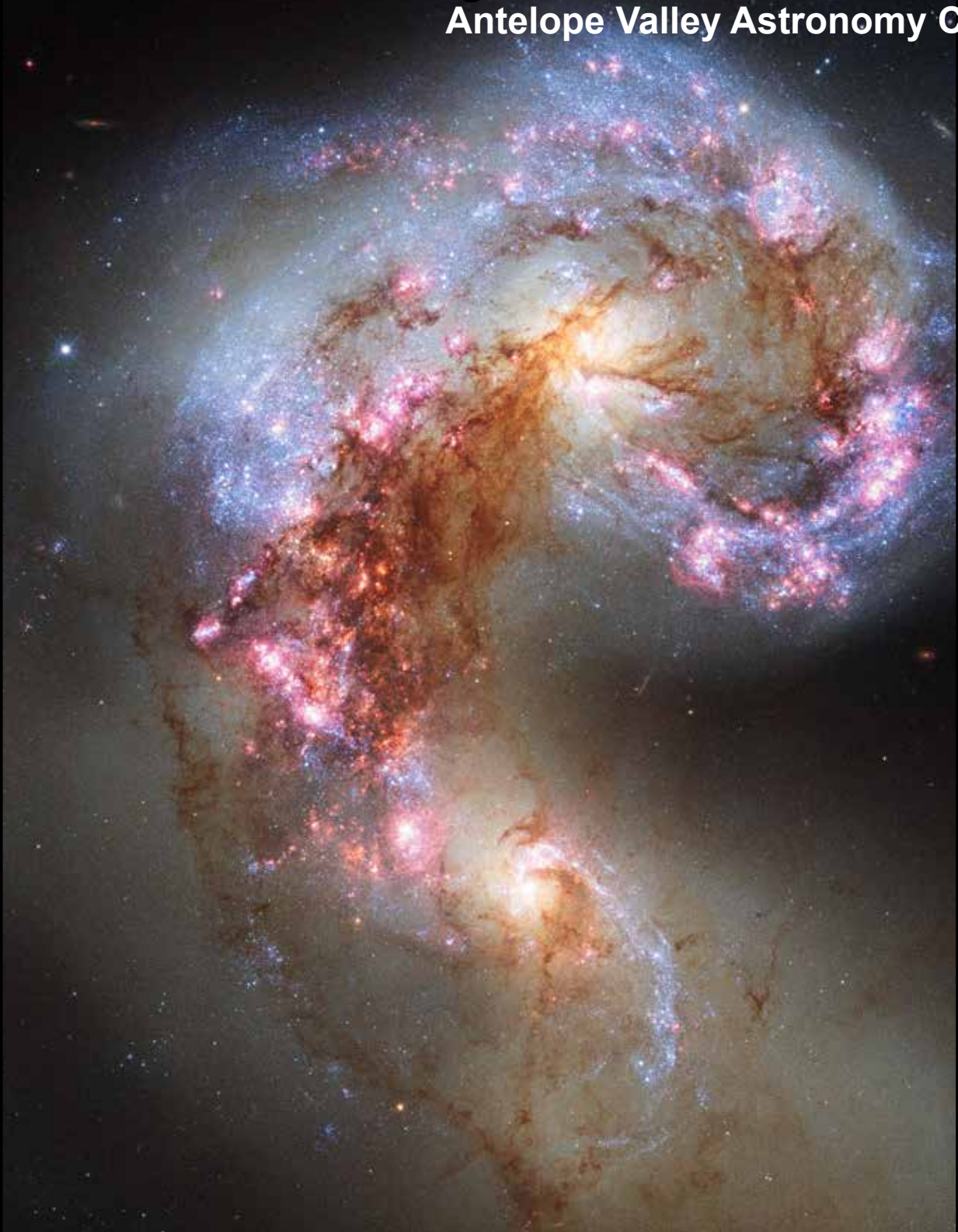


Volume 44.3

March 2024

# Desert Sky Observer

Antelope Valley Astronomy Club



# Desert Sky Observer

www.avastronomyclub.org

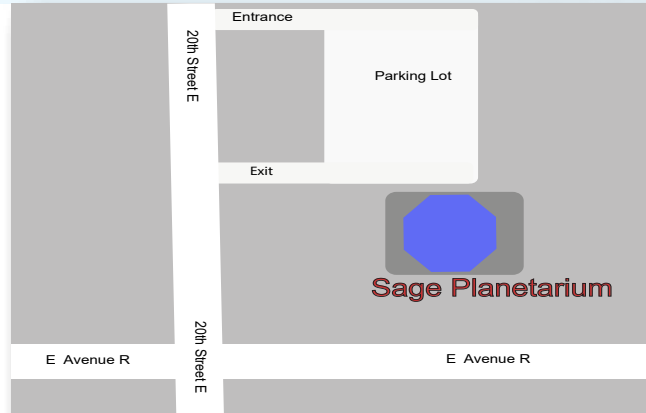
March 2024

## Upcoming Events

March 5: Election Day -- VOTE  
March 8: Club Meeting  
March 9: Messier Marathon Star Party @ SaddlebackSP  
March 10: Daylight Saving begins  
March 25: Penumbral Lunar eclipse  
March 30: Moonwalk @ PDW @ 7:30PM  
Every clear night: Personal Star Party  
April 6: DSSP/Messier Marathon at Chuchupate  
April 8: Partial Total Solar Eclipse  
April 12: Club Meeting  
April 13: Lunar Club at Matt's house  
April 27: Moonwalk @ PDW @ 8:00 PM



AVAC Calendar



## Board Members

**President:** Phil Wriedt (661) 917-4874  
[president@avastronomyclub.org](mailto:president@avastronomyclub.org)

**Vice-President:** Matt Leone (661) 256-3851  
[vice-president@avastronomyclub.org](mailto:vice-president@avastronomyclub.org)

**Secretary:** Rose Moore (661) 972-1953  
[secretary@avastronomyclub.org](mailto:secretary@avastronomyclub.org)

**Treasurer:** Rod Girard (661) 803-7838  
[treasurer@avastronomyclub.org](mailto:treasurer@avastronomyclub.org)

**Director of Community Development:**  
Christian Amaya (661) 972-0091  
[community@avastronomyclub.org](mailto:community@avastronomyclub.org)

## Appointed Positions

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

**Equipment & Library:**  
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**Club Historian:** vacant  
[history@avastronomyclub.org](mailto:history@avastronomyclub.org)

**Webmaster:** Steve Trotta (661) 269-5428  
[webmaster@avastronomyclub.org](mailto:webmaster@avastronomyclub.org)

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

**Astronomical League Coordinator:**  
Phil Wriedt (661) 917-4874  
[al@avastronomyclub.org](mailto: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 20<sup>th</sup> 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/](http://www.avastronomyclub.org/)

[www.instagram.com/av\\_astronomyclub](https://www.instagram.com/av_astronomyclub)



[www.avastronomyclub.org](http://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!

Our next meeting will be on the 8th. At the last meeting, Jeremy said that he has a speaker that was willing to come and speak at this month's meeting. Rose will send out a email giving more details as they become known.

The next day will be the Club's attempt at doing a Messier Marathon at Saddleback State Park. Over the past two years I've had to cancel the star parties due to rain and wind storms. We reserved the large group campground for those star parties. It would seem like a waste of money to pay for the group camp and then have 3 people show up. So we are asking that those that go, to pick an individual camp and setup there, hopefully near each other. Given that every weekend lately we've had a rainstorm, I can't say I am holding out a great deal of optimism. We have another Dark Sky party on April 6 at Chuchupate, so there will be another chance to do a Marathon.

On Saturday the 30th(Easter weekend) is the next Moonwalk at Prime Desert Woodland. Sunset is at 7:12 PM so the walk itself will start about 7:45 PM. Once again we need telescopes there for the public to view the sky. Come, get setup before sunset, caus' setting up in the dark just ain't no fun. It goes without saying (but I'll say it anyway) It's cold out there! It might rain too, so be prepared. Jeremy has said he will do the Moonwalk even if its cloudy. Don't setup if it's overcast or rainy.

It's still that time of the year, to renew your membership. As of a couple of days ago less than half of the Club have renewed their membership. Just follow the directions on the website, pay via PayPal or give Rod a check at the next meeting. We have lots of observing opportunities planned for this next year.

Keep Looking Up, Phil

## AVAC Membership Renewal

There is still time to renew your membership! The easiest way to renew your membership is through the AVAC website via our PayPal account . But you can still renew using a check via the club's Post Office Box:

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

## On The Cover

Please note: North is 0.0° right of vertical RA: 12h 1' 53.82" DEC: -18° 52' 31.37" ( Corvus )

The NASA/ESA Hubble Space Telescope has snapped the best ever image of the Antennae Galaxies. Hubble has released images of these stunning galaxies twice before, once using observations from its Wide Field and Planetary Camera 2 (WFPC2) in 1997, and again in 2006 from the Advanced Camera for Surveys (ACS). Each of Hubble's images of the Antennae Galaxies has been better than the last, due to upgrades made during the famous servicing missions, the last of which took place in 2009.

The galaxies — also known as NGC 4038 and NGC 4039 — are locked in a deadly embrace. Once normal, sedate spiral galaxies like the Milky Way, the pair have spent the past few hundred million years sparring with one another. This clash is so violent that stars have been ripped from their host galaxies to form a streaming arc between the two. In wide-field images of the pair the reason for their name becomes clear — far-flung stars and streamers of gas stretch out into space, creating long tidal tails reminiscent of antennae.

[continued on next page](#)

## From the Secretary

By Rose Moore

Members:

We have a club meeting on Friday March 8th at 7pm. We are working on getting a speaker, further info/email to follow. We have applications for speakers from both Night Sky Network and the NASA Engages site (formerly the Speaker Bureau).

On Saturday, March 9th we have our Messier Marathon dark sky star party; we need to hear from members if they will be attending this event! We are not going to reserve the large group camp site as we have not had enough members turning out for recent star parties. So if the club has a Messier Marathon, it will be at Saddleback State Park, and it will be up to the individuals to secure an individual campsite, hopefully close to other members. Please let us know either by email or contacting a Board member, if you will be going! We need a head count to make a decision as to whether to have this event.

There is a penumbral lunar eclipse starting on the evening of Sunday March 24th. There will be no event held for this eclipse as the shadowed part of the Moon will be hard to see.

Our Prime Desert Moon Walk for March is scheduled for Sunday March 30th at 7:30pm. However this may be changed as that weekend is the Easter holiday. We will keep you posted as to any change. We will need members with telescopes, everything depends on the weather.

Coming up in April we have a dark sky star party on April 6th at Chuchupate; a club meeting on Friday April 12th; a Lunar Club event at Matt's for Saturday April 13th; and a Prime Desert Moon Walk on Saturday April 27th.

At April's meeting we will be handing out the Night Sky Network pins/certificates and our AVAC certificates for those who participated in events last year.

Don't forget there is a solar eclipse on Monday, April 8th. However, in our area, it will be totally eclipsed only about 40%. We do not have an event scheduled for this at this time. Stay tuned!

For those that haven't renewed their membership dues, please do so asap, as we will be having the membership list purged soon.

Clear skies, Rose

## On The Cover ... continued

This new image of the Antennae Galaxies shows obvious signs of chaos. Clouds of gas are seen in bright pink and red, surrounding the bright flashes of blue star-forming regions — some of which are partially obscured by dark patches of dust. The rate of star formation is so high that the Antennae Galaxies are said to be in a state of starburst, a period in which all of the gas within the galaxies is being used to form stars. This cannot last forever and neither can the separate galaxies; eventually the nuclei will coalesce, and the galaxies will begin their retirement together as one large elliptical galaxy.

This image uses visible and near-infrared observations from Hubble's Wide Field Camera 3 (WFC3), along with some of the previously-released observations from Hubble's Advanced Camera for Surveys (ACS).

Credit: ESA/Hubble & NASA

## Vice President's Corner

By Matt Leone

March is a busy month with the Messier Marathon on March 9, moon walk on the 30th, and a lunar eclipse on the 24/25th. Jupiter is going away further in the west. Saturn will start coming up in the east in the early morning.

The one thing I love about the Messier Marathon you start to get the sky back in your head. Its like a crash course on the sky; I don't know about you but I can see the lines in the constellation. I just love the night sky, looking up at night and wishing I was out there. Just think in a hundred years from now, going to the planets will be second nature.

Hopefully the pictures from the painting class will be on the web site. I hope you all had fun painting and you will love to have another class. I want to invite all off you to join my friends and me at Mt. Pinos August 2-5 it will be a great weekend observing.

There is one last thing I would love to talk about. It would be nice to see people in our club going to star parties. Bring a friend, sit out under the stars and make great friends. I just love hearing "wow," "is that real," "no way." When you see it live, with your eye through a lens it touches you in different ways. Pictures are nice but it sinks in your brain better when it is live and under the sky. Maybe I just love camping, or it brings back memories of all the friends I have made during the night. I know somewhere out there someone is thinking and saying remember when that guy showed me the sky and it touched me. When we go through life, we can either make it better or just be a lump of coal.

So, lets light up the night and make memories, Matt



The "Artists of January" also known as the January painting class.

For sale: 4 inch Celestron Equatorial telescope. Includes mount, solar filter, finder scope, eyepieces, two inch diagonal, carrying bag. Few scratches on finish. Price: \$250. Email either Duane ([gurba1826@gmail.com](mailto:gurba1826@gmail.com)) or Rose ([rmorion1@bak.rr.com](mailto:rmorion1@bak.rr.com))

## Constant Companions: Circumpolar Constellations, Part II

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

As the seasons shift from Winter to Spring, heralding in the promise of warmer weather here in the northern hemisphere, our circumpolar constellations remain the same. Depending on your latitude, you will be able to see up to nine circumpolar constellations. This month, we'll focus on: Lynx, Camelopardalis, and Perseus. The objects within these constellations can all be spotted with a pair of binoculars or a small to medium-sized telescope, depending on your Bortle scale – the darkness of your night skies.



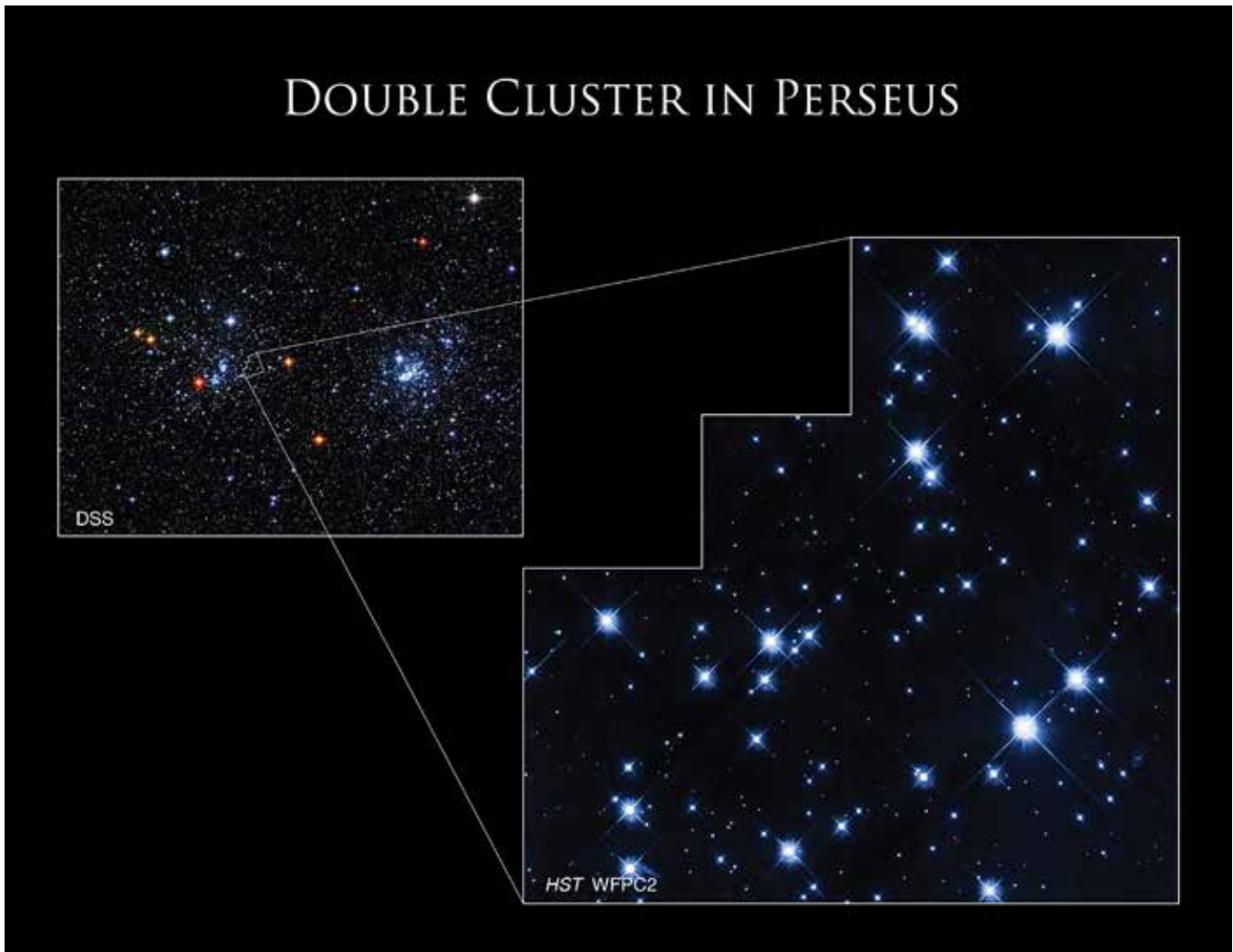
In the appearance of left to right: constellations Perseus, Camelopardalis, and Lynx in the night sky. Also featured: Cassiopeia as a guide constellation, and Capella as a guide star. Credit: Stellarium Web

- **Double Stars:** The area that comprises the constellation Lynx is famous for its multiple star systems, all of which can be separated with a telescope under dark skies. Some of the notable stars in Lynx are the following:
  - 12 Lyncis – a triple star that can be resolved with a medium-sized telescope.
  - 10 Ursae Majoris – a double star that was once a part of Ursa Major.
  - 38 Lyncis – a double star that is described as blue-white and lilac.
- **Kemble's Cascade:** This asterism located in Camelopardalis, has over 20 stars, ranging in visible magnitude (brightness) and temperature. The stars give the appearance of flowing in a straight line leading to the Jolly Roger Cluster (NGC 1502). On the opposite side of this constellation, you find the asterism Kemble's Kite. All three objects can be spotted with a pair of binoculars or a telescope and require moderate dark skies.

### 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!

## DOUBLE CLUSTER IN PERSEUS



A ground-based image from the Digitized Sky Survey (DSS) in the upper left shows Caldwell 14, the Double Cluster in Perseus, with an outline of the region imaged by Hubble's Wide Field and Planetary Camera 2 (WFPC2). Ground-based image: Digitized Sky Survey (DSS); Hubble image: NASA, ESA, and S. Casertano (Space Telescope Science Institute); Processing: Gladys Kober (NASA/Catholic University of America)

- **Double Cluster:** The constellation Perseus contains the beautiful Double Cluster, two open star clusters (NGC 869 and 884) approximately 7,500 light-years from Earth. This object can be spotted with a small telescope or binoculars and is photographed by amateur and professional photographers alike. It can even be seen with the naked eye in very dark skies. Also in Perseus lies Algol, the Demon Star. Algol is a triple-star system that contains an eclipsing binary, meaning two of its three stars constantly orbit each other. Because of this orbit, you can watch the brightness dim every two days, 20 hours, 49 minutes – for 10-hour periods at a time. For a visual representation of this, revisit NASA's What's Up: November 2019.

From constellations you can see all year to a once in a lifetime event! Up next, find out how you can partner with NASA volunteers for the April 8, 2024, total solar eclipse with our upcoming mid-month article on the Night Sky Network page through NASA's website!

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](https://nightsky.jpl.nasa.gov) to find local clubs, events, and more!

## Space News

News from around the Net

### Scientists Find Evidence Of Geothermal Activity Within Icy Dwarf Planets

A team co-led by Southwest Research Institute found evidence for hydrothermal or metamorphic activity within the icy dwarf planets Eris and Makemake, located in the Kuiper Belt. Methane detected on their surfaces has the tell-tale signs of warm or even hot geochemistry in their rocky cores, which is markedly different than the signature of methane from a comet. “We see some interesting signs of hot times in cool places,” said SwRI’s Dr. Christopher Glein, an expert in planetary geochemistry . . . (continued at <https://phys.org/news/2024-02-scientists-evidence-geothermal-icy-dwarf.html> )



### A Lunar Odyssey: “Odie” Lander Touches Down On The Moon

Odyssey has become the first mission of NASA’s Commercial Lunar Payload Services program to soft-land on the Moon. UPDATE: February 24, 2024: NASA and Intuitive Machines held a press conference yesterday, stating that while Odyssey did indeed land on the Moon and controllers are receiving telemetry, the Nova-C lander appears to be perched on its side. Systems seem to be receiving power through the lander’s solar panels, and it appears that the EagleCAM cubesat did not deploy prior to landing. . . . (continued at <https://skyandtelescope.org/astronomy-news/a-lunar-odyssey-odie-lander-touches-down-on-the-moon/> )



### This Quasar Eats One Sun A Day For Breakfast

Astrophysicists just spotted the brightest and fastest-growing supermassive black hole — and it turns out, it was hiding in plain sight for decades. Dubbed J0529-4351, the quasar was so bright that it was first dismissed as a star. Described in a paper published in Nature Astronomy, the quasar has a mass of 17 billion Suns and it’s still growing. The black hole is consuming the equivalent of one Sun per day, shining brighter than 500 trillion Suns and making it the brightest known object in the universe. . . . (continued at <https://www.astronomy.com/science/this-quasar-eats-one-sun-a-day-for-breakfast/> )



### JWST’s New Look At Supernova 1987a Reveals A Neutron Star

In 1987, astronomers had an incredible front-row seat to a cosmic event that maybe isn’t rare, but rarely happens near us. Just 168,000 light-years away, on February 23 of that year, a star in the Large Magellanic Cloud, the largest satellite galaxy of the Milky Way, exploded. This happened when the star’s core collapsed into a dense object and expelled the outer gas layers, giving astronomers an iconic show. As the closest supernova that has happened in our lifetimes, Supernova 1987A (SN 1987A) has been studied, scrutinized . . . (continued at <https://www.astronomy.com/science/jwsts-new-look-at-supernova-1987a-reveals-a-neutron-star/> )



### Researchers Find Destruction Of Oceans’ Worth Of Water Per Month In Orion Nebula

An international team, including Western astrophysicists Els Peeters and Jan Cami, has found the destruction and re-formation of a large quantity of water in a planet-forming disk located at the heart of the Orion Nebula. This discovery was made possible by an original multidisciplinary approach combining observations from the James Webb Space Telescope (JWST) and quantum physics calculations. . . . (continued at <https://phys.org/news/2024-02-destruction-oceans-worth-month-orion.html> )



### Ride The Wave Of Radio Astronomy During The Solar Eclipse

Students and science enthusiasts are invited to catch a real-time look at radio astronomy as scientists explore magnetic hotspots on the Sun during a live, virtual solar eclipse event on April 8, 2024. A massive, 34-meter telescope once used by NASA’s Deep Space Network to communicate with spacecraft will point towards the Sun during the solar eclipse that day. The Moon’s position in front of the Sun will help the antenna detect radio waves from solar active regions in more detail than is usually possible. . . (continued at <https://science.nasa.gov/solar-system/skywatching/ride-the-wave-of-radio-astronomy-during-the-solar-eclipse/> )



## Space News

News from around the Net

### **Brightest And Fastest-Growing: Astronomers Identify Record-Breaking Quasar**

Using the European Southern Observatory's (ESO) Very Large Telescope (VLT), astronomers have characterised a bright quasar, finding it to be not only the brightest of its kind, but also the most luminous object ever observed. Quasars are the bright cores of distant galaxies and they are powered by supermassive black holes. The black hole in this record-breaking quasar is growing in mass by the equivalent of one Sun per day, making it the fastest-growing black hole to date. The black holes powering quasars collect matter from their surroundings in a process so energetic . . . (continued at <https://www.eso.org/public/news/eso2402/> )



### **What Is Rubin Observatory?**

Every night for a decade, Rubin Observatory will take images of the sky using a 3200 megapixel camera and six different optical filters. Each image covers an area as big as 40 full moons, and the giant 8.4-meter telescope can move between different positions in less than five seconds. In this way, the telescope will image the entire visible sky every 3-4 nights. This makes Rubin Observatory particularly good at detecting objects that have changed in brightness, like supernovae, or in position, like asteroids. . . . (continued at <https://rubinobservatory.org/about> )



### **What Kinds Of Astronomy Could Be Done With A Telescope On The Moon?**

For decades, astronomers have said that one of the most optimal places to build large telescopes is on the surface of the Moon. The Moon has several advantages over Earth- and space-based telescopes that make it worth considering as a future home for giant observatories. A new paper lists all the advantages, including how telescopes on the lunar surface wouldn't be blocked by an atmosphere or impacted by wind, and how the low gravity would allow gigantic structures to be built that could be upgraded over time by astronauts. . . . (continued at <https://www.universetoday.com/165883/what-kinds-of-astronomy-could-be-done-with-a-telescope-on-the-moon/> )



### **ESO Reports Good Progress Building The Extremely Large Telescope**

The European Southern Observatory's aptly-named Extremely Large Telescope, featuring a huge 39-metre-wide (128-foot) segmented primary mirror and sophisticated adaptive optics, is roughly halfway complete with its massive dome rising in Chile, its mirror segments and instruments on track in Europe and support facilities in place. While it's been nine years since the project's ground breaking in 2014, the world's largest telescope is on track to begin operations in just five years. . . (continued at <https://astronomynow.com/2023/07/11/eso-reports-good-progress-building-the-extremely-large-telescope/> )



### **Solar Physics: Why Study It? What Can It Teach Us About Finding Life Beyond Earth?**

Universe Today has investigated the importance of studying impact craters, planetary surfaces, exoplanets, and astrobiology, and what these disciplines can teach both researchers and the public about finding life beyond Earth. Here, we will discuss the fascinating field of solar physics (also called heliophysics), including why scientists study it, the benefits and challenges of studying it, . . . (continued at <https://phys.org/news/2024-02-solar-physics-life-earth.html> )



### **Astronomy For "Cloudy, Cloudy Nights"**

Clouds have always been the nemesis of astronomers, blocking out the sky on nights that otherwise could've been used for serious work. And clouds affect all types of astronomers: planet watchers, asteroid hunters, nova chasers, deep-sky astrophotographers — all of them have to pack up when the clouds move in. So, traditionally, cloudy nights are used for other chores — catching up on astronomy reading, attending to telescopes and other gear, image processing, cataloging astrophotos and notebook pages, or even sleeping! . . (continued at <https://skyandtelescope.org/astronomy-news/astronomy-for-cloudy-cloudy-nights/> )



## 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.

**Saddleback Butte State Park** is east of 170th Street East between Avenue I and Avenue K. Elevation 3651 feet. Temperatures in summer average 95° with a high of 115,° winter average lows are 33° with occasional snow. There are 37 individual campsites and one group campsite. When the club has a star party there the group campsite is used. Individual campsites cost \$20 per night. Enter off Avenue K.



## Solar System Summary

The **Sun** moves from central Aquarius to the southern Pisces by the end of March.

On the evening of March 24/25 the **Moon** enters into a penumbral eclipse starting at 21:53, mid-point at 00:13, ending at 02:32.

## The Planets

**Mercury** begins the month, coming out from behind the setting Sun. It reaches a prominent place in the evening twilight during the second week, winding up the month in eastern Pisces.

**Venus** is still prominent in the morning sky. Starting the month at mag -3.92 in central of Capricorn. On the 21st Saturn passes by, 1/3° to the south.

**Mars** starts the month in Capricorn, moving east into Aquarius; slowly getting brighter as Earth catches up with Mars.

**Jupiter** continues moving forward in southern Aries at mag -2.0. On the 13th the 3.5 day crescent Moon passes 3½° north.

**Saturn**, still in Aquarius, after the Solar conjunction on 28th last month, quickly separating itself from the Sun. On the 21st Venus zips by 1/3° to the north.

**Uranus** continues moving east in eastern Aries at mag 5.8. By months end, Jupiter is 3½° east and closing.

**Neptune** is moving east on the southern border of Pisces at 7.9. On the 17th Neptune is in solar conjunction and thereafter passes into the morning twilight.

## Dwarf Planets

**134340 Pluto** spends the month, now in western Capricorn moving east at mag 14.5.

**1 Ceres** at mag 9.0 starts the month on the edge of Sagittarius moving east toward the center. .

**2 Pallas** at mag 9.3 continues moving east into southern Hercules, to mag 9.1.

**3 Juno** at mag 8.6, continues moving in retrograde in southern Leo, at the end of month is mag 9.3 .

**4 Vesta** is at mag 8, moving east in Taurus almost making it to Gemini by month's end.

## Moon Phases



First Qtr  
Mar 16

Full  
Mar 25

Third Qtr  
Mar 3

New  
Mar 10

## Sun and Moon Rise and Set\*

Date	Moonrise	Moonset	Sunrise	Sunset
3/1/2024	23:53	09:16	06:20	17:49
3/5/2024	03:01	12:29	06:15	17:52
3/10/2024	07:30	19:40	07:09	18:56
3/15/2024	10:22	00:29	07:02	19:00
3/20/2024	15:04	04:53	06:55	19:04
3/25/2024	19:48	07:02	06:48	19:08
3/30/2024	23:48	09:31	06:41	19:12

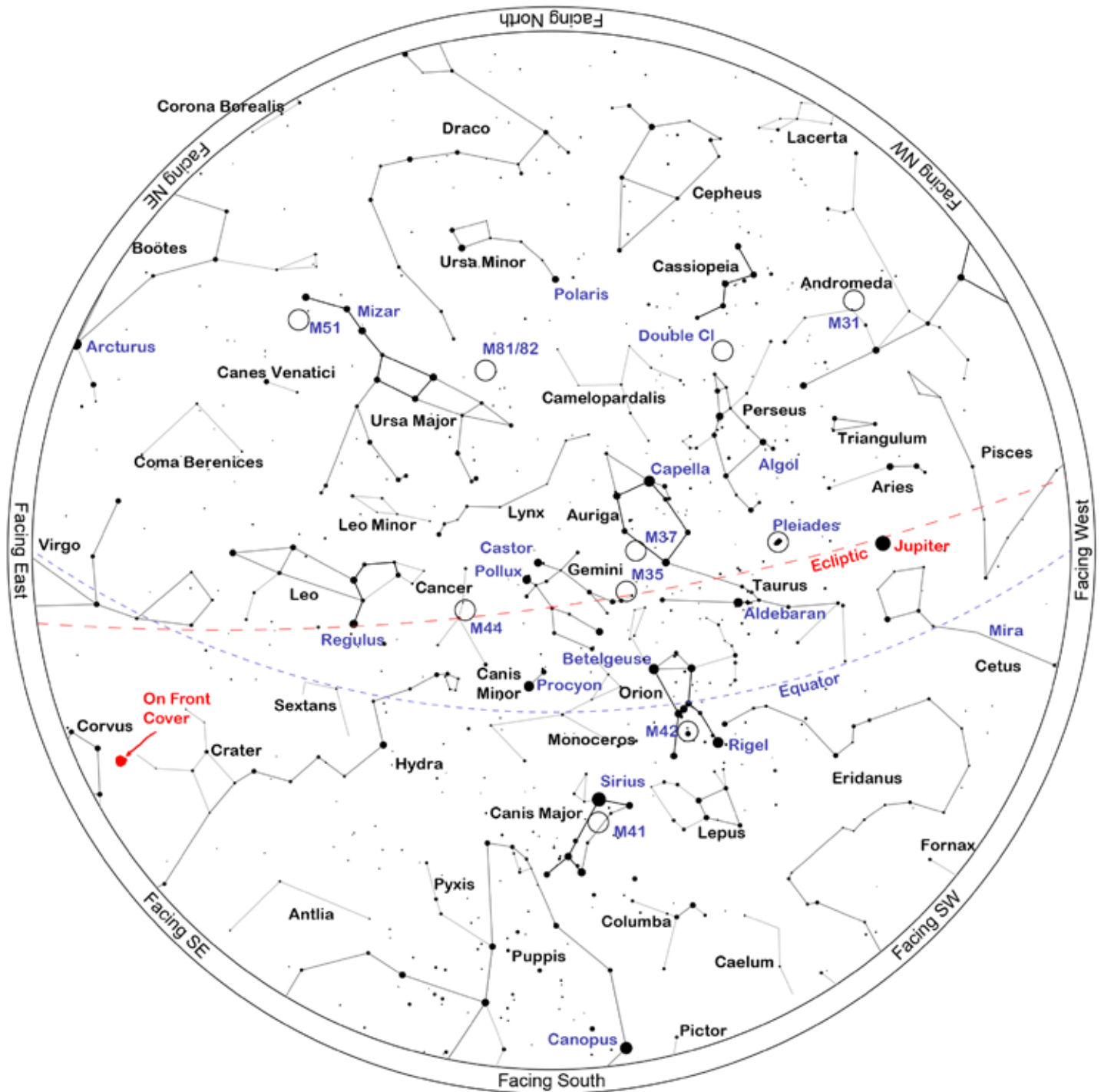
## Planet Data\*

	March 1				
	Rise	Transit	Set	Mag	Phase%
Mercury	06:34	12:16	17:58	-1.66	99.5
Venus	05:17	10:33	15:50	-3.92	91.5
Mars	05:06	10:18	15:29	1.26	97.1
Jupiter	09:06	15:49	22:32	-2.23	99.2
Saturn	06:25	12:01	17:37	0.95	100.
	March 15				
	Rise	Transit	Set	Mag	Phase%
Mercury	07:39	13:55	20:12	-1.06	77.2
Venus	06:13	11:46	17:19	-3.90	93.7
Mars	05:44	11:06	16:27	1.22	96.5
Jupiter	09:19	16:04	22:49	-2.16	99.5
Saturn	06:35	12:12	17:50	1.03	99.9
	March 30				
	Rise	Transit	Set	Mag	Phase%
Mercury	07:14	13:53	20:33	1.23	19.6
Venus	06:04	11:56	17:48	-4.06	95.7
Mars	05:18	10:51	16:25	1.19	95.6
Jupiter	08:29	15:17	22:05	-2.63	99.6
Saturn	05:40	11:20	17:00	0.93	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 March 9, 20:00 (UTC -08:00)

Powered by: Heavens-Above.com

# Desert Sky Observer

www.avastronomyclub.org

March 2024

## 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 March 9, 2024. The list is sorted by the transit time of the object.

ID	Common Name	Type	Const	RA	Dec	Mag	Rise	Transit	Set
NGC129		Open	Cas	00h 30m 00s	+60° 13.1'	6.5	Circ	13:17	Circ
NGC133		Open	Cas	00h 31m 19s	+63° 21.0'	9.0	Circ	13:19	Circ
NGC146		Open	Cas	00h 33m 03s	+63° 18.0'	9.1	Circ	13:20	Circ
NGC147	C17	E Gal	Cas	00h 33m 12s	+48° 30.0'	9.3	03:47	13:21	22:55
NGC190		Galaxy	Psc	00h 38m 55s	+07° 03.7'	14.0	07:04	13:26	19:49
M110	Satellite Of Andromeda Galaxy	Galaxy	And	00h 40m 22s	+41° 41.1'	8.9	04:50	13:28	22:05
NGC210		Galaxy	Cet	00h 40m 35s	-13° 52.3'	10.9	08:05	13:28	18:51
NGC206	V-36	Neb	And	00h 40m 36s	+40° 44.0'		04:56	13:28	22:00
Arp168	M32	Galaxy	And	00h 42m 41s	+40° 51.0'	9.0	04:58	13:30	22:02
M32	Satellite Of Andromeda Galaxy	Galaxy	And	00h 42m 42s	+40° 51.9'	9.1	04:58	13:30	22:03
M31	Andromeda Galaxy	Galaxy	And	00h 42m 44s	+41° 16.1'	4.3	04:55	13:30	22:05
NGC246	C56	P Neb	Cet	00h 47m 00s	-11° 53.0'	10.9	08:05	13:34	19:04
NGC254		Galaxy	Scl	00h 47m 28s	-31° 25.2'	11.8	09:12	13:35	17:58
NGC288		Globular	Scl	00h 52m 45s	-26° 35.0'	8.1	08:58	13:40	18:22
NGC281	PacMan Nebula	Open	Cas	00h 52m 54s	+56° 37.4'	7.0	Circ	13:40	Circ
IC59	Gamma Cassiopeiae Nebula	Neb	Cas	00h 57m 29s	+61° 08.6'		Circ	13:45	Circ
IC63	Gamma Cassiopeiae Nebula	Neb	Cas	00h 59m 29s	+60° 54.7'		Circ	13:47	Circ
C51	IC1613	IrrGal	Cet	01h 04m 48s	+02° 07.0'	9.3	07:43	13:52	20:01
M103	NGC581	Open	Cas	01h 33m 23s	+60° 39.0'	7.0	Circ	14:21	Circ
NGC598	Pinwheel Galaxy	Galaxy	Tri	01h 33m 51s	+30° 39.6'	5.7	06:40	14:21	22:02
NGC604	III-150	Neb	Tri	01h 34m 33s	+30° 47.0'		06:40	14:22	22:03
M74	The Phantom	Galaxy	Psc	01h 36m 42s	+15° 47.0'	9.8	07:36	14:24	21:12
M76	Little Dumbbell Nebula	P Neb	Per	01h 42m 18s	+51° 34.2'	12.0	04:15	14:30	00:44
NGC651	Apple Core Nebula [2]	P Neb	Per	01h 42m 21s	+51° 34.1'	12.2	04:15	14:30	00:44
NGC637		Open	Cas	01h 43m 04s	+64° 02.4'	8.2	Circ	14:30	Circ
NGC654		Open	Cas	01h 44m 00s	+61° 53.0'	6.5	Circ	14:31	Circ
NGC720		Galaxy	Cet	01h 53m 00s	-13° 44.3'	10.2	09:17	14:40	20:04
NGC780		Galaxy	Tri	02h 00m 35s	+28° 13.5'	14.0	07:17	14:48	22:19
NGC784		Galaxy	Tri	02h 01m 17s	+28° 50.2'	11.8	07:15	14:49	22:22
NGC821		Galaxy	Ari	02h 08m 21s	+10° 59.6'	10.8	08:22	14:56	21:30
Baily191	NGC884	Open	Per	02h 22m 18s	+57° 08.1'	4.0	Circ	15:10	Circ
IC1795		Neb	Cas	02h 26m 32s	+62° 02.4'		Circ	15:14	Circ
IC1805	Heart Nebula	Open	Cas	02h 32m 47s	+61° 27.6'	6.5	Circ	15:20	Circ
NGC1052		Galaxy	Cet	02h 41m 05s	-08° 15.3'	10.6	09:49	15:28	21:08
M34	Spiral Cluster	Open	Per	02h 42m 05s	+42° 45.6'	6.0	06:44	15:29	00:14
M77	Cetus A	Galaxy	Cet	02h 42m 41s	-00° 00.8'	9.7	09:27	15:30	21:33

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ID	Common Name	Type	Const	RA	Dec	Mag	Rise	Transit	Set
NGC1084		Galaxy	Eri	02h 46m 00s	-07° 34.6'	10.6	09:52	15:33	21:15
IC1848	Soul Nebula	Open	Cas	02h 51m 18s	+60° 24.4'	6.5	Circ	15:39	Circ
NGC1156		Galaxy	Ari	02h 59m 42s	+25° 14.2'	11.7	08:27	15:47	23:07
NGC1201		Galaxy	For	03h 04m 08s	-26° 04.1'	10.6	11:08	15:51	20:35
NGC1175		Galaxy	Per	03h 04m 32s	+42° 20.3'	12.8	07:10	15:52	00:34
HR963	HD20010	Dbl	For	03h 12m 04s	-28° 59.2'	3.9	11:27	15:59	20:32
NGC1316	Fornax A	Galaxy	For	03h 22m 42s	-37° 12.4'	8.9	12:13	16:10	20:07
Barnard202	B202	DkNeb	Ari	03h 25m 38s	+30° 16.0'		08:34	16:13	23:52
Barnard204	B204	DkNeb	Ari	03h 28m 29s	+30° 11.0'		08:37	16:16	23:55
NGC1350		Galaxy	For	03h 31m 08s	-33° 37.7'	10.5	12:05	16:18	20:32
NGC1407		Galaxy	Eri	03h 40m 12s	-18° 34.8'	9.8	11:19	16:28	21:36
IC347		Galaxy	Eri	03h 42m 32s	-04° 17.9'	13.0	10:39	16:30	22:21
NGC1448		Galaxy	Hor	03h 44m 32s	-44° 38.6'	11.0	13:20	16:32	19:44
IC348		Open	Per	03h 44m 34s	+32° 09.7'	7.3	08:45	16:32	00:19
M45	Pleiades	Open	Tau	03h 47m 30s	+24° 07.0'	1.6	09:19	16:35	23:51
Barnard5	B5	DkNeb	Per	03h 47m 53s	+32° 53.0'		08:45	16:35	00:26
NGC1461		Galaxy	Eri	03h 48m 27s	-16° 23.5'	11.7	11:20	16:36	21:52
IC353		Neb	Tau	03h 53m 00s	+25° 48.0'		09:19	16:40	00:02
IC2003		P Neb	Per	03h 56m 22s	+33° 52.5'	13.0	08:49	16:44	00:39
NGC1499	California Nebula	Neb	Per	04h 03m 14s	+36° 22.0'		08:43	16:51	00:58
NGC1515		Galaxy	Dor	04h 04m 03s	-54° 06.0'	11.0	15:31	16:51	18:11
NGC1496		Open	Per	04h 04m 32s	+52° 39.7'	10.0	06:17	16:52	03:26
NGC1502		Open	Cam	04h 07m 50s	+62° 19.8'	5.7	Circ	16:55	Circ
IC360		Neb	Tau	04h 09m 00s	+26° 06.0'		09:33	16:56	00:19
NGC1514	Crystal Ball Nebula	P Neb	Tau	04h 09m 17s	+30° 46.5'	10.0	09:15	16:57	00:38
NGC1513		Open	Per	04h 09m 57s	+49° 30.8'	8.4	07:12	16:57	02:43
IC359		Neb	Tau	04h 12m 28s	+27° 42.1'		09:31	17:00	00:29
NGC1535		P Neb	Eri	04h 14m 16s	-12° 44.3'	10.0	11:35	17:02	22:28
Barnard10	B10	DkNeb	Tau	04h 18m 41s	+28° 16.0'		09:35	17:06	00:37
NGC1545		Open	Per	04h 20m 57s	+50° 15.2'	6.2	07:13	17:08	03:03
NGC1569		Galaxy	Cam	04h 30m 49s	+64° 50.8'	11.2	Circ	17:18	Circ
Barnard18	B18	DkNeb	Tau	04h 31m 13s	+24° 21.0'		10:02	17:19	00:35
NGC1582		Open	Per	04h 31m 53s	+43° 49.0'	7.0	08:27	17:19	02:12
NGC1560		Galaxy	Cam	04h 32m 48s	+71° 52.7'	11.5	Circ	17:20	Circ
NGC1624		Open	Per	04h 40m 36s	+50° 27.6'	10.4	07:30	17:28	03:26
NGC1640		Galaxy	Eri	04h 42m 14s	-20° 26.0'	11.7	12:27	17:30	22:33
NGC1647		Open	Tau	04h 45m 55s	+19° 06.8'	6.4	10:34	17:33	00:32
IC2118	Witch Head Nebula	Neb	Eri	05h 04m 54s	-07° 15.0'		12:10	17:52	23:35

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ID	Common Name	Type	Const	RA	Dec	Mag	Rise	Transit	Set
NGC1851	C73	Globular	Col	05h 14m 06s	-40° 03.0'	7.3	14:20	18:01	21:43
IC405	Flaming Star Nebula	Neb	Aur	05h 16m 29s	+34° 21.3'		10:07	18:04	02:01
M79	NGC1904	Globular	Lep	05h 24m 11s	-24° 31.4'	8.5	13:22	18:12	23:01
M38	Starfish Cluster	Open	Aur	05h 28m 40s	+35° 50.8'	7.0	10:11	18:16	02:21
M1	Crab Nebula	SNR	Tau	05h 34m 32s	+22° 00.8'	8.4	11:13	18:22	01:30
M42	Great Orion Nebula	Open+D Neb	Ori	05h 35m 16s	-05° 23.4'	4.0	12:35	18:23	00:10
M43	De Mairan's Nebula	D Neb	Ori	05h 35m 31s	-05° 16.0'	9.0	12:35	18:23	00:11
M36	Pinwheel Cluster	Open	Aur	05h 36m 18s	+34° 08.3'	6.5	10:27	18:24	02:20
M78	NGC2068	D Neb	Ori	05h 46m 45s	+00° 04.8'	8.0	12:31	18:34	00:37
M37	Salt-and-pepper Cluster	Open	Aur	05h 52m 18s	+32° 33.2'	6.0	10:51	18:40	02:29
M35	NGC2168	Open	Gem	06h 09m 00s	+24° 21.0'	5.5	11:40	18:56	02:13
M41	Little Beehive	Open	CMa	06h 46m 01s	-20° 45.3'	5.0	14:31	19:33	00:35
M50	Heart-shaped Cluster	Open	Mon	07h 02m 42s	-08° 23.0'	7.0	14:11	19:50	01:29
M47	NGC2422	Open	Pup	07h 36m 35s	-14° 29.0'	4.5	15:02	20:24	01:45
M46	NGC2437	Open	Pup	07h 41m 46s	-14° 48.6'	6.5	15:09	20:29	01:50
M93	NGC2447	Open	Pup	07h 44m 30s	-23° 51.4'	6.5	15:40	20:32	01:23
M48	NGC2548	Open	Hya	08h 13m 43s	-05° 45.0'	5.5	15:14	21:01	02:48
M44	Praesepe, Beehive Cluster	Open	Cnc	08h 40m 24s	+19° 40.0'	4.0	14:27	21:28	04:28
M67	King Cobra	Open	Cnc	08h 51m 18s	+11° 48.0'	7.5	15:02	21:39	04:15
M81	Bode's Galaxy	Galaxy	UMa	09h 55m 33s	+69° 03.9'	7.8	Circ	22:43	Circ
M82	Cigar Galaxy	Galaxy	UMa	09h 55m 53s	+69° 40.8'	9.2	Circ	22:43	Circ
M95	NGC3351,UGC5850	Galaxy	Leo	10h 43m 58s	+11° 42.2'	10.6	16:55	23:31	06:07
M96	NGC3368	Galaxy	Leo	10h 46m 46s	+11° 49.2'	10.1	16:58	23:34	06:10
M105	NGC3379	Galaxy	Leo	10h 47m 50s	+12° 34.9'	10.5	16:57	23:35	06:14
M108	NGC3556	Galaxy	UMa	11h 11m 31s	+55° 40.4'	10.6	Circ	23:59	Circ
M97	Owl Nebula	P Neb	UMa	11h 14m 48s	+55° 01.1'	12.0	Circ	00:02	Circ
M65	Leo Triplet	Galaxy	Leo	11h 18m 56s	+13° 05.5'	10.1	17:26	00:06	06:46
M66	Leo Triplet	Galaxy	Leo	11h 20m 15s	+12° 59.4'	9.7	17:28	00:08	06:47
M109	NGC3992	Galaxy	UMa	11h 57m 36s	+53° 22.4'	10.6	13:54	00:45	11:36
M98	NGC4192	Galaxy	Com	12h 13m 48s	+14° 54.0'	10.9	18:16	01:01	07:47
M99	Virgo Cluster	Galaxy	Com	12h 18m 50s	+14° 25.0'	10.4	18:22	01:06	07:50
M106	NGC4258	Galaxy	CVn	12h 18m 58s	+47° 18.2'	9.1	15:44	01:06	10:28
M61	Swelling Spiral	Galaxy	Vir	12h 21m 55s	+04° 28.3'	10.1	18:54	01:09	07:24
M40	Winnecke 4	Dbl+Asterism	UMa	12h 22m 12s	+58° 05.0'	8.7	Circ	01:10	Circ
M100	Mirror of M99	Galaxy	Com	12h 22m 55s	+15° 49.3'	10.1	18:22	01:10	07:59
M84	NGC4374	Galaxy	Vir	12h 25m 04s	+12° 53.2'	10.2	18:33	01:12	07:52
M85	NGC4382	Galaxy	Com	12h 25m 24s	+18° 11.4'	10.0	18:17	01:13	08:09
M86	NGC4406	Galaxy	Vir	12h 26m 12s	+12° 56.7'	9.9	18:34	01:14	07:53

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ID	Common Name	Type	Const	RA	Dec	Mag	Rise	Transit	Set
M49	NGC4472	Galaxy	Vir	12h 29m 47s	+08° 00.0'	9.3	18:52	01:17	07:42
M87	Smoking Gun	Galaxy	Vir	12h 30m 49s	+12° 23.4'	9.6	18:40	01:18	07:56
M88	NGC4501	Galaxy	Com	12h 31m 59s	+14° 25.2'	10.2	18:35	01:19	08:03
M91	Missing Messier Object	Galaxy	Com	12h 35m 27s	+14° 29.7'	10.9	18:38	01:23	08:07
M89	NGC4552	Galaxy	Vir	12h 35m 40s	+12° 33.3'	10.9	18:45	01:23	08:01
M90	NGC4569	Galaxy	Vir	12h 36m 50s	+13° 09.7'	10.2	18:44	01:24	08:04
M58	NGC4579	Galaxy	Vir	12h 37m 44s	+11° 49.1'	10.4	18:49	01:25	08:01
M68	NGC4590	Globular	Hya	12h 39m 28s	-26° 44.5'	9.0	20:46	01:27	06:08
M104	Sombrero Galaxy	Galaxy	Vir	12h 39m 59s	-11° 37.3'	9.2	19:57	01:27	06:57
M59	NGC4621	Galaxy	Vir	12h 42m 02s	+11° 38.7'	10.7	18:54	01:29	08:05
M60	NGC4649	Galaxy	Vir	12h 43m 40s	+11° 33.1'	9.8	18:55	01:31	08:07
M94	Croc's Eye Galaxy	Galaxy	CVn	12h 50m 53s	+41° 07.1'	8.9	17:04	01:38	10:12
M64	Black Eye Galaxy	Galaxy	Com	12h 56m 44s	+21° 41.0'	9.3	18:37	01:44	08:51
M53	NGC5024	Globular	Com	13h 12m 55s	+18° 10.1'	8.5	19:05	02:00	08:56
M63	Sunflower Galaxy	Galaxy	CVn	13h 15m 49s	+42° 01.7'	9.3	17:23	02:03	10:43
NGC5139	Omega Centauri	Globular	Cen	13h 26m 48s	-47° 29.0'	3.6	23:25	02:14	05:03
NGC5169		Galaxy	CVn	13h 28m 10s	+46° 40.3'	14.0	17:00	02:15	11:31
NGC5204		Galaxy	UMa	13h 29m 36s	+58° 25.1'	11.3	Circ	02:17	Circ
M51	Whirlpool Galaxy	Galaxy	CVn	13h 29m 52s	+47° 11.7'	8.9	16:56	02:17	11:38
Arp85	M51B	Galaxy	CVn	13h 29m 58s	+47° 16.0'	9.6	16:56	02:17	11:39
NGC5182		Galaxy	Hya	13h 30m 41s	-28° 09.0'	13.0	21:42	02:18	06:54
NGC5214		Galaxy	CVn	13h 32m 49s	+41° 52.3'	14.0	17:41	02:20	10:59
M83	Southern Pinwheel Galaxy	Galaxy	Hya	13h 37m 00s	-29° 51.8'	8.0	21:55	02:24	06:54
HR5144	HD119055	Triple	Boo	13h 40m 40s	+19° 57.3'	5.8	19:26	02:28	09:30
NGC5283		Galaxy	Dra	13h 41m 06s	+67° 40.3'	14.0	Circ	02:28	Circ
M3	NGC5272	Globular	CVn	13h 42m 11s	+28° 22.5'	7.0	18:58	02:30	10:01
M101	Pinwheel Galaxy	Galaxy	UMa	14h 03m 13s	+54° 20.9'	8.2	15:23	02:51	14:18
M5	NGC5904	Globular	Ser	15h 18m 33s	+02° 04.9'	7.0	21:57	04:06	10:14

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

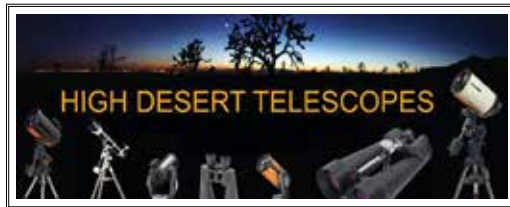
Sge - Sagitta  
Sgr - Sagittarius  
Tau - Taurus  
Tel - Telescopium  
TrA - Triangulum  
Australe  
Tri - Triangulum  
Tuc - Tucana  
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UMi - Ursa Minor  
Vel - Vela  
Vir - Virgo  
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