Volume 46.11 November 2026

Desert Sky Observer

Antelope Valley Astronomy Club



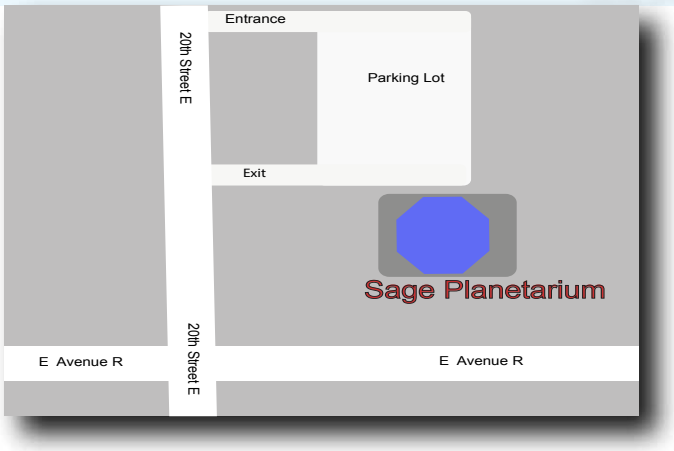
Upcoming Events

Nov. 8: DSSP @ TBD
Nov. 13: Club Meeting
Nov. 14: Moonwalk @ PDW 5:30 PM
Nov. 14: Lunar Club @ PDW 5:30 PM

AVAC Calendar

Every clear night: Personal Star Party

Dec. 5: Club Christmas Party @ Greenhouse Cafe 5:30 PM
Dec. 5: Moonwalk @ PDW 530PM
No Telescopes / Festival of lights



Board Members

President: Christian Amaya (661) 972-0091
president@avastronomyclub.org

Vice-President: Jim Pendleton (661) 331-1768
vice-president@avastronomyclub.org

Secretary: Rose Moore (661) 972-1953
secretary@avastronomyclub.org

Treasurer: Rod Girard (661) 803-7838
treasurer@avastronomyclub.org

Director of Community Development: Vacant
community@avastronomyclub.org

Appointed Positions

Lunar Club:
Matt Leone (661) 713-1894

Equipment & Library: vacant
library@avastronomyclub.org

Club Historian: vacant
history@avastronomyclub.org

Webmaster: Steve Trotta (661) 269-5428
webmaster@avastronomyclub.org

Night Sky Coordinator:
Rose Moore (661) 972-1953

Newsletter Editor: Rod Girard (661) 803-7838
dso@avastronomyclub.org

Astronomical League Coordinator:
Vacant
al@avastronomyclub.org

Monthly Meetings

Monthly meetings are held at the **S.A.G.E. Planetarium** in Palmdale, the second Friday of each month except December. The meeting location is at the northeast corner of Avenue R and 20th Street East. Meetings start at 7 p.m. and are open to the public. Please note that food and drink are not allowed in the planetarium.

Membership

Membership in the Antelope Valley Astronomy Club is open to any individual or family.

The Club has three categories of membership.

- Family membership at $30.00 per year.
- Individual membership at $25.00 per year.
- Junior membership at $15.00 per year.

Membership entitles you to ...

- The Desert Sky Observer -- monthly newsletter
- The AVAC Membership Manual.
- To borrow club equipment, books, videos, and other items.

AVAC
PO Box 8545
Lancaster, CA 93539-8545

Visit the Antelope Valley Astronomy Club website at www.avastronomyclub.org/
www.instagram.com/av_astronomyclub

www.avastronomyclub.org

The Antelope Valley Astronomy Club, Inc. is a 26 USC §501(c)(3) California Non-Profit Corporation.

President's Message

As far back as I can remember, I've always had an interest in space. I remember in third grade wanting to be an astronaut, and in high school, I considered astronomy as a college major. However, life led me down a different career path.

Fast forward to 2021: my kids were older, and I finally had free time to pursue whatever I wanted. When trying to pick up a hobby, the very first things that came to mind were astronomy and recreational soccer. And sure enough, both turned out to be things I truly enjoy.

Like most people trying to learn a new subject, the first thing I did was Google how to get started in amateur astronomy. Among many suggestions, Google recommended getting an astronomy book. I grabbed a 1980 book from the Palmdale library, and inside, one of the key recommendations was to join an astronomy club. A quick search for "astronomy club near me" led me straight to the Antelope Valley Astronomy Club.

Ever since, my love and interest in the night sky have only continued to grow. Thanks to so many members of this club, I've learned an incredible amount—from the types of telescopes and eyepieces to buy and where to find good prices on quality equipment, to great dark sky locations. Most importantly, I've learned the value of community outreach events to share the wonders of the universe with others.

So here we are, five years later. After the passing of our longest-running president and friend—R.I.P., Phil—I felt the best way to give back to the club was to step into the president's position.

One of my main goals as president for 2027 is to keep our wonderful club traditions going strong, especially our community outreach events and dark sky star parties. Additionally, my goal is to host more events to help the club grow with passionate new members who will keep this organization thriving until the Andromeda and Milky Way galaxies collide! **:)**

Keep Looking Up!
Christian Amaya



An Added Thought

"Remember to look up at the stars and not down at your feet. Try to make sense of what you see and wonder about what makes the universe exist. Be curious. And however difficult life may seem, there is always something you can do and succeed at. It matters that you don't just give up."

Stephen Hawking

From the Secretary

By Rose Moore

Thank you to all the members who attended our business meeting in October. We had a great turnout! Our club Christmas Party will be upon us soon! If you would like to attend please let me know as soon as possible.

Rod and I will be going to the Greenhouse Cafe about one weeks before our party to let them know our buffet choices. Our Christmas Party is on Saturday December 5th, starting at 5:30pm, at the Greenhouse Cafe, Lancaster. Cost is $25 per person, $15 per kids 12 and under. The PayPal link is on our website (https://www.avastronomyclub.org/christmas) Or you may pay Rod at our next meeting November 13th. Additional emails will be going out with the information and menus prior to the next meeting.

We will have a grand prize (SeeStar S30Pro) at the Christmas Party, and will have a raffle for other items. If you would like to donate an item, please bring it to the party, wrapped or in a holiday bag, to put under the tree. The gift does not have to be astronomy related, and it can be a gently used item.

There may be a dark sky star party on Saturday November 8th, weather permitting. More info will be available as we get closer to the date.

We have a club meeting on Friday November 13th at 7pm. We do not have a speaker for the meeting, but will see what Jeremy can do for a presentation. Please attend!

There will be a Prime Desert Moon Walk on Saturday November 14th, starting at 5:30pm. We will need members with telescopes for the event!

We have a school event with Jeremy at the Manzanita Elementary School in Palmdale on Thursday, November 19th, starting at 5:30pm. Weather permitting. We will need members with telescopes for the event. Further info to follow!

I hope to see you all at the party!

Rose

Rose's Local Events and Other Happenings...

Nightfall 2026 at Borrego Springs, November 6-8th: https://nightfallstarparty.com/

Griffith Observatory in Los Angeles: Griffith has events and daily programs: https://griffithobservatory.lacity.gov/

Mt. Wilson Observatory: has numerous tours, concerts, lectures, and public nights. For those who don't get their emails/newsletters: https://www.mtwilson.edu/

Food for Thought

"For every one billion particles of antimatter there were one billion and one particles of matter. And when the mutual annihilation was complete, one billionth remained - and that's our present universe."

Albert Einstein



NGC 7635 The Bubble Nebula

Discovered by William Herschel in 1781, the Bubble Nebula, NGC 7635, in Cassiopeia, is an uniquely beautiful object which almost appears to be unnatural at first glance. Residing approximately 7,100 light-years from Earth, the Bubble Nebula is quite large, measuring about 7 light-years across. In perspective this is nearly one and a half times the distance from our Sun to its nearest stellar neighbor, Alpha Centauri.
The Bubble Nebula was formed by the incredibly fierce stellar winds of an extremely hot, blue giant, Wolf-Rayet star, 45 times more massive and, due to its high temperature, thousands of times more luminosity than the Sun. Moving at over 4 million MPH, these stellar winds have swept up interstellar molecular gas and dust like a snowplow, pushing outward to form the outer edge of the bubble. Because it has slammed into dense regions of cold gas the bubble has become asymmetrical in shape with its star dramatically off centerer, located at the 10 o'clock position in the above Hubble image.
Dense pillars of cool hydrogen gas laced with dust appear at the upper left of the picture, and more "fingers" can be seen nearly face-on, behind the translucent bubble. The gases heated to varying temperatures emit different colors: oxygen is hot enough to emit blue light in the bubble near the star, while the cooler pillars are yellow from the combined light of hydrogen and nitrogen.

What is a Wolf-Rayet star?



Discovered in 1867 by two astronomers, Charles Wolf and Georges Rayet of the Paris Observatory, Wolf-Rayet stars are massive stars typically 20 to 50 times more massive than our Sun. What made these stars unique, were the unusual pattern in the wavelengths of their light spectrum, indicating emission lines or bands of light from ionized helium . Most stars only display absorption lines in their spectra as a result of overlying elements absorbing light energy at specific wavelengths. Later astronomer's discovered that Wolf-Rayet stars lose their outer hydrogen layers late in their evolution, exposing elements heavier than hydrogen that are produced in the star's core. These elements include helium, carbon, oxygen and nitrogen.
The lose of the outer hydrogen layers was caused by the star's extraordinary hot surface temperatures of up to 90,000 degrees Fahrenheit, (50,000 degrees Celsius), creating extremely powerful stellar winds which carry mass off the star's surface at speeds up to 4.5 million MPH. Wolf-Rayet stars typically only last less than a million years. Due to their immense masses, these stellar giants end as supernovae, forming neutron stars or black holes.

Editor's note: The above articles are a compilation of numerous on-line articles and are not an original composition.

Space News

News from around the Net

Winter observing targets for small telescopes

From the Crab Nebula to the Orion Nebula, these 10 winter deep-sky objects are easy to find and perfect targets for small telescopes.
Our first object is the Crab Nebula in Taurus. It's one of the sky's most famous objects, and a nice small telescope target. Although the word "nebula" is part of this object's name, astronomers classify M1 as a supernova remnant.
https://www.astronomy.com/observing/winter-observing-targets-for-small-telescopes/

A Distant Supercluster of Galaxies Points To Self-Interacting Dark Matter

Seven billion light-years from Earth, there is an unexpected cluster of galaxies. It has two regions in the process of colliding with each other with a combined mass of more than two quadrillion solar masses. Given its mass, the distant cluster has been nicknamed El Gordo, the Fat One. What makes it unusual is that it's extraordinarily
https://www.universetoday.com/articles/a-distant-supercluster-of-galaxies-points-to-self-interacting-dark-matter

Gemini North Reveals Pearl-Like Knots in the Remnant of a Supernova Witnessed in the Year 1181

The Gemini North telescope located on Maunakea in Hawai'i has revealed the most detailed view yet of Pa 30, the likely remnant of the historic supernova seen in the year 1181. The new observations reveal that its famous "firework" filaments are not smooth streaks, but chains of tiny knots.
https://noirlab.edu/public/news/noirlab2624/

Astronomers discover a ghostly green star unlike any known before:

Astronomers have uncovered a surprising rainbow of dead stars, including the first known star that would appear genuinely green to human eyes. Researchers found that white dwarfs can glow in unexpected shades of pink, purple, yellow, and cyan because of unusual chemical interactions in their extremely dense atmospheres. White dwarfs, the extremely dense remains of stars similar to our Sun, were long believed to follow this same pattern. In fact, they received their name because the first examples discovered were unusually hot and appeared white or pale blue. However, scientists have now found that these stellar remnants can produce a much broader spectrum of colors.
https://www.sciencedaily.com/releases/2026/10/261017230018.htm

Euclid discovers a new comet:

The discovery is impressive for a mission that is designed to take deep, steady images of distant galaxies – not for following fast-moving Solar System objects like comets. The observation was reported to the IAU's Minor Planet Center (MPC) as a new comet. This alerted ground-based astronomers who could then contribute follow-up observations. The MPC subsequently confirmed it as a comet on 8 October, and it is now identified as C/2026 S1 (Euclid).
https://www.esa.int/Science_Exploration/Space_Science/Euclid/Euclid_discovers_new_comet

Shredded star reveals a massive black hole wandering far from its galaxy's center

Astronomers have discovered a star being torn apart by a massive black hole more than 1,000 parsecs from the center of its host galaxy. The tidal disruption event, TDE 2023mfm, was first discovered by ZTF and then studied …
https://phys.org/news/2026-10-shredded-star-reveals-massive-black.html

News from around the Net

Thinks are finally looking up for NASA's first missions to Venus in a generation:

Two NASA missions are on track to launch to Venus in the early 2030s. The first, known as the Deep Atmosphere Venus Investigation of Noble gases, Chemistry, and Imaging (DAVINCI), is now scheduled for launch in December 2030, a year earlier than previously planned. DAVINCI will send a parachute-assisted descent probe through the atmosphere of Venus, returning the first direct images of the planet's surface since 1982. A second mission, Venus Emissivity, Radio science, InSAR, Topography, And Spectroscopy (VERITAS), will follow with a launch in November 2032 to map the Venusian surface by radar from orbit.
https://arstechnica.com/space/2026/10/nasas-embattled-venus-missions-are-back-on-track-after-cancellation-threat/

Webb reveals metal-rich gas around Milky Way's central black hole: The gas orbiting Sagittarius A (Sgr A*), the supermassive black hole at the center of the Milky Way galaxy, is rich in metals, researchers at McGill University's Trottier Space Institute have found. The metal enrichment probably resulted from stars that exploded and released material into the black hole's surroundings over time, they said. The team also learned this gas is similar in composition to many of the stars in the black hole's orbit, suggesting the gas and stars may have formed together.
Link: https://phys.org/news/2026-10-webb-reveals-metal-rich-gas.html

NASA's Chandra Breaks Down 'Treble Clef's' Galaxy Cluster Collision:

Astronomers have used NASA's Chandra X-ray Observatory to break down the cause of a remarkable formation of radio waves they have nicknamed the "Treble Clef" because its distinct shape strongly resembles the musical symbol.The researchers discovered the Treble Clef is likely caused by an outburst from a supermassive black hole, followed by a collision of two galaxy clusters.
Link: https://chandra.si.edu/photo/2026/trebleclef/

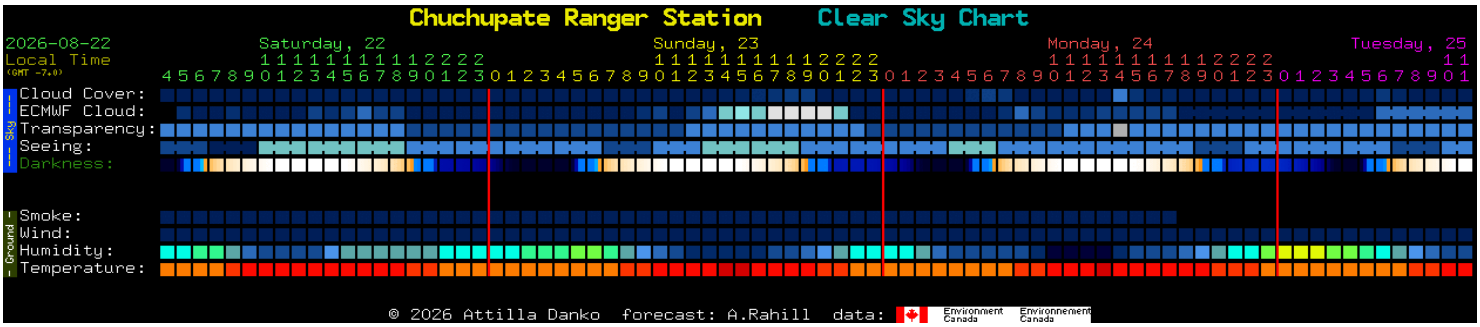
Host Stars Shape Their Planetary Systems Into Two Families

The age of exoplanet science took shape with the Kepler mission, and gained more momentum with the TESS mission. The initial goal had a simple definition: use the transit method to find planets orbiting other stars. Beyond that, scientists have worked hard and used multiple tools at their disposal to determine exoplanet compositions and other characterstics.
https://www.universetoday.com/articles/host-stars-shape-their-planetary-systems-into-two-families

Lone, starless cloud may be a 'dark' galaxy

Astronomers using China's FAST radio telescope have discovered a compact cloud of hydrogen with no visible stars or galaxy around it. This could be one of the strongest candidates yet for an isolated "dark galaxy," ....
https://phys.org/news/2026-10-lone-starless-cloud-dark-galaxy.html

Astronomical Weather:
If you want the most up to date astronomical weather information, go to https://www.cleardarksky.com/csk/ . On the same page, below the Clear Dark Sky Chart, there will be a full description and explanation for every category in the chart. The data is up to date and from my experience very reliable. Below is an example of the clear dark sky chart for Chuchupate.



Chuchupate / Mt. Pinos area live Video:
If you want to see live camera streaming and local weather information for the Chuchupate and Mt. Pinos area, try going to; https:www.frazmtn.com/cams/ .

California live video streaming:
If you want to see live weather video streaming from hundreds of cameras, all around California, try going to; https://cameras.alertcalifornia.org .

Local Clubs

The following is a list of astronomy clubs or societies which are local to the Antelope Valley Astronomy Club. Please take time to visit their sites. It is interesting to see what other clubs are doing and who knows, you might discover an event that you would like to attend. If there is a club you would like added to this list please let the Editor know. We would prefer clubs local to Southern California, however others may be considered.

Astronomical Society of the Desert, Rancho Mirage
https://www.astrorx.org

Big Bear Valley Astronomical Society, Big Bear City
https://bearvalleyastronomers.org

China Lake Astronomical Society, Ridgecrest
https://www.chinalakeastro.org

Kern County Astronomical Society
https://www.kernastro.org/

Local Group of Santa Clarita, Santa Clarita
https://www.lgscv.org

Los Angeles Astronomical Society, Los Angeles
https://www.laas.org

Mountain Skies Astronomical Society, Lake Arrowhead
https://www.mountain-skies.org

Orange County Astronomers
https://www.ocastronomers.org/

Riverside Astronomical Society, Riverside
https://www.rivastro.org

Santa Monica Astronomy Club, Woodland Hills
https://samoastronomy.org

Ventura County Astronomical Society, Simi Valley
https://www.vcas.org

Under The Veil, In Darkness

There are many breathtaking views to be found in the night sky, but there is one that moves to the top of the list in the Summer and Fall. The view is composed of several sections of a single supernova explosion that happened about 10,000 years ago to a star twenty times the mass of our sun, and only 2,100 light years away. Its structure spans over three degrees of sky, 6 times bigger that the full moon. The entire structure is so big, that while its various parts were discovered by William Hershchel in 1784, they were catalogued as three separate magnitude 7.0 objects near the western wing of Cygnus The Swan: NGC 6960, NGC 6992, and Fleming's Triangular Wisp.

Under dark skies, armed with an O-III filter or a UHC filter (O-III and H alpha), the absolute beauty and filament intricacies of The Veil Nebula are best visible short focal length, wide field telescopes. With larger aperture, of course, the brighter the view. The 19th century astronomers' narrow fields of view hid the true nature of these seemingly separate nebulae that were degrees apart from each other. The realization that they were all elements of the same huge object happened in the late 1800s and early 1900s with long exposure, wide-field photographic plates taken of the region by E.E. Barnard and Isaac Roberts. For the first time, these astro photos revealed faint, connecting tendrils linking the isolated segments together into a single, colossal, rough circle. When astronomers used spectroscopy to measure the speed and direction of the nebula, they were astonished to find that the Western Veil is racing westward and the Eastern Veil is racing eastward, both outward from a single empty point at over 930,000 miles per hour. They were able to trace all of the pieces of the nebula back to a single location at one instant of time. Imagine, for a moment, how the supernova must have looked to people 8,000 to 10,000 years ago before recorded human history; a sole point in the expanse, lighting the sky as bright as a crescent moon at magnitude -8! The glowing material leftover from that titanic explosion still inspires awe today.

I've spent many evenings exploring the glowing tendrils of the Witches Broom (the Western Veil) near the star 52 Cygni, and the branches of the Eastern Veil and its backwards letter F-like appearance under the dark Summer and Fall skies at the top of Mt. Pinos. It is humbling to think of how the blast wave from that Type II supernova explosion must have ripped into the surrounding interstellar medium, heating the gas to millions of degrees. Today, as the gas cools, astro photos show the glow of vibrant reds (hydrogen alpha) and blues/greens (oxygen III), and visually (with the help of the same easily obtained filters) in greenish-gray delicate, smoke-like wisps to our eyes. Whenever you observe the stunning Veil Nebula under very dark skies, you have an astounding astronomy experience awaiting you.

Clear skies!
Tom Koonce

Veil Nebula region after stacking, no processing yet:
Note the amount of stars actually present before processing. This is more like what you'll see visually through a 400mm focal length telescope with an O-III and Hydrogen alpha filter, but the nebula will be fainter.



Veil Nebula region after processing:

Credit: Lester Christopher and Jeff Marston, 2025



Visual Transition from Summer Sky to Winter Sky



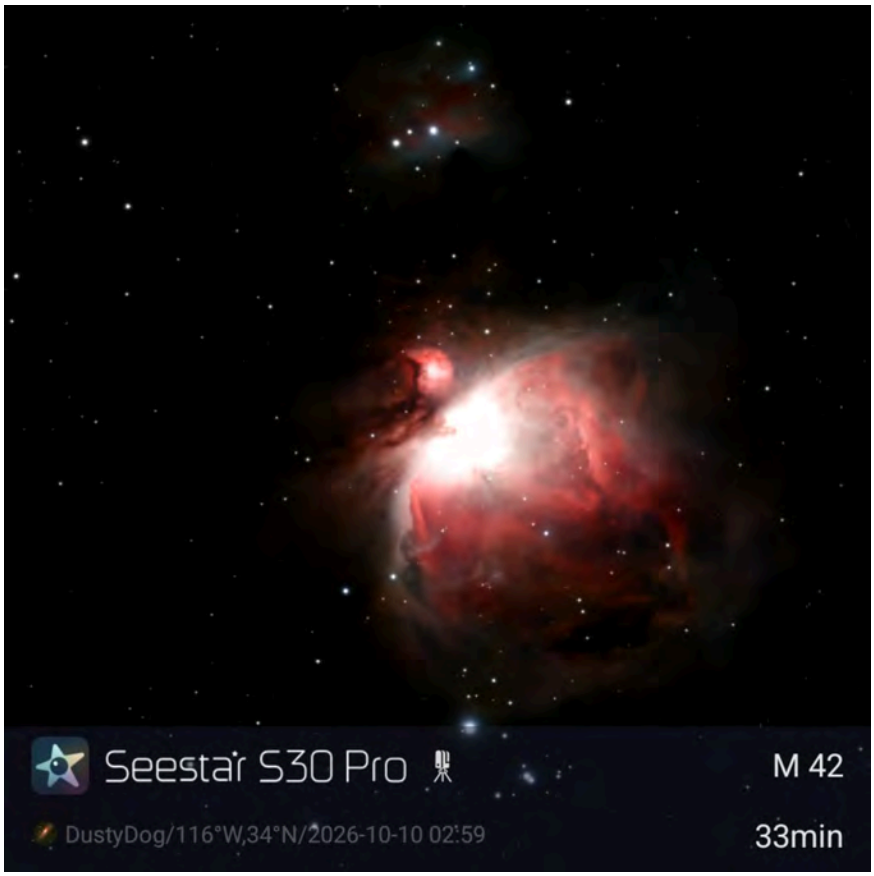
Rod Girard



Rod Girard



Christian Amaya



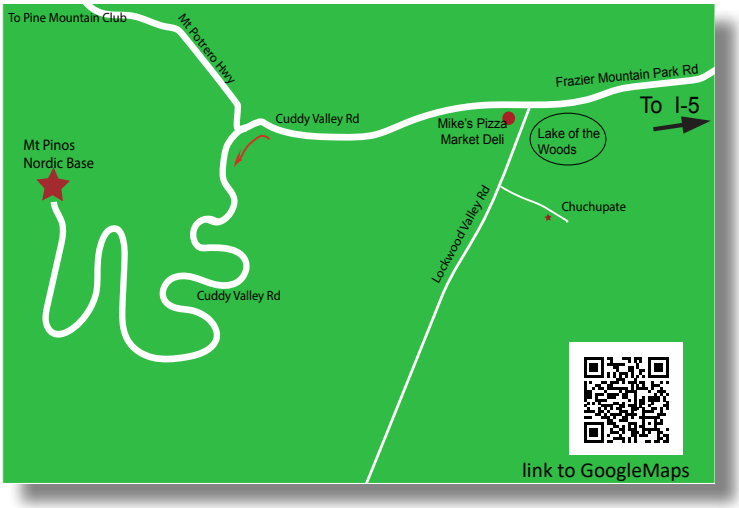
Jerry Bell

Dark Sky Observing Sites

The **Chuchupate** parking lot is a half a mile beyond the Mt Pinos ranger station (on some maps The Chuchupate Ranger Sta.), the parking lot is also called Frazier Mountain trailhead.

To get there, take the Frazier Mountain Park RD east about 7 miles from I-5, to Lake Of The Woods, Turn left on Lockwood Valley Rd. (If you see Mike's Pizza on your left you missed the turn) In less than a mile there is a road to the left, go past the ranger station, the parking lot is on the right. The Club gathers in the upper end of the lot. The Elevation is 5430 feet. There is a vault toilet. (link to GoogleMaps) RX3R+3F, Frazier Park, CA 93225





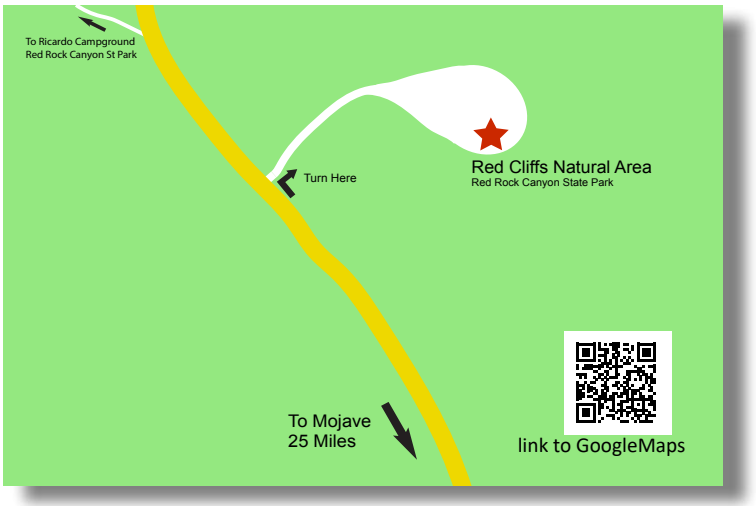
Mt Pinos is a parking lot at 8350 feet for the "Mt Pinos Nordic Base." There is a vault toilet 300 yds to the east in the Chula Vista campground.

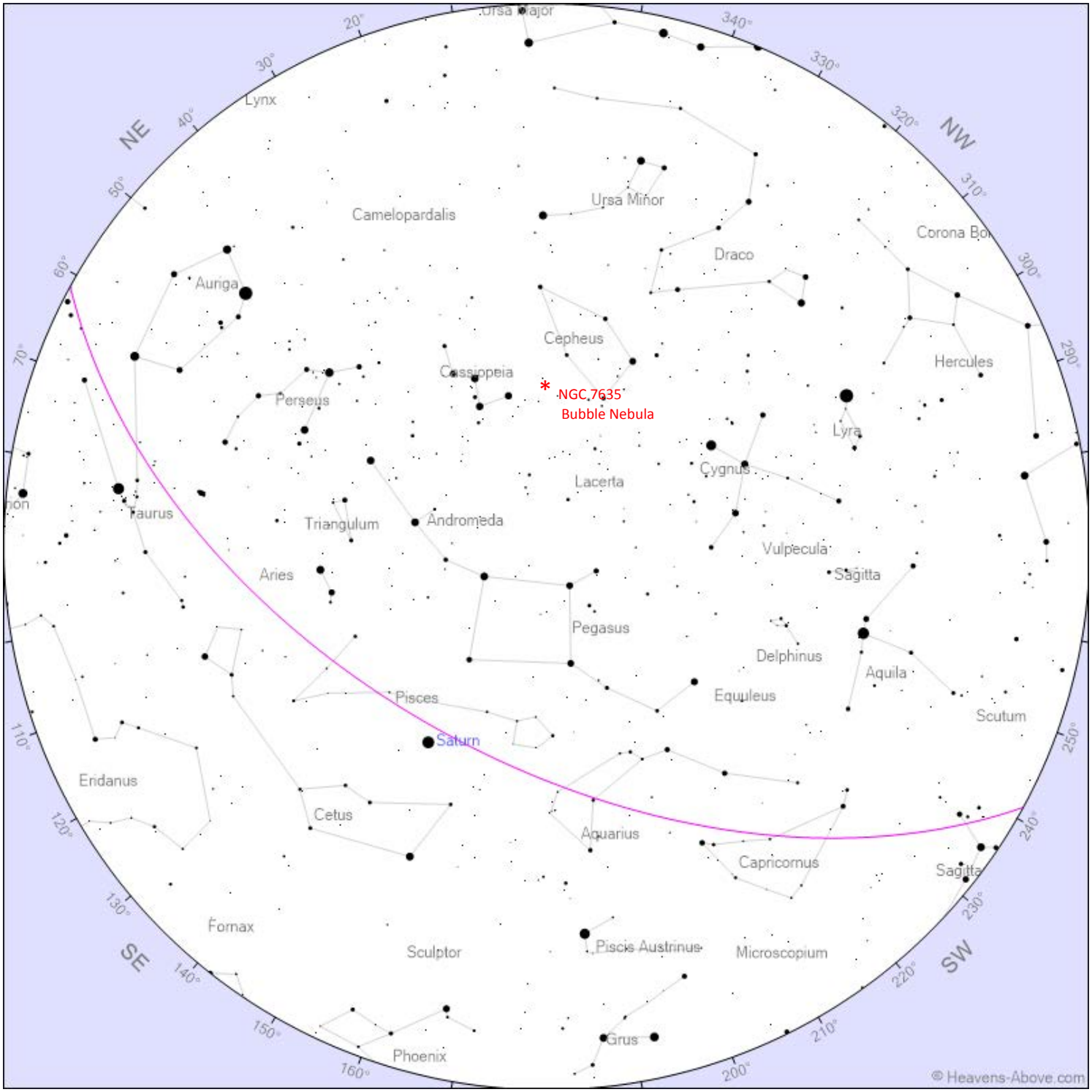
To get there: From I-5, get off at Frazier Mountain Park Rd and drive west about 7 miles to Mike's Pizza/ Market Deli at Lockwood Valley Rd. Keep on the main roadway (don't turn left to go to Chuchupate). Continue past Mike's Pizza on Cuddy Valley Rd (the road's new name) about 5 miles. Continue straight (do not turn right on to Mil Potrero Hwy) for another 8 1/2 miles to the parking area.

RV7F+FF Frazier Park, California (link to GoogleMaps)

The Red Cliffs Natural Area is part of **Red Rock Canyon State Park** is a day use area and is not for use by the public after dark. The Club gets a special permit for a star party and pays a fee.

To get there: Take the CA-14 north 25 miles past Mojave. You will see giant red cliffs on the right side and a small sign that says "Red Cliffs Natural Area" and a dirt road. (If you see the large sign for the Ricardo campground, you drove a mile too far). Follow the road to the large parking lot (that hasn't been graded in a long time). Elevation is 2410 feet. There is a vault toilet. . . . (link to GoogleMaps). 926F+X5 Ricardo, California





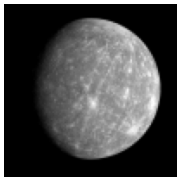
Location: Lancaster California
November 8, 2026 20:00 Hrs.

Solar System Summary

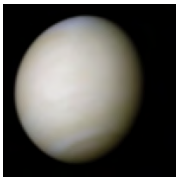


The Moon is a 29-day-old waning crescent, and is approaching new moon. From Lancaster, it is not observable – it will reach its highest point in the sky during daytime and is no higher than 1° above the horizon at dawn.

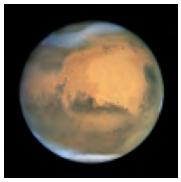
Planets



Mercury recently passed in front of the Sun at inferior solar conjunction. From Lancaster, it is not readily observable since it is very close to the Sun, at a separation of only 8° from it.



Venus recently passed in front of the Sun at inferior solar conjunction. From Lancaster, however, it is visible in the dawn sky, rising at 04;32 (PDT) – 1 hour and 45 minutes before the Sun – and reaching an altitude of 16° above the south-eastern horizon before fading from view as dawn breaks at around 06:00.



Mars is currently emerging from behind the Sun. From Lancaster, it is visible in the dawn sky, rising at 23:32 (PDT) and reaching an altitude of 69° above the south-eastern horizon before fading from view as dawn breaks at around 05:42.



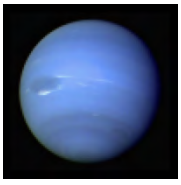
Jupiter is currently emerging from behind the Sun. From Lancaster, it is visible in the dawn sky, rising at 23:48 (PDT) and reaching an altitude of 68° above the southern horizon before fading from view as dawn breaks at around 06:00.



Saturn recently passed opposition. From Lancaster, it is visible in the evening sky, becoming accessible around 1722 (PDT), 26° above your eastern horizon, as dusk fades to darkness. It will then reach its highest point in the sky at 21:14, 56° above your southern horizon. It will continue to be observable until around 02:24, when it sinks below 10° above your western horizon.



Uranus is currently approaching opposition. From Lancaster, it is visible in the morning sky, becoming accessible around 19:38, when it reaches an altitude of 21° above your eastern horizon. It will then reach its highest point in the sky at 0o:50, 76° above your southern horizon. It will be lost to dawn twilight.



Neptune is currently an early evening object. From Lancaster, it is visible in the evening sky, becoming accessible around 17:53 (PDT), 36° above your south-eastern horizon, as dusk fades to darkness. It will then reach its highest point in the sky at 20:47, 54° above your southern horizon. It will continue to be observable until around 00:56, when it sinks below 21° above your western horizon.

In-The-Sky.org

Moon Phases



First Qtr	Full	Third Qtr	New
Nov. 17	Nov. 24	Nov. 01	Nov. 08

Sun and Moon Rise and Set*

Date	Moonrise	Moonset	Sunrise	Sunset
11/1/2026	01:00	14:54	06:12	17:00
11/5/2026	04:47	16:50	06:15	16:56
11/10/2026	09:55	19:34	06:20	16:52
11/15/2026	13:46	00:08	06:25	16:49
11/20/2026	16:02	04:08	06:30	16:46
11/25/2026	19:42	10:04	06:34	16:44
11/30/2026	01:00	14:00	06:39	16:43

Planet Data*

Nov. 08, 2026

	Rise	Culm.	Set
Mercury	05:36	11:01	16:27
Venus	04:32	10:01	15:31
Mars	23:32	06:20	13:09
Jupiter	23:48	06:30	13:13
Saturn	15:09	21:14	03:19
Uranus	17:46	00:50	07:54
Neptune	14:46	20:47	02:47

20 Nov 2026	– Mercury at highest altitude in morning sky
20 Nov 2026	– Mercury at greatest elongation west
02 Feb 2027	– Mercury at greatest elongation east
03 Jan 2027	– Venus at greatest elongation west
21 Mar 2028	– Venus at greatest elongation east
10 Jan 2027	– Mars enters retrograde motion
19 Feb 2027	– Mars at opposition
19 Feb 2027	– Mars at perigee
10 Feb 2027	– Jupiter at opposition
12 Apr 2027	– Jupiter ends retrograde motion
10 Dec 2026	– Saturn ends retrograde motion
09 Aug 2027	– Saturn enters retrograde motion
17 Oct 2027	– Saturn at opposition
25 Nov 2026	– Uranus at opposition
08 Feb 2027	– Uranus ends retrograde motion
15 Sep 2027	– Uranus enters retrograde motion
12 Dec 2026	– Neptune ends retrograde motion
09 Jul 2027	– Neptune enters retrograde motion
28 Sep 2027	– Neptune at opposition

*Sun, Moon and Planetary date based on Lancaster, CA
*All time mentioned are local and approximate.

Suggested Observing List

The list below contains objects that will be visible on the night of the AVAC Deep Sky Star Party or the Saturday nearest the New Moon, in this case November 08, 2026. The list is sorted by the Rise time of the object.

ID	Name	Type	RA	Dec	Mag	Rise	Transit	Set	Const
IC 1396		Bright Nebula	21h 39m 09s	+57°47.0'	3.5	Circum	6:22PM	Circum	Cep
NGC 6939		Open Cluster	20h 31m 27s	+60°38.3'	7.8	Circum	5:15PM	Circum	Cep
NGC 6543	Cat's Eye Nebula	Planetary Nebula	17h 58m 36s	+66°38.2'	8.3	Circum	2:42PM	Circum	Dra
NGC 1502		Open Cluster	04h 07m 45s	+62°19.8'	6.9	Circum	12:51AM	Circum	Cam
Kemble's Cascade		Asterism	03h 57m 30s	+63°04.2'		Circum	12:41AM	Circum	Cam
M40	Winnecke 4	Dbl+Asterism	12h 22m 12s	+58°05.0'	8.7	Circum	9:05AM	Circum	UMa
NGC 5907		Galaxy	15h 15m 52s	+56°19.8'	10.3	Circum	11:59AM	Circum	Dra
M102	Spindle Galaxy, duplicate of M101	Galaxy	15h 06m 30s	+55°45.7'	10.8	Circum	11:50AM	Circum	Dra
NGC4036		Galaxy	12h 01m 27s	+61°53.7'	10.6	Circum	8:45AM	Circum	UMa
NGC 884	Double Cluster	Open Cluster	02h 22m 27s	+57°06.9'	6.1	Circum	11:06PM	Circum	Per
NGC 869	Double Cluster	Open Cluster	02h 19m 03s	+57°09.0'	5.3	Circum	11:02PM	Circum	Per
Stock 2	Muscleman Cluster	Open Cluster	02h 15m 04s	+59°16.0'	4.4	Circum	10:58PM	Circum	Cas
M97	Owl Nebula, NGC3587	P Neb	11h 14m 48s	+55°01.1'	12.0	Circum	7:58AM	Circum	UMa
NGC 663		Open Cluster	01h 46m 04s	+61°15.0'	7.1	Circum	10:29PM	Circum	Cas
NGC 659		Open Cluster	01h 44m 16s	+60°42.0'	7.9	Circum	10:28PM	Circum	Cas
NGC 654		Open Cluster	01h 44m 10s	+61°53.0'	6.5	Circum	10:27PM	Circum	Cas
M103	NGC581	Open	01h 33m 23s	+60°39.0'	7.0	Circum	10:17PM	Circum	Cas
NGC 457	Owl Cluster	Open Cluster	01h 19m 10s	+58°20.0'	6.4	Circum	10:02PM	Circum	Cas
NGC 225		Open Cluster	00h 43m 28s	+61°47.1'	7.0	Circum	9:27PM	Circum	Cas
NGC 40		Planetary Nebula	00h 13m 08s	+72°31.7'	10.7	Circum	8:56PM	Circum	Cep
NGC 40		Planetary Nebula	00h 13m 08s	+72°31.7'	10.7	Circum	8:56PM	Circum	Cep
NGC 7789		Open Cluster	23h 57m 04s	+56°44.1'	6.7	Circum	8:40PM	Circum	Cas
M52	The Scorpion, NGC7654	Open	23h 24m 48s	+61°35.6'	8.0	Circum	8:08PM	Circum	Cas
King 10		Open Cluster	22h 54m 58s	+59°10.2'		Circum	7:38PM	Circum	Cep
M108	NGC3556, UGC6225	Galaxy	11h 11m 31s	+55°40.4'	10.6	Circum	7:55AM	Circum	UMa
M82	Cigar Galaxy	Galaxy	09h 55m 53s	+69°40.8'	9.2	Circum	6:39AM	Circum	UMa
M81	Bode's Galaxy	Galaxy	09h 55m 33s	+69°03.9'	7.8	Circum	6:39AM	Circum	UMa
NGC 2403		Galaxy	07h 36m 55s	+65°35.7'	8.5	Circum	4:20AM	Circum	Cam
NGC 2841		Galaxy	09h 22m 01s	+50°58.3'	9.2	8:02PM	6:05AM	4:09PM	UMa
NGC 2169	37 Cluster	Open Cluster	06h 08m 27s	+13°57.0'	5.9	8:09PM	2:52AM	9:34AM	Ori
Fornax Gal Cluster		Galactic Cluster	03h 38m 31s	-35°26.6'		8:16PM	12:22AM	4:28AM	For
M78	NGC2068	D Neb	05h 46m 45s	+00°04.7'	8.0	8:27PM	2:30AM	8:33AM	Ori
NGC 1973	Part of Running Man Nebula	Bright Nebula	05h 35m 09s	-04°43.9'		8:29PM	2:18AM	8:08AM	Ori
NGC 1975	Part of Running Man Nebula	Bright Nebula	05h 35m 21s	-04°40.9'		8:29PM	2:19AM	8:08AM	Ori
NGC 1977	Part of Running Man Nebula	Bright Nebula	05h 35m 27s	-04°49.9'		8:29PM	2:19AM	8:08AM	Ori
M43	Orion Nebula Extension	D Neb	05h 35m 31s	-05°16.0'	9.0	8:31PM	2:19AM	8:07AM	Ori
M42	Great Orion Nebula	Open+D Neb	05h 35m 16s	-05°23.4'	4.0	8:31PM	2:19AM	8:06AM	Ori
IC 418		Planetary Nebula	05h 27m 30s	-12°41.5'	10.7	8:44PM	2:11AM	7:38AM	Lep
NGC 2264	Christmas Tree Cluster	Open Cluster	06h 40m 58s	+09°53.7'	3.9	8:54PM	3:24AM	9:55AM	Mon
NGC 2261	Hubble's Variable Nebula	Bright Nebula	06h 39m 13s	+08°44.0'	11.0	8:55PM	3:22AM	9:50AM	Mon
NGC 2237	Rosette Nebula	Bright Nebula	06h 32m 19s	+04°59.0'	5.5	8:59PM	3:16AM	9:32AM	Mon
NGC 2244		Open Cluster	06h 32m 25s	+04°52.0'	4.8	8:59PM	3:16AM	9:32AM	Mon
NGC 2392	Eskimo Nebula	Planetary Nebula	07h 29m 10s	+20°54.7'	8.6	9:08PM	4:12AM	11:17AM	Gem
M79	NGC1904	Globular	05h 24m 11s	-24°31.4'	8.5	9:18PM	2:07AM	6:57AM	Lep
NGC 2232		Open Cluster	06h 26m 37s	-04°44.8'	3.9	9:20PM	3:10AM	8:59AM	Mon
NGC 2301		Open Cluster	06h 51m 49s	+00°28.0'	6.0	9:31PM	3:35AM	9:39AM	Mon
M109	NGC3992, UGC6937	Galaxy	11h 57m 36s	+53°22.4'	10.6	9:52PM	8:41AM	7:29PM	UMa
M50	Heart-shaped Cluster	Open	07h 02m 42s	-08°23.0'	7.0	10:07PM	3:46AM	9:25AM	Mon
M44	Beehive Cluster	Open	08h 40m 24s	+19°40.0'	4.0	10:23PM	5:24AM	12:24PM	Cnc

M41	Little Beehive	Open	06h 46m 01s	-20°45.3'	5.0	10:27PM	3:29AM	8:31AM	CMa
NGC 2359	Thor's Helmet	Bright Nebula	07h 17m 48s	-13°12.9'		10:36PM	4:01AM	9:26AM	CMa
NGC 2360		Open Cluster	07h 17m 48s	-15°36.8'	7.2	10:43PM	4:01AM	9:19AM	CMa
M47	NGC2422	Open	07h 36m 35s	-14°29.0'	4.5	10:58PM	4:20AM	9:42AM	Pup
M67	King Cobra	Open	08h 51m 18s	+11°48.0'	7.5	10:58PM	5:35AM	12:11PM	Cnc
NGC 2438		Planetary Nebula	07h 41m 51s	-14°44.1'	11.0	11:04PM	4:25AM	9:46AM	Pup
M46	NGC2437	Open	07h 41m 46s	-14°48.6'	6.5	11:04PM	4:25AM	9:46AM	Pup
NGC 3877		Galaxy	11h 46m 07s	+47°29.6'	11.0	11:07PM	8:29AM	5:52PM	UMa
NGC 2903		Galaxy	09h 32m 10s	+21°30.0'	9.0	11:09PM	6:15AM	1:22PM	Leo
M48	NGC2548	Open	08h 13m 43s	-05°45.0'	5.5	11:10PM	4:57AM	10:44AM	Hya
NGC2362	Mexican Jumping Star	Open	07h 18m 41s	-24°57.2'	4.1	11:14PM	4:02AM	8:50AM	CMa
NGC 2362		Open Cluster	07h 18m 48s	-24°56.8'	4.1	11:14PM	4:02AM	8:50AM	CMa
M101	Pinwheel Galaxy	Galaxy	14h 03m 13s	+54°20.9'	8.2	11:25PM	10:46AM	10:08PM	UMa
M93	Butterfly Cluster	Open	07h 44m 30s	-23°51.3'	6.5	11:36PM	4:28AM	9:20AM	Pup
M106	NGC4258	Galaxy	12h 18m 58s	+47°18.2'	9.1	11:41PM	9:02AM	6:23PM	CVn
NGC 2467		Bright Nebula	07h 52m 30s	-26°22.8'	7.1	11:53PM	4:36AM	9:19AM	Pup
NGC 4244		Galaxy	12h 17m 29s	+37°48.4'	10.4	12:47AM	9:01AM	5:15PM	CVn
M95	NGC3351	Galaxy	10h 43m 58s	+11°42.2'	10.6	12:51AM	7:27AM	2:03PM	Leo
M105	NGC3379	Galaxy	10h 47m 50s	+12°34.9'	10.5	12:53AM	7:31AM	2:09PM	Leo
NGC5195		Galaxy	13h 29m 59s	+47°16.0'	9.6	12:53AM	10:13AM	7:34PM	CVn
M51	Whirlpool Galaxy	Galaxy	13h 29m 52s	+47°11.7'	8.9	12:53AM	10:13AM	7:33PM	CVn
M96	NGC3368	Galaxy	10h 46m 46s	+11°49.2'	10.1	12:54AM	7:30AM	2:06PM	Leo
M94	Croc's Eye Galaxy	Galaxy	12h 50m 53s	+41°07.1'	8.9	1:01AM	9:34AM	6:08PM	CVn
NGC 3115	Spindle Gal	Galaxy	10h 05m 14s	-07°43.0'	8.9	1:07AM	6:48AM	12:30PM	Sex
M63	Sunflower Galaxy	Galaxy	13h 15m 49s	+42°01.7'	9.3	1:20AM	9:59AM	6:38PM	CVn
M65	Leo Triplet, NGC3623	Galaxy	11h 18m 56s	+13°05.5'	10.1	1:22AM	8:02AM	2:42PM	Leo
M66	Leo Triplet, NGC3627	Galaxy	11h 20m 15s	+12°59.4'	9.7	1:24AM	8:03AM	2:43PM	Leo
NGC 4631		Galaxy	12h 42m 11s	+32°32.7'	9.2	1:37AM	9:25AM	5:14PM	CVn
NGC 4656		Galaxy	12h 43m 58s	+32°10.3'	10.5	1:40AM	9:27AM	5:14PM	CVn
Mel 111	Coma Berenices Star Cluster	Open Cluster	12h 25m 00s	+26°00.1'	1.8	1:46AM	9:08AM	4:30PM	Com
NGC 4565	Bernice's Hair Clip	Galaxy	12h 36m 20s	+25°59.3'	9.6	1:57AM	9:20AM	4:42PM	Com
NGC 3242	Ghost of Jupiter	Planetary Nebula	10h 24m 48s	-18°38.2'	8.6	1:59AM	7:08AM	12:17PM	Hya
M98	NGC4192	Galaxy	12h 13m 48s	+14°54.0'	10.9	2:12AM	8:57AM	3:42PM	Com
M85	NGC4382	Galaxy	12h 25m 24s	+18°11.4'	10.0	2:13AM	9:09AM	4:04PM	Com
Abell 1656	Coma Gal Cluster	Galactic Cluster	12h 59m 48s	+27°59.0'	11.0	2:13AM	9:43AM	5:13PM	Com
M100	Mirror of M99	Galaxy	12h 22m 55s	+15°49.3'	10.1	2:18AM	9:06AM	3:54PM	Com
M99	Virgo Cluster Pinwheel	Galaxy	12h 18m 50s	+14°25.0'	10.4	2:18AM	9:02AM	3:46PM	Com
Markarian's Chain		Galactic Chain	12h 25m 04s	+12°53.2'		2:29AM	9:08AM	3:48PM	Vir
M86	NGC4406	Galaxy	12h 26m 12s	+12°56.7'	9.9	2:30AM	9:09AM	3:49PM	Vir
M88	NGC4501	Galaxy	12h 31m 59s	+14°25.2'	10.2	2:31AM	9:15AM	3:59PM	Com
M64	Black Eye Galaxy	Galaxy	12h 56m 44s	+21°41.0'	9.3	2:33AM	9:40AM	4:47PM	Com
M91	Missing Messier Object, NGC4548	Galaxy	12h 35m 27s	+14°29.7'	10.9	2:35AM	9:19AM	4:03PM	Com
M87	Smoking Gun	Galaxy	12h 30m 49s	+12°23.4'	9.6	2:36AM	9:14AM	3:52PM	Vir
M90	NGC4569	Galaxy	12h 36m 50s	+13°09.7'	10.2	2:40AM	9:20AM	4:00PM	Vir
M89	NGC4552	Galaxy	12h 35m 40s	+12°33.3'	10.9	2:41AM	9:19AM	3:57PM	Vir
M58	NGC4579	Galaxy	12h 37m 44s	+11°49.1'	10.4	2:45AM	9:21AM	3:57PM	Vir
NGC 4567	Siamese Twins	Galaxy	12h 36m 33s	+11°15.5'	11.3	2:45AM	9:20AM	3:54PM	Vir
NGC 4568	Siamese Twins	Galaxy	12h 36m 35s	+11°14.2'	10.8	2:45AM	9:20AM	3:54PM	Vir
M49	NGC4472	Galaxy	12h 29m 47s	+08°00.0'	9.3	2:48AM	9:13AM	3:38PM	Vir
M59	NGC4621	Galaxy	12h 42m 02s	+11°38.7'	10.7	2:50AM	9:25AM	4:01PM	Vir

M61	Swelling Spiral, NGC4303	Galaxy	12h 21m 55s	+04°28.3'	10.1	2:50AM	9:05AM	3:20PM	Vir
M60	NGC4649, UGC7898	Galaxy	12h 43m 40s	+11°33.1'	9.8	2:52AM	9:27AM	4:02PM	Vir
NGC 4526	Lost Galaxy	Galaxy	12h 34m 03s	+07°42.0'	9.7	2:53AM	9:17AM	3:42PM	Vir
M3	NGC5272	Globular	13h 42m 11s	+28°22.5'	7.0	2:54AM	10:25AM	5:57PM	CVn
M53	NGC5024	Globular	13h 12m 55s	+18°10.1'	8.5	3:01AM	9:56AM	4:52PM	Com
3C 273		Quasar	12h 29m 06s	+02°03.0'	12.0	3:04AM	9:12AM	3:21PM	Vir
NGC 4038	The Antennae Galaxy	Galaxy	12h 01m 53s	-18°51.9'	10.3	3:37AM	8:45AM	1:53PM	Crv
NGC 4039	The Antennae	Galaxy	12h 01m 54s	-18°53.1'	10.6	3:37AM	8:45AM	1:53PM	Crv
M104	Sombrero Galaxy	Galaxy	12h 39m 59s	-11°37.3'	9.2	3:53AM	9:23AM	2:53PM	Vir
NGC 4361		Planetary Nebula	12h 24m 30s	-18°47.6'	10.3	3:59AM	9:08AM	2:16PM	Crv
M68	NGC4590	Globular	12h 39m 28s	-26°44.5'	9.0	4:41AM	9:23AM	2:04PM	Hya
M92	NGC6341	Globular	17h 17m 07s	+43°08.1'	7.5	5:14AM	2:00PM	10:47PM	Her
M13	Great Hercules Cluster	Globular	16h 41m 41s	+36°27.5'	7.0	5:18AM	1:25PM	9:32PM	Her
NGC 5746		Galaxy	14h 44m 57s	+01°57.3'	10.3	5:20AM	11:28AM	5:36PM	Vir
M83	Southern Pinwheel Galaxy	Galaxy	13h 37m 00s	-29°51.8'	8.0	5:51AM	10:20AM	2:50PM	Hya
M5	NGC5904	Globular	15h 18m 33s	+02°04.9'	7.0	5:53AM	12:02PM	6:10PM	Ser
NGC 6210		Planetary Nebula	16h 44m 30s	+23°48.7'	9.7	6:13AM	1:28PM	8:42PM	Her
NGC6826	Blinking Planetary	P Neb	19h 44m 48s	+50°31.5'	10.0	6:31AM	4:28PM	2:25AM	Cyg
NGC 6826	Blinking Planetary	Planetary Nebula	19h 44m 53s	+50°31.6'	8.8	6:31AM	4:28PM	2:25AM	Cyg
NGC 5128	Centaurus A	Galaxy	13h 25m 29s	-43°01.1'	6.8	6:45AM	10:09AM	1:33PM	Cen

And - Andromeda
Ant - Antlia
Aps - Apus
Aql - Aquila
Aqr - Aquarius
Ara - Ara
Ari - Aries
Aur - Auriga
Boo - Bootes
Cae - Caelum
Cam - Camelopardis
Cap - Capricornus
Car - Carina
Cas - Cassiopeia
Cen - Centaurus
Cep - Cepheus
Cet - Cetus
Cha - Chamaeleon

Cir - Circinus
CMa - Canis Major
CMi - Canis Minor
Cnc - Cancer
Col - Columba
Com - Coma Berenices
CrA - Corona Australis
CrB - Corona Borealis
Crt - Crater
Cru - Crux
Crv - Corvus
CVn - Canes Venatici
Cyg - Cygnus
Del - Delphinus
Dor - Dorado
Dra - Draco
Equ - Equuleus
Eri - Eridanus

For - Fornax
Gem - Gemini
Gru - Grus
Her - Hercules
Hor - Horologium
Hya - Hydra
Hyi - Hydrus
Ind - Indus
Lac - Lacerta
Leo - Leo
Lep - Lepus
Lib - Libra
LMi - Leo Minor
Lup - Lupus
Lyn - Lynx
Lyr - Lyra
Men - Mensa
Mic - Microscopium

Mon - Monoceros
Mus - Musca
Nor - Norma
Oct - Octans
Oph - Ophiuchus
Ori - Orion
Pav - Pavo
Peg - Pegasus
Per - Perseus
Phe - Phoenix
Pic - Pictor
PsA - Pisces Austrinus
Psc - Pisces
Pup - Puppis
Pyx - Pyxis
Ret - Reticulum
Scl - Sculptor
Sco - Scorpius

Sct - Scutum
Ser - Serpens
Sex - Sextans
Sge - Sagitta
Sgr - Sagittarius
Tau - Taurus
Tel - Telescopium
TrA - Triangulum Australe
Tri - Triangulum
Tuc - Tucana
UMa - Ursa Major
UMi - Ursa Minor
Vel - Vela
Vir - Virgo
Vol - Volans
Vul - Vulpecula

Greek Alphabet

α - alpha
β - beta
γ - gamma
δ - delta
ε - epsilon
ζ - zeta
η - eta
θ - theta
ι - iota
κ -kappa
λ - lambda
μ -mu
ν - nu
ξ - xi
ο - omicron
π - pi
π - rho
σ - sigma
τ - tau
υ - upsilon
ϕ - phi
χ - chi
ψ - psi
ω - omega

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