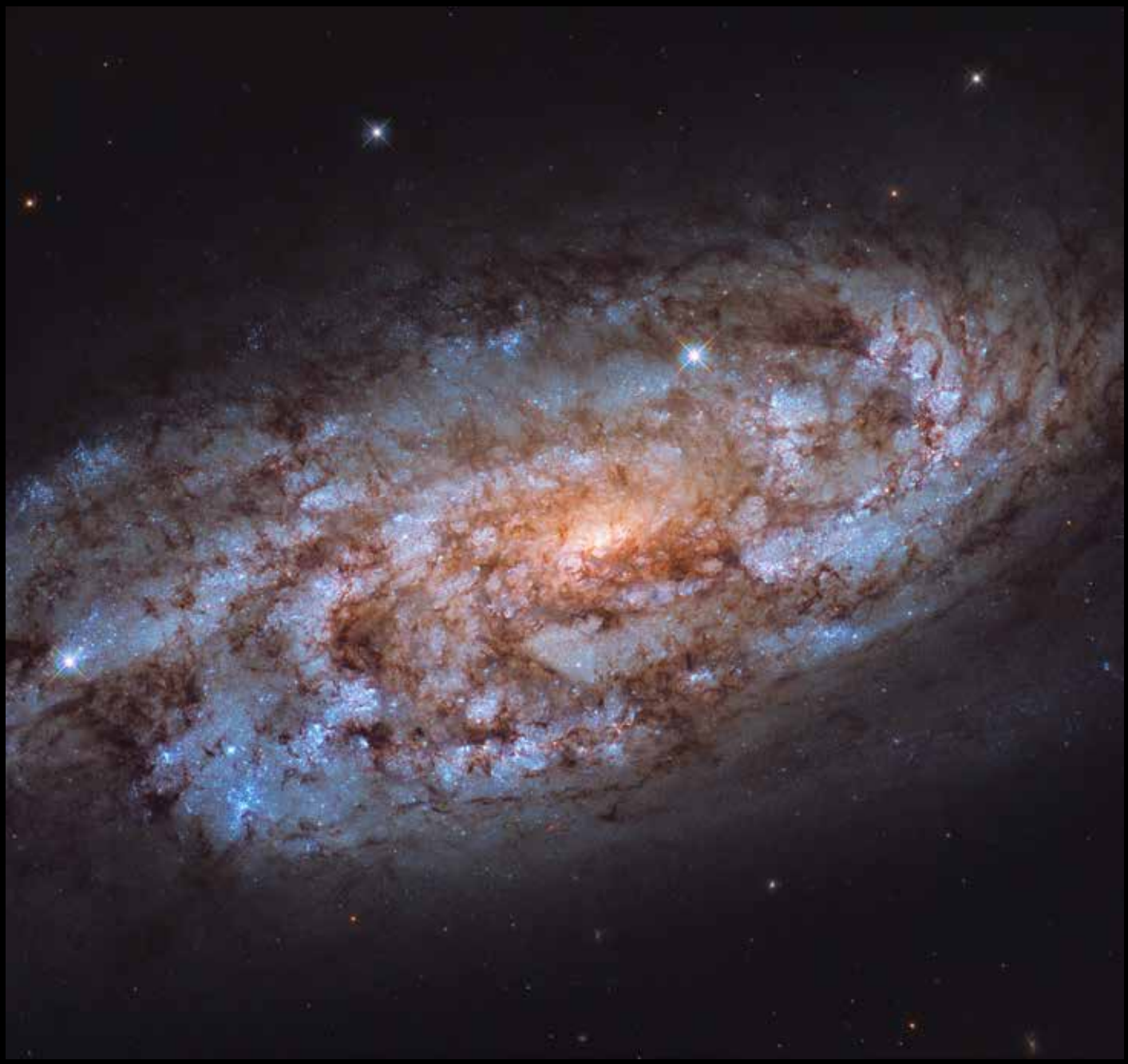
Volume 44.1 January 2024

Desert Sky Observer

Antelope Valley Astronomy Club



Upcoming Events

January 12: Club Meeting/ Space Painting
January 13: Moonwalk @ PDW 5:30 pm

Every clear night: Personal Star Party
February 9: Club Meeting - Star Party at Sage
February 10: Moonwalk @ PDW 6:00 pm
March 8: Club Meeting
March 9: Messier Marathon Star Party
March10: Daylight Saving begins
March 25: Penumbral Lunar eclipse
March 30: Moonwalk @ PDW @ 7:30PM

AVAC Calendar

Board Members

President: Phil Wriedt (661) 917-4874
president@avastronomyclub.org

Vice-President: Matt Leone (661) 256-3851
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:
Christian Amaya(661) 972-0091
community@avastronomyclub.org

Appointed Positions

Newsletter Editor: Phil Wriedt (661) 917-4874
dso@avastronomyclub.org

Equipment & Library:
John VanEvera 661-754-1819
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

Astronomical League Coordinator:
Phil Wriedt (661) 917-4874
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 Reflector -- the publication of the Astronomical League.
- 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 §503(c)(3) California Non-Profit Corporation.

The AVAC is a Sustaining Member of The Astronomical League and the International Dark-Sky Association

President's Message

By Phil Wriedt

Hi There!

Happy New Year! I hope everyone had a wonderful holiday season.

Our Christmas party was on December 9th. There was good company and good food. I wish more members could have joined us. It was probably one of our smaller parties, but Santa stopped by and dropped off plenty of presents for the raffle.

Our meeting on January 12th will be an Astronomy painting class. It will be guided by Suzanne Leone, who designed the prototype, that we will try to duplicate. It will held in the Multi-Purpose Room We scheduled it so that the construction in the planetarium would not impact our meeting. Well, the construction will be pushed back to June or maybe July. The meeting will start at 6:45PM so everyone can get setup be ready to start painting and finish on time.

The next day, the 13th, we have a Moonwalk at Prime Desert Woodland scheduled. Sunset is at 5:02pm, so the Walk will start about 5:30. Those bringing a telescope, get there about 4 pm, so you have time and light to set up. Bring warm clothes, gloves, scarfs and hats, it will be cold, so be prepared. The Moon will be 2 days old and will lead Saturn down to the horizon. If it's raining or overcast, well Jeremy will still be leading the walk.

The New Year means it's time to renew your memberships. No we won't show a classic movie and interrupt it ever 5 minutes begging for money. Just follow the directions on page 5, pay via PayPal or give Rod a check at the next meeting. We have lots of observing opportunities planned for the new year. We are hoping that NASA fixes the glitch they have in the speaker bureau.

Keep Looking Up, Phil

Vice President's Corner

By Matt Leone

This is Matthew Leone, head of the lunar club to give you the 2024 dates to observe the moon. As of now all events of the Lunar club will be at my house. April 13, May 11, August 10, September 7. I am hoping to see all of you there. There will be a lunar eclipse March 25th, 9:53pm to 2:32am.

January 12 at 6:30pm Suzanne Leone will be having a painting class for the club members and friends. The class is limited to 20 -24 people so sign up as soon as possible. Let Rose know if you are planning to come, all are welcome to watch and learn new painting tricks.

In January there are a few comets flying by. Going through Leo is Comet 62p Tsuchinshan, and Comet 144p Kushida flying by Taurus. Jupiter is still great in the sky with all its glory. On January 14 look 1 hour after sunset and you will see the Moon, Saturn, Neptune within 10 degrees of each other in the south west.

Happy viewing and see you all in January at the art class. Matt

On The Cover

Please note: North is 208.9° right of vertical RA: 5h 5' 13.98" DEC: -37° 58' 48.78" (Columba)

An orange glow radiates from the centre of NGC 1792, the heart of this stellar forge. Captured by the NASA/ESA Hubble Space Telescope, this intimate view of NGC 1792 gives us some insight into this galactic powerhouse. The vast swathes of tell-tale blue seen throughout the galaxy indicate areas that are full of young, hot stars, and it is in the shades of orange, seen nearer the centre, that

continued on next page

From the Secretary

By Rose Moore

Members,

Thanks to all who attended the Club Christmas party, and for donating gifts! It was a wonderful occasion to meet up with fellow members and eat some good food!

Our first club meeting of the year, Friday January 12th, will be an astronomy paint class with Sue Leone! Please let me know if you want to be on the list, so that Matt can make sure we have the proper number of supplies on hand. Doors will be open at 6:30pm, and the class will start promptly at 7:15. This allows time for members to pay Rod for the class and/or the yearly club dues. The supplies of paint, canvases, and brushes will be supplied by Matt and Sue. Bring your imagination and have some fun! The cost is $15 per member and $20 for non members.

A reminder that club dues for 2024 are due prior to Feb. 1st. Please pay on the website on the Profile page, or pay by check or cash to Rod at our next meeting. Costs are $15 for Junior membership, $25 for Individual membership, and $30 for Family membership. If you need to pay by mail, please mail a check to: AVAC, P.O. Box 8545, Lancaster, CA 93539.

On Saturday January 13th, we have a Prime Desert Moon Walk, starting at 5:30pm. Weather permitting. We need members with telescopes to help at this event! Set up time is 30-60 mins prior to the event. Members may also come out to take the astronomy walk and talk with Jeremy, it's free! A waxing crescent Moon (less than 5%) will be up until 7:52pm. Sunset is at 5:02pm. Jupiter and Saturn are still visible.

Events coming up are the Messier Marathon on March 9th, a Penumbral Lunar Eclipse (Local) March 25th, the Total Solar Eclipse (from Texas to Maine), and Lunar club meetings at Matt's.

There will be no dark sky star party this month due to colder temperatures.

Stay warm! Rose

On The Cover ... continued

the older, cooler stars reside.

Nestled in the constellation of Columba (The Dove), NGC 1792 is both a spiral galaxy, and a starburst galaxy. Within starburst galaxies, stars are forming at comparatively exorbitant rates. The rate of star formation can be more than 10 times faster in a starburst galaxy than in the Milky Way. When galaxies have a large resevoir of gas, like NGC 1792, these short lived starburst phases can be sparked by galactic events such as mergers and tidal interactions. One might think that these starburst galaxies would easily consume all of their gas in a large forming event. However, supernova explosions and intense stellar winds produced in these powerful starbursts can inject energy into the gas and disperse it. This halts the star formation before it can completely deplete the galaxy of all its fuel. Scientists are actively working to understand this complex interplay between the dynamics that drive and quench these fierce bursts of star formation.

Credit: ESA/Hubble & NASA, J. Lee
Acknowledgement: Leo Shatz

AVAC Membership Renewal

It is that time year again, time to renew your AVAC Membership and HOORAY!!!, we are back in the Sage Planetarium for our monthly meetings. We have had in person meetings for the last few months now and it has been great. However if you haven't had a chance to make it out to one of these meetings I wholeheartedly encourage you to attend. The Sage Planetarium is one of the club's most rewarding benefits.

It is very gratifying to see the early membership renewals. In these times of financial uncertainty our members are more than ever the lifeblood for the AVAC. That said, please worry not, financially the club is still solvent and we are able to meet all our obligations while providing for future club events and guest speakers etc.

Please remember that our meetings are open to the public and all will be welcome. So, if for any reason you are unable to renew your membership you are still welcome to attend and we look forward to seeing you all again.

For administrative reasons we encourage members to renew their membership in January. For myself the easiest way to renew my membership was through the AVAC website via our PayPal account. However you can renew at our monthly club meetings with good old cash or by check.

For those unable to attend our monthly meeting you can renew your membership through the mail by sending a check to the club's Post Office Box:

Antelope Valley Astronomy Club
PO BOX 8545
Lancaster, CA 93539-8545

For members less familiar with the club's website, it is actually fairly simple:

- Google Antelope Valley Astronomy Club and then open on the link.
- Click on MEMBER and then click on LOGIN.
- The default Member Name will be your Membership Number.
- If you had Signed Up on line you would have created a Password, but if you have forgotten it, use the Forgot Password link.
- Once you have Logged In, under Member click on Profile.
- Under Profile click on Membership.
- Under Your Current Membership click on Renew Now.
- You will have the choice of paying with a PayPal account or with a Credit Card.
- If you choose Credit Card PayPal will allow you to pay as a Guess

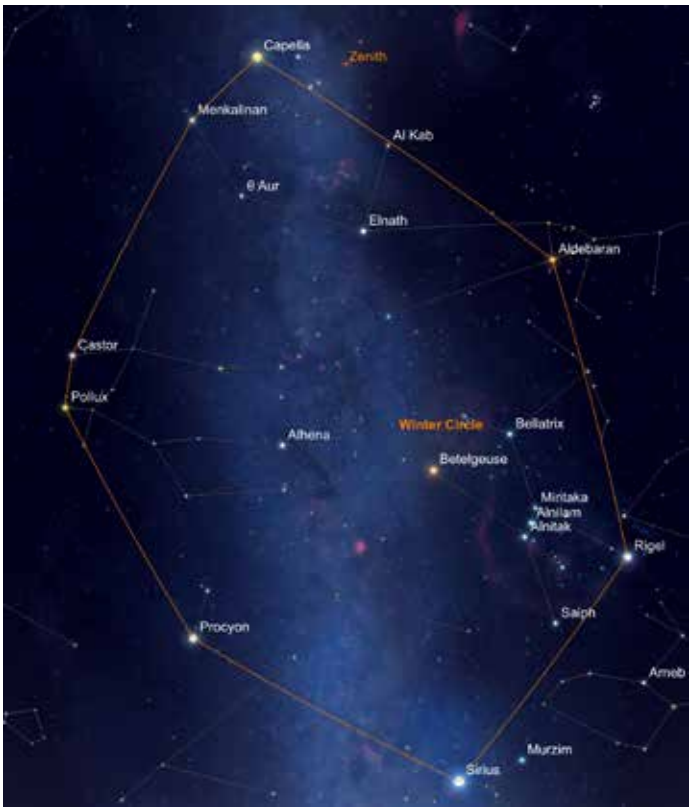
Thank you,
Rod Girard AVAC Treasurer

Connecting the 'Dots' with Asterisms

by Katherine Troche, Astronomy Society of the Pacific, NASA Night Sky Network

In our December Night Sky Notes, we mentioned that the Orion constellation has a distinct hourglass shape that makes it easy to spot in the night sky. But what if we told you that this is not the complete constellation, but rather, an asterism?

An asterism is a pattern of stars in the night sky, forming shapes that make picking out constellations easy. Cultures throughout history have created these patterns as part of storytelling, honoring ancestors, and timekeeping. Orion's hourglass is just one of many examples of this, but did you know Orion's brightest knee is part of another asterism that spans six constellations, weaving together the Winter night sky? Many asterisms feature bright stars that are easily visible to the naked eye. Identify these key stars, and then connect the dots to reveal the shape.



Stars that make up the Winter Circle, as seen on January 1, 2024 **Sky Safari**

Try looking for these asterisms this season and beyond:

• **Winter Circle** – this asterism, also known as the Winter Hexagon, makes up a large portion of the Winter sky using stars Rigel, Aldebaran, Capella, Pollux, Procyon, and Sirius as its points. Similarly, the Winter Triangle can be found using Procyon, Sirius, and Betelgeuse as points. Orion's Belt is also considered an asterism.

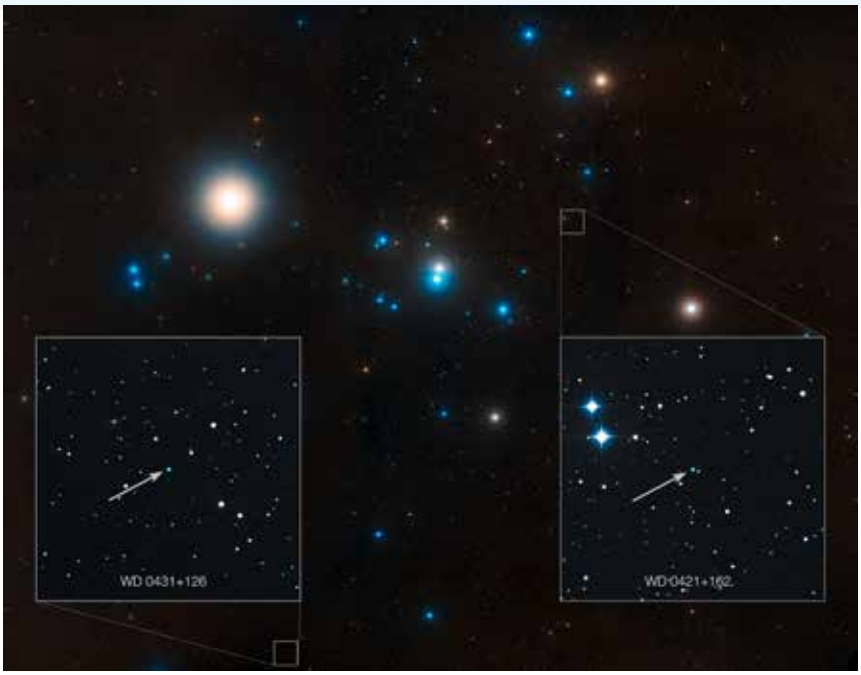
• **Diamond of Virgo** – this springtime asterism consists of the following stars: Arcturus, in the constellation Boötes; Cor Caroli, in Canes Venatici; Denebola in Leo, and Spica in Virgo. Sparkling at the center of this diamond is the bright cluster Coma Berenices, or Bernice's Hair – an ancient asterism turned constellation!

• **Summer Triangle** – as the nights warm up, the Summer Triangle dominates the heavens. Comprising the bright stars Vega in Lyra, Deneb in Cygnus, and Altair in Aquila, this prominent asterism is the inspiration behind the cultural festival Tanabata. Also found is Cygnus the Swan, which makes up the Northern Cross asterism.

• **Great Square of Pegasus** – by Autumn, the Great Square of Pegasus can be seen. This squareshaped asterism takes up a large portion of the sky, and consists of the stars: Scheat, Alpheratz, Markab and Algenib.

Additional Skywatching Resources

Plan your skywatching with help from our planner page, featuring daily stargazing tips courtesy EarthSky monthly sky maps, and videos from NASA/JPL. You can even find out how to spot the International Space Station! Both Astronomy and Sky and Telescope magazines offer regular stargazing guides to readers, both in print and online. Want to join a group of folks for a star party? Find clubs and astronomy events near you, and may you have clear skies!



This image shows the region around the Hyades star cluster, the nearest open cluster to us. The Hyades cluster is very well-studied due to its location, but previous searches for planets have produced only one. A new study led by Jay Farihi of the University of Cambridge, UK, has now found the atmospheres of two burnt-out stars in this cluster — known as white dwarfs — to be "polluted" by rocky debris circling the star. Inset, the locations of these white dwarf stars are indicated — stars known as WD 0421+162, and WD 0431+126.
NASA, ESA, STScI, and Z. Levay (STScI)

Tracing these outlines can guide you to objects like galaxies and star clusters. The Hyades, for example, is an open star cluster in the Taurus constellation with evidence of rocky planetary debris. In 2013, Hubble Space Telescope's Cosmic Origins Spectrograph was responsible for breaking down light into individual components. This observation detected low levels of carbon and silicon – a major chemical for planetary bodies. The Hyades can be found just outside the Winter Circle and is a favorite of both amateur and professional astronomers alike.

How to Spot Asterisms

• **Use Star Maps and Star Apps** – Using star maps or stargazing apps can help familiarize yourself with the constellations and asterisms of the night sky.
• **Get Familiar with Constellations** – Learning the major constellations and their broader shapes visible each season will make spotting asterisms easier.
• **Use Celestial Landmarks** – Orient yourself by using bright stars, or recognizable constellations. This will help you navigate the night sky and pinpoint specific asterisms. Vega in the Lyra constellation is a great example of this.

Learn more about how to stay warm while observing this Winter with our upcoming mid-month article on the Night Sky Network page through NASA's website!

Space News

News from around the Net

New Study Shows Small Magellanic Cloud Is Actually Two Smaller Galaxies

A large international team of astronomers and astrophysicists has found evidence showing that the Small Magellanic Cloud is not a single galaxy—it is actually two, one behind the other. The group has written a paper describing their work and posted it to the arXiv preprint server. The Magellanic Clouds have for many years been known as two irregular dwarf galaxies that can be seen as appearing very close to one another in the southern celestial hemisphere. They have also been named individually as the Large and Small Magellanic Clouds,. . . . (continued at https://phys.org/news/2023-12-small-magellanic-cloud-smaller-galaxies.html)

New 1.5-Billion-Pixel Image Shows Running Chicken Nebula In Unprecedented Detail

While many holiday traditions involve feasts of turkey, soba noodles, latkes or Pan de Pascua, this year, the European Southern Observatory (ESO) is bringing you a holiday chicken. The so-called Running Chicken Nebula, home to young stars in the making, is revealed in spectacular detail in this 1.5-billion-pixel image captured by the VLT Survey Telescope (VST), hosted at ESO's Paranal site in Chile. This vast stellar nursery is located in the constellation Centaurus (the Centaur), at about 6,500 light-years from Earth. Young stars within this nebula emit intense radiation that makes the surrounding hydrogen gas glow in shades of pink. . . .(continued at https://phys.org/news/2023-12-billion-pixel-image-chicken-nebula-unprecedented.html)

What Are The Hazards Of Living In Space? Swollen Heads, For One

Recently there has been a surge in commercial spaceflight. So, while regular human spaceflights beyond low-Earth orbit are still far off on the horizon, they appear to becoming an inevitability in the coming decades. To prepare for that eventuality, scientists, engineers, and medical professionals are tirelessly working to identify and mitigate the new challenges interplanetary travel poses to human health and well-being. Here are just a few problems (and solutions) experts are considering to keep astronauts happy and healthy on their way to the Moon, Mars, and beyond. . . . (continued at https://www.astronomy.com/science/what-are-the-hazards-of-living-in-space-swollen-heads-for-one/)

NASA's Deep Space Network Turns 60 And Prepares For The Future

NASA's Deep Space Network marks its 60th year on Dec. 24. In continuous operations since 1963, the DSN is what makes it possible for NASA to communicate with spacecraft at or beyond the Moon. The dazzling galactic images captured by the James Webb Space Telescope, the cutting-edge science data being sent back from Mars by the Perseverance rover, and the historic images sent from the far side of the Moon by Artemis I – they all reached Earth via the network's giant radio dish antennas.. . . .(continued at https://www.jpl.nasa.gov/news/nasas-deep-space-network-turns-60-and-prepares-for-the-future)

Lobster-Eyed Einstein Probe Will Capture The Whole X-Ray Sky

Next month, all going well, a Long March rocket will launch a highly innovative X-ray telescope of a kind astronomers have been dreaming of for decades. The joint mission between the Chinese Academy of Sciences and the European Space Agency could overcome obstacles that have hindered X-ray astronomy. Yet the mission is so low-profile it has had almost no publicity, at least in English, until the last few days, and at time of writing there doesn't even seem to be a Wikipedia article about it. The atmosphere absorbs high-energy photons, which is fortunate for life but has meant all X-ray astronomy needs to be done from satellites or rockets. That's not the end of the challenges astronomers have faced . . . (continued at https://www.iflscience.com/lobster-eyed-einstein-probe-will-capture-the-whole-x-ray-sky-72184)

Space News

News from around the Net

Dream Chaser Spaceplane Is Ready For Serious Testing At NASA

Sierra Nevada Corporation, the aerospace company behind the spaceplane, has just delivered the first Dream Chaser spaceplane, called Tenacity, to NASA's Neil Armstrong Test Facility in Ohio. Here, it will undergo environmental training to ensure it can cope with the extreme conditions of space travel. If it passes all the necessary tests, it will be tasked with carrying out uncrewed cargo supply missions to the ISS, delivering everyday goods and scientific equipment to the astronauts onboard. However, it has a highly customizable design, which means it has the potential for other applications in the future. . . . .(continued at https://www.iflscience.com/dream-chaser-spaceplane-is-ready-for-serious-testing-at-nasa-72201)

The Webb Telescope's Grand Tour Of The Solar System

The James Webb Space Telescope has revealed galaxies in the early universe, hidden star formation, and sniffed the atmospheres of exoplanets. But it's also exploring closer to home, imaging each of the giant planets in detail. The telescope can see aspects of the planets' compositions in ways that passing satellites typically can't, both thanks to its sensitivity and its spectral resolution. At the same time, homing in on the planets has tested Webb's capabilities for tracking objects that are not only quite bright compared to distant galaxies, but also extended, rotating, and moving quickly across the plane of the sky. . . . . (continued at https://skyandtelescope.org/astronomy-news/the-webb-telescopes-grand-tour-of-the-solar-system/)

Supernova Encore: Second Lensed Supernova In A Distant Galaxy

In November 2023, NASA's James Webb Space Telescope observed a massive cluster of galaxies named MACS J0138.0-2155. Through an effect called gravitational lensing, first predicted by Albert Einstein, a distant galaxy named MRG-M0138 appears warped by the powerful gravity of the intervening galaxy cluster. In addition to warping and magnifying the distant galaxy, the gravitational lensing effect caused by MACS J0138 produces five different images of MRG-M0138. . . . .(continued at https://www.sciencedaily.com/releases/2023/12/231221162219.htm)

Tatahouine: 'Star Wars Meteorite' Sheds Light On The Early Solar System

Locals watched in awe as a fireball exploded and hundreds of meteorite fragments rained down on the city of Tatahouine, Tunisia, on June 27, 1931. Fittingly, the city later became a major filming location for the Star Wars movie series. The desert climate and traditional villages became a huge inspiration to the director, George Lucas, who proceeded to name the fictional home planet of Luke Skywalker and Darth Vader, "Tatooine." The mysterious 1931 meteorite, a rare type of achondrite (a meteorite that has experienced melting) known as a diogenite, is obviously not a fragment of Skywalker's home planet. But it was similarly named after the city of. . . . (continued at https://phys.org/news/2023-12-tatahouine-star-wars-meteorite-early.html)

JWST Sets A New Record, Sees Newly Forming Stars In The Triangulum Galaxy

Our Milky Way bristles with giant molecular clouds birthing stars. Based on what we see here, astronomers assume that the process of star creation also goes on similarly in other galaxies. It makes sense since their stars have to form somehow. Now, thanks to JWST, astronomers have spotted baby stellar objects in a galaxy 2.7 million light-years away. That's millions of light-years more distant than any previous observations of newly forming stars have reached. The targets of JWST's observations are "young stellar objects" (YSOs) in the Triangulum Galaxy (M33). Astronomers used the telescope's mid-infrared imager (MIRI) to study one section of one of M33's spiral arms in the hunt for YSOs. They found 793 of these baby stars, . . . (continued at https://www.universetoday.com/164986/jwst-sets-a-new-record-sees-newly-forming-stars-in-the-triangulum-galaxy/)

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.

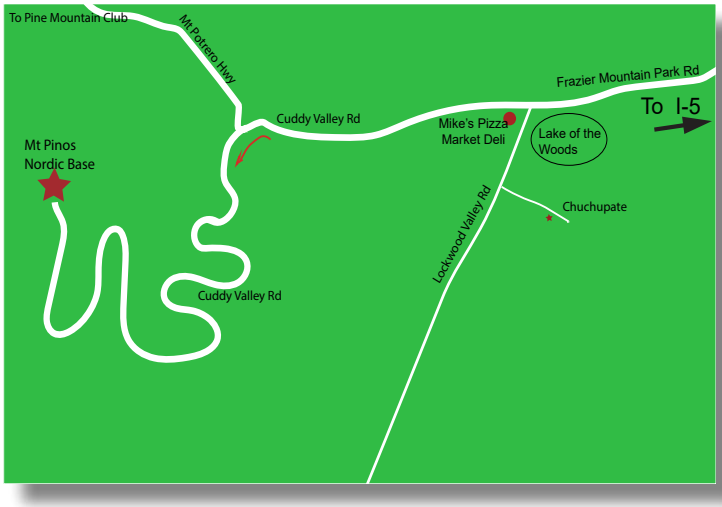
To get there, take the Frazier Mountain Park RD east about 7 miles from I-5, to Lake Of The Woods, Turn left on Lockwood Valley Rd. (If you see Mike's Pizza on your left you missed the turn) In less than a mile there is a road to the left, go past the ranger station, the parking lot is on the right.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

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.

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.
Note: The entire drive from I-5 is uphill.



Solar System Summary

The **Sun** moves from central Sagittarius to the middle of Capricorn at the end of January.

The Planets

Mercury begins the month in the morning twilight. It reaches greatest western elongation of 24° on the 12th. By the end of the month it is just 15° west of the Sun. On the 27th Mars is in conjunction ¼° south.

Venus is still prominent in the morning sky. Starting the month at mag -4.0 in central of Ophiuchus, continues its slide back toward the Sun, ending the month on the central of Sagittarius at -3.98.

Mars is about as far away from Earth as possible, and will spend the entire year in the morning sky. Over the next 7 months Mars will be in conjunction with 7 different planets, including Mercury as noted above.

Jupiter resumes moving forward in southern Aries. On the 18th the 56% waxing Moon is 1⅔° north.

Saturn moving east in central Aquarius at mag 0.9, getting ready for its conjunction at the end of February. The 12% waxing Moon passes 2.3° south on the morning of the 14th.

Uranus continues its retrograde motion in eastern Aries at mag 5.7, until the end of the month, when it resumes its easterly course.

Neptune is moving east on the border of southern Pisces at 7.9. On the 15th the 25% waxing Moon passes less than 1.5° to the south.

Dwarf Planets

134340 Pluto spends the month, again, on the eastern edge of Sagittarius moving east at mag 14.5 just south of M75. On the 20th passes behind the Sun, thereafter in the morning twilight.

1 Ceres starts the month, in the morning twilight, in the middle of Ophiuchus moving east. By the end of the month its on the western edge of Sagittarius.

2 Pallas at mag 9.5 continues moving east in Serpens Caput. As the month progresses it moves toward Hercules, but doesn't quite make it.

3 Juno at mag 9.3, makes a retrograde U-turn southern Leo.

4 Vesta at mag 7, retrograde moving thru Taurus. M-1 is passed 31 arc-mins south on the 13th.

Moon Phases

First Qtr Jan 17 | Full Jan 25 | Third Qtr Jan 3 | New Jan 11

Sun and Moon Rise and Set*

Date	Moonrise	Moonset	Sunrise	Sunset
1/1/2024	10:42	22:21	06:59	16:52
1/5/2024	01:11	12:18	07:00	16:55
1/10/2024	06:36	16:07	07:00	17:00
1/15/2024	10:07	22:13	06:59	17:04
1/20/2024	12:32	00:22	06:55	16:45
1/25/2024	15:34	05:57	06:57	16:48
1/30/2024	20:28	09:49	06:59	16:51

Planet Data*

January 1

	Rise	Transit	Set	Mag	Phase%
Mercury	05:33	10:36	15:39	0.41	31.9
Venus	04:08	09:17	14:25	-4.06	78.2
Mars	06:08	11:00	15:51	1.39	99.4
Jupiter	12:46	19:22	02:03	-2.64	99.2
Saturn	10:03	15:32	21:01	0.93	99.8

January 15

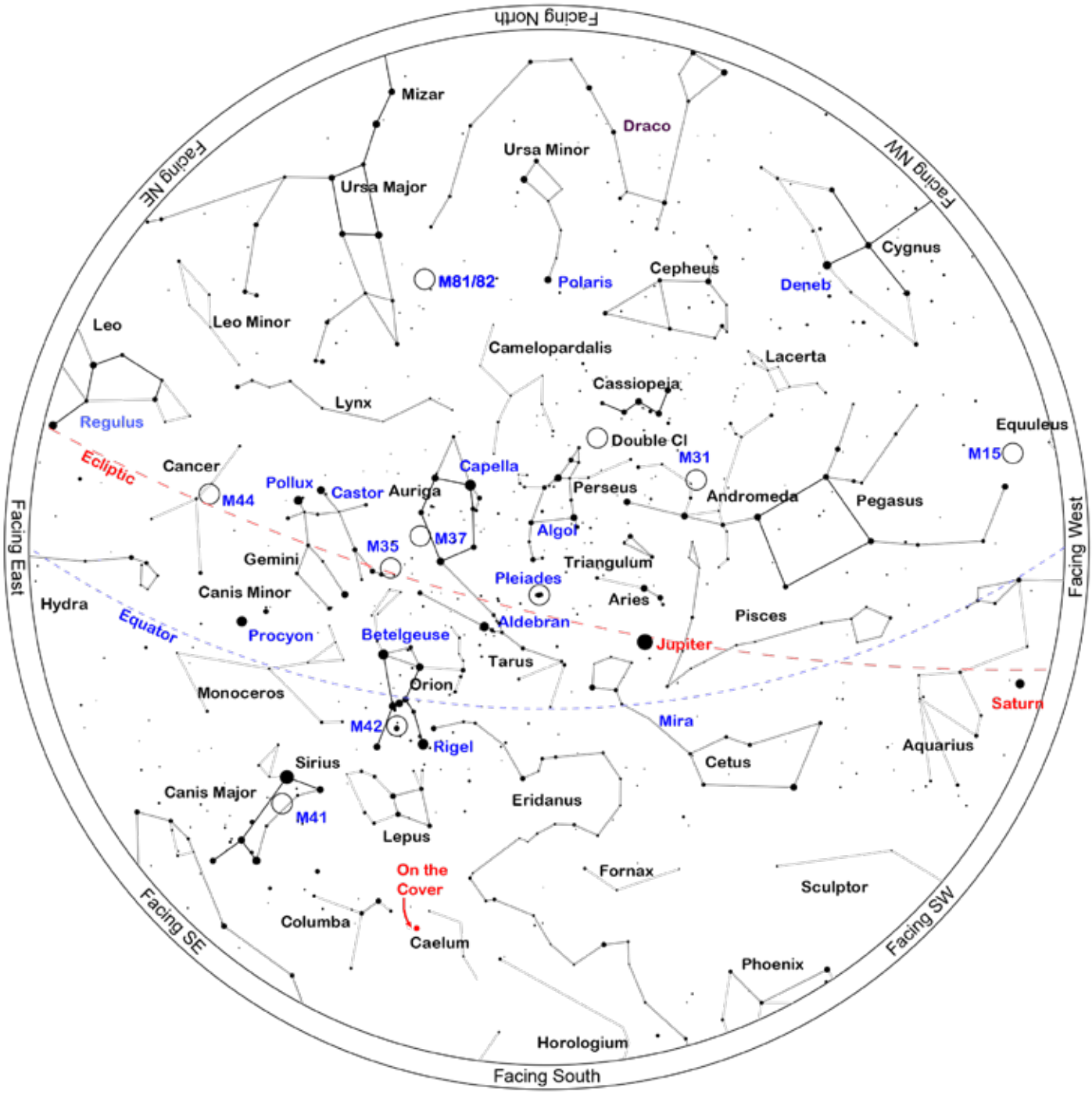
	Rise	Transit	Set	Mag	Phase%
Mercury	05:24	10:22	15:19	-0.23	70.6
Venus	04:34	09:34	14:33	-4.01	82.0
Mars	05:59	10:50	15:42	1.39	99.0
Jupiter	11:52	18:29	01:10	-2.54	99.0
Saturn	09:12	14:42	20:12	0.95	99.9

January 30

	Rise	Transit	Set	Mag	Phase%
Mercury	05:53	10:50	15:49	-0.28	87.3
Venus	04:57	09:54	14:51	-3.98	85.5
Mars	05:45	10:41	15:36	1.33	98.5
Jupiter	10:56	17:34	00:17	-2.43	99.0
Saturn	08:17	13:49	19:21	0.96	99.9

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

Sky Chart



Location: Set from geolocation service
Latitude: 34° 39' N, longitude: 118° 10' W
Time: 2024 January 13, 20:00 (UTC -08:00)

Powered by: Heavens-Above.com

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 January 13, 2024. The list is sorted by the transit time of the object.

ID	Common Name	Type	Const	RA	Dec	Mag	Rise	Transit	Set
Abell62		P Neb	Aql	19h 33m 18s	+10° 37.0'	13.0	05:29	12:01	18:34
NGC6807		P Neb	Aql	19h 34m 34s	+05° 41.0'	14.0	05:44	12:03	18:21
M55	NGC6809	Globular	Sgr	19h 40m 00s	-30° 57.7'	7.0	07:43	12:08	16:33
NGC6813		Neb	Vul	19h 40m 22s	+27° 18.5'		04:41	12:08	19:36
GC6820		Neb	Vul	19h 42m 28s	+23° 05.2'		04:58	12:11	19:23
Barnard338	B338	DkNeb	Aql	19h 43m 02s	+07° 27.0'		05:47	12:11	18:35
NGC6818	Little Gem	P Neb	Sgr	19h 43m 58s	-14° 09.1'	10.0	06:50	12:12	17:35
NGC6826	Blinking Planetary	P Neb	Cyg	19h 44m 48s	+50° 31.0'	8.8	02:14	12:13	22:11
Abell65		P Neb	Sgr	19h 46m 34s	-23° 08.2'	13.1	07:21	12:15	17:09
NGC6838		Globular	Sge	19h 53m 46s	+18° 46.6'	8.3	05:24	12:22	19:20
NGC6842		P Neb	Vul	19h 55m 02s	+29° 17.3'	14.0	04:48	12:23	19:58
HR7619	Psi Cyg	Mult	Cyg	19h 55m 38s	+52° 26.3'	4.9	01:54	12:24	22:54
Abell66		P Neb	Sgr	19h 57m 32s	-21° 36.6'	14.1	07:26	12:26	17:25
Barnard144	Fish on the platter nebula	DkNeb	Cyg	19h 58m 00s	+35° 20.0'		04:24	12:26	20:28
NGC6853	Apple Core Nebula	P Neb	Vul	19h 59m 36s	+22° 43.2'	8.1	05:17	12:28	19:39
NGC6857	III-144	Neb	Cyg	20h 02m 48s	+33° 31.4'	11.4	04:37	12:31	20:24
IC4954		Neb	Vul	20h 04m 45s	+29° 15.1'		04:58	12:33	20:08
M75	NGC6864	Globular	Sgr	20h 06m 05s	-21° 55.3'	9.5	07:36	12:34	17:32
Barnard342	B342	DkNeb	Cyg	20h 09m 30s	+41° 12.0'		04:03	12:38	21:12
NGC6885	20 Vulpeculae Cluster	Open	Vul	20h 12m 00s	+26° 29.0'	5.9	05:16	12:40	20:04
NGC6891		P Neb	Del	20h 15m 09s	+12° 42.2'	12.0	06:04	12:43	19:22
NGC6894		P Neb	Cyg	20h 16m 24s	+30° 33.9'	14.0	05:04	12:45	20:25
IC4997		P Neb	Sge	20h 20m 09s	+16° 43.9'	12.0	05:57	12:48	19:39
Barnard345	B345	DkNeb	Cyg	20h 21m 00s	+46° 33.0'		03:34	12:49	22:04
NGC6913	Cooling Tower	Open	Cyg	20h 23m 57s	+38° 30.5'	6.6	04:33	12:52	21:11
Abell70		P Neb	Aql	20h 31m 33s	-07° 05.3'	14.3	07:17	13:00	18:43
Barnard348	B348	DkNeb	Cyg	20h 34m 00s	+42° 05.0'		04:22	13:02	21:42
NGC6940		Open	Vul	20h 34m 26s	+28° 17.0'	6.3	05:31	13:03	20:34
NGC6960	Filamentary Nebula	Neb	Cyg	20h 45m 58s	+30° 35.6'		05:33	13:14	20:55
IC5068		Neb	Cyg	20h 50m 29s	+42° 28.6'		04:36	13:19	22:02
IC5070	Pelican Nebula	Neb	Cyg	20h 51m 00s	+44° 24.1'		04:22	13:19	22:16
NGC6979	II-206	Neb	Cyg	20h 51m 00s	+32° 09.0'	11.0	05:32	13:19	21:06
NGC6981		Globular	Aqr	20h 53m 28s	-12° 32.2'	9.4	07:54	13:22	18:49
IC5076		Neb	Cyg	20h 55m 33s	+47° 23.7'		04:01	13:24	22:46
IC1340		Neb	Cyg	20h 56m 08s	+31° 02.8'		05:42	13:24	21:07
NGC6992	Cirrus Nebula	Neb	Cyg	20h 56m 19s	+31° 44.6'		05:39	13:24	21:10

ID	Common Name	Type	Const	RA	Dec	Mag	Rise	Transit	Set
NGC6996	VIII-58	Open	Cyg	20h 56m 30s	+44° 38.0'	10.0	04:26	13:25	22:23
NGC6997		Open	Cyg	20h 56m 39s	+44° 37.9'	10.0	04:26	13:25	22:23
Barnard352	B352	DkNeb	Cyg	20h 57m 10s	+45° 53.0'		04:16	13:25	22:34
Barnard354	B354	DkNeb	Cep	20h 58m 00s	+58° 09.0'		Circ	13:26	Circ
NGC7000	Gulf of Mexico	BrNeb	Cyg	20h 58m 48s	+44° 20.0'		04:31	13:27	22:23
M73	NGC6994	Open+ Asterism	Aqr	20h 58m 56s	-12° 38.1'	9.0	08:00	13:27	18:54
NGC7006	C42	Globular	Del	21h 01m 30s	+16° 11.0'	10.6	06:40	13:30	20:19
NGC7009	Saturn Nebula	P Neb	Aqr	21h 04m 12s	-11° 22.0'	8.0	08:02	13:32	19:03
NGC7027		P Neb	Cyg	21h 07m 02s	+42° 14.1'	10.0	04:54	13:35	22:17
IC1369		Open	Cyg	21h 12m 09s	+47° 46.1'	6.8	04:14	13:40	23:07
Barnard153	B153	DkNeb	Cep	21h 21m 03s	+56° 26.0'		Circ	13:49	Circ
NGC7076		Neb	Cep	21h 26m 24s	+62° 53.5'		Circ	13:55	Circ
NGC7078	Great Pegasus Cluster	Globular	Peg	21h 29m 58s	+12° 10.0'	6.4	07:21	13:58	20:35
M39	NGC7092	Open	Cyg	21h 31m 42s	+48° 25.0'	5.5	04:27	14:00	23:33
M2	NGC7089	Globular	Aqr	21h 33m 27s	-00° 49.3'	7.5	08:01	14:02	20:02
NGC7090		Galaxy	Ind	21h 36m 28s	-54° 33.4'	11.0	12:56	14:05	15:13
IC1396	Elephant Trunk	Open	Cep	21h 38m 58s	+57° 29.3'	3.5	Circ	14:07	Circ
NGC7099		Globular	Cap	21h 40m 22s	-23° 10.7'	7.5	09:15	14:08	19:02
NGC7128		Open	Cyg	21h 43m 57s	+53° 42.9'	9.7	03:11	14:12	01:13
NGC7142		Open	Cep	21h 45m 09s	+65° 46.5'	9.3	Circ	14:13	Circ
NGC7139	III-696	P Neb	Cep	21h 46m 08s	+63° 47.5'	13.3	Circ	14:14	Circ
Barnard166	B166	DkNeb	Cep	21h 51m 05s	+60° 05.0'		Circ	14:19	Circ
Barnard168	B168	DkNeb	Cyg	21h 53m 20s	+47° 16.0'		05:00	14:21	23:43
IC5146	Cocoon Nebula	Open	Cyg	21h 53m 29s	+47° 16.0'	7.2	05:00	14:22	23:43
IC1434		Open	Lac	22h 10m 42s	+52° 51.0'	9.0	04:00	14:39	01:17
NGC7245		Open	Lac	22h 15m 11s	+54° 20.6'	9.2	03:16	14:43	02:10
NGC7232		Galaxy	Gru	22h 15m 38s	-45° 51.0'	13.0	11:41	14:44	17:46
NGC7261		Open	Cep	22h 20m 06s	+58° 03.0'	8.4	Circ	14:48	Circ
NGC7293	Helix Nebula	P Neb	Aqr	22h 29m 36s	-20° 48.0'	7.3	09:56	14:58	20:00
NGC7380		Open	Cep	22h 47m 21s	+58° 07.9'	7.2	Circ	15:15	Circ
C9	Cave Nebula	BrNeb	Cep	22h 56m 48s	+62° 37.0'		Circ	15:25	Circ
IC1470		Neb	Cep	23h 05m 10s	+60° 14.6'		Circ	15:33	Circ
NGC7492		Globular	Aqr	23h 08m 27s	-15° 36.6'	11.5	10:18	15:37	20:55
HR8872	Omi Cep	Triple	Cep	23h 18m 38s	+68° 06.6'	4.8	Circ	15:47	Circ
IC5308		Galaxy	Gru	23h 19m 21s	-42° 15.4'	12.0	12:19	15:47	19:16
M52	The Scorpion	Open	Cas	23h 24m 48s	+61° 35.6'	8.0	Circ	15:53	Circ
NGC7662	Blue Snowball	P Neb	And	23h 25m 54s	+42° 33.0'	8.3	07:11	15:54	00:38
NGC7686		Open	And	23h 30m 07s	+49° 08.0'	5.6	06:17	15:58	01:39

ID	Common Name	Type	Const	RA	Dec	Mag	Rise	Transit	Set
IC5332		Galaxy	Scl	23h 34m 27s	-36° 06.0'	10.6	12:00	16:03	20:05
NGC7785		Galaxy	Psc	23h 55m 19s	+05° 54.9'	11.6	10:04	16:23	22:43
HR9071	Sig Cas	Triple	Cas	23h 59m 01s	+55° 45.3'	4.9	Circ	16:27	Circ
NGC7822		Neb	Cep	00h 03m 36s	+67° 09.0'		Circ	16:32	Circ
NGC55	C72	S Gal	Scl	00h 14m 54s	-39° 11.0'	7.9	12:57	16:43	20:29
NGC129		Open	Cas	00h 30m 00s	+60° 13.1'	6.5	Circ	16:58	Circ
NGC133		Open	Cas	00h 31m 19s	+63° 21.0'	9.0	Circ	16:59	Circ
NGC146		Open	Cas	00h 33m 03s	+63° 18.0'	9.1	Circ	17:01	Circ
NGC147	C17	E Gal	Cas	00h 33m 12s	+48° 30.0'	9.3	07:27	17:01	02:35
NGC190		Galaxy	Psc	00h 38m 55s	+07° 03.7'	14.0	10:44	17:07	23:30
M110	Sat Of Andromeda Galaxy	Galaxy	And	00h 40m 22s	+41° 41.1'	8.9	08:31	17:08	01:46
NGC210		Galaxy	Cet	00h 40m 35s	-13° 52.3'	10.9	11:45	17:09	22:32
NGC206	V-36	Neb	And	00h 40m 36s	+40° 44.0'		08:37	17:09	01:40
Arp168	M32	Galaxy	And	00h 42m 41s	+40° 51.0'	9.0	08:38	17:11	01:43
M32	Sat Of Andromeda Galaxy	Galaxy	And	00h 42m 42s	+40° 51.9'	9.1	08:38	17:11	01:43
M31	Andromeda Galaxy	Galaxy	And	00h 42m 44s	+41° 16.1'	4.3	08:36	17:11	01:46
NGC246	C56	P Neb	Cet	00h 47m 00s	-11° 53.0'	10.9	11:46	17:15	22:44
NGC254		Galaxy	Scl	00h 47m 28s	-31° 25.2'	11.8	12:53	17:16	21:39
NGC288		Globular	Scl	00h 52m 45s	-26° 35.0'	8.1	12:39	17:21	22:03
NGC281	PacMan Nebula	Open	Cas	00h 52m 54s	+56° 37.4'	7.0	Circ	17:21	Circ
IC59	Gamma Cassiopeiae Nebula	Neb	Cas	00h 57m 29s	+61° 08.6'		Circ	17:26	Circ
IC63	Gamma Cassiopeiae Nebula	Neb	Cas	00h 59m 29s	+60° 54.7'		Circ	17:28	Circ
C51	IC1613	IrrGal	Cet	01h 04m 48s	+02° 07.0'	9.3	11:24	17:33	23:42
NGC474		Galaxy	Psc	01h 20m 07s	+03° 24.9'	11.1	11:36	17:48	00:01
NGC485		Galaxy	Psc	01h 21m 28s	+07° 01.0'	14.0	11:27	17:50	00:12
M103	NGC581	Open	Cas	01h 33m 23s	+60° 39.0'	7.0	Circ	18:01	Circ
NGC598	Pinwheel Galaxy	Galaxy	Tri	01h 33m 51s	+30° 39.6'	5.7	10:21	18:02	01:43
NGC604	III-150	Neb	Tri	01h 34m 33s	+30° 47.0'		10:21	18:03	01:44
M74	The Phantom	Galaxy	Psc	01h 36m 42s	+15° 47.0'	9.8	11:17	18:05	00:53
M76	Little Dumbbell Nebula	P Neb	Per	01h 42m 18s	+51° 34.2'	12.0	07:56	18:10	04:25
NGC651	Apple Core Nebula	P Neb	Per	01h 42m 21s	+51° 34.1'	12.2	07:56	18:10	04:25
NGC637		Open	Cas	01h 43m 04s	+64° 02.4'	8.2	Circ	18:11	Circ
NGC654		Open	Cas	01h 44m 00s	+61° 53.0'	6.5	Circ	18:12	Circ
NGC720		Galaxy	Cet	01h 53m 00s	-13° 44.3'	10.2	12:57	18:21	23:45
NGC780		Galaxy	Tri	02h 00m 35s	+28° 13.5'	14.0	10:58	18:29	02:00
NGC784		Galaxy	Tri	02h 01m 17s	+28° 50.2'	11.8	10:56	18:29	02:03
NGC821		Galaxy	Ari	02h 08m 21s	+10° 59.6'	10.8	12:03	18:36	01:10
Baily191	NGC884	Open	Per	02h 22m 18s	+57° 08.1'	4.0	Circ	18:50	Circ
IC1795		Neb	Cas	02h 26m 32s	+62° 02.4'		Circ	18:55	Circ

ID	Common Name	Type	Const	RA	Dec	Mag	Rise	Transit	Set
NGC936		Galaxy	Cet	02h 27m 37s	-01° 09.3'	10.1	12:56	18:56	00:55
NGC943	Arp309	Galaxy	Cet	02h 29m 09s	-10° 49.0'	11.4	13:25	18:57	00:30
NGC956		Open	And	02h 32m 30s	+44° 35.6'	9.0	10:02	19:01	03:59
IC1805	Heart Nebula	Open	Cas	02h 32m 47s	+61° 27.6'	6.5	Circ	19:01	Circ
NGC1052		Galaxy	Cet	02h 41m 05s	-08° 15.3'	10.6	13:30	19:09	00:49
M34	Spiral Cluster	Open	Per	02h 42m 05s	+42° 45.6'	6.0	10:25	19:10	03:55
M77	Cetus A	Galaxy	Cet	02h 42m 41s	-00° 00.8'	9.7	13:08	19:11	01:14
NGC1084		Galaxy	Eri	02h 46m 00s	-07° 34.6'	10.6	13:33	19:14	00:56
IC1848	Soul Nebula	Open	Cas	02h 51m 18s	+60° 24.4'	6.5	Circ	19:19	Circ
NGC1156		Galaxy	Ari	02h 59m 42s	+25° 14.2'	11.7	12:08	19:28	02:48
NGC1201		Galaxy	For	03h 04m 08s	-26° 04.1'	10.6	14:49	19:32	00:16
NGC1175		Galaxy	Per	03h 04m 32s	+42° 20.3'	12.8	10:51	19:33	04:15
HR963	SAO168373,	Dbl	For	03h 12m 04s	-28° 59.2'	3.9	15:07	19:40	00:13
NGC1316	Fornax A	Galaxy	For	03h 22m 42s	-37° 12.4'	8.9	15:54	19:51	23:47
Barnard202	B202	DkNeb	Ari	03h 25m 38s	+30° 16.0'		12:15	19:54	03:33
Barnard204	B204	DkNeb	Ari	03h 28m 29s	+30° 11.0'		12:18	19:57	03:35
NGC1350		Galaxy	For	03h 31m 08s	-33° 37.7'	10.5	15:46	19:59	00:13
Barnard1		DkNeb	Per	03h 32m 57s	+31° 09.0'		12:18	20:01	03:44
Barnard2		DkNeb	Per	03h 33m 31s	+32° 19.0'		12:14	20:02	03:50
Barnard3		DkNeb	Per	03h 40m 01s	+31° 58.0'		12:22	20:08	03:55
NGC1407		Galaxy	Eri	03h 40m 12s	-18° 34.8'	9.8	14:59	20:08	01:17
IC347		Galaxy	Eri	03h 42m 32s	-04° 17.9'	13.0	14:20	20:11	02:01
NGC1448		Galaxy	Hor	03h 44m 32s	-44° 38.6'	11.0	17:01	20:13	23:25
IC348		Open	Per	03h 44m 34s	+32° 09.7'	7.3	12:25	20:13	04:00
M45	Pleiades	Open	Tau	03h 47m 30s	+24° 07.0'	1.6	13:00	20:16	03:31
Barnard5		DkNeb	Per	03h 47m 53s	+32° 53.0'		12:25	20:16	04:07
NGC1461		Galaxy	Eri	03h 48m 27s	-16° 23.5'	11.7	15:01	20:17	01:32
IC353		Neb	Tau	03h 53m 00s	+25° 48.0'		12:59	20:21	03:43

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

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