaran.
- **Lower-Left** — White Dwarfs: Stellar remnants — the spent cores of low-to-medium mass stars (up to about 8 times the Sun's mass), slowly fading over billions of years.
- **Lower-Right** — Red Dwarfs: Smallest, coolest, dimmest Main Sequence stars — but likely the longest-lived objects in the universe.

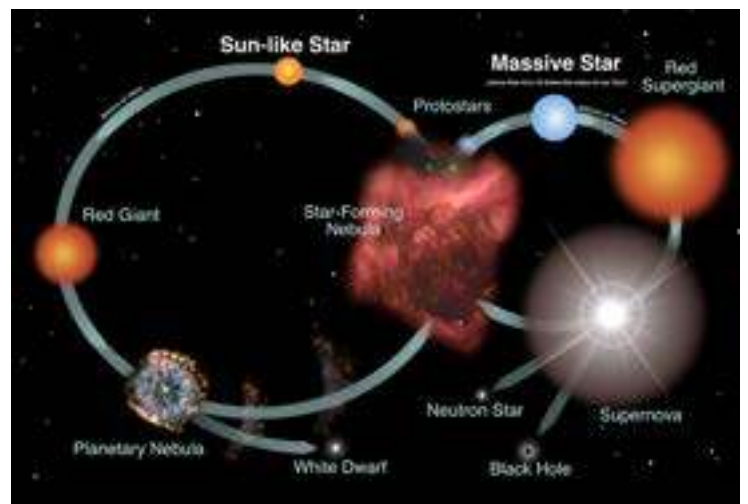


FIGURE 2 — The Sun's evolution stages, Credits:NASA, Night Sky Network

GIANTS, DWARFS, AND EVERYTHING IN BETWEEN:

A star does not stay in one place on the H-R diagram forever. It moves -- slowly at first, then dramatically -- as the nuclear fuel in its core changes and eventually runs out.

Once a Sun-like star exhausts its hydrogen fuel, the core contracts under gravity while the outer layers expand enormously, cooling as they spread. The star swells into the upper-right corner of the diagram -- the Red Giant branch. This is not a gentle puff. A star that spent billions of years as a modest point of light suddenly becomes a bloated, luminous giant many times its original size.

Betelgeuse, the distinctly reddish star on Orion's shoulder, is one of these. It is so vast that if it replaced our Sun at the center of the solar system, its surface would extend roughly to Jupiter's orbit -- swallowing Mercury, Venus, Earth, and Mars entirely. And Betelgeuse is not even the largest known star. It is simply the most famous nearby example of what the H-R diagram's upper-right corner looks like in the night sky.

(FIGURE 3)

What happens next depends on mass. Stars much heavier than the Sun end their lives in a supernova -- a catastrophic explosion that can briefly outshine an entire galaxy. But for stars like our Sun, the end is quieter. The outer layers drift away into space as a glowing shell of gas called a planetary nebula, leaving behind the exposed core. That core -- roughly Earth-sized but containing half a solar mass of material -- is called a White Dwarf. It no longer fuses anything. It simply radiates stored heat into space, cooling over billions of years from blazing white to dull orange to, eventually, a cold dark cinder. On the H-R diagram, white dwarfs occupy the lower-left corner: hot surface temperatures but extremely low luminosity, because they are so small. Sirius B, the faint companion to the brightest star in our sky, is a white dwarf you can locate with a telescope from Scottsdale on a steady night.

WHY IT STILL MATTERS TODAY:

More than a century after Hertzsprung and Russell first noticed their diagram's patterns, it remains one of the most-used tools in astronomy -- not as a curiosity, but as a working instrument applied every day.

When researchers study a distant star cluster, they plot its members on the H-R diagram and read the cluster's age directly from the shape of the pattern. Stars more massive than a certain threshold will have already burned off the main sequence; the point where the main sequence starts to peel away -- called the turnoff point -- acts like a clock hand. The older the cluster, the lower the turnoff point sits on the diagram.

When exoplanets are found, scientists use the host star's position on the diagram to estimate its surface temperature, luminosity, and lifespan. That information feeds directly into whether any orbiting world could lie in the habitable zone -- the range of distances where liquid water might exist on a surface. A star's H-R position, in other words, is one of the first things checked when evaluating whether a newly discovered planet is worth a closer look.

And for those of us at the eyepiece, the diagram does something quieter but just as powerful. It transforms every star from an anonymous dot of light into something with a known address in the universe -- a position in a life cycle, a mass, an age, a fate already written in physics.

Next time you are out under a dark Arizona sky, glance at Betelgeuse in Orion and then shift your eyes to Rigel, the blue-white star at the hunter's opposite knee. Both are giants, but they could not be more different. Betelgeuse sits in the upper-right of the H-R diagram -- an old, swollen star near the end of its life. Rigel blazes in the upper-left -- massive, furiously hot, burning through fuel at a rate that gives it only a few million years to live. That single naked-eye comparison, one red star and one blue-white star in the same constellation, is the H-R diagram written across the sky. A century of astrophysics, right there in one upward glance.

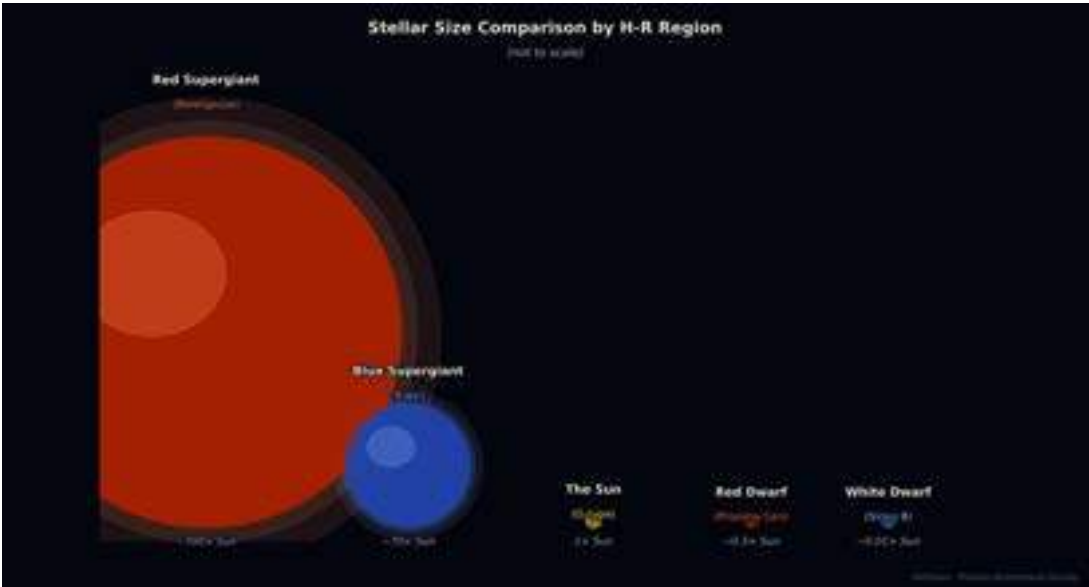
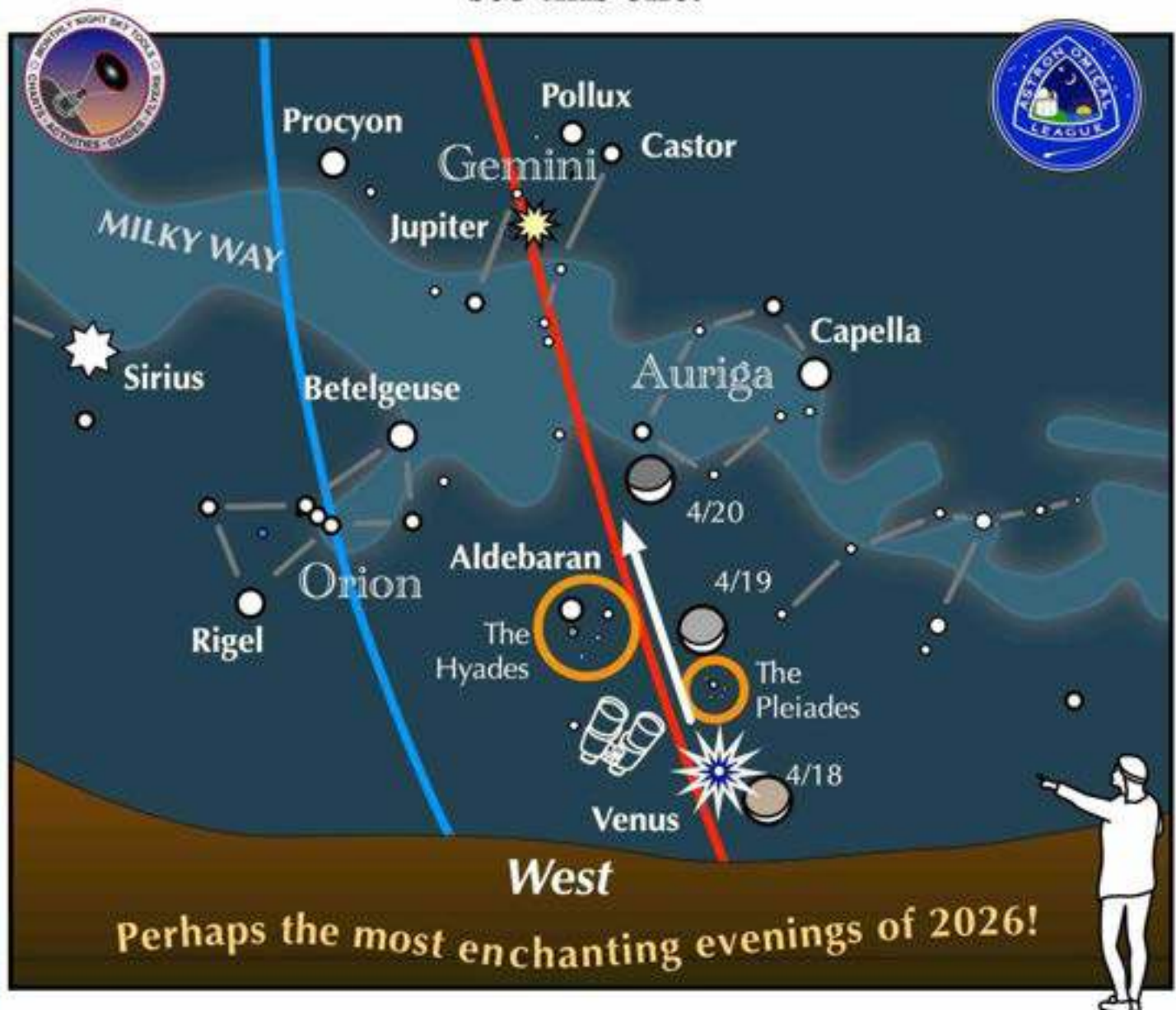


FIGURE 2 — Size Comparison

**If you can see only one celestial event this April,
see this one.**



**Enhance the scene –
use binoculars!**

On April 18, 19, & 20, look low in the west-northwest 60 minutes after sunset.

- On the first evening, the crescent moon, glowing full with earthshine, floats near brilliant Venus, while on the second evening, it moves just above the delicate Pleiades star cluster, and to the right of the bright star Aldebaran and the intriguing Hyades star cluster.
- On the third evening, the slightly thicker, but more pronounced crescent moon hangs above the Pleiades and the Hyades.
- Above it all, bright Jupiter plows through Gemini, shining near Castor and Pollux.

Astroimaging Special Interest Group (ASIG)

Your astroimages have been stunning—each galaxy spiral and nebular glow pushes our group's passion deeper into the cosmos.

Easy Targets

M35 – Open Cluster (Gemini) – Mag 5.1 Big, bright, and generous. Resolves beautifully in small scopes, and with steady seeing you'll notice the faint companion cluster NGC 2158 lurking nearby like a distant echo. Act early in April — Gemini is sinking into the west by late evening and will be out of reach by May.

M48 – Open Cluster (Hydra) – Mag 5.8 Often overlooked, which is astronomer code for "pleasant surprise." Wide, loose, and binocular-friendly with a subtle arc pattern. Hydra is well up in the south by mid-evening — a good early target before you head to the galaxy fields.

M3 – Globular Cluster (Canes Venatici) – Mag 6.2 One of the finest globulars in the northern sky. Even modest apertures start to crack it open; larger scopes turn it into a snowstorm of ancient stars. M3 was the first Messier object discovered by Charles Messier himself and is one of the best-studied globular clusters, made up of around 500,000 stars and estimated to be 11.4 billion years old.

M81 – Bode's Galaxy (Ursa Major) – Mag 6.9 A bright spiral galaxy and a gateway to spring galaxy season. At magnitude 6.9, it measures 24' by 13' — through an 8-inch scope, a large, bright central region surrounds the much brighter core, and larger apertures reveal how the spiral arms wind around it.

Challenge Targets

NGC 4565 – Needle Galaxy (Coma Berenices) – Mag 10.4 Edge-on perfection. Under dark skies it slices the field with a razor-thin dust lane. Transparency matters more than aperture here. The New Moon window (April 13–21) is where this one shines — or rather, where it doesn't disappear into sky glow.

NGC 3242 – Ghost of Jupiter (Hydra) – Mag 8.6 A bright planetary nebula that tolerates high magnification. Blue-green disk with subtle internal structure; an O-III filter enhances the outer shell. It's small but punches hard — catch it before it drops too low in the south by late evening.

NGC 3628 – Hamburger Galaxy (Leo) – Mag 9.5 The faintest member of the Leo Triplet, but arguably the most dramatic. Look for the dark dust lane bisecting the elongated glow — patience required. Leo is ideally placed high in the south by 9–10 PM all through April. If you're going after M65/M66, swing the scope a touch north and complete the trio.

Helpful YouTube channels

[AstroBackyard](#) – Excellent for beginner and intermediate astrophotographers, covering gear, imaging techniques, and post-processing.

[Nebula Photos](#) – Focuses on budget astrophotography, including DSLR and smartphone imaging.

[Peter Zelinka](#) – Great for nightscape and deep-sky astrophotography techniques.

[Chuck's Astrophotography](#) – Covers deep-sky imaging, processing tutorials, and equipment reviews.

[NSN Webinar Series: JWST: Revealing the Invisible Universe](#) - Principal Science Visuals Developer Joseph DePasquale will provide some background on the observatory and the art and science of image processing that reveals the inherent beauty of the infrared universe.

[Mastersofpixinsight](#) - Masters of PixInsight is an educational platform dedicated to teaching astrophotographers how to effectively use PixInsight for deep-sky image processing.

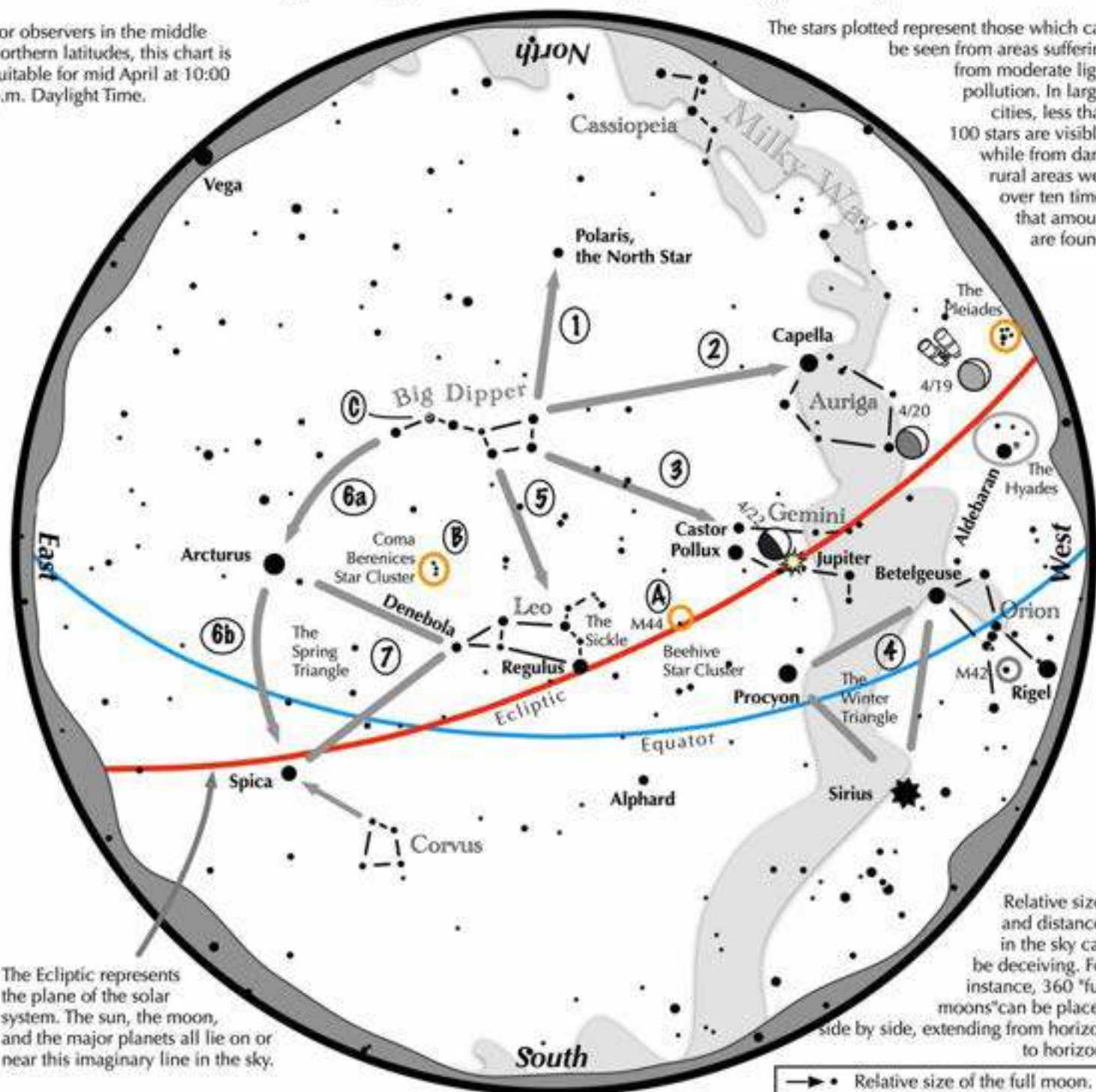
[20 Top TIPS for Better Astrophotography](#) -Dylan O'Donnell Dylan covers both image acquisition as well as processing and provides some great tips for better images.

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.



→ • 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.

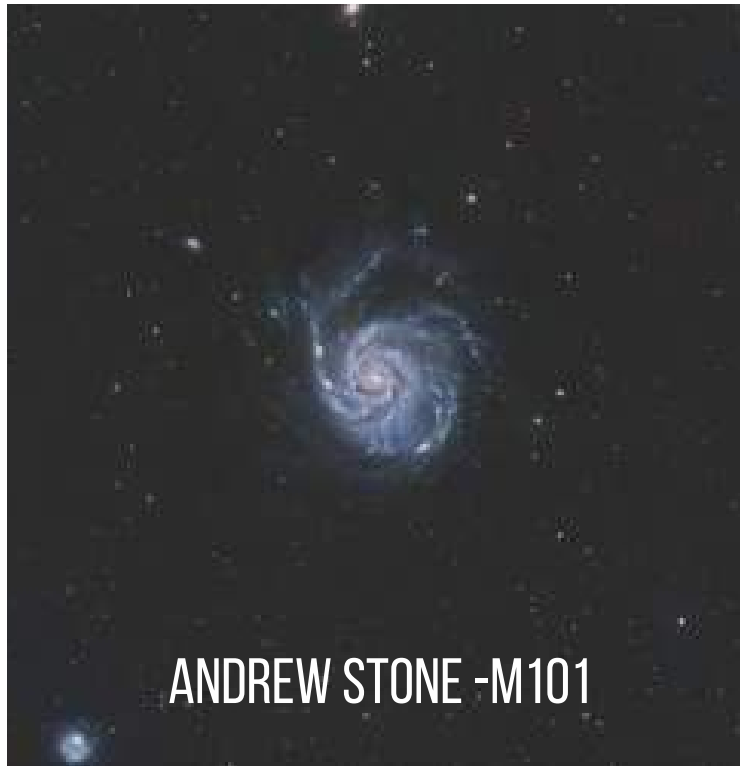
Binocular Highlights

- 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.

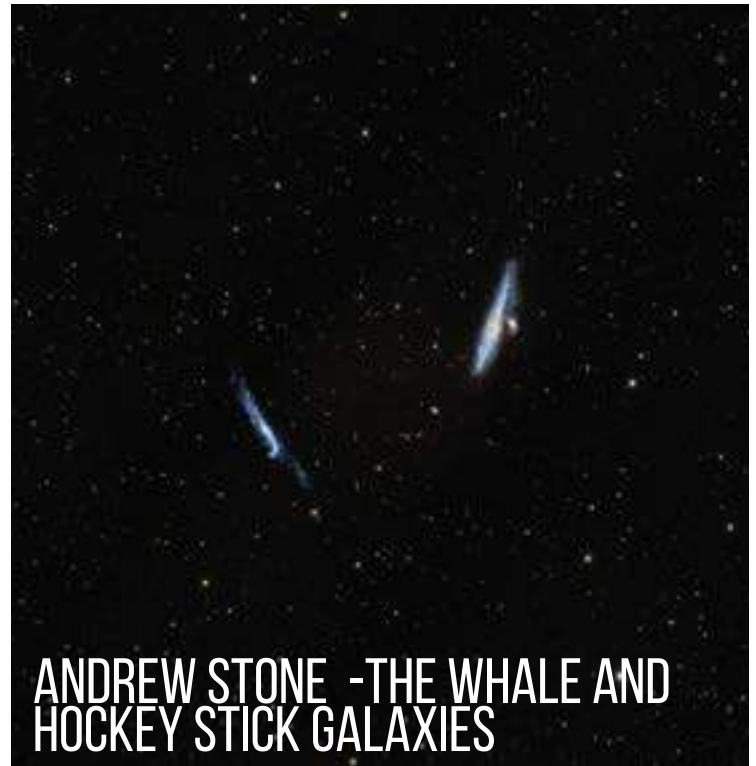


Astronomical League
www.astroleague.org

Duplication allowed and encouraged for all free distribution.



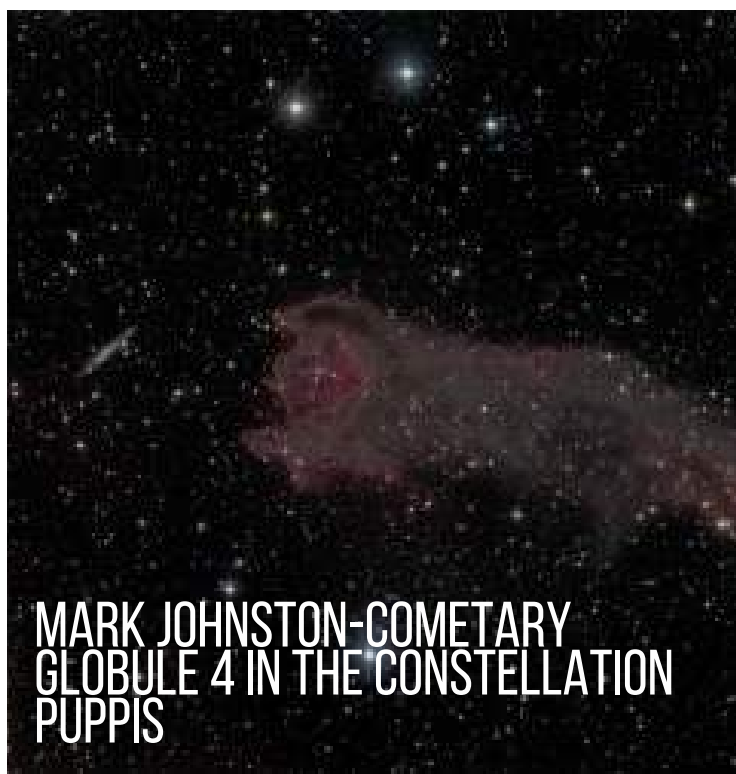
ANDREW STONE -M101



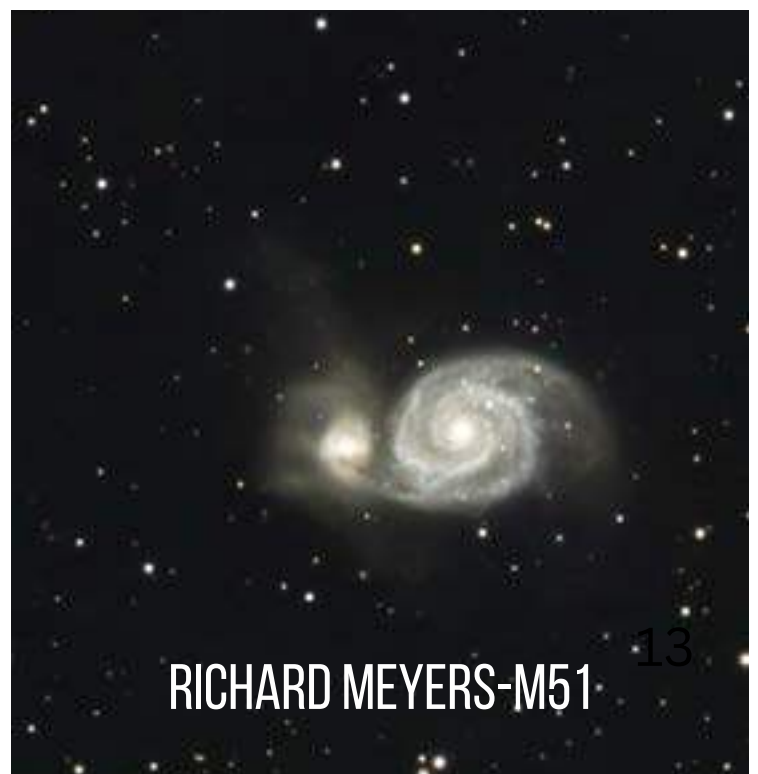
ANDREW STONE -THE WHALE AND
HOCKEY STICK GALAXIES



MARK SAVAN



MARK JOHNSTON-COMETARY
GLOBULE 4 IN THE CONSTELLATION
PUPPIS



RICHARD MEYERS-M51



Have you seen the red dwarf

Wolf 359

One of the closest star systems is a challenge to spot!

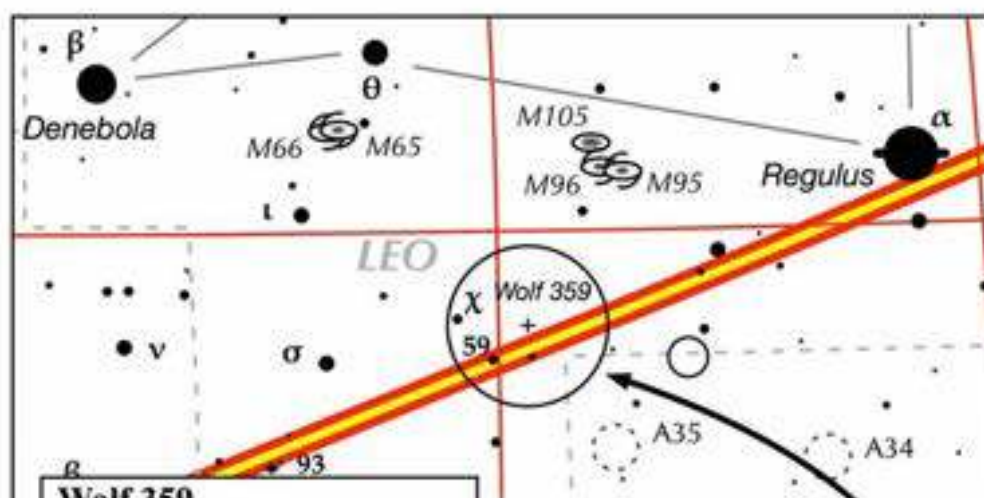


The stars are incredibly far away and they have an extremely wide range of intrinsic brightness. One of the closest is also one of the least luminous – the red dwarf Wolf 359. Lying almost 8 light-years distant in the constellation Leo, it only reaches 13.6 magnitude, and is only 0.001 as luminous as the sun. (At infrared wavelengths, though, it has a magnitude of about 7!)

If you have a large enough telescope – one of 10 inches aperture or larger – you should be able to spot it if you have a good chart.

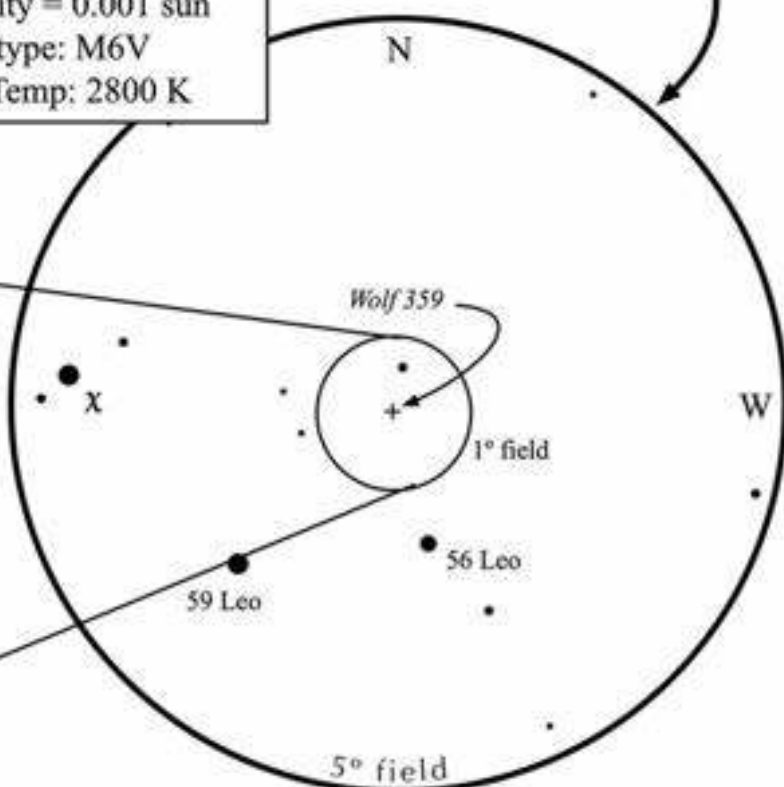
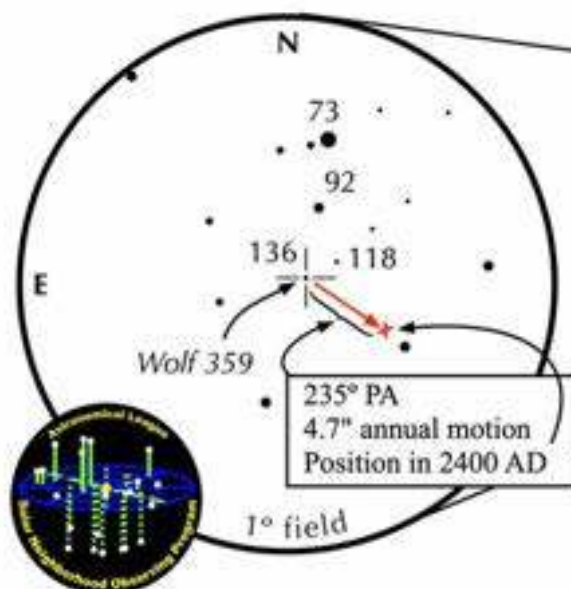
Locating Wolf 359:

1. Identify the 4th magnitude Chi Leonis and near it, the 5th magnitude 59 Leonis.
2. Through a finder, use Chi, 59, and 56 Leonis to triangulate to a 7.3 magnitude star. It lies 20 minutes north of Wolf 359.
3. Through a wide field eyepiece (1°), spot the 9.2 magnitude star sitting 12 minutes south of the 7th magnitude star.
4. Wolf 359 lies 8 minutes south of that star. It might exhibit a red hue.



Wolf 359

- Distance = 7.9 light-years
- Magnitude 13.6
- Luminosity = 0.001 sun
- Spectral type: M6V
- Surface Temp: 2800 K



Helpful Astronomy Websites

by Mark Johnston

The following websites are great free resources to help you plan and enjoy your astronomy adventures

Astromart: astromart.com/

This is one of the top two sites for buying and selling used astronomy gear, product reviews, and forums where you can discuss any aspect of astronomy with other enthusiasts. A small fee is required.

Astrometry.net: <https://nova.astrometry.net/>

This site will take any astronomy image you send it (galaxy, starfield, nebula, etc) and then tell you what it is and where it is in the sky.

Astronomy Tools: astronomy.tools/calculators/field_of_view/

This site has a lot of capabilities but I use it primarily to figure out how a target (e.g. the Helix nebula) will look in my eyepiece or astronomy camera. You pick your scope, camera, eyepiece and target and the site does the rest.

Astrospheric: www.astrospheric.com/

Probably the best short term astronomy weather forecasting tool, providing predictions of clouds, transparency and seeing.

Clear Sky Charts: www.cleardarksky.com/

Excellent source of astronomy seeing conditions forecast. Also a great tool for finding observing sites with lower light pollution.

Cloudynights: www.cloudynights.com/

This is one of the top two sites for buying and selling used astronomy gear, product reviews, and forums where you can discuss any aspect of astronomy with other enthusiasts. Free.

Dark site finder: darksitefinder.com/map/

Great website for finding a dark observing location.

Heavens above: heavens-above.com/

Top site for predicting naked eye observations of satellites. See when the ISS is visible in your neighborhood!

Jupiter transits: shallowsky.com/jupiter/

For anyone with a small telescope, this is a great site. You can find out when the Great Red Spot and Jupiter's satellite transits are visible.

Solar Dynamic Observatory (SDO): <https://sdo.gsfc.nasa.gov/data/>

Find out how the Sun looks right now, at various wavelengths. If you own a solar telescope, this site coupled with Astrospheric is all you need to plan fabulous solar observing!

Starizona: <https://starizona.com/>

Astronomy store located in Tucson, Arizona. They specialize in a wide range of astronomy equipment and accessories, catering to both amateur and professional astronomers. Their offerings include telescopes, cameras, filters, and eyepieces, among other products. Knowledgeable staff and passion for astronomy.

Telescopius: telescopius.com/

This site is very helpful in planning an observing evening. It will tell you when any particular target is rising and setting and when is the best time to observe it. This allows you to sequence your observing in a planned manner.

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 04/2026:

Celestron nexstar 6 se complete scope tripod brand new\$ 700.00. 847-833-8916
AJ Rozdilsky



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.



Various Filters – 1.25"

Red, Yellow,Blue,Green,Multiple O3 filters

Member Price: \$100

Telescope Loan Program

The PAS Telescope Loan Program provides PAS active members access to various donated telescopes and accessories to enhance their learning of visual astronomy as well as astrophotography.

Check-out Process: The entire PAS inventory of telescopes is available for active members to use. Some telescopes require completion of a training program, others do not. Several of the loaner telescopes represent a significant dollar value. In certain cases, the PAS member will be asked to provide credit card information as insurance against potential damage or loss.

A kit of eyepieces and accessories is available for all loaner telescopes if needed. There is also a special kit of advanced 2" eyepieces available for loan as well as advanced finder scopes. Laser collimation tools are also available for loan if needed.

Loan periods are for a maximum of one month. However, longer periods may be granted in special cases.

All telescope equipment and accessories must be picked up at the PAS storage facility and delivered back to the facility by the end of the loaner period. If you wish to check out one of PAS's telescopes, send an email to telescope@pasaz.org with the following information:

- Full Name
- Email Address
- Desired Telescope and/or accessory kit
- Check out date
- Check in date
- Additional information as needed

ZWO SeeStar S50

Coronado Personal Solar Telescope (PST)

Orion SkyQuest XT-10 - 10" Dobsonian

Orion Skyquest XT-8 – 8" Dobsonian

Meade ETX-70 Go-To Refractor

Sky-Watcher – 10" Collapsible Motorized Dobsonian

Accessory Kit #4 - Advanced Observing

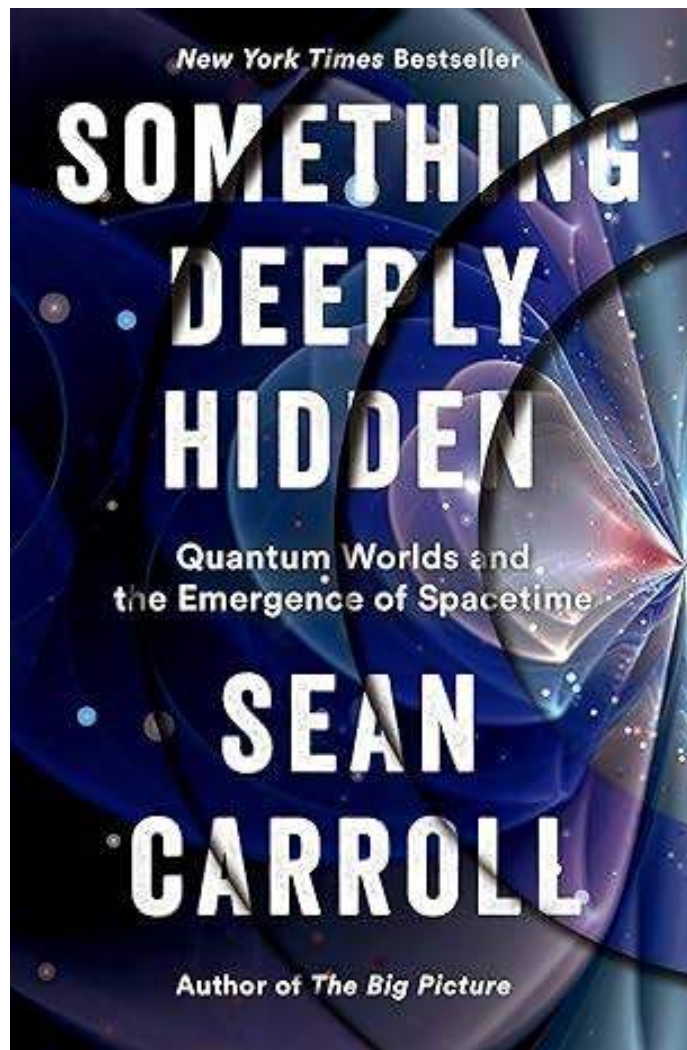
Accessory Kit #5 – 1.25" Eyepieces & filters





The 2026 Book Club

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



Sean Carroll's Something Deeply Hidden: Quantum Worlds and the Emergence of Spacetime (2019)

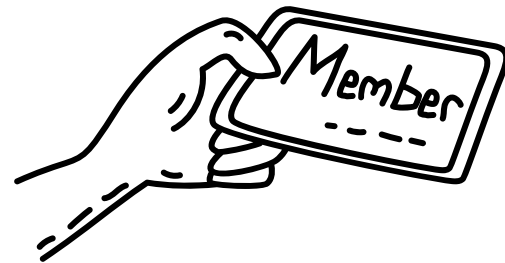
Sean Carroll, one of the world's most respected voices in science communication, reexamines the history of 20th-century physics with fresh clarity. In *Something Deeply Hidden*—already praised as a modern classic—he argues that confronting the central puzzle of quantum mechanics fundamentally reshapes our understanding of space and time. By seeking a true reconciliation between quantum theory and Albert Einstein's relativity, Carroll presents a perspective that could change everything.

For decades, much of the physics community has sidestepped an uncomfortable reality: the field has wrestled with unresolved foundational issues since 1927. Quantum mechanics, despite its predictive success, contains conceptual gaps that are often glossed over. Popular science tends to emphasize its strangeness, while academic culture has frequently steered researchers away from the so-called “dead end” of quantum foundations.

In this bold yet carefully argued work, Carroll challenges that mindset. He contends that the long-standing crisis in physics may finally have a resolution—if we are willing to embrace a radical implication: reality may consist of countless parallel versions of ourselves. Not just one observer, but many. Not just one universe, but an ever-branching multiverse.



Sign Up



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
Member-at-Large	Ruza Sabelja	mal1@pasaz.org
Member-at-Large	Damon Finell	mal2@pasaz.org
Membership Manager	Richard Pipkin	membership@pasaz.org
Star Tours Manager	Andrew Stone	startours@pasaz.org
Event Manager	Ruza Sabelja	events@pasaz.org
Website Manager	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
Scott Adams
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.

