

Snake River Skies

The Monthly Newsletter of the Magic Valley Astronomical Society

September 2023

Membership Meeting

September 9th at the Herrett Center
CSI main campus at 7:00pm

Centennial Observatory

See Inside for Details

Faulkner Planetarium

See Inside for Details

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*Magic Valley Astronomical Society is a
member of the Astronomical League*



*M-51 imaged by
Rick Widmer & Ken Thomason
Herrett Telescope - Shotwell Camera*

www.mvasastro.org

President's Message

Hi everyone:

Sept skies are some of my favorites. Rising in the East are Orion, Gemini, Andromeda, and lots of others. The major planets are up, too.

One item still on my mind is membership. While our active numbers are down, I would like to have an open discussion on ways to increase those. Local star parties? This is something we did a few years ago.

Setting up scopes around town or even in some of our nearby communities at nightfall.

A presentation in our own arena (Herrett Ctr)? Visiting our local high schools? I'd like to ask our Board too, for ideas. Maybe we could spend a few minutes in our Oct Mfg. to further this. Don't forget the Annular Eclipse on October 14th.

Stay safe and keep looking up.

Cheers,

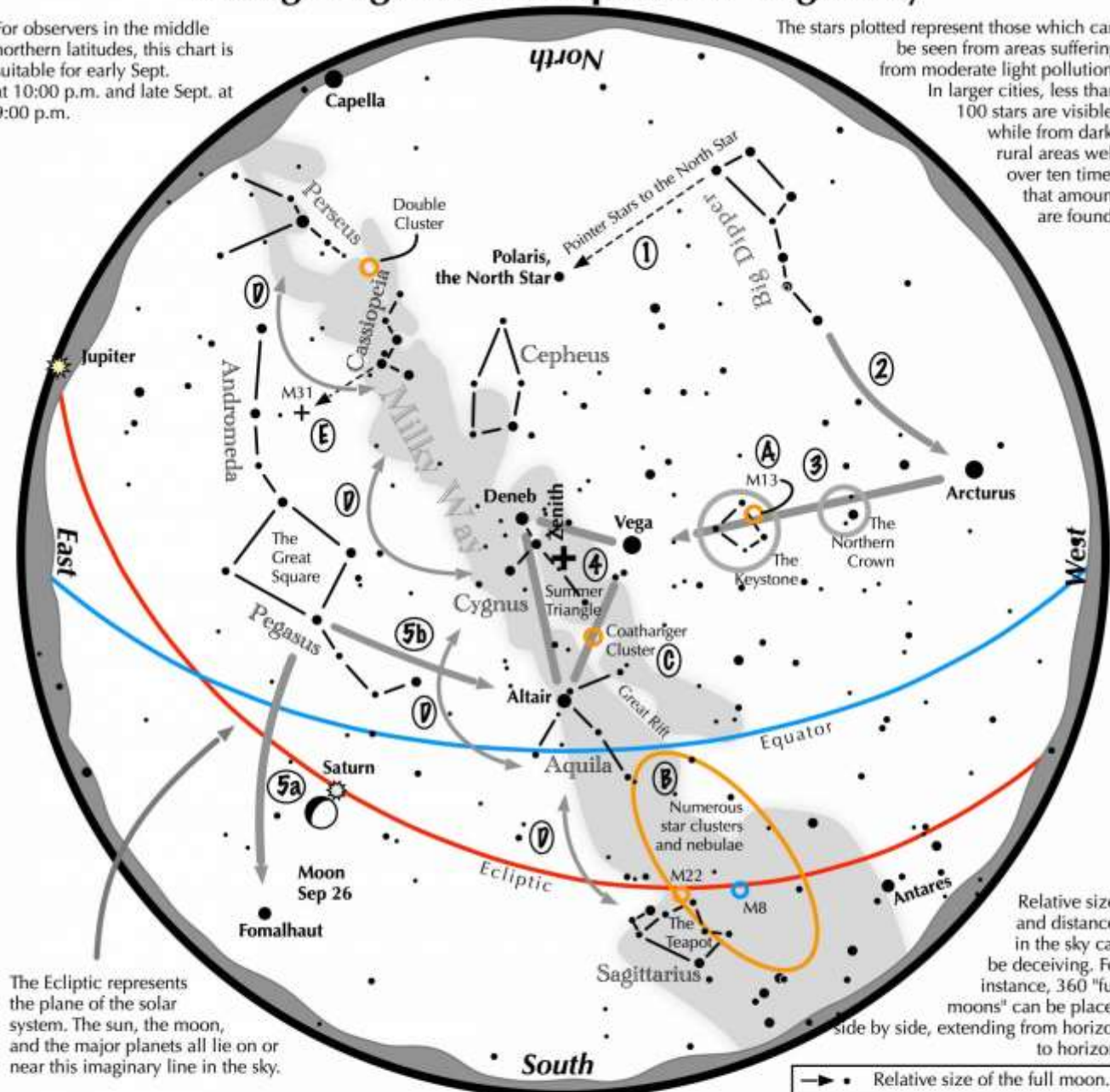
Gary Leavitt, MVAS President



Navigating the mid September Night Sky

For observers in the middle northern latitudes, this chart is suitable for early Sept. at 10:00 p.m. and late Sept. at 9:00 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.



Navigating the mid September 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 September evening sky.
- 3 Nearly overhead shines a star of similar brightness as Arcturus, 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 The stars of the summer triangle, Vega, Altair, and Deneb, shine overhead.
- 5 The westernmost two stars of the Great Square, which lies high in the east, point south to Fomalhaut. The southernmost two stars point west to Altair.

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.



Centennial Observatory and Faulkner Planetarium Events



Observatory Upcoming Events

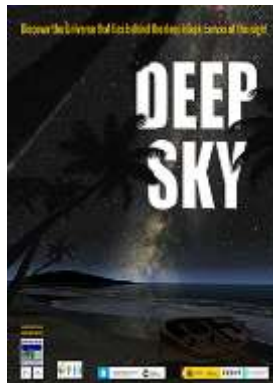
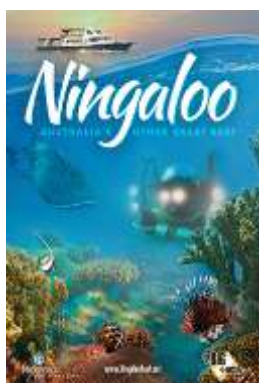
All events are weather permitting.

Event	Place	Date	Time	Admission
Venus at Greatest Illuminated Extent	Centennial Observatory	Tuesday, September 19 th , 2023	5:30 to 7:15 AM	FREE
<u>Partial Solar Eclipse</u>	Centennial Observatory	Saturday, October 14 th , 2023	9:00 AM to 12:00 PM	FREE
Monthly Free Star Party	Centennial Observatory	Saturday, October 14 th , 2023	7:45 to 9:45 PM	FREE
<u>International Observe the Moon Night</u>	Centennial Observatory	Saturday, October 21 st , 2023	7:30 to 9:30 PM	FREE
Closest Approach of Jupiter in 2023	Centennial Observatory	Wednesday, November 1 st , 2023	1:00 to 2:30 AM	FREE
Monthly Free Star Party	Centennial Observatory	Saturday, November 11 th , 2023	6:00 to 9:00 PM	FREE
Telescope Tuesday	Centennial Observatory	Tuesday, November 14 th , 2023	6:00 to 9:00 PM	\$1.50 or free with <u>Faulkner Planetarium</u> admission

Faulkner Planetarium Shows

For the full schedule and times visit!

[Now Showing!](#)



Visit the Herrett Center [Video Vault](#)

The Night Sky This Month – September 2023



The northern summer Milky Way through Sagittarius and Scutum in the southwestern sky as seen from southern Alberta, Canada. Image credit Brian Ventrudo/CosmicPursuits.com.

(Looking for last month's 'Night Sky'? [Find it at this link...](#))

The thick band of the Milky Way in Scorpius and Sagittarius has moved westward, but the lengthening nights keep it accessible to stargazers until the end of September before it sets for the year. In the east, the relatively star-poor constellations of Pegasus, Capricornus, and Piscis Austrinus are moving into view along with hundreds of galaxies accessible with a small telescope. The latter constellation's lone bright star, Fomalhaut, shines alone in the southern sky for much of the night along with Saturn to the west, which is still in excellent position for observing. Also in September, Venus blazes in the eastern early-morning sky, Jupiter reaches prime observing season, and the zodiacal light emerges in the morning for observers in dark sky. Here's what to see in the night sky this month...

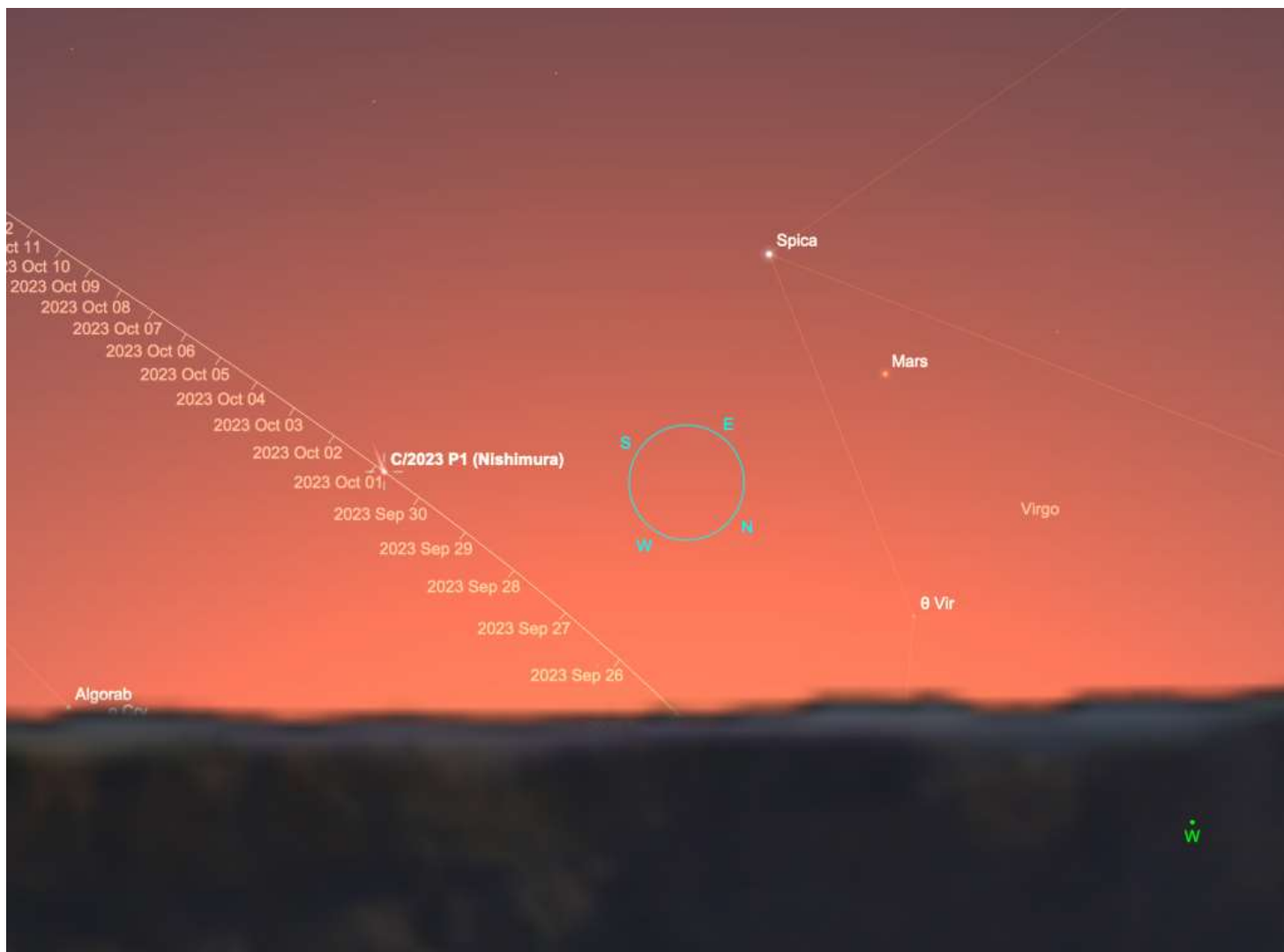
Comet C/2023 P1 Nishimura

In August 2023, the Japanese amateur astronomer and comet hunter Hideo Nishimura captured an image of a new comet now called Comet C/2023 (P1) Nishimura. The comet was a relatively bright 11th magnitude at the time of discovery in Gemini. It was a happy bit of luck for Nishimura since most comets are now captured by automated telescopes at professional observatories. The comet is brightening quickly and may reach naked-eye visibility by the middle of September. It will lie in the morning twilight for northern hemisphere observers, so a pair of binoculars or a wide-field telescope will help you spot the comet more easily. The image below shows the path of the comet through the month as seen from the northern hemisphere. It appears in the east-northeastern morning sky at morning twilight.



The path of Comet C/2023 P1 Nishimura through the middle of September 2023 as seen in the eastern early-morning sky from the northern hemisphere.

Southern-hemisphere observers get their best chance to see the comet at month's end. The image below shows where to find it in the bright evening twilight in the western sky (the cyan circle in the image shows a 2° field of view).

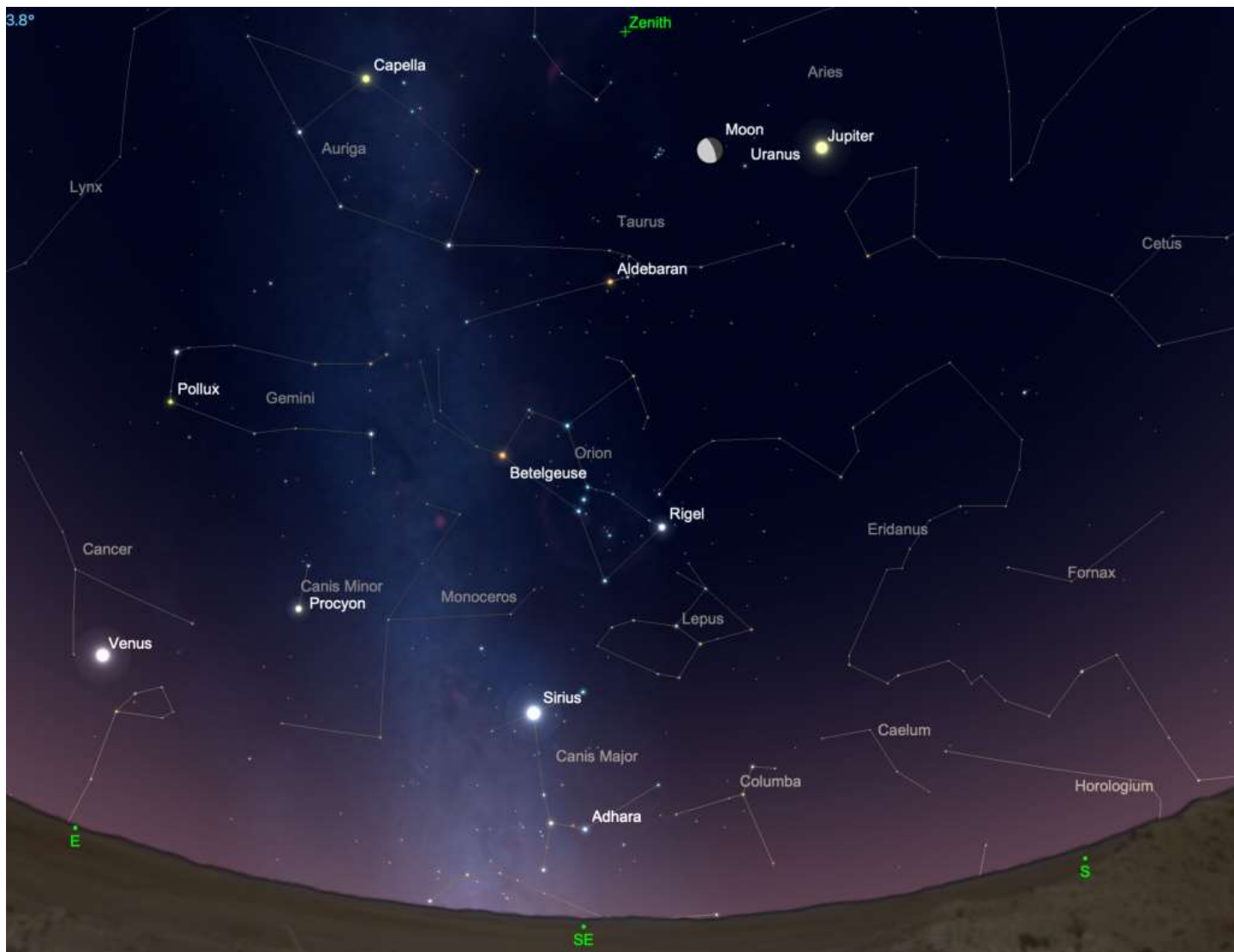


The path of Comet C/2023 P1 Nishimura at the end of September 2023 as seen in the western early-evening sky from the southern hemisphere. The cyan circle shows a 2 degree field of view.

Comet Nishimura is on a hyperbolic orbit on its way the inner solar system and – if it survives its encounter with the Sun – will head out to interstellar space. It won't be back this way again. Read more background on the Comet Nishimura [at this link](#).

Sky Events in September 2023

4 September 2023. The waning gibbous Moon and Jupiter rise together in the east in the late evening about 7° apart from each other. Jupiter, now shining at magnitude -2.6, begins retrograde motion today. It's now well-placed for observation from now through the end of the year in the constellation Aries about 15° north of the ecliptic, its most northerly position in eight years and ideal for observing with binoculars or a telescope.



The Moon, Jupiter, Venus, and bright stars on the early morning of Sept. 5, 2023.

5 Sept. The Pleiades star cluster leads the Moon by about 5° in the early-morning sky. All this month, make an effort to rise early before twilight and gaze at the bright stars of Taurus, Orion, Gemini, and Canis Major along with the bright planets Venus and Jupiter. It's an impressive display.

6 Sept. Last Quarter Moon, 22:21 UT

6-20 Sept. The arc of the Milky Way splits the sky in half in the mid-evening hours making for a great photo opportunity or for old-fashioned visual observing in dark sky as the Moon gets out of the way for the next couple of weeks. The plane of the galaxy appears to thrust at a right angle from the southwestern horizon in Sagittarius, passes overhead through the constellations Scutum and Cygnus, then arcs again down to the northeastern horizon into the rising constellation Auriga.

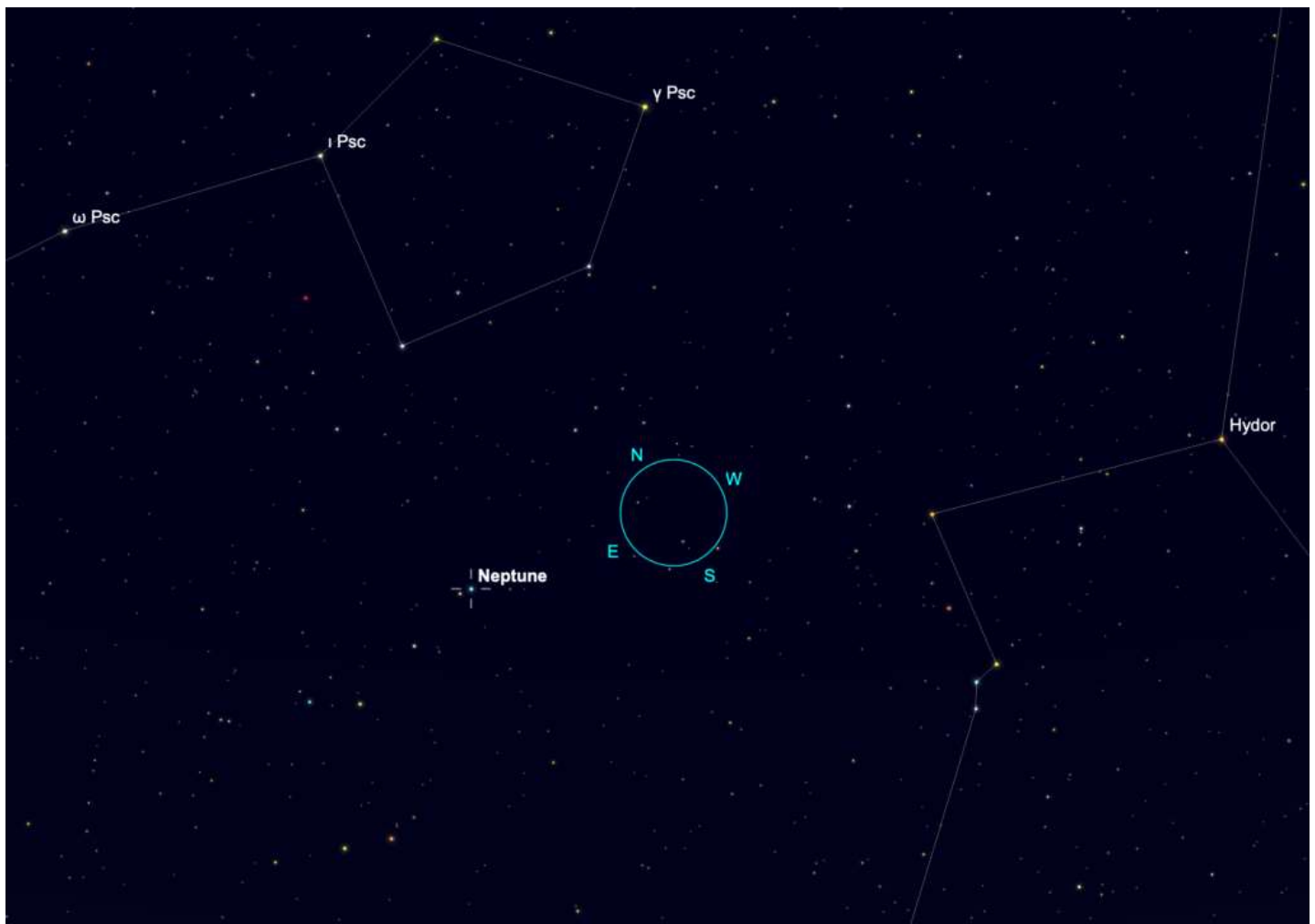


The Moon near Messier 44 on the early morning of Sept. 11, 2023. The predicted position of Comet C/2023 P1 (Nishimura) is also shown here in Leo, though it may not be as prominent as indicated.

11 Sept. Look eastward before dawn to see the waning crescent Moon and the Beehive cluster (Messier 44) about 3.5° apart. A lovely sight, for sure, but Venus steals the show here as it shines at magnitude -4.7 to the south. The planet is quickly moving away from Earth now and over the course of September its apparent diameter shrinks from $49''$ to $32''$. However, its elongation from the Sun increases from 28° to 44° during the month.

12 Sept. Over the next couple of weeks, northern-hemisphere observers who have very dark sky can see the zodiacal light in the east about 90-120 minutes before sunrise in the northern hemisphere. This whitish glowing wedge of light appears to thrust upward from the horizon. The zodiacal light, sometimes called the “False Dawn”, is simply sunlight reflected off tiny dust particles in the inner solar system.

15 Sept. New Moon, 01:40 UT



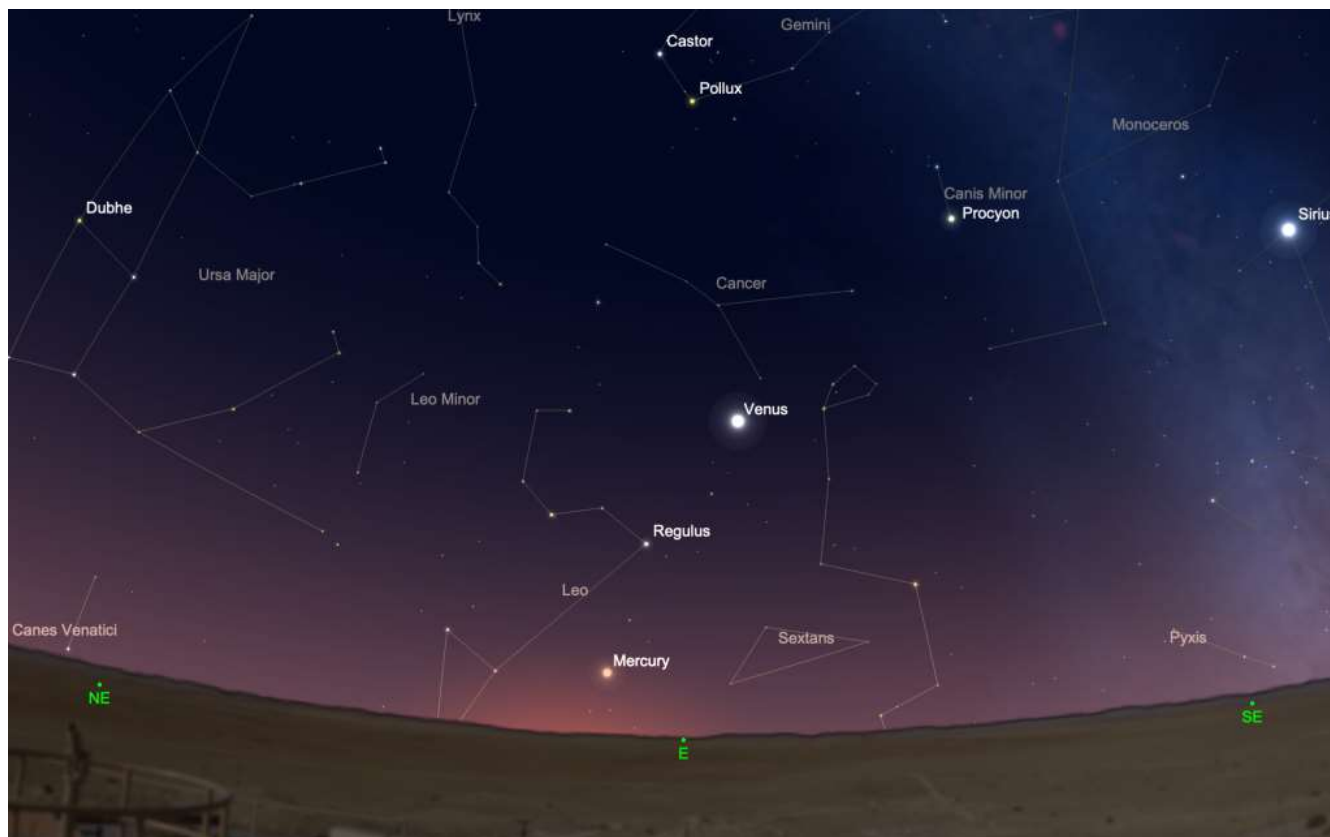
Neptune at opposition. The planet lies in Pisces near the 6th-magnitude star 20 Psc. The cyan circle indicates a 2 degree field of view.

19 Sept. Neptune reaches opposition in the constellation Pisces near the 5.5 magnitude star 20 Piscium. The planet itself, which lies today at a distance of 4.3 billion kilometers, shines at magnitude 7.8 and spans a diameter of just 2.4". You can spot the planet in binoculars, but you need a telescope at about 150x or more to reveal its pale blue-green disk.

19 Sept. Venus reaches its greatest illuminated extent today and shines as the "Morning Star" at magnitude -4.8, as bright as it ever gets, and bright enough to cast a shadow in dark locations.

20 Sept. Look to the southwest to see the crescent Moon just a degree or two (depending on your location) from brilliant Antares in Scorpius.

22 Sept. First Quarter Moon, 19:32 UT



Mercury and Venus as seen looking eastward on the morning of Sept. 22, 2023.

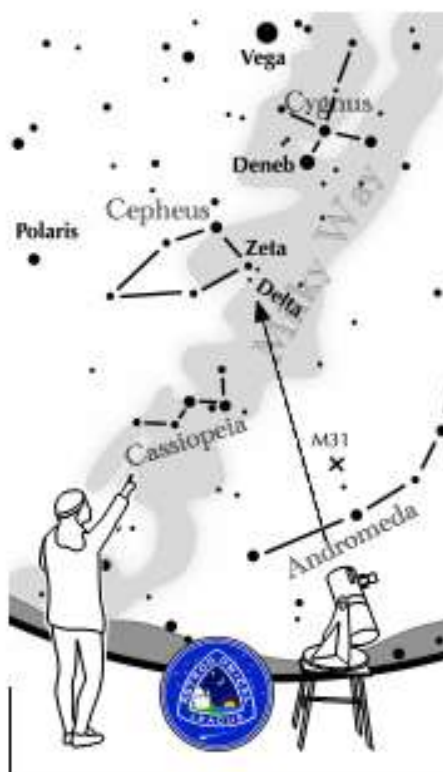
22 Sept. Northern-hemisphere observers enjoy the best morning apparition of Mercury in 2023. Look for the speedy little planet in the east at dawn in the constellation Leo. Today the planet marks its greatest western elongation about 18° from the Sun and well above the eastern horizon. The planet shines at a bright magnitude -0.3 today and brightens to magnitude -1.0 in the next few days.

23 Sept. The September equinox arrives at 6:50 Universal Time as the Sun crosses the celestial equator moving southward. This marks the first day of autumn in the northern hemisphere and the first day of spring in the southern hemisphere.

29 Sept. Full Moon, 09:58 UT

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ASTRONOMICAL LEAGUE Double Star Activity



Other Suns: Delta Cephei

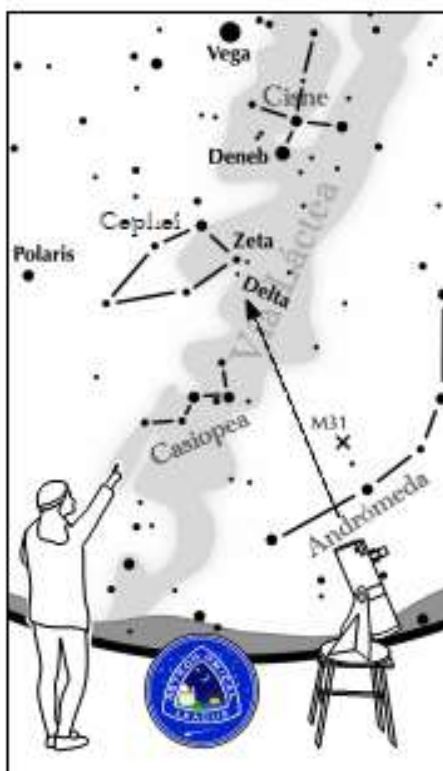
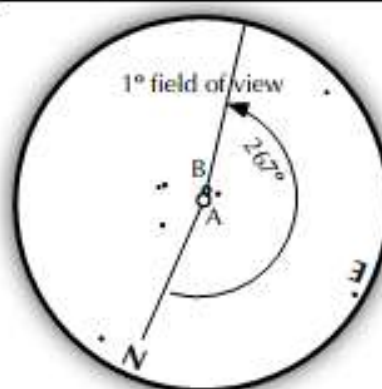
How to find Delta Cephei on a September evening

Face northeast and find bright Deneb, the northernmost star of Cygnus. It is nearly overhead. Between Deneb and the "W" shaped Cassiopeia lies the house-shaped constellation Cepheus. Find Zeta, the lower left star of the "house." Dimmer Delta shines just below it.

Suggested magnification: >20x
Suggested aperture: >2 inches

Beta Capricorni

A-B separation: 41 sec
A magnitude: 4.2
B magnitude: 6.1
Position Angle: 191°
A & B colors:
yellow, blue



Otros Soles: Delta Cephei

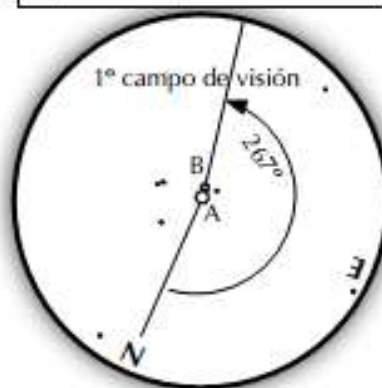
Cómo encontrar Delta Cephei en una tarde de Septiembre

Mire hacia el noreste y encuentre a la brillante Deneb, la estrella más al norte de Cisne. Está casi arriba. Entre Deneb y Casiopea en forma de "W" se encuentra la constelación de Cefeo en forma de casa. Encuentra a Zeta, la estrella inferior izquierda de la "casa". La Delta con brillo débil, esta justo debajo de ella.

Ampliación sugerida: >20x,
Apertura sugerida: >50 mm

Delta Cephei

A-B separación: 41 sec
A magnitud: 4.2
B magnitud: 6.1
PA: 191°
A & B color:
amarilla, azul



September Skies

Dick Cookman

Highlights: Comet Journal, Martian Landers, Meteor Showers, Planet Plotting, September Moon

Focus Constellations: Ursa Major, Ursa Minor, Draco, Cepheus, Cassiopeia, Camelopardalis, Perseus, Andromeda, Pegasus, Cygnus, Aquila, Lyra, Hercules, Corona Borealis, Bootes

Comet Journals

Comets C/2023 P1 (Nishimura) is at magnitude 6 and could possibly reach naked eye visibility at magnitude 4 or even brighter. It will be best viewed before dawn in the first week of September between Cancer and Leo. It will move through Leo in the 2nd week and Virgo in late September before dropping into southern hemisphere skies. It is a Oort Belt comet and will be closest to Earth on September 12 when it will pass through perihelion on September 18. Comet 103P/Hartley 2 is in Perseus and will be closest to Earth on September 26 and will reach perihelion on October 12. It will pass into and through Auriga in September, Gemini and Cancer in October, then circle through southern hemisphere skies as it leaves the inner solar system and travels beyond Jupiter.

Mars Landers

The Mars rovers have been gathering evidence about Mars for more than a quarter century. Scientists on Earth are flooded with data gathered over that time. They have surveyed the information that appears to be most important but are far from comprehensive examination of the tremendous amount of data gathered. It will require decades for the current number of scientists to dig through this data and more is coming in daily. We need a whole lot more scientists, a situation not restricted to planetary science! Curiosity collected evidence of preserved ancient mud cracks on June 20, 2021. Analysis was finally made and the conclusion that the surface of Gale Crater on Mars underwent high frequency wet-dry cycling was published in August of this year in Nature. Data collected by the Insight lander during its 4 year mission was examined and the conclusion that the rotation rate of Mars is slowly speeding up in its rotation rate, possibly due to climatic changes which redistribute H₂O globally. The story goes on, we will be mining Mars data for years, deducing its geologic history, life potential, and hints about Earth's future.

Meteor Showers

September hosts the moderate Alpha Aurigid meteor shower and the minor Delta Aurigids and Piscids (9/20). Neither one is very favorable due to lunar glare or relatively scarce meteors.

September 29, 4AM: Delta Aurigids. Active September 18 – October 10. Radiant 04h00m +47°. ZHR 6. 64 km/sec. Unfavorable – Full Moon glare. Progenitor: Comet Keiss.

Planet Plotting's

Mercury (4.9 to -0.9) in Leo, Venus (-4.3 to -4.4) in Cancer and Leo, and Uranus (+5.8) and Jupiter (-2.5 to -2.6) in Aries are morning planets. In mid-September, after its inferior conjunction with the Sun on the 6th, Mercury appears right above the eastern horizon below Regulus in Leo before sunrise. During the next week it moves higher in the sky until reaching greatest western elongation from the Sun (17.9°) on the 22nd, when Mercury presents its best morning apparition of 2023 slightly less than 18 hours before the Autumn Equinox at 2:50AM EDT on the 23rd, Venus shines brightly before dawn above Regulus throughout the month. It is brightest at -4.8 on the 9th. Uranus and Jupiter rise in Aries about 10PM EDT and are best viewed when they are high in the southern sky before dawn. Neptune rises at sunset and sets at sunrise on the 19th when it reaches Opposition with the Sun Saturn is low in the eastern sky after sunset and is best viewed when it is high in the southern sky around midnight. It was brightest when at Opposition on August 27, and presents its most stunning apparition in early September. Mars is hard to find low in the western sky in the early evening and rapidly drops into the glow of sunset.

A waning gibbous Moon appears to pass Neptune on the 1st, Jupiter on the 4th, and Uranus on the 5th. The waning crescent passes Venus on the 11th and Mercury on the 13. The waxing Crescent passes Mars on the 16th, then the waxing gibbous Moon passes Saturn on the 26th and Neptune on the 28th.

Planet	Constellation(s)	Magnitude	Planet Passages	Time	Date
Sun	Leo, Virgo	-26.5	New Moon	9:40PM EDT	9/14
Mercury	Leo	4.9	Inferior Conjunction	7:00AM EDT	9/6
Mercury	Leo	-0.3	Max. West Elongation	9:00AM EDT	9/22
Venus	Cancer, Leo	-4.3 to -4.8 to -4.4			
Mars	Leo, Virgo	1.8 to 1.7			
Jupiter	Aries	-2.5 to -2.6			
Saturn	Aquarius	+0.4 to +0.6			
Uranus	Aries	5.7			
Neptune	Pisces	7.8	Opposition	7:00AM EDT	9/19

September Moon

September's New Moon is at the boundary of Leo and Virgo on the 14th at 9:40PM EDT. The New Moon marks the start of Lunation 1246 which ends 29.58 days later with the New Moon of October in Aquarius on the 14th at 1:55PM EDT. The Full Moon in September is a "Supermoon" which occurs 32 hours 59 minutes after lunar perigee (when the Moon is closest to Earth in its orbit and appears unusually large). The Full Moon on the 29th occurs at 5:58AM in Pisces. It is called the Fruit Moon. It occurs nearer to the Sept. 23rd Autumnal Equinox than its October successor, so it is defined as the "Harvest Moon". It was called the "Barley Moon" in Medieval England and for Celts it was the "Singing Moon". In China, it is the "Chrysanthemum Moon" and Colonial Americans called it "Harvest Moon" due to the low angle the rising Moon makes with the horizon, lighting up the farmers fields for a harvesting well into the evening. Anishnaabe (Odawa and Ojibwe) first people recognize the 9th Moon of the year as "Waatebagaa-giizis" (Leaves Turning Moon). Ontario's Earth Haven Farm presents cultural teachings explaining the cycle of life and nature of September's Grandmother Moon of Creation: "The ninth moon of Creation is the Corn Moon, during which time we learn about the cycle of life. Each cob of corn has thirteen rows of multicoloured seeds which represent all the spirits waiting to begin their Earth Walk. These will be the future generations for whom we must prepare."

Lunar Apogee (max. lunar distance) is on September 12 at 11:43AM EDT. The Moon's distance is 252,457 mi. (63.70 Earth radii). Perigee is on the 27th at 8:59PM EDT. The Moon is at 223,639 mi. (56.43 Earth radii).

Planet	Constellation	Magnitude	Moon Passages	Moon Phase	Moon Age
Sun	Leo, Virgo	-26.5	9:40PM EDT, 9/14	New	0 Days
Mercury	Leo	1.9	5.4°N, 8:00PM EDT, 9/13	Waning Crescent	28.6 Days
Venus	Cancer	-4.4	11.0°N, 9:00AM EDT, 9/11	Waning Crescent	26.14 Days
Mars	Virgo	1.7	0.7°N, 3:00PM EDT, 9/16	Waxing Crescent	1.72 Days
Jupiter	Aries	-2.5	3.0°N, 4:00PM EDT, 9/4	Waning Gibbous	19.43 Days
Saturn	Aquarius	0.5	3.0°S, 9:00PM EDT, 9/26	Waxing Gibbous	11.97 Days
Uranus	Aries	5.8	3.0°N, 9:00PM EDT, 9/5	Waning Gibbous	20.64 Days
Neptune	Pisces	7.8	1.4° S, 3:00AM EDT, 9/1	Waning Gibbous	15.89 Days
Neptune	Pisces	7.8	1.4° S, 1:00PM EDT, 9/28	Waxing Gibbous	13.64 Days

NASA Night Sky Notes



This article is distributed by NASA Night Sky Network

The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!

Looking Beyond the Stars

Brian Kruse

Looking up in awe at the night sky, the stars and planets pop out as bright points against a dark background. All of the stars that we see are nearby, within our own Milky Way Galaxy. And while the amount of stars visible from a dark sky location seems immense, the actual number is measurable only in the thousands. But what lies between the stars and why can't we see it? Both the Hubble telescope and the James Webb Space Telescope (Webb) have revealed that what appears as a dark background, even in our backyard telescopes, is populated with as many galaxies as there are stars in the Milky Way.

So, why is the night sky dark and not blazing with the light of all those distant galaxies? Much like looking into a dense forest where every line of sight has a tree, every direction we look in the sky has billions of stars with no vacant spots. Many philosophers and astronomers have considered this paradox. However, it has taken the name of Heinrich Wilhelm Olbers, an early 19th century German astronomer. Basically, Olbers Paradox asks why the night sky is dark if the Universe is infinitely old and static – there should be stars everywhere. The observable phenomenon of a dark sky leads us directly into the debate about the very nature of the Universe – is it eternal and static, or is it dynamic and evolving?

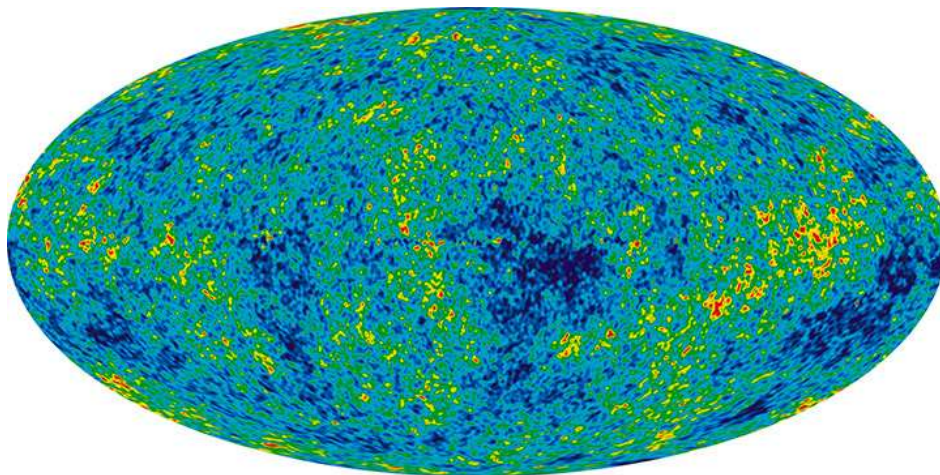
It was not until the 1960s with the discovery of the Cosmic Microwave Background that the debate was finally settled, though various lines of evidence for an evolving universe had built up over the previous half century. The equations of Einstein's General Theory of Relativity suggested a dynamic universe, not eternal and unchanging as previously thought. Edwin Hubble used the cosmic distance ladder discovered by Henrietta Swan Leavitt to show that distant galaxies are moving away from us – and the greater the distance, the faster they're moving away. Along with other evidence, this led to the recognition of an evolving Universe.

The paradox has since been resolved, now that we understand that the Universe has a finite age and size, with the speed of light having a definite value. Here's what's happening – due to the expansion of the Universe, the light from the oldest, most distant galaxies is shifted towards the longer wavelengths of the electromagnetic spectrum. So the farther an object is from us, the redder it appears. The Webb telescope is designed to detect light from distant objects in infrared light, beyond the visible spectrum. Other telescopes detect light at still longer wavelengths, where it is stretched into the radio and microwave portions of the spectrum. The farther back we look, the more things are shifted out of the visible, past the infrared, and all the way into the microwave wavelengths. If our eyes could see microwaves, we would behold a sky blazing with the light of the hot, young Universe – the Cosmic Microwave Background.

The next time you look up at the stars at night, turn your attention to the darkness between the stars, and ponder how you are seeing the result of a dynamic, evolving Universe.



NASA's James Webb Space Telescope has produced the deepest and sharpest infrared image of the distant universe to date. Known as Webb's First Deep Field, this image of galaxy cluster SMACS 0723 is overflowing with detail. This slice of the vast universe is approximately the size of a grain of sand held at arm's length by someone on the ground. (Image Credit: NASA, ESA, CSA, STScI) <https://bit.ly/webbdeep>



The oldest light in the universe, called the cosmic microwave background, as observed by the Planck space telescope is shown in the oval sky map. An artist's concept of Planck is next to the map. The cosmic microwave background was imprinted on the sky when the universe was just 380,000 years old. It shows tiny temperature fluctuations that correspond to regions of slightly different densities, representing the seeds of all future structure: the stars and galaxies of today. (Image credit: ESA and the Planck Collaboration - D. Ducros) <https://go.nasa.gov/3qC4G5q>

Phil Harrington's Cosmic Challenge

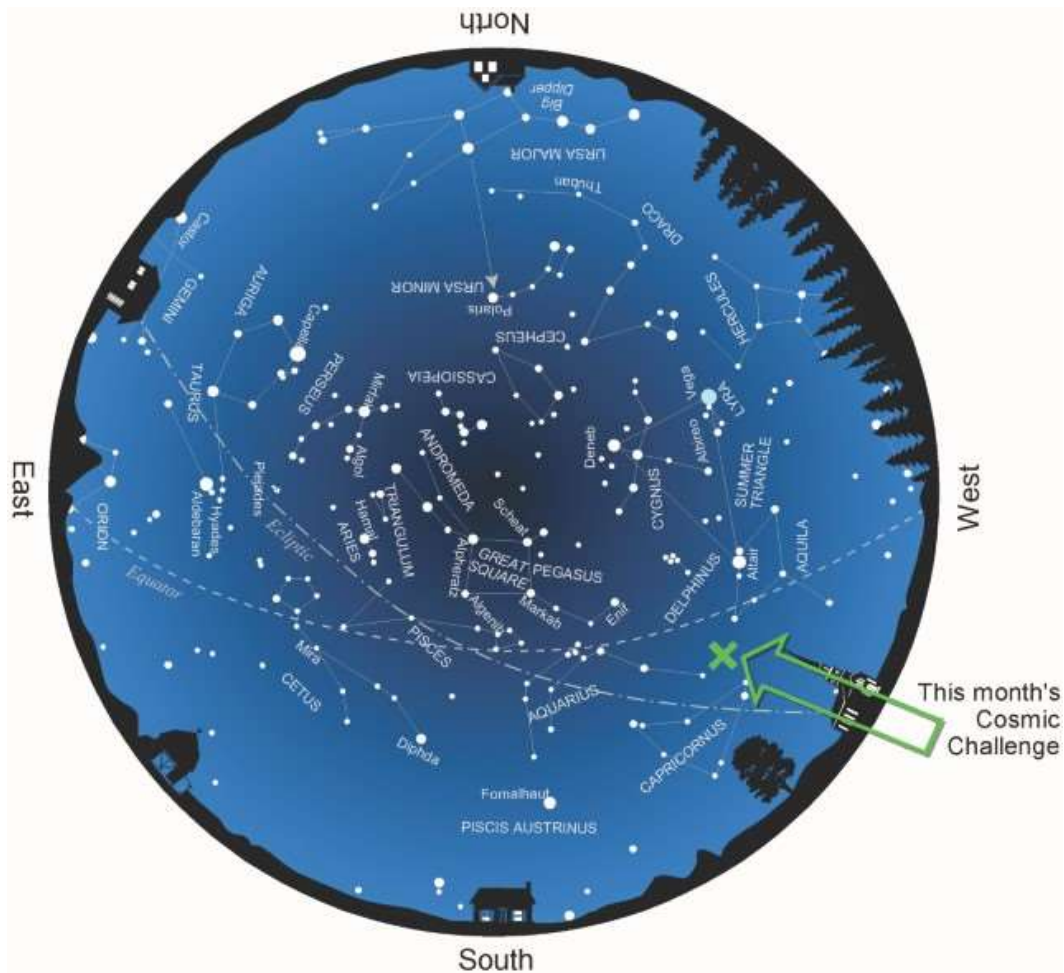
Abell 70



This month's suggested aperture range: 10-inch (25 cm) to 14-inch (36cm) telescopes
Featured telescope: Celestron C-11

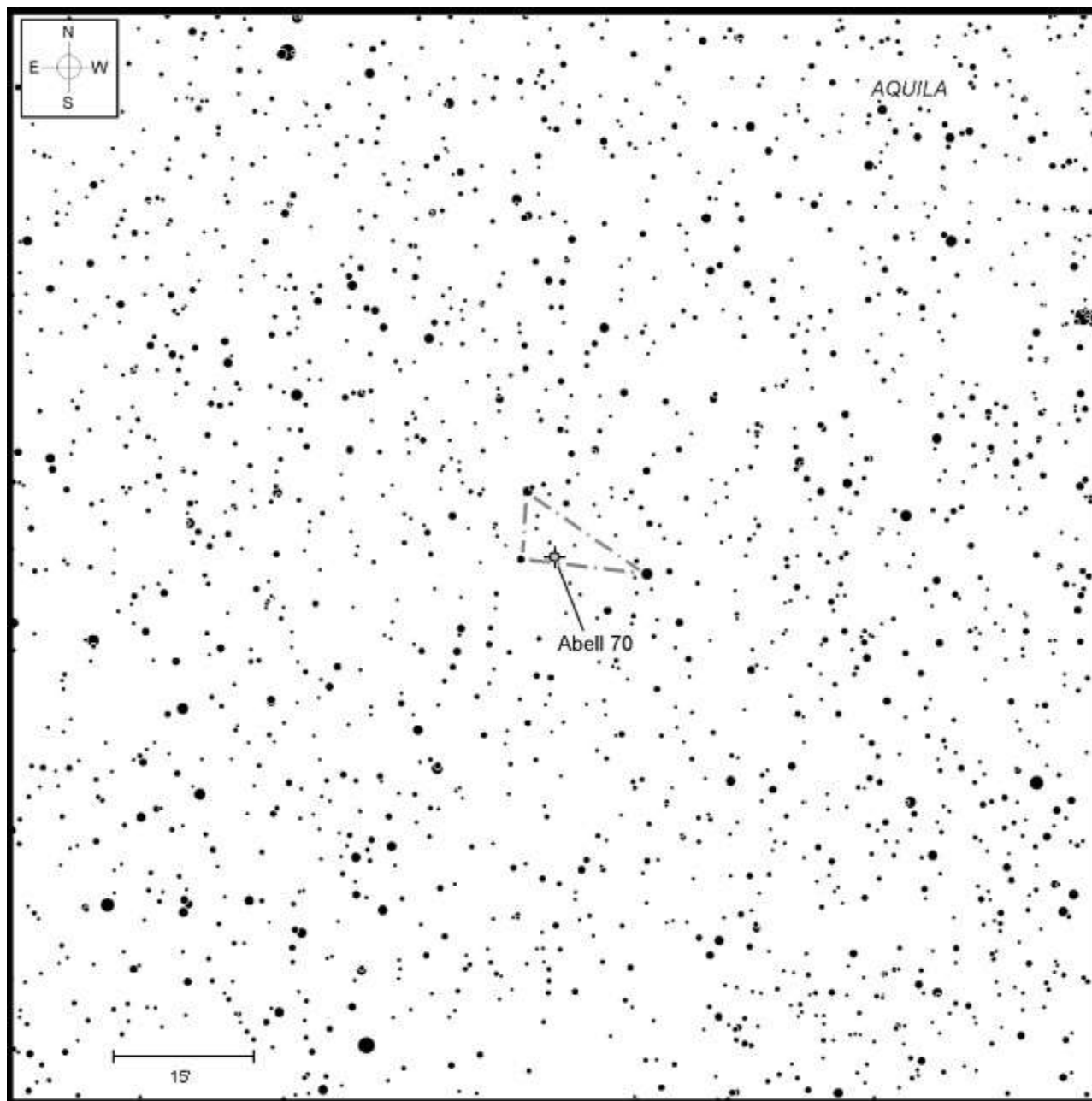
Target	Type	RA	DEC	Constellation	Magnitude	Size
Abell 70	Planetary Nebula	20h 31.6h	-07° 05.3'	Aquila	14.7	42"

Of the more than 80 planetaries listed by George Abell in his 1966 paper "[Properties of Some Old Planetary Nebulae](#)," **Abell 70** (also known as **PK38.1-25.4**) is one of the most unique. Actually, the planetary itself is a stereotypical example of a ring nebula, like M57, with a round shell of gas expanding away from the dim progenitor star. But look carefully and there is clearly more here than just that. Photographs show that the ring has a brightening along its northern edge. The allusion to an engagement ring is unmistakable, but that's no diamond. Instead, that odd brighter segment proves to be a distant lens-shaped galaxy that just happens to lie along the same line of sight. Can you spot both through your telescope?



Above: Evening star map showing the location of this month's Cosmic Challenge.

Credit: Map adapted from [Star Watch](#) by Phil Harrington

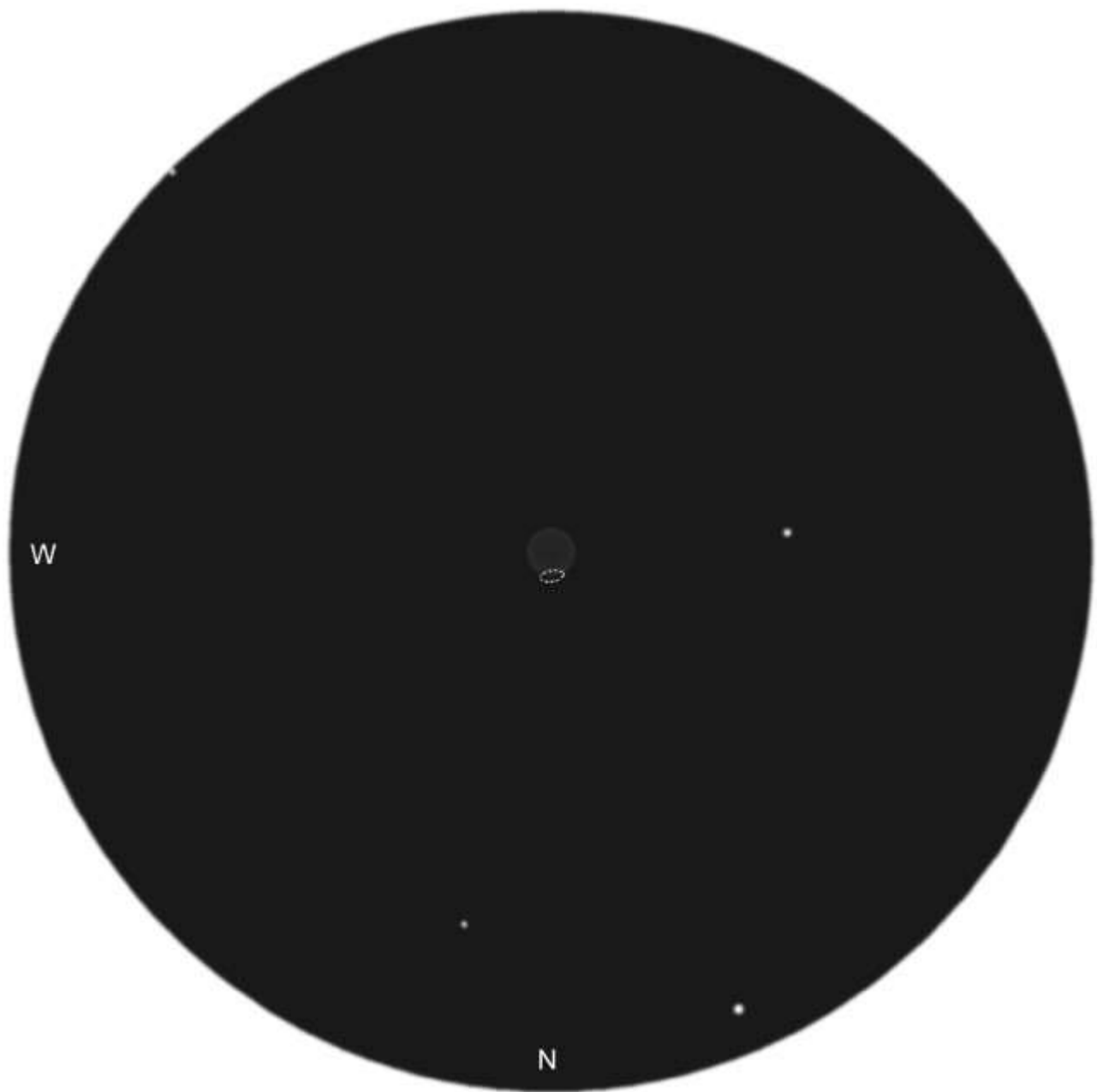


Above: Finder chart for this month's [Cosmic Challenge](#).

Credit: Chart adapted from [Cosmic Challenge](#) by Phil Harrington
 Click on the chart to open a printable PDF version in a new window

If you will be star-hopping, zeroing in on this unlikely odd couple will take some effort, since they lie in the dark, southeastern corner of Aquila. Here's one approach. Begin at the wide double star Alpha (α) Capricorni in neighboring Capricornus and scan about 3° to the northeast. Use chart 6.11 to spot Abell 70 lying to the southeast of the halfway point between two 10th-magnitude stars and just $3'$ west of an 11th-magnitude sun.

Even though it shines at only magnitude 14.7, Abell 70 is large enough that high magnification is not absolute necessary to identify its disk from among the neighboring stars. To resolve its distinctive annular shape, however, will take a slow, careful examination using averted vision and probably no less than 350x. An O-III filter will also help to accentuate its subtle annularity.



Above: Abell 70 as portrayed through the author's 10-inch (25cm) telescope. The superimposed galaxy went unseen, but its location is shown as a dotted oval.



Above: This image by Adam Block was taken using an SBIG STX16803 CCD Camera and Astrodon Gen II filter on the 32-inch (81-cm) Schulman Telescope at [Mount Lemmon SkyCenter/University of Arizona](#).
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Remove the filter to try and catch a glimpse of its galactic companion, cataloged as **PMN (Parkes-MIT-NRAO) J2033-0656**, behind the ring's northern edge. But don't be surprised if it evades detection. It did through my 10-inch (25cm), which is why it is shown only as a dotted oval in rendering above. Spotting the interloper's dim presence, rated at 16th magnitude, taxes even my 18-inch (45.7cm) reflector under 6th-magnitude skies. Undoubtedly, darker conditions would have made my quest a little easier. But even though the galaxy may come clean, even the darkest, most transparent skies probably will not help to show the planetary's central star that started it all. It shines at only 19th magnitude. A 2011 study entitled [A barium central star binary in the Type I diamond ring planetary nebula Abell 70](#) shows that the central star is actually a binary system, with a hot white dwarf and an unusual G-type subgiant "barium" star. Abell 70's distance is not well established. Current estimates place it between 13,500-17,500 light years away, but it's getting closer. It is approaching our solar system at a rate of 176,400 miles per hour (283, 900 kilometers per hour). Of course, by the time it gets anywhere this neck of the galaxy, it will have long since dissipated. Right now, the nebula is expanding at a rate of 85,000 miles per hour (38 km per second).

Have a favorite challenge object of your own? I'd love to hear about it, as well as how you did with this month's challenge. Contact me through my [website](#) or post to this month's discussion forum. Until next month, remember that half of the fun is the thrill of the chase. Game on!

About the Author: Phil Harrington writes the monthly [Binocular Universe](#) column in [Astronomy](#) magazine and is the author of 9 books on astronomy. Visit his web site at www.philharrington.net to learn more.



Magic Valley Astronomical Society
550 Sparks St.
Twin Falls, ID

The Magic Valley Astronomical Society (MVAS) was founded in 1976. The Society is a non-profit [501(c) 3] educational and scientific organization dedicated to bringing together people with an interest in astronomy.

In partnership with the Centennial Observatory, Herrett Center, College of Southern Idaho - Twin Falls; we hold regularly scheduled monthly meetings and observation sessions, at which we share information on current astronomical events, tools and techniques for observation, astrophotography, astronomical computer software, and other topics concerning general astronomy. Members enthusiastically share their telescopes and knowledge of the night sky with all who are interested. In addition to our monthly public star parties we hold members only star parties at various locations throughout the Magic Valley.

MVAS promotes the education of astronomy and the exploration of the night sky along with safe solar observing through our public outreach programs. We provide two types of outreach; public star parties and events open to anyone interested in astronomy, and outreach programs for individual groups and organizations (e.g. schools, churches, scout troops, company events, etc.), setting up at your location. All of our outreach programs are provided by MVAS volunteers at no cost. However, MVAS will gladly accept donations. Donations enable us to continue and improve our public outreach programs.

Membership is not just about personal benefits. Your membership dues support the work that the Magic Valley Astronomical Society does in the community to promote the enjoyment and science of astronomy. Speakers, public star parties, classes and support for astronomy in schoolrooms, and outreach programs just to name a few of the programs that your membership dues support.

Annual Membership dues will be:

\$20.00 for individuals, families, and \$10.00 for students.

Contact Treasurer Jim Tubbs for dues information via e-mail: jtubbs015@msn.com

Donations to our club are always welcome and are even tax deductible. Please contact a board member for details.

Lending Telescopes: The society currently has three telescopes for loan and would gladly accept others please contact President Robert Mayer, for more information on these and other benefits.



Telescopes are an individual thing and not practical for public use. However, everyone should have the experience of a good look at the moon for at least 5 minutes in their life time. It is a dimension and feeling that is unexplainable. Pictures or TV can't give this feeling, awareness, or experience of true dimension. A person will not forget seeing our closest neighbor, the moon.

Norman Herrett in a letter to Dr. J. L. Taylor, president of the College