

Volume 44.5

May 2024

Desert Sky Observer

Antelope Valley Astronomy Club



Desert Sky Observer

www.avastronomyclub.org

May 2024

Upcoming Events

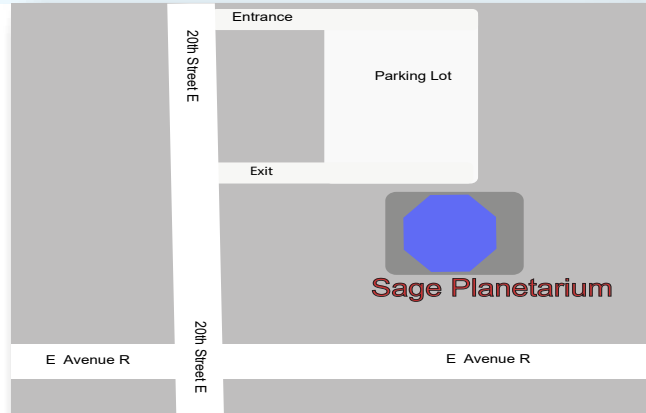
May 4: DSSP at Red Cliffs
May 10: Club Meeting
May 11: Lunar Club at Matt's house
May 17: Public Viewing/Moonwalk at SAGE

Every clear night: Personal Star Party

June 8: DSSP at Chuchupate
June 14: Club Meeting



AVAC Calendar



Board Members

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

Vice-President: Matt Leone (661) 713-1894
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!

Our next scheduled event, a Dark Sky Star Party, is planned to be on the Saturday/Sunday the 4th/5th of May, at Red Cliffs; The Weather Service forecast for Saturday is clear and a high of 79. For Saturday night there's a 30% chance of rain with Low of 40° and 25 to 30 mph winds gusts to 40 mph. Chuchupate has a chance of snow.... Really? Maybe, as Matt suggests, we should all start dancing in the Moonlight for good weather in June.

Our next Club Meeting is on Friday, the 10th, and I'd like to say we have a speaker, but I don't know yet. Rose and Matt are shaking the bushes looking for a speaker. If you know someone who would be a good speaker, don't keep it to yourself, call Rose and let her know. Rose will send an email when more information is available.

On the next night, the 11th, Matt will host the Lunar Club at his house in Rosamond. It goes without saying, the Lunar Club is dedicated to observing the Moon. Ask a board member, or Matt if you need directions.

Monday, April 8th was the "Great American Eclipse." We set up next to the SAGE in the "concrete garden." Jeremy, Rose, and I setup telescopes with solar filters and showed the eclipse to the students. I think there were 5 or 6 classes that came out and looked at the Sun. There were a couple members of the public that stopped by too. On the 17th Rose and I went to Daisy Gibson Elementary School and showed the students the Sun. There were about 100 students that came out.

There are 2 items within the next few months you might want to look out for:

- First: ***T Coronae Borealis***. This is a recurrent nova in Corona Borealis. It is a binary system normally of mag. 10. The last time it went nova was February 9, 1946. It's due again between March and September of this year. It's peak mag. of about 2.5 ± 0.5 . Look for it on the southern border between C. Borealis and Serpens Caput, at 15h 59m, 25°55'.
- Second: Comet ***13P/Olbers*** (orbital period of 69 years) last seen in 1956. Perihelion will be achieved on June 30, with closest approach to Earth of 1.94 AU on July 20. It is expected to brighten to about apparent mag 7-8. By June it will be traversing the eastern side of Auriga.

Keep Looking Up, Phil

On The Cover

Please note: North is 22.0° right of vertical RA: 11h 20' 14.31" DEC: 12° 59' 2.53" (Leo)

This spiral galaxy [M66] was observed as part of the Physics at High Angular resolution in Nearby Galaxies (PHANGS) program, a large project that includes observations from several space- and ground-based telescopes of many galaxies to help researchers study all phases of the star formation cycle, from the formation of stars within dusty gas clouds to the energy released in the process that creates the intricate structures revealed by Webb's new images.

NGC 3627 is 36 million light-years away in the constellation Leo.

Learn more about what can be seen in this vast collection of Webb images here.

[continued on page 5](#)

From the Secretary

By Rose Moore

We had a day star party event at the Daisy Gibson Elementary School in Palmdale on April 17th for Career Day. This was a solar observing event. Thank you to Phil for helping out at this event. We had over a hundred kids, and adults, in small groups look through the scopes. There were several groups of sunspots visible. I was going to swing around to look at the Moon, but the Principal came out and told us the event was ending early. Thanks to Principal Konrad for inviting us to the event!

As many of you might have noticed, we have no Prime Desert Woodland Moon Walks on the schedule. Jeremy is meeting with staff from PDW to discuss some items soon. We'll keep you posted as to when and if the Moon Walks continue, or if something else will be replacing it.

We have a dark sky star party scheduled for Saturday May 4th, starting at 3pm, at the Red Cliffs parking area; weather permitting. This is an overnight star party and members will need to vacate the parking area by 9am on Sunday. We have obtained the Special Events permit from State Parks. The club will pay for each car at the event, \$6 per car. There are vault toilets (not sure of the toilet paper situation, maybe bring your own), and picnic tables, but no running water. You may bring your own drinks and snacks to the event. Cell phone service is intermittent and unreliable [or completely missing]. Red Cliffs is on Highway 14 approximately 24 miles north of Mojave. Heading north on the 14, the road into the Red Cliffs Natural Area is a right turn about a quarter mile before (south) the Abbot Road/Riccardo Campground entrance to Red Rock State Park. Turn right at the big red cliff that's been featured in dozens of movies and TV shows. If you get to the Abbot Rd/Riccardo turn off you've missed it and gone too far north.

There will be a 17% waning crescent Moon up until 4:05pm. Sunset is at 7:43pm. Jupiter is the last planet up for the early evening, setting at 8:30pm. Several planets rise early in the morning.

A Google Map to the area can be found here:

<https://www.google.com/maps/place/Red+Cliffs+Natural+Area/@35.3611459,-117.9819029,630m/data=!3m1!1e3!4m2!3m1!1s0x80c18304243316f7:0xcc96add6ebef2c69>

We have a club meeting on Friday, May 10th at 7pm, and we are still looking into getting a speaker for our club. Applications are in for both NSN and NASA, but there has been no response as yet. Follow up emails have gone out.

We have a Lunar Club event at Matt Leone's home on Saturday May 11th, for members and their guests; weather permitting. There will be a waxing crescent Moon about 17%. Sunset is at 7:48pm. Jupiter is the only planet up, setting at 8:11pm. Arrival time to be sent in an email prior to the event. You are allowed to bring drinks and snacks.

Come out and support your club!

Clear skies, Rose

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) or Rose (rmorion1@bak.rr.com)

Vice President's Report

By Matt Leone

The Lunar club will hopefully be able to dust off the cob webs on May 11, starting at 7:00 pm; so please, do your moon dance for good weather. The Lunar Club will meet at Matthew Leone's house in Rosamond. We should see great craters in the Moon because it's a 4-day Moon.

The pictures of the solar eclipse were breathtaking. I was skiing in Mammoth and shared solar glasses with several people, who thanked me with a great smile. It was my best day of skiing for the year. I believe we are going to Red Cliffs Saturday May 4.

Jeremy on May 17 is having a moon walk at the planetarium, so we need volunteers with telescopes. Hopefully, I will have a list of speakers soon. Soon the weather will turn in our favor and we can get back to great observation of the nights. See you at the meeting on Friday, May 10, keep the faith, do your weather dancing, and please do it where no one can see you.

Matthew Leone

On The Cover ... continued

[Image description: Webb's image of NGC 3627 shows a face-on barred spiral galaxy anchored by its central region, which has a bright blue central dot. It is surrounded by a bar structure filled with a lighter blue haze of stars, which forms a large, angled oval toward the top. Two large distinct spiral arms appear as arcs that start at the central bar. One starts at left and stretches to the top and another starts at right and extends to the bottom.]

Credit:

NASA, ESA, CSA, STScI, J. Lee (STScI), T. Williams (Oxford), PHANGS Team



Photos by Member Roger Day

May's Night Sky Notes: Stargazing for Beginners

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

Millions were able to experience the solar eclipse on April 8, 2024, inspiring folks to become amateur astronomers – hooray! Now that you've been 'bitten by the bug', and you've decided to join your local astronomy club, here are some stargazing tips!

The Bortle Scale

Before you can stargaze, you'll want to find a site with dark skies. It's helpful learn what your [Bortle scale](#) is. But what is the Bortle scale? The Bortle scale is a numeric scale from 1-9, with 1 being darkest and 9 being extremely light polluted; that rates your night sky's darkness. For example, New York City would be a Bortle 9, whereas Cherry Springs State Park in Pennsylvania is a Bortle 2.



The Bortle scale helps amateur astronomers and stargazers to know how much light pollution is in the sky where they observe. Credit: International Dark Sky Association

Determining the Bortle scale of your night sky will help narrow down what you can expect to see after sunset. Of course, other factors such as weather (clouds namely) will impact seeing conditions, so plan ahead. Find Bortle ratings near you here: www.lightpollutionmap.info

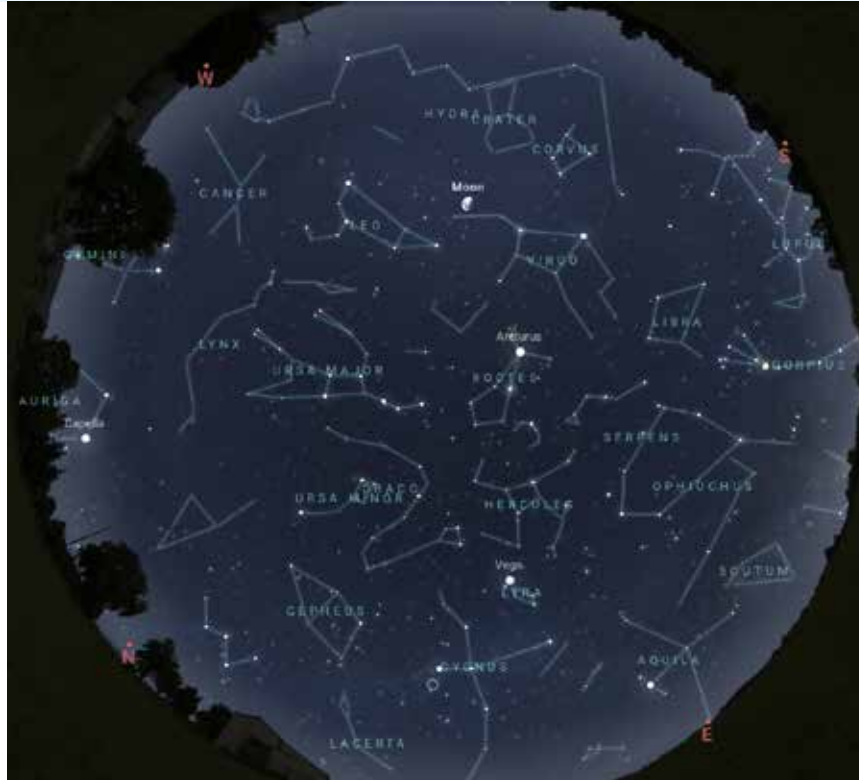
No Equipment? No Problem!

There's plenty to see with your eyes alone. Get familiar with the night sky by studying star maps in books, or with a planisphere. These are great to begin identifying the overall shapes of constellations, and what is visible during various months.

Interactive sky maps, such as [Stellarium Web](#), work well with mobile and desktop browsers, and are also great for learning the constellations in your hemisphere. There are also several astronomy apps on the market today that work with the GPS of your smartphone to give an accurate map of the night sky.

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!



A full view of the northern hemisphere night sky in mid-May. Credit: Stellarium Web.

[Keep track of Moon phases.](#) Both the interactive sky maps and apps will also let you know when planets and our Moon are out! This is especially important because if you are trying to look for bright deep sky objects, like the Andromeda Galaxy or the Perseus Double Cluster, you want to avoid the Moon as much as possible. Moonlight in a dark sky area will be as bright as a streetlight, so plan accordingly! And if the Moon is out, check out this Skywatcher's Guide to the Moon: bit.ly/MoonHandout

Put On That Red Light

If you're looking at your phone, you won't be able to see as much. Our eyes take approximately 30 minutes to get dark sky adapted, and a bright light can ruin our night vision temporarily. The easiest way to stay dark sky adapted is to avoid any bright lights from car headlights or your smartphone. To avoid this, simply use red lights, such as a red flashlight or headlamp. The reason: white light constricts the pupils of your eyes, making it hard to see in the dark, whereas red light allows your pupils to stay dilated for longer. Most smartphones come with adaptability shortcuts that allow you to make your screen red, but if you don't have that feature, use red cellophane on your screen and flashlight.

Up next: why binoculars can sometimes be the best starter telescope, with Night Sky Network's upcoming mid-month article through NASA's website!

Space News

News from around the Net

Nasa's Chandra Releases Timelapse Movies Of Crab Nebula And Cassiopeia A

New movies of two of the most famous objects in the sky—the Crab Nebula and Cassiopeia A—are being released from NASA's Chandra X-ray Observatory. Each includes X-ray data collected by Chandra over about two decades. They show dramatic changes in the debris and radiation remaining after the explosion of two massive stars in our galaxy. The Crab Nebula, the result of a bright supernova explosion seen by Chinese and other astronomers in the year 1054, is 6,500 light-years from Earth. At its center is a neutron star, a super-dense star produced by the supernova. As it rotates at about 30 times per second, . . . (continued at <https://phys.org/news/2024-04-nasa-chandra-timelapse-movies-crab.html>)



The Largest Digital Camera Ever Made For Astronomy Is Done

A digital camera the size of a sedan was recently completed with the hopes of gleaning new information about dark energy, dark matter, the Milky Way, and more. The Legacy Survey of Space and Time (LSST) Camera will be mounted on the Simonyi Survey Telescope at the Vera C. Rubin Observatory in Chile later this year. The new imager weighs 6,600 pounds (3,000 kilograms) and the lens is roughly the height of a small adult at 5 feet (1.5 meters) across. It has 3,200 megapixels, compared to about 48 megapixels for a digital camera on the market today. . . . (continued at <https://www.astronomy.com/science/the-largest-digital-camera-ever-made-for-astronomy-is-done/>)



Hubble Celebrates 34th Anniversary With A Look At The Little Dumbbell Nebula

In celebration of the 34th anniversary of the launch of NASA's legendary Hubble Space Telescope on April 24, astronomers took a snapshot of the Little Dumbbell Nebula (also known as Messier 76, M76, or NGC 650/651) located 3,400 light-years away in the northern circumpolar constellation Perseus. The photogenic nebula is a favorite target of amateur astronomers. M76 is classified as a planetary nebula, an expanding shell of glowing gases that were ejected from a dying red giant star. The star eventually collapses into an ultra-dense and hot white dwarf. . . . (continued at <https://phys.org/news/2024-04-hubble-celebrates-34th-anniversary-dumbbell.html>)



A Collision With Something The Size Of Arizona Could Have Formed Half Of Pluto's 'Heart

When NASA released images of Pluto in 2015 taken by the New Horizons spacecraft, many were captivated by the dwarf planet's heart-shaped feature, now called Tombaugh Regio. And now the mystery of how this "heart," which is nearly 1,000 miles (1,600 kilometers) across, came to be may be solved. A recent study in Nature Astronomy reveals how the western half of the heart, known as Sputnik Planitia, is the result of a massive impact (continued at <https://www.astronomy.com/science/a-shallow-collision-might-have-formed-half-of-plutos-heart/>)



NASA's Roman Space Telescope's 'Eyes' Pass First Vision Test

Engineers at L3Harris Technologies in Rochester, New York, have combined all 10 mirrors for NASA's Nancy Grace Roman Space Telescope. Preliminary tests show the newly aligned optics, collectively called the IOA (Imaging Optics Assembly), will direct light into Roman's science instruments extremely precisely. This will yield crisp images of space once the observatory launches. "This is the pre-launch first light, our first time seeing through the entire telescope," said Joshua Abel, the lead systems engineer for the Roman Space Optical Telescope Assembly . . . (continued at <https://phys.org/news/2024-04-nasa-roman-space-telescope-eyes.html>)



Space News

News from around the Net

A Dead Star Will Soon Spark A Once-In-A-Lifetime Display In Earth's Skies

A nova called T Coronae Borealis spectacularly erupts every 80 years. Your only chance to see it will come any day now. In October 1217 the abbot of the Ursberg Abbey in present-day southern Germany looked to the firmament and, in the arc-shaped constellation Corona Borealis, saw something wondrous. “It was originally a faint star that for a time shone with great light and then returned to its original faintness,” he wrote in Latin at the time. He wasn't the first to see it, nor was he the last. This stellar apparition emerges, then vanishes, every 80 years or so—and that's because it isn't really a star at all. That abbot witnessed a thermonuclear explosion 3,000 light-years away. . . . (continued at <https://www.scientificamerican.com/article/this-nova-will-soon-erupt-as-a-once-in-a-lifetime-new-star-in-the-night-sky/>)



Earth's Mini-Moon Linked To Farside Lunar Crater

Researchers might have located the birthplace of 469219 Kamo'oailewa, a small asteroid that has been described as Earth's “mini-moon.” By analyzing Kamo'oailewa's geology and simulating different formation scenarios, they traced it back to a specific impact crater on the far side of the Moon. On its voyage around the Sun, Earth is accompanied not only by the Moon but by quasi-satellites, objects that — despite not being bound by our planet's gravity — co-orbit the Sun with us over long time periods. The closest and most stable of these is Kamo'oailewa. This neighbor of ours loops out as far as 100 times the distance of the Moon, and has a rapid spin rate, rotating every 28 minutes. At around 36 to 60 meters (118 to 197 feet) in diameter, it is barely bigger than a boulder. . . . (continued at <https://skyandtelescope.org/astronomy-news/earths-mini-moon-linked-to-farside-lunar-crater/>)



See Amazing Views Of The April 8th Total Solar Eclipse From Space

Did you see it? The April 8th eclipse across North America was one for a generation, as the path of totality passed from Mexico, across the United States from Texas to Maine, and out over the Canadian Maritime provinces. And while some viewers along the southern and central portion of the track battled clouds — the reverse of the expected trend — viewers along the northeast portion of the track saw skies swept clear by a late season snow storm just days before totality. Eyes in space, both human and robotic, were on hand to catch the eclipse as well. Those views typically show either the shadow of the Moon crossing Earth or, from solar observing missions, the Moon crossing in front of the Sun. . . . (continued at <https://skyandtelescope.org/astronomy-blogs/astronomy-space-david-dickinson/see-amazing-views-of-the-april-8th-total-solar-eclipse-from-space/>)



Hubble Goes Hunting For Small Main-Belt Asteroids

18 April 2024 — ESA/Hubble Science Release heic2407

Astronomers recently used a trove of archived images taken by the NASA/ESA Hubble Space Telescope to visually snag a largely unseen population of smaller asteroids in their tracks. The treasure hunt required pursuing 37,000 Hubble images spanning 19 years. The payoff was finding 1701 asteroid trails, with 1031 of those asteroids uncatalogued. About 400 of these uncatalogued asteroids are about below a kilometre in size.

Volunteers from around the world known as ‘citizen scientists’ contributed to the identification of this asteroid bounty. Professional scientists combined the volunteers’ efforts with machine learning algorithms to identify the asteroids. This represents a new approach to finding asteroids in astronomical archives spanning decades, and it may be effectively applied to other datasets, say the researchers.

“We are getting deeper into seeing the smaller population of main-belt asteroids. We were surprised to see such a large number of candidate objects,” said lead author Pablo García Martín of the Autonomous University of Madrid, Spain. “There was some hint that this population existed, but now we are confirming it with a random asteroid population sample obtained using the whole Hubble archive. This is important for providing insights into the evolutionary models of our Solar System.”

The large, random sample offers new insights into the formation and evolution of the asteroid belt. Finding a lot of small asteroids favours the idea that they are fragments of larger asteroids that have collided and broken apart, like smashed pottery. This is a grinding-down process spanning billions of years.

An alternative theory for the existence of smaller fragments is that they formed that way billions of years ago. But there is no conceivable mechanism that would keep them from snowballing up to larger sizes as they agglomerate dust from the planet-forming circumstellar disc around our Sun. “Collisions would have a certain signature that we can use to test the current main belt population,” said co-author Bruno Merín of the European Space Astronomy Centre in Madrid, Spain.

Because of Hubble’s fast orbit around Earth, it can capture wandering asteroids through their telltale trails in the Hubble exposures. As viewed from an Earth-based telescope, an asteroid leaves a streak across the picture. Asteroids ‘photobomb’ Hubble exposures by appearing as unmistakable, curved trails in Hubble photographs.

As Hubble moves around Earth, it changes its point of view while observing an asteroid, which also moves along its own orbit. By knowing Hubble’s position during the observation and measuring the curvature of the streaks, scientists can determine the distances to the asteroids and estimate the shapes of their orbits.

The asteroids snagged mostly dwell in the main belt, which lies between the orbits of Mars and Jupiter. Their brightness is measured by Hubble’s sensitive cameras, and comparing their brightness to their distance allows for a size estimate. The faintest asteroids in the survey are roughly one forty-millionth the brightness of the faintest star that can be seen by the human eye.

“Asteroid positions change with time, and therefore you cannot find them just by entering coordinates, because at different times they might not be there,” said Merín. “As astronomers we don’t have time to go looking through all the asteroid images. So we got the idea to collaborate with more than 10 000 citizen-science volunteers to peruse the huge Hubble archives.”

In 2019 an international group of astronomers launched the Hubble Asteroid Hunter, a citizen-science project to identify asteroids in archival Hubble data. The initiative was developed by researchers and engineers at the European Science and Technology Centre (ESTEC) and the European Space Astronomy Centre's science data centre (ESDC), in collaboration with the Zooniverse platform, the world's largest and most popular citizen-science platform, and Google.

A total of 11,482 citizen-science volunteers, who provided nearly two million identifications, were then given a training set for an automated algorithm to identify asteroids based on artificial intelligence. This pioneering approach may be effectively applied to other datasets.

The project will next explore the streaks of previously unknown asteroids to characterise their orbits and study their properties, such as rotation periods. Because most of these asteroid streaks were captured by Hubble many years ago, it is not possible to follow them up now to determine their orbits.

The findings are published in the journal [Astronomy and Astrophysics](#).

More information

The Hubble Space Telescope is a project of international cooperation between ESA and NASA.

Image credit: NASA, ESA, P. G. Martín (Autonomous University of Madrid), J. DePasquale (STScI).

Acknowledgment: A. Filippenko (University of California, Berkeley)

Links

- [Science paper](#)
- [Release on STScI website](#)
- [Release on ESA website](#)

Contacts*-

Bethany Downer -- ESA/Hubble Chief Science Communications Officer

Email: Bethany.Downer@esahubble.org

Dark Sky Observing Site

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.



Solar System Summary

The **Sun** starts the month in central Aries, and on the 13th crosses into Taurus. During the month the Sun passes by Uranus and Jupiter. Venus returns to the dark side on the 4th of June.

Comet 13P/Olbers at mag 9.3 starts the month in Taurus. On the 21st brushes by M36 in Auriga at 8.4. On the 31st its 2¼° east of Bogardus (θ) a double star in Auriga.

The Planets

Mercury starts the month in Pisces. In the morning twilight it continues it's fall back toward the Sun, passing thru Cetus and Aries winding up in Taurus.

Venus is in the morning sky, but falling back toward the Sun. On June 3 it achieves superior conjunction and is occulted by the Sun.

Mars starts the month in Pisces, cuts across the corner of Cetus, and winds up in central Pisces.

Jupiter continues moving east in Taurus. On the 18th Jupiter will be in solar conjunction.

Saturn while moving slowly east in Aquarius is quickly separating itself from the Sun. On the 31st the Moons zips by 1½° to the south.

Uranus continues moving east in eastern Aries at mag 5.8. On the 12th the Sun passes in front of Uranus.

Neptune is moving east near the southern border of Pisces at 7.9.

Dwarf Planets

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

1 Ceres at mag 7.9 spends the month in central Sagittarius making a retrograde loop.

2 Pallas at mag 8.9 begins it's retrograde moving east from southern Hercules into Corona Borealis at 9.0.

3 Juno at mag 10.1, continues moving normally in southern Leo, by the end of month is mag 10.6 .

4 Vesta is at mag 8.5, crosses central Gemini during the month.

Moon Phases



First Qtr May 15 Full May 23 Third Qtr May 1 & 30 New May 7

Sun and Moon Rise and Set*

Date	Moonrise	Moonset	Sunrise	Sunset
5/1/2024	02:16	12:32	06:01	19:38
5/5/2024	04:23	17:15	05:57	19:41
5/10/2024	07:39	23:09	05:53	19:45
5/15/2024	12:44	01:57	05:49	19:49
5/20/2024	17:27	03:57	05:46	19:52
5/25/2024	22:39	07:05	05:43	19:56
5/30/2024	01:26	12:44	05:41	19:59

Planet Data*

May 1

	Rise	Transit	Set	Mag	Phase%
Mercury	05:05	11:20	17:36	1.03	28.3
Venus	05:42	12:16	15:51	-3.89	98.8
Mars	04:17	10:17	16:18	1.12	93.8
Jupiter	06:46	13:41	20:35	-2.01	99.9
Saturn	03:43	09:26	15:09	1.16	99.8

May 15

	Rise	Transit	Set	Mag	Phase%
Mercury	04:47	11:13	17:40	0.19	52.0
Venus	05:37	12:28	19:21	-3.90	99.6
Mars	03:50	10:02	16:14	1.09	93.1
Jupiter	06:02	12:59	19:56	-2.00	100.
Saturn	02:51	08:35	14:19	1.16	99.7

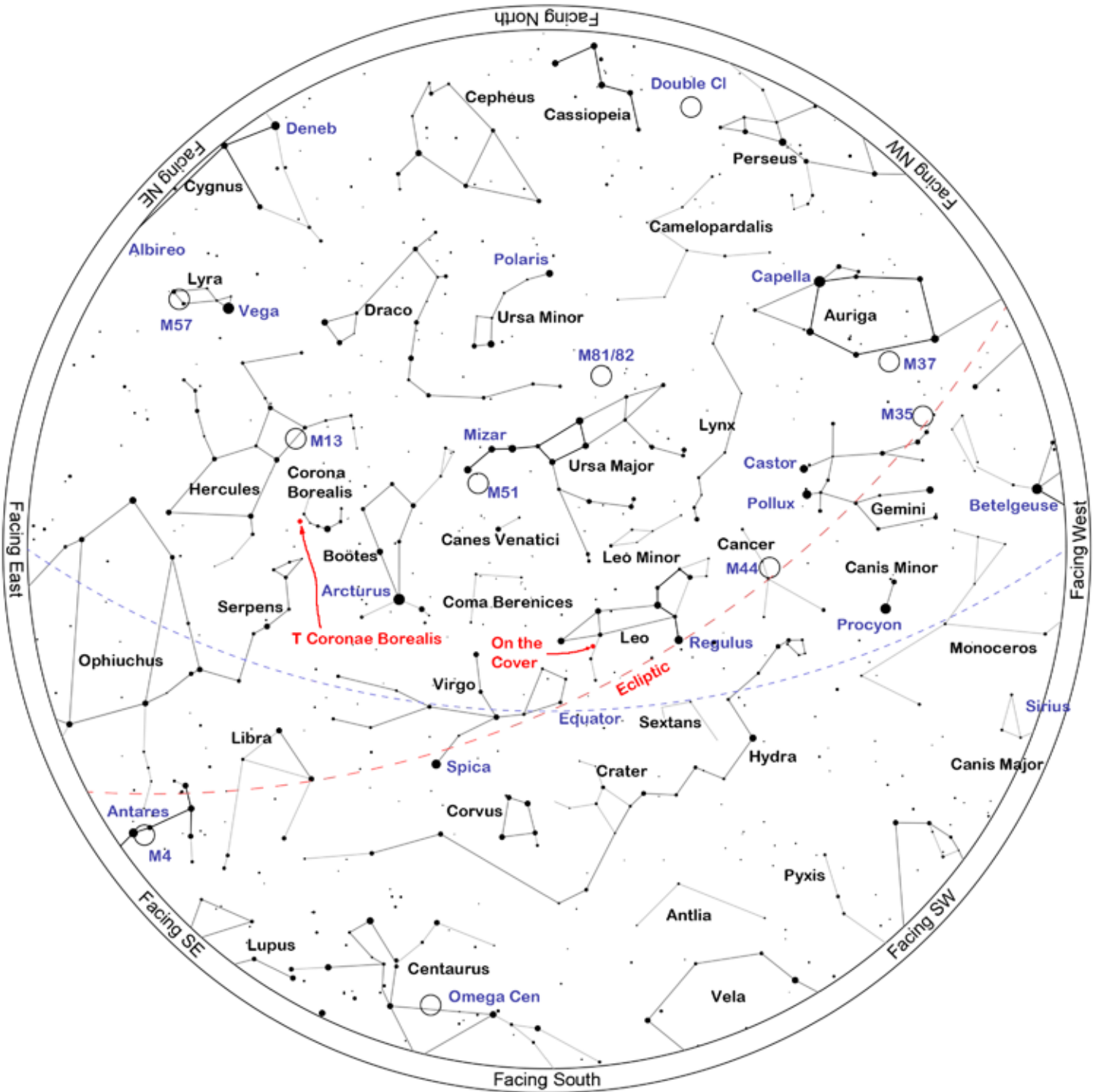
May 30

	Rise	Transit	Set	Mag	Phase%
Mercury	04:51	11:43	18:36	-0.75	79.9
Venus	05:39	12:45	19:52	-3.91	99.9
Mars	03:20	09:45	16:09	1.06	92.2
Jupiter	05:15	12:15	19:14	-2.00	99.9
Saturn	01:51	07:36	13:24	1.14	99.7

*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 May 4, 22:00 (UTC -07:00)

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 May 4, 2024. The list is sorted by the transit time of the object.

ID	Common Name	Type	Const	RA	Dec	Mag	Rise	Transit	Set
M79	NGC1904	Globular	Lep	05h 24m 11s	-24° 31.4'	8.5	10:41	15:31	20:20
M38	Starfish Cluster	Open	Aur	05h 28m 40s	+35° 50.8'	7.0	07:31	15:35	23:40
M1	Crab Nebula	SNR	Tau	05h 34m 32s	+22° 00.8'	8.4	08:33	15:41	22:49
M42	Great Orion Nebula	Open+D Neb	Ori	05h 35m 16s	-05° 23.4'	4.0	09:54	15:42	21:30
M43	Orion Nebula Ext.	D Neb	Ori	05h 35m 31s	-05° 16.0'	9.0	09:54	15:42	21:30
M36	Pinwheel Cluster	Open	Aur	05h 36m 18s	+34° 08.3'	6.5	07:47	15:43	23:39
M78	NGC2068	D Neb	Ori	05h 46m 45s	+00° 04.8'	8.0	09:50	15:53	21:56
M37	Salt-and-pepper Cluster	Open	Aur	05h 52m 18s	+32° 33.2'	6.0	08:10	15:59	23:48
M35	NGC2168	Open	Gem	06h 09m 00s	+24° 21.0'	5.5	08:59	16:16	23:32
M41	Little Beehive	Open	CMA	06h 46m 01s	-20° 45.3'	5.0	11:51	16:53	21:55
M50	Heart-shaped Cluster	Open	Mon	07h 02m 42s	-08° 23.0'	7.0	11:30	17:09	22:49
M47	NGC2422	Open	Pup	07h 36m 35s	-14° 29.0'	4.5	12:22	17:43	23:05
M46	NGC2437	Open	Pup	07h 41m 46s	-14° 48.6'	6.5	12:28	17:48	23:09
M93	NGC2447	Open	Pup	07h 44m 30s	-23° 51.4'	6.5	12:59	17:51	22:43
M48	NGC2548	Open	Hya	08h 13m 43s	-05° 45.0'	5.5	12:34	18:20	00:07
M44	Beehive Cluster	Open	Cnc	08h 40m 24s	+19° 40.0'	4.0	11:46	18:47	01:48
M67	King Cobra	Open	Cnc	08h 51m 18s	+11° 48.0'	7.5	12:22	18:58	01:34
M81	Bode's Galaxy	Galaxy	UMa	09h 55m 33s	+69° 03.9'	7.8	Circ	20:02	Circ
M82	Cigar Galaxy	Galaxy	UMa	09h 55m 53s	+69° 40.8'	9.2	Circ	20:02	Circ
M95	NGC3351	Galaxy	Leo	10h 43m 58s	+11° 42.2'	10.6	14:15	20:51	03:26
M96	NGC3368	Galaxy	Leo	10h 46m 46s	+11° 49.2'	10.1	14:17	20:53	03:30
M105	NGC3379	Galaxy	Leo	10h 47m 50s	+12° 34.9'	10.5	14:16	20:54	03:33
M108	NGC3556	Galaxy	UMa	11h 11m 31s	+55° 40.4'	10.6	Circ	21:18	Circ
M97	Owl Nebula	P Neb	UMa	11h 14m 48s	+55° 01.1'	12.0	Circ	21:21	Circ
M65	Leo Triplet	Galaxy	Leo	11h 18m 56s	+13° 05.5'	10.1	14:45	21:25	04:06
M66	Leo Triplet	Galaxy	Leo	11h 20m 15s	+12° 59.4'	9.7	14:47	21:27	04:07
M109	NGC3992	Galaxy	UMa	11h 57m 36s	+53° 22.4'	10.6	11:13	22:04	08:55
M98	NGC4192	Galaxy	Com	12h 13m 48s	+14° 54.0'	10.9	15:35	22:20	05:06
M99	Virgo Cluster	Galaxy	Com	12h 18m 50s	+14° 25.0'	10.4	15:41	22:25	05:09
M106	NGC4258	Galaxy	CVn	12h 18m 58s	+47° 18.2'	9.1	13:04	22:26	07:47
M61	Swelling Spiral	Galaxy	Vir	12h 21m 55s	+04° 28.3'	10.1	16:13	22:28	04:44
M40	Winnecke 4	Dbl+Asterism	UMa	12h 22m 12s	+58° 05.0'	8.7	Circ	22:29	Circ
M100	Mirror of M99	Galaxy	Com	12h 22m 55s	+15° 49.3'	10.1	15:41	22:29	05:18
M84	NGC4374	Galaxy	Vir	12h 25m 04s	+12° 53.2'	10.2	15:52	22:32	05:11
M85	NGC4382	Galaxy	Com	12h 25m 24s	+18° 11.4'	10.0	15:36	22:32	05:28
M86	NGC4406	Galaxy	Vir	12h 26m 12s	+12° 56.7'	9.9	15:53	22:33	05:12
M49	NGC4472	Galaxy	Vir	12h 29m 47s	+08° 00.0'	9.3	16:11	22:36	05:02

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ID	Common Name	Type	Const	RA	Dec	Mag	Rise	Transit	Set
M87	Smoking Gun	Galaxy	Vir	12h 30m 49s	+12° 23.4'	9.6	15:59	22:37	05:15
M88	NGC4501	Galaxy	Com	12h 31m 59s	+14° 25.2'	10.2	15:54	22:39	05:23
M91	Missing Messier Object	Galaxy	Com	12h 35m 27s	+14° 29.7'	10.9	15:58	22:42	05:26
M89	NGC4552	Galaxy	Vir	12h 35m 40s	+12° 33.3'	10.9	16:04	22:42	05:21
M90	NGC4569	Galaxy	Vir	12h 36m 50s	+13° 09.7'	10.2	16:03	22:43	05:24
M58	NGC4579	Galaxy	Vir	12h 37m 44s	+11° 49.1'	10.4	16:08	22:44	05:21
M68	NGC4590	Globular	Hya	12h 39m 28s	-26° 44.5'	9.0	18:05	22:46	03:27
M104	Sombrero Galaxy	Galaxy	Vir	12h 39m 59s	-11° 37.3'	9.2	17:17	22:47	04:17
M59	NGC4621	Galaxy	Vir	12h 42m 02s	+11° 38.7'	10.7	16:13	22:49	05:24
M60	NGC4649	Galaxy	Vir	12h 43m 40s	+11° 33.1'	9.8	16:15	22:50	05:26
M94	Croc's Eye Galaxy	Galaxy	CVn	12h 50m 53s	+41° 07.1'	8.9	14:23	22:57	07:32
M64	Black Eye Galaxy	Galaxy	Com	12h 56m 44s	+21° 41.0'	9.3	15:56	23:03	06:11
M53	NGC5024	Globular	Com	13h 12m 55s	+18° 10.1'	8.5	16:24	23:19	06:15
M63	Sunflower Galaxy	Galaxy	CVn	13h 15m 49s	+42° 01.7'	9.3	14:42	23:22	08:02
NGC5139	Omega Centauri	Globular	Cen	13h 26m 48s	-47° 29.0'	3.6	20:44	23:33	02:22
NGC5169		Galaxy	CVn	13h 28m 10s	+46° 40.3'	14.0	14:19	23:35	08:51
NGC5204		Galaxy	UMa	13h 29m 36s	+58° 25.1'	11.3	Circ	23:36	Circ
M51	Question Mark Galaxy	Galaxy	CVn	13h 29m 52s	+47° 11.7'	8.9	14:16	23:36	08:57
Arp85	M51B	Galaxy	CVn	13h 29m 58s	+47° 16.0'	9.6	14:15	23:37	08:58
NGC5182		Galaxy	Hya	13h 30m 41s	-28° 09.0'	13.0	19:01	23:37	04:13
NGC5214		Galaxy	CVn	13h 32m 49s	+41° 52.3'	14.0	15:00	23:39	08:18
M83	Southern Pinwheel Galaxy	Galaxy	Hya	13h 37m 00s	-29° 51.8'	8.0	19:14	23:44	04:13
HR5144	SAO82942	Triple	Boo	13h 40m 40s	+19° 57.3'	5.8	16:46	23:47	06:49
NGC5283		Galaxy	Dra	13h 41m 06s	+67° 40.3'	14.0	Circ	23:48	Circ
M3	NGC5272	Globular	CVn	13h 42m 11s	+28° 22.5'	7.0	16:17	23:49	07:20
NGC5286	C84	Globular	Cen	13h 46m 24s	-51° 22.0'	7.6	21:46	23:53	02:00
NGC5292		Galaxy	Cen	13h 47m 40s	-30° 56.4'	14.0	19:29	23:54	04:19
NGC5356		Galaxy	Vir	13h 54m 59s	+05° 20.0'	14.0	17:44	00:02	06:19
NGC5363		Galaxy	Vir	13h 56m 07s	+05° 15.2'	10.2	17:45	00:03	06:20
NGC5447	III-787	Neb	UMa	14h 02m 29s	+54° 16.3'		12:46	00:09	11:32
M101	Pinwheel Galaxy	Galaxy	UMa	14h 03m 13s	+54° 20.9'	8.2	12:43	00:10	11:37
NGC5461	III-788	Neb	UMa	14h 03m 42s	+54° 19.0'		12:45	00:10	11:36
NGC5485		Galaxy	UMa	14h 07m 11s	+55° 00.0'	11.5	Circ	00:14	Circ
NGC5460		Open	Cen	14h 07m 27s	-48° 20.6'	5.6	21:33	00:14	02:55
NGC5500		Galaxy	Boo	14h 10m 15s	+48° 32.7'	14.0	14:42	00:17	09:51
IC991		Galaxy	Vir	14h 17m 48s	-13° 52.3'	13.0	19:01	00:24	05:48
HR5362	HD125383	Dbl	Lup	14h 20m 10s	-43° 03.5'	5.6	21:04	00:27	03:50
IC4406	Retina Nebula	P Neb	Lup	14h 22m 26s	-44° 09.0'	11.0	21:14	00:29	03:44

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ID	Common Name	Type	Const	RA	Dec	Mag	Rise	Transit	Set
HR5409	Phi Vir	Triple	Vir	14h 28m 12s	-02° 13.6'	4.8	18:38	00:35	06:31
NGC5669		Galaxy	Boo	14h 32m 44s	+09° 53.4'	12.0	18:09	00:39	07:10
NGC5689		Galaxy	Boo	14h 35m 30s	+48° 44.5'	11.9	15:05	00:42	10:19
M102	Spindle Galaxy <small>(duplicate of M101?)</small>	Galaxy	Dra	15h 06m 30s	+55° 45.7'	10.8	Circ	01:13	Circ
NGC5875		Galaxy	Boo	15h 09m 13s	+52° 31.6'	13.0	14:44	01:16	11:47
NGC5907	Splinter Galaxy	Galaxy	Dra	15h 15m 54s	+56° 19.7'	11.4	Circ	01:22	Circ
NGC5882		P Neb	Lup	15h 16m 50s	-45° 38.9'	11.0	22:19	01:23	04:28
NGC5897		Globular	Lib	15h 17m 24s	-21° 00.6'	8.6	20:23	01:24	06:25
M5	NGC5904	Globular	Ser	15h 18m 33s	+02° 04.9'	7.0	19:17	01:25	07:34
Barnard228		DkNeb	Lup	15h 44m 00s	-34° 30.0'		21:41	01:51	06:00
IC4593	White Eyed Pea	P Neb	Her	16h 11m 44s	+12° 04.3'	11.0	19:41	02:18	08:55
IC4592	Jabbah	Neb	Sco	16h 11m 59s	-19° 27.4'		21:12	02:19	07:25
M80	NGC6093	Globular	Sco	16h 17m 03s	-22° 58.5'	8.5	21:29	02:24	07:18
IC4601		Neb	Sco	16h 20m 18s	-20° 04.9'		21:23	02:27	07:31
Abell38		P Neb	Sco	16h 23m 17s	-31° 44.9'	11.7	22:08	02:30	06:52
M4	Cat's Eye	Globular	Sco	16h 23m 35s	-26° 31.5'	7.5	21:48	02:30	07:12
IC4603	Rho Ophiuchi Complex [1]	Neb	Oph	16h 25m 24s	-24° 28.0'		21:43	02:32	07:21
IC4604	Rho Ophiuchi Complex [2]	Neb	Oph	16h 25m 33s	-23° 26.5'		21:39	02:32	07:25
NGC6124	C75	Open	Sco	16h 25m 36s	-40° 40.0'	5.8	22:54	02:32	06:10
IC4605		Neb	Sco	16h 30m 12s	-25° 06.8'		21:50	02:37	07:24
NGC6153		P Neb	Sco	16h 31m 31s	-40° 15.2'	12.0	22:58	02:38	06:18
NGC6181		Galaxy	Her	16h 32m 21s	+19° 49.5'	11.9	19:38	02:39	09:40
NGC6171		Globular	Oph	16h 32m 32s	-13° 03.1'	8.1	21:13	02:39	08:05
NGC6178		Open	Sco	16h 35m 47s	-45° 38.6'	7.2	23:38	02:42	05:47
NGC6193	C82	Open	Ara	16h 41m 18s	-48° 46.0'	5.2	00:11	02:48	05:25
M13	Great Hercules Cluster	Globular	Her	16h 41m 41s	+36° 27.5'	7.0	18:41	02:48	10:56
NGC6210	Turtle Planetary Nebula	P Neb	Her	16h 44m 30s	+23° 48.0'	9.0	19:36	02:51	10:06
NGC6204		Open	Ara	16h 46m 09s	-47° 01.0'	8.2	00:00	02:53	05:46
M12	Gumball Globular	Globular	Oph	16h 47m 14s	-01° 56.8'	8.0	20:56	02:54	08:51
NGC6231	Table of Scorpius	Open	Sco	16h 54m 00s	-41° 48.0'	2.6	23:30	03:01	06:32
IC4628	Prawn Nebula	Neb	Sco	16h 56m 58s	-40° 27.3'		23:24	03:04	06:43
NGC6254		Globular	Oph	16h 57m 09s	-04° 05.9'	6.6	21:12	03:04	08:55
Barnard47	B47	DkNeb	Oph	16h 59m 42s	-22° 38.0'		22:11	03:06	08:02
M62	Flickering Globular	Globular	Oph	17h 01m 13s	-30° 06.7'	8.0	22:39	03:08	07:36
M19	NGC6273	Globular	Oph	17h 02m 38s	-26° 16.0'	8.5	22:26	03:09	07:52
Barnard51	B51	DkNeb	Oph	17h 04m 44s	-22° 15.0'		22:14	03:11	08:08
IC4637		P Neb	Sco	17h 05m 10s	-40° 53.1'	14.0	23:35	03:12	06:48
M92	NGC6341	Globular	Her	17h 17m 07s	+43° 08.1'	7.5	18:36	03:24	12:11
M9	NGC6333	Globular	Oph	17h 19m 12s	-18° 31.0'	9.0	22:17	03:26	08:35

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ID	Common Name	Type	Const	RA	Dec	Mag	Rise	Transit	Set
NGC6357	Lobster Nebula	Neb	Sco	17h 24m 43s	-34° 12.1'		23:20	03:31	07:42
IC4651		Open	Ara	17h 24m 52s	-49° 56.5'	6.9	01:07	03:31	05:56
Abell41		P Neb	Ser	17h 29m 04s	-15° 13.3'	13.9	22:16	03:36	08:55
Abell42		P Neb	Oph	17h 31m 31s	-08° 19.1'	14.6	21:59	03:38	09:18
Barnard78	B78	DkNeb	Oph	17h 32m 00s	-25° 35.0'		22:53	03:39	08:24
NGC6388		Globular	Sco	17h 36m 17s	-44° 44.1'	6.9	00:32	03:43	06:54
M14	NGC6402	Globular	Oph	17h 37m 36s	-03° 14.7'	9.5	21:50	03:44	09:38
Barnard276	B276	DkNeb	Oph	17h 39m 39s	-19° 49.0'		22:41	03:46	08:51
M6	Butterfly Cluster	Open	Sco	17h 40m 20s	-32° 15.2'	4.5	23:27	03:47	08:06
NGC6397	C86	Globular	Ara	17h 40m 42s	-53° 40.0'	5.6	02:18	03:47	05:17
NGC6426		Globular	Oph	17h 44m 55s	+03° 10.1'	11.2	21:40	03:51	10:03
IC4665		Open	Oph	17h 46m 30s	+05° 39.0'	4.2	21:34	03:53	10:12
NGC6445	Crescent Nebula	P Neb	Sgr	17h 49m 15s	-20° 00.6'	13.0	22:51	03:56	09:00
NGC6503		Galaxy	Dra	17h 49m 27s	+70° 08.6'	10.2	Circ	03:56	Circ
NGC6441		Globular	Sco	17h 50m 13s	-37° 03.0'	7.4	23:59	03:57	07:54
Barnard283	B283	DkNeb	Sco	17h 51m 00s	-33° 52.0'		23:45	03:58	08:10
Barnard285	B285	DkNeb	Ser	17h 51m 32s	-12° 52.0'		22:32	03:58	09:24
M7	Scorpion's Tail	Open	Sco	17h 53m 51s	-34° 47.6'	3.5	23:52	04:00	08:09
IC4670		Neb	Sgr	17h 55m 07s	-21° 44.6'		23:03	04:02	09:00
NGC6501		Galaxy	Her	17h 56m 04s	+18° 22.3'	12.3	21:06	04:03	10:59
M23	NGC6494	Open	Sgr	17h 57m 04s	-18° 59.1'	6.0	22:56	04:04	09:11
NGC6543	Cat Eye Nebula	P Neb	Dra	17h 58m 36s	+66° 38.0'	8.1	Circ	04:05	Circ
NGC6496		Globular	Sco	17h 59m 04s	-44° 16.0'	9.2	00:51	04:06	07:20
M20	Trifid Nebula	Open+D Neb	Sgr	18h 02m 42s	-22° 58.2'	5.0	23:15	04:09	09:04
M8	Lagoon Nebula	Open+D Neb	Sgr	18h 03m 41s	-24° 22.7'	5.0	23:20	04:10	09:00
M21	NGC6531	Open	Sgr	18h 04m 13s	-22° 29.3'	7.0	23:15	04:11	09:07
M24	Small Sagittarius Star Cloud	Open	Sgr	18h 18m 26s	-18° 24.3'	4.5	23:15	04:25	09:34
M16	Eagle Nebula	Open+D Neb	Ser	18h 18m 48s	-13° 48.3'	6.5	23:02	04:25	09:49

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
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Mon - Monoceros
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Nor - Norma
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Oph - Ophiuchus
Ori - Orion

Pav - Pavo
Peg - Pegasus
Per - Perseus
Phe - Phoenix
Pic - Pictor
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Psc - Pisces
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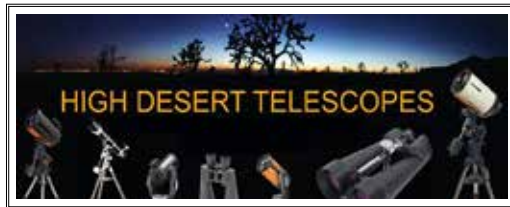
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