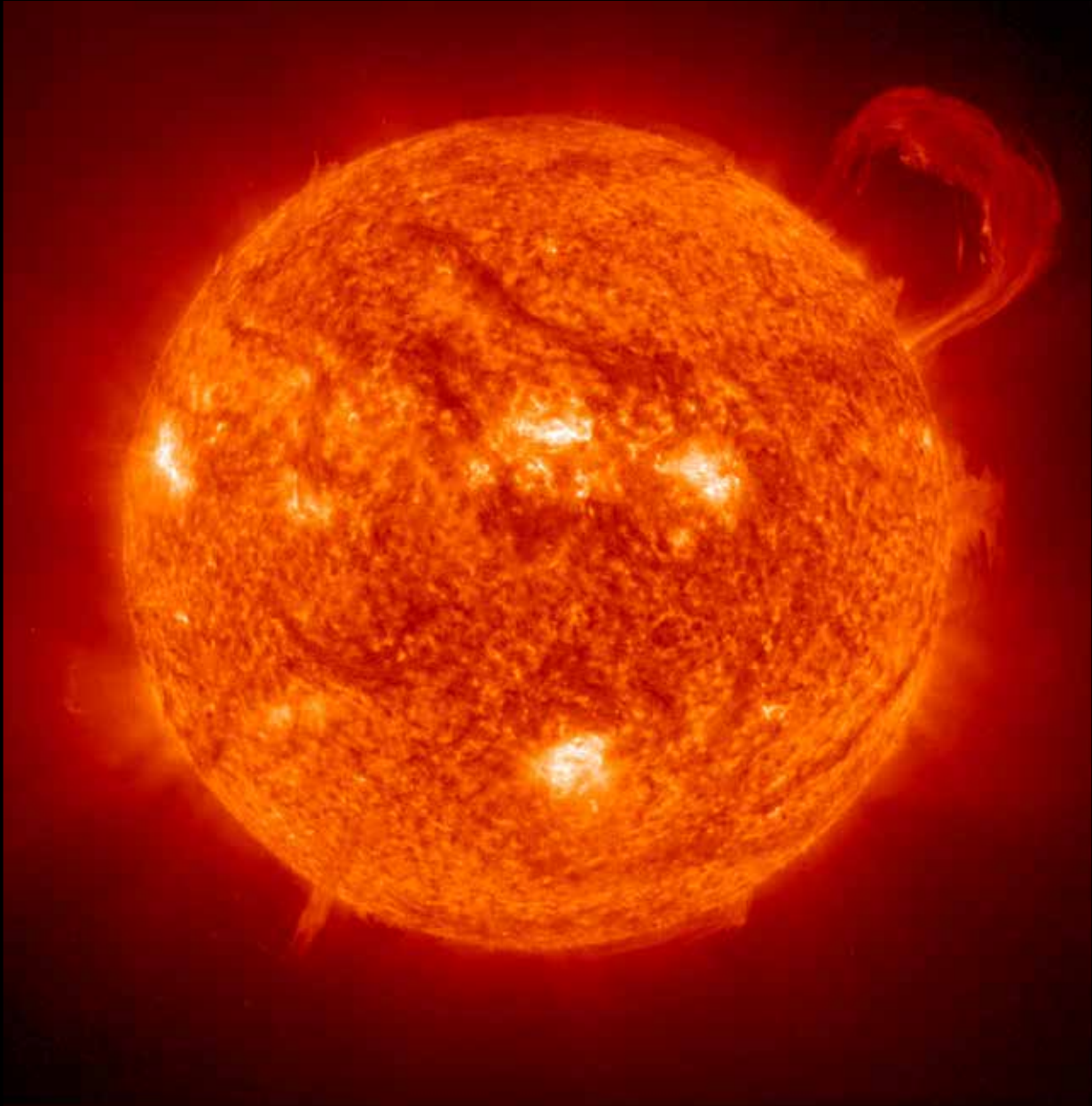


Volume 44.4

April 2024

# Desert Sky Observer

Antelope Valley Astronomy Club



# Desert Sky Observer

www.avastronomyclub.org

April 2024

## Upcoming Events

- April 6/7: DSSP/Messier Marathon at Chuchupate  
April 8: Partial Total Solar Eclipse @ SAGE Planetarium  
From 10:07 am to 12:22 pm  
April 12: Club Meeting  
April 13: Lunar Club at Matt's house  
April 27: Moonwalk @ ?????? @ 8:00 PM  
Every clear night: Personal Star Party  
May 4: DSSP at Chuchupate  
May 10: Club Meeting  
May 11: Lunar Club at Matt's house  
May 18: Moonwalk @ ??????? @ 8:30 PM



AVAC Calendar



## Board Members

**President:** Phil Wriedt (661) 917-4874  
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**Vice-President:** Matt Leone (661) 256-3851  
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**Secretary:** Rose Moore (661) 972-1953  
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**Director of Community Development:**  
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## Appointed Positions

**Newsletter Editor:** Phil Wriedt (661) 917-4874  
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**Equipment & Library:**  
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**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

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 6th/7th of April, at Chuchupate; I think this is going to be canceled though. The Weather Service forecast for next Saturday is a high of 45 and low of 22 with gusty winds at 20 mph. If we moved it to Red Cliffs the forecast is rain/snow, 58/38, and gusty winds to 30 mph. My joints are already starting to hurt. Maybe we should think twice about this coming weekend?

Monday, April 8th is the "Great American Eclipse." For us, the eclipse will start about 10:07 AM, Max at 11:13AM, and will end about 12:22PM. Maximum coverage will be about 47%. Jeremy would like us to setup next to the SAGE in the "concrete garden." If you have a solar filter for your telescope or binoculars, please come, setup 30-45 minutes before the start of the eclipse starts. However, if it's overcast, Jeremy will have bought a lot of eclipse glasses for naught and nobody will be able to see the eclipse.

Our next Club Meeting is on Friday, the 12th, 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 how 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 13th, Matt will host the Lunar Club at his house in Rosamond. The Lunar Club is dedicated to observing the Moon. Ask a board member, or Matt if you need directions.

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  $2.5 \pm 0.5$ . Look for it on the southern border between C. Borealis and Serpens Caput, at 15h 59m, 25°55'.
- Second: Comet ***12P/Pons-Brooks*** (orbital period of 71 years) last seen in 1954. Perihelion will be achieved on April 21, with closest approach to Earth of 1.55 AU on June 2. It is expected to brighten to about apparent mag 4.5.

Keep Looking Up, Phil

## On The Cover

Extreme Ultraviolet Imaging Telescope (EIT) image of a huge, handle-shaped prominence taken on Sept. 14, 1999 taken in the 304 angstrom wavelength - Prominences are huge clouds of relatively cool dense plasma suspended in the Sun's hot, thin corona. At times, they can erupt, escaping the Sun's atmosphere. Emission in this spectral line shows the upper chromosphere at a temperature of about 60,000 degrees K. Every feature in the image traces magnetic field structure. The hottest areas appear almost white, while the darker red areas indicate cooler temperatures.

SOHO is a project of international cooperation between ESA and NASA. See the SOHO web page at <http://sohowww.nascom.nasa.gov> for more details.

Image Credit: ESA/NASA/SOHO

## From the Secretary

By Rose Moore

Members:

We begin April with a Dark Sky Star Party on Saturday April 6th. We have this tentatively scheduled for Chuchupate, however, the weather may not cooperate. The highs have been variable, and there is possible snow for this coming weekend; so be on the lookout for an email regarding the DSSP prior to the event.

On Monday April 8th we have the Solar Eclipse; it will be approximately 47% in our area. Jeremy will be having an event at the SAGE Planetarium that morning. This will be open to students and the public. More information to come. We will need members with telescopes to help at this event. Set up time is 30-60 mins prior to the event. Jeremy says this will be held in the new outdoor area of the school, which I need to get clarification on.

Friday, April 12th is our club meeting at the SAGE Planetarium at 7pm. I will be handing out the Night Sky Network certificates and pins, as well as the AVAC certificates for those who have participated in events for last year. Please try to attend and support your club! We have applications in for speakers and are waiting to hear back from both NSN and NASA.

There is a Lunar Club observing event at Matt Leone's home on Saturday, April 13th. Time to be announced, hopefully, weather permitting. We will have a waxing crescent moon about 24%, which will set at 12:29am on Sunday. More info to come!

We do not have a definite date on a Prime Desert Moon Walk for April. We will keep you all posted!

I have contacted JPL regarding their tours. The tours are posted about 1 month ahead and fill up quickly. I would like to know if anyone would be interested in a tour of JPL, and need members to contact me if they are interested. I would need an approximate number of attendees; and prior to the trip, would need names of all those who would attend. We do not have a tentative date/month as yet. The tours lasts 2-2.5 hours, and involve climbing multiple flights of stairs. [Also tours are on weekdays ONLY]

Comet 12P/Pons-Brooks is now about a mag 5.0 and visible with binoculars in the constellation of Triangulum. The comet is heading toward the constellation of Aries and hopefully a mag 4.1 by the first week of April. By the third week of April it heads into the Southern Hemisphere and gets closer to the Sun. Go out and take a look!

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)

### AVAC Membership Renewal

There is still time to renew memberships! 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

## Participate in Eclipse Science

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



April is NASA's Citizen Science Month, and there is no shortage of projects available. Here are some [citizen science projects](#) that you can participate in on April 8th, on and off the path of totality right from your smartphone!

### Eclipse Soundscapes

**Eclipse Soundscapes** will compare data from a 1932 study on how eclipses affect wildlife – in this case, crickets. There are a number of ways you can participate, both on and off the path. NOTE: you must be 13 and older to submit data. Participants 18+ can apply to receive the free Data Collector kit. Learn more at: [eclipsesoundscapes.org/](http://eclipsesoundscapes.org/)

### GLOBE Eclipse

Folks that participated in the **GLOBE Eclipse** 2017 will be glad to see that their eclipse data portal is now open! With the GLOBE Observer smartphone app, you can measure air temperature and clouds during the eclipse, contributing data to the GLOBE program from anywhere you are. Learn more at: [observer.globe.gov/](http://observer.globe.gov/)

### HamSCI

HamSCI stands for **Ham Radio Science Citizen Investigation**. HamSCI has been actively engaged in scientific data collection for both the October 14, 2023, annular solar eclipse and the upcoming April 8, 2024, total eclipse. Two major activities that HamSCI will be involved in around the solar events will be the Solar Eclipse QSO Party (SEQP) and the Gladstone Signal Spotting Challenge (GSSC) which are part of the HamSCI Festivals of Eclipse Ionospheric Science. Learn more about these experiments and others at: [hamsci.org/eclipse](http://hamsci.org/eclipse)

### 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!



## SunSketcher

If you're traveling to totality, help the **SunSketcher** team measure the oblateness, or shape, of the Sun during the eclipse by timing the flashes of Baily's Beads. You will need a smartphone with a working camera for this, along with something to hold the phone in place - don't forget a spare battery! NOTE: The app will need to run from five minutes before the eclipse starts until the end of the eclipse. Any additional phone use will result in Sun Sketcher data loss. Learn more at: [sunskecher.org/](https://sunskecher.org/)

Don't stop at the eclipse - NASA has citizen science projects you can do all year long – from [cloud spotting on Mars](#) to [hunting for distant planets](#)! By contributing to these research efforts, you can help NASA make new discoveries and scientific breakthroughs, resulting in a better understanding of the world around us, from the critters on the ground, to the stars in our sky.

We'll be highlighting other citizen science projects with our mid-month article on the [Night Sky Network](#) page, but we want to wish all you eclipse chasers out there a very happy, and safe solar eclipse! For last minute activities, check out Night Sky Network's [Solar Eclipse Resources section](#)!

## Space News

News from around the Net

### Every Full Moon, You Can See The Craters Made Famous In 2001: A Space Odyssey

On April 3, 1968, more than a year before Neil Armstrong walked on the Moon, a film that was destined to become a science-fiction classic was shown in U.S. cinemas for the first time. Although many cinema-goers were baffled by 2001: A Space Odyssey, many others fell head over heels in love with Stanley Kubrick's stark vision of the future. Compared to today's sci-fi blockbusters, with their epic space battles, heroes, and villains, 2001 is slow, even ponderous – and yet it stands the test of time. Thoughtful and awe-inspiring, it still looks as fresh and striking as it did when it was first released, . . . (continued at <https://www.astronomy.com/observing/explore-clavius-and-tycho-craters/> )



### Is Betelgeuse Fading Again?

Betelgeuse has dipped nearly half a magnitude since late January. Could it be headed for another Great Dimming Event? We also take a look at this spring's "other" eclipse. But unlike the Great Dimming of 2019–20 its waning so far has been modest. Betelgeuse, located in Orion's right shoulder, ordinarily shines at magnitude +0.4, a close match to neighboring Procyon in Canis Minor. But since late January it's lost some of its luster — at least a third of a magnitude's worth. That may not sound like much especially given the star's variable nature, but the red supergiant star is currently the faintest it's been in the past two years. . . . (continued at <https://skyandtelescope.org/astronomy-news/is-betelgeuse-fading-again/> )



### Euclid 'Dark Universe' Telescope's Vision Restored By Deicing Campaign

The Euclid "dark universe" probe's ailing vision has been restored after an experimental deicing campaign successfully evaporated ice from the telescope's mirrors, the European Space Agency (ESA) announced on Tuesday (March 26). Ice layers as wide as a single DNA strand had collected on Euclid's mirrors, causing a small but progressive decrease in the amount of starlight the telescope was capturing, the agency said last week. So, scientists began "deicing" Euclid for the first time — from a million miles away — by heating one of its six mirrors that they strongly suspected was causing much of the issue. . . . (continued at <https://www.space.com/euclid-dark-matter-telescope-vision-restored> )



### Sleeping Supermassive Black Holes Awakened Briefly By Shredded Stars

A new investigation into an obscure class of galaxies known as Compact Symmetric Objects, or CSOs, has revealed that these objects are not entirely what they seem. CSOs are active galaxies that host supermassive black holes at their cores. Out of these monstrous black holes spring two jets traveling in opposite directions at nearly the speed of light. But in comparison to other galaxies that boast fierce jets, these jets do not extend out to great distances—they are much more compact. . . . (continued at <https://phys.org/news/2024-03-supermassive-black-holes-awakened-briefly.html> )



### 12p/Pons-Brooks: How And When To See The 'Devil Comet'

A Mount Everest-sized 'devil' comet making its first visit to the inner solar system in more than 70 years could be visible to the naked eye over the next few weeks. The once or possibly twice-in-a-lifetime object, known as 12P/Pons-Brooks, is due to make its closest approach to the sun on 21 April, which is when it will be at its brightest. For those in the northern hemisphere, the Halley-type comet is likely to be at its best visibility-wise between now and mid-April, although it won't be the easiest to spot. "Don't expect it to be dazzlingly bright—the kind of image you see in photographs It's not going to be like that,". . . . (continued at <https://phys.org/news/2024-03-12ppons-brooks-devil-comet.html> )



## Space News

News from around the Net

### **Bizarre ‘Hot Jupiter’ Planets Keep Surprising Astronomers**

Astronomers now have three possible theories to explain how weird hot Jupiter exoplanets form. It was May 2013, and the Kepler space telescope was dead. The Kepler planet-hunting mission had been discovering new planets since its launch in 2009, but in May 2013 the second of its four reaction wheels failed. The telescope could no longer control where it pointed; the prime Kepler mission was over. . . . (continued at <https://www.scientificamerican.com/article/bizarre-hot-jupiter-planets-keep-surprising-astronomers/> )



### **A Dead Star Will Soon Spark A Once-In-A-Lifetime Display In Earth’s Skies**

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/> )



### **Astronomers Find Evidence That Blue Supergiant Stars Can Be Formed By The Merger Of Two Stars**

An international piece of research, led by the Instituto de Astrofísica de Canarias (IAC) has found clues to the nature of some of the brightest and hottest stars in our Universe, called blue supergiants. Although these stars are commonly observed, their origin has been an old puzzle that has been debated for several decades. By simulating novel stellar models and analysing a large data sample in the Large Magellanic Cloud, IAC researchers have found strong evidence that most blue supergiants may have formed from the merger of two stars bound in a binary system. . . .(continued at <https://www.iac.es/en/outreach/news/astronomers-find-evidence-blue-supergiant-stars-can-be-formed-merger-two-stars> )



### **What Will We See In The Sky During Totality?**

Totality is so precious no one will fault you if you don’t bother or even forget to hunt for planets and stars during the April eclipse. After all, the Sun and Moon are the celebrities of this show. Millions of us will drive, fly, and sail hundreds or even thousands of miles to directly experience what it feels like to be a cog in the grand cycling of heavenly bodies. I can’t wait to feel that emotional cocktail of terror and reverence as the Moon’s shadow descends and then moments later to gaze agog at the Sun’s spiky, subatomic hairdo. . . . (continue at <https://skyandtelescope.org/astronomy-news/what-will-we-see-in-the-sky-during-totality/> )



### **More Than A Few Nearby Stars Show Signs They Ate Young Planets**

Stars in mid- and later life don’t always end up with as many planets as they started with. Early in their evolutionary histories, planetary systems are places of chaos, and some planets get flung out of their star’s grasp entirely, only to end up a rogue world traveling through space. But sometimes planets encounter another risk. A star can lose a planet not due to ejection but due to ingestion. A study published March 20 in Nature surveyed 91 nearby star systems. By looking for small changes in composition, the astronomers behind the study reported that about 1 in 12 had the telltale signatures of having eaten a planet. . . . (continued at <https://www.astronomy.com/science/more-than-a-few-nearby-stars-show-signs-they-ate-young-planets/> )

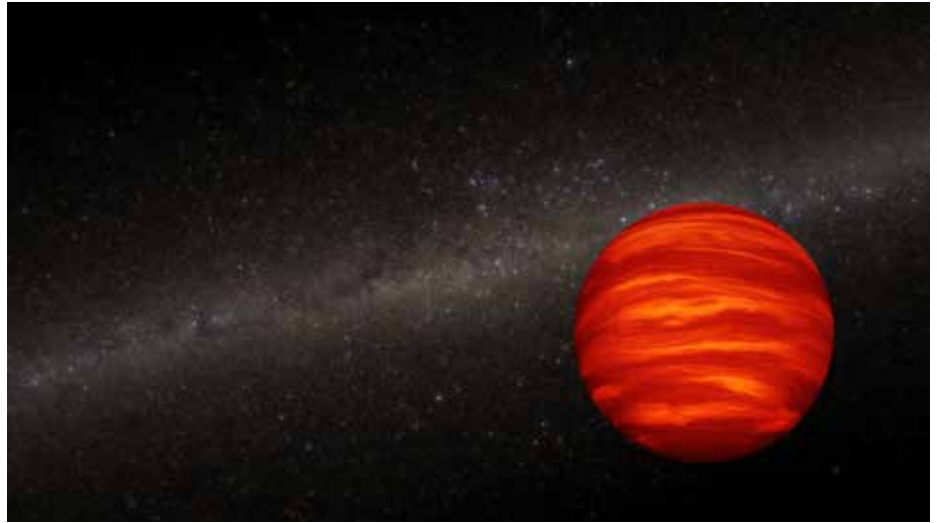


## Hubble Finds That Ageing Brown Dwarfs Grow Lonely

21 March 2024 — ESA/Hubble Science Release heic2405

It takes two to tango, but in the case of brown dwarfs that were once paired as binary systems, that relationship doesn't last for very long, according to a recent survey using the NASA/ESA Hubble Space Telescope.

Brown dwarfs are interstellar objects larger than Jupiter but smaller than the lowest-mass stars. Like stars, they collapse out of a cloud of gas and dust but do not have enough mass to sustain the fusion of hydrogen like a normal star.



Like stars, brown dwarfs can be born in pairs and orbit about each other. A Hubble Space Telescope survey has found that the older a brown dwarf is, the less likely it is to have a companion dwarf. This implies that a binary pair of dwarfs is so weakly linked by gravity that they drift apart over a few hundred million years as a result of the pull of bypassing stars. Call them the lonely hearts of the cosmos.

Hubble can detect binaries as close to each other as 480 million kilometres — the approximate separation between our Sun and the asteroid belt. But the astronomers who carried out the survey didn't find any binary pairs in a sample of brown dwarfs in the solar neighbourhood. "Our survey confirms that widely separated companions are extremely rare among the lowest-mass and coldest isolated brown dwarfs, even though binary brown dwarfs are observed at younger ages. This suggests that such systems do not survive over time," said lead author Clémence Fontanive of the Trottier Institute for Research on Exoplanets, Université de Montréal, Canada.

In a similar survey Fontanive conducted a couple of years ago, Hubble looked at extremely young brown dwarfs and some had binary companions, confirming that star-forming mechanisms do produce binary pairs among low-mass brown dwarfs. The lack of binary companions for older brown dwarfs suggests that some may have started out as binaries, but parted ways over time.

The new Hubble findings further support the theory that brown dwarfs are born the same way as stars, through the gravitational collapse of a cloud of molecular hydrogen. The difference is that they do not have enough mass to sustain nuclear fusion of hydrogen for generating energy, whereas stars do. More than half of the stars in our galaxy have a companion star that resulted from these formation processes, with more massive stars more commonly found in binary systems. "The motivation for the study was really to see how low in mass the trends seen among multiple star systems hold up," said Fontanive.

"Our Hubble survey offers direct evidence that these binaries that we observe when they're young are unlikely to survive to old ages, they're likely going to get disrupted. When they're young, they're part of a molecular cloud, and then as they age the cloud disperses. As that happens, things start moving around and stars pass by each other. Because brown dwarfs are so light, the gravitational hold tying wide binary pairs is very weak, and bypassing stars can easily tear these binaries apart," said Fontanive.

The team selected a sample of brown dwarfs previously identified by NASA's Wide-Field Infrared Survey Explorer. It sampled some of the coldest and lowest-mass old brown dwarfs in the solar neighbourhood. These old brown dwarfs are so cool (a few hundred degrees warmer than Jupiter in most cases) that their atmospheres contain water vapour that condensed out.

To find the coolest companions, the team used two different near-infrared filters, one in which cold brown dwarfs are bright, and another covering specific wavelengths where they appear very faint as a result of water absorption in their atmospheres.

“Most stars have friends – whether that is a binary companion or exoplanets,” added team member Beth Biller of the University of Edinburgh in the United Kingdom. “This survey really demonstrates that the same is not true for brown dwarfs. After a brief period early in their lifespans, most brown dwarfs remain single for the rest of their very long existence.”

“This is the best observational evidence to date that brown dwarf pairs drift apart over time,” said Fontanive. “We could not have done this kind of survey and confirmed earlier models without Hubble’s sharp vision and sensitivity.”

## More information

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

Image credit: NASA, ESA, J. Olmsted (STScI)

## Links

[Release on STScI website](#)

[Science paper](#)

## Contacts

Bethany Downer

ESA/Hubble Chief Science Communications Officer

Email: [Bethany.Downer@esahubble.org](mailto:Bethany.Downer@esahubble.org)

## Dark Sky Observing Site

**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.



## Solar System Summary

The **Sun** starts the month in central Pisces, and on the 18th crosses the eastern edge of Aries

On the evening of April 1st the comet 12P/Pons-Brooks will 2° SW of Hamal in Aries at Mag 5. On the 10th 12P crosses the ecliptic 4° east of Jupiter at mag 4.6. At the end of April 12P is about 23° east of Mintaka in Orion at mag 4.58 .

### The Planets

**Mercury** spends the month in Pisces. On the 11th it achieves inferior conjunction reemerging in the morning twilight near the end of the month.

**Venus** is in the morning sky, but not for long. Starting the month at mag -3.9 on the edge of Pisces. On the 3rd passes by Neptune, ¼° to the north. On the morning of the 7th the 2% Moon brushes by. After this Venus disappears into the morning twilight.

**Mars** starts the month in Aquarius, moving east into Pisces; slowly getting brighter as Earth catches up with Mars. On the 10th Saturn passes ½° south. On the 28th Neptune passes 2 arc-mins north.

**Jupiter** continues moving forward in southern Aries at mag -2.0. At the end of the month Jupiter passes into Taurus. On the 20th Uranus passes ½° to the north.

**Saturn**, while moving east in Aquarius is quickly separating itself from the Sun. On the 10th Mars zips by ½° to the north.

**Uranus** continues moving east in eastern Aries at mag 5.8. On the 20th Jupiter passes ½° to the south.

**Neptune** is moving east on the southern border of Pisces at 7.9. Venus and Mars pass by during the month.

### Dwarf Planets

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

**1 Ceres** at mag 8.7 starts the month in central Sagittarius moving east toward the Capricorn.

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

**3 Juno** at mag 9.4, continues moving in retrograde in southern Leo, at the end of month is mag 10.1 .

**4 Vesta** is at mag 8.4, moving east in Gemini making it to within ½° of Mebsuta at month's end.

## Moon Phases



First Qtr  
Apr 15

Full  
Apr 23

Third Qtr  
Apr 1

New  
Apr 8

## Sun and Moon Rise and Set\*

Date	Moonrise	Moonset	Sunrise	Sunset
4/1/2024	01:52	11:17	06:38	19:14
4/5/2024	04:53	16:00	06:33	19:17
4/10/2024	07:33	22:07	06:26	19:21
4/15/2024	11:53	02:13	06:20	19:25
4/20/2024	16:45	04:44	06:14	19:29
4/25/2024	21:41	06:53	06:08	19:33
4/30/2024	01:33	11:22	06:02	19:37

## Planet Data\*

April 1

	Rise	Transit	Set	Mag	Phase%
Mercury	07:06	13:46	20:26	1.81	13.8
Venus	06:03	11:57	17:52	-3.89	95.9
Mars	05:15	10:49	16:25	1.18	95.5
Jupiter	08:23	15:11	22:00	-2.09	99.7
Saturn	05:33	11:13	16:53	1.10	99.9

April 15

	Rise	Transit	Set	Mag	Phase%
Mercury	05:59	12:26	18:51	4.19	2.2
Venus	05:52	12:06	18:20	-3.89	97.5
Mars	04:48	10:35	16:22	1.15	94.8
Jupiter	07:37	14:29	21:20	-2.04	99.8
Saturn	04:42	10:24	16:05	1.14	99.8

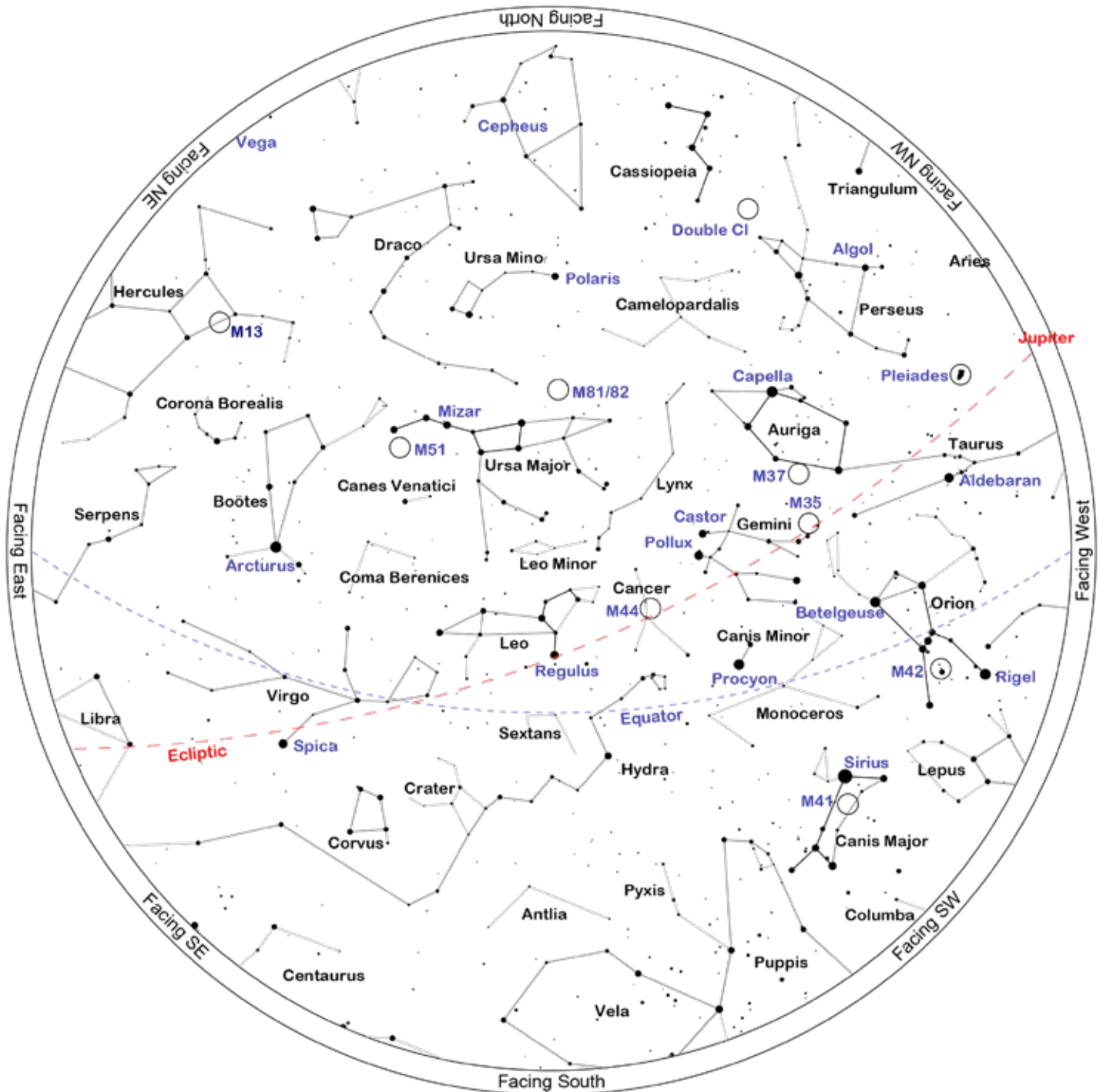
April 30

	Rise	Transit	Set	Mag	Phase%
Mercury	05:08	11:23	17:37	1.12	26.6
Venus	05:42	12:16	18:49	-3.89	98.7
Mars	04:19	10:18	16:18	1.12	93.9
Jupiter	06:50	13:44	20:38	-2.01	99.9
Saturn	03:47	09:30	15:13	1.16	99.8

\*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 April 6, 22:00 (UTC -07:00)

Powered by: Heavens-Above.com

# Desert Sky Observer

www.avastronomyclub.org

April 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 April 6, 2024. The list is sorted by the transit time of the object.

ID	Common Name	Type	Const	RA	Dec	Mag	Rise	Transit	Set
IC348		Open	Per	03h 44m 34s	+32° 09.7'	7.3	07:54	15:42	23:29
M45	Pleiades, Subaru	Open	Tau	03h 47m 30s	+24° 07.0'	1.6	08:29	15:44	23:00
Barnard5	B5	DkNeb	Per	03h 47m 53s	+32° 53.0'		07:54	15:45	23:35
NGC1461		Galaxy	Eri	03h 48m 27s	-16° 23.5'	11.7	10:30	15:45	21:01
IC353		Neb	Tau	03h 53m 00s	+25° 48.0'		08:28	15:50	23:12
IC2003		P Neb	Per	03h 56m 22s	+33° 52.5'	13.0	07:58	15:53	23:48
NGC1499	California Nebula	Neb	Per	04h 03m 14s	+36° 22.0'		07:53	16:00	00:07
NGC1515		Galaxy	Dor	04h 04m 03s	-54° 06.0'	11.0	14:41	16:01	17:21
NGC1496		Open	Per	04h 04m 32s	+52° 39.7'	10.0	05:27	16:01	02:36
NGC1502		Open	Cam	04h 07m 50s	+62° 19.8'	5.7	Circ	16:05	Circ
IC360		Neb	Tau	04h 09m 00s	+26° 06.0'		08:43	16:06	23:29
NGC1514	Crystal Ball Nebula	P Neb	Tau	04h 09m 17s	+30° 46.5'	10.0	08:25	16:06	23:48
NGC1513		Open	Per	04h 09m 57s	+49° 30.8'	8.4	06:21	16:07	01:52
IC359		Neb	Tau	04h 12m 28s	+27° 42.1'		08:40	16:09	23:38
NGC1535		P Neb	Eri	04h 14m 16s	-12° 44.3'	10.0	10:45	16:11	21:38
Barnard10	B10	DkNeb	Tau	04h 18m 41s	+28° 16.0'		08:44	16:16	23:47
NGC1545		Open	Per	04h 20m 57s	+50° 15.2'	6.2	06:23	16:18	02:13
NGC1569		Galaxy	Cam	04h 30m 49s	+64° 50.8'	11.2	Circ	16:28	Circ
NGC1582		Open	Per	04h 31m 53s	+43° 49.0'	7.0	07:36	16:29	01:21
NGC1560		Galaxy	Cam	04h 32m 48s	+71° 52.7'	11.5	Circ	16:30	Circ
Barnard19	B19	DkNeb	Tau	04h 33m 00s	+26° 16.0'		09:06	16:30	23:53
Barnard20	B20	DkNeb	Per	04h 37m 04s	+50° 58.0'		06:29	16:34	02:39
IC2087		Neb	Tau	04h 40m 00s	+25° 44.5'		09:15	16:37	23:59
Barnard23	B23	DkNeb	Tau	04h 40m 33s	+29° 52.0'		09:00	16:37	00:15
NGC1624		Open	Per	04h 40m 36s	+50° 27.6'	10.4	06:40	16:38	02:35
NGC1640		Galaxy	Eri	04h 42m 14s	-20° 26.0'	11.7	11:36	16:39	21:42
NGC1647		Open	Tau	04h 45m 55s	+19° 06.8'	6.4	09:44	16:43	23:42
IC2118	Witch Head Nebula	Neb	Eri	05h 04m 54s	-07° 15.0'		11:19	17:02	22:44
NGC1851	C73	Globular	Col	05h 14m 06s	-40° 03.0'	7.3	13:30	17:11	20:52
IC405	Flaming Star Nebula	Neb	Aur	05h 16m 29s	+34° 21.3'		09:16	17:13	01:11
M79	NGC1904	Globular	Lep	05h 24m 11s	-24° 31.4'	8.5	12:32	17:21	22:10
M38	Starfish Cluster	Open	Aur	05h 28m 40s	+35° 50.8'	7.0	09:21	17:26	01:30
M1	Crab Nebula	SNR	Tau	05h 34m 32s	+22° 00.8'	8.4	10:23	17:31	00:40
M42	Great Orion Nebula	Open+D Neb	Ori	05h 35m 16s	-05° 23.4'	4.0	11:44	17:32	23:20
M43	De Mairan's Nebula	D Neb	Ori	05h 35m 31s	-05° 16.0'	9.0	11:44	17:32	23:21
M36	Pinwheel Cluster	Open	Aur	05h 36m 18s	+34° 08.3'	6.5	09:37	17:33	01:30

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ID	Common Name	Type	Const	RA	Dec	Mag	Rise	Transit	Set
M78	NGC2068	D Neb	Ori	05h 46m 45s	+00° 04.8'	8.0	11:41	17:44	23:47
M37	Auriga Salt-and-pepper Cluster	Open	Aur	05h 52m 18s	+32° 33.2'	6.0	10:00	17:49	01:38
M35	NGC2168	Open	Gem	06h 09m 00s	+24° 21.0'	5.5	10:49	18:06	01:22
M41	Little Beehive	Open	CMA	06h 46m 01s	-20° 45.3'	5.0	13:41	18:43	23:45
M50	Heart-shaped Cluster	Open	Mon	07h 02m 42s	-08° 23.0'	7.0	13:20	19:00	00:39
M47	NGC2422	Open	Pup	07h 36m 35s	-14° 29.0'	4.5	14:12	19:34	00:55
M46	NGC2437	Open	Pup	07h 41m 46s	-14° 48.6'	6.5	14:18	19:39	00:59
M93	NGC2447	Open	Pup	07h 44m 30s	-23° 51.4'	6.5	14:50	19:41	00:33
M48	NGC2548	Open	Hya	08h 13m 43s	-05° 45.0'	5.5	14:24	20:11	01:57
M44	Beehive Cluster	Open	Cnc	08h 40m 24s	+19° 40.0'	4.0	13:37	20:37	03:38
M67	King Cobra	Open	Cnc	08h 51m 18s	+11° 48.0'	7.5	14:12	20:48	03:24
M81	Bode's Galaxy	Galaxy	UMa	09h 55m 33s	+69° 03.9'	7.8	Circ	21:52	Circ
M82	Cigar Galaxy, Ursa Major A	Galaxy	UMa	09h 55m 53s	+69° 40.8'	9.2	Circ	21:53	Circ
M95	NGC3351	Galaxy	Leo	10h 43m 58s	+11° 42.2'	10.6	16:05	22:41	05:17
M96	NGC3368	Galaxy	Leo	10h 46m 46s	+11° 49.2'	10.1	16:07	22:44	05:20
M105	NGC3379	Galaxy	Leo	10h 47m 50s	+12° 34.9'	10.5	16:06	22:45	05:23
M108	NGC3556	Galaxy	UMa	11h 11m 31s	+55° 40.4'	10.6	Circ	23:08	Circ
M97	Owl Nebula	P Neb	UMa	11h 14m 48s	+55° 01.1'	12.0	Circ	23:12	Circ
M65	Leo Triplet	Galaxy	Leo	11h 18m 56s	+13° 05.5'	10.1	16:36	23:16	05:56
M66	Leo Triplet	Galaxy	Leo	11h 20m 15s	+12° 59.4'	9.7	16:37	23:17	05:57
M109	NGC3992	Galaxy	UMa	11h 57m 36s	+53° 22.4'	10.6	13:03	23:55	10:46
M98	NGC4192	Galaxy	Com	12h 13m 48s	+14° 54.0'	10.9	17:25	00:11	06:56
M99	Virgo Cluster Pinwheel	Galaxy	Com	12h 18m 50s	+14° 25.0'	10.4	17:32	00:16	07:00
M106	NGC4258	Galaxy	CVn	12h 18m 58s	+47° 18.2'	9.1	14:54	00:16	09:38
M61	Swelling Spiral	Galaxy	Vir	12h 21m 55s	+04° 28.3'	10.1	18:04	00:19	06:34
M40	Winnecke 4	DbI+Asterism	UMa	12h 22m 12s	+58° 05.0'	8.7	Circ	00:19	Circ
M100	Mirror of M99	Galaxy	Com	12h 22m 55s	+15° 49.3'	10.1	17:31	00:20	07:08
M84	NGC4374	Galaxy	Vir	12h 25m 04s	+12° 53.2'	10.2	17:43	00:22	07:01
M85	NGC4382	Galaxy	Com	12h 25m 24s	+18° 11.4'	10.0	17:27	00:22	07:18
M86	NGC4406	Galaxy	Vir	12h 26m 12s	+12° 56.7'	9.9	17:43	00:23	07:03
M49	NGC4472	Galaxy	Vir	12h 29m 47s	+08° 00.0'	9.3	18:01	00:27	06:52
M87	Smoking Gun	Galaxy	Vir	12h 30m 49s	+12° 23.4'	9.6	17:50	00:28	07:06
M88	NGC4501	Galaxy	Com	12h 31m 59s	+14° 25.2'	10.2	17:45	00:29	07:13
M91	Missing Messier Object	Galaxy	Com	12h 35m 27s	+14° 29.7'	10.9	17:48	00:32	07:17
M89	NGC4552	Galaxy	Vir	12h 35m 40s	+12° 33.3'	10.9	17:54	00:33	07:11
M90	NGC4569	Galaxy	Vir	12h 36m 50s	+13° 09.7'	10.2	17:53	00:34	07:14
M58	NGC4579	Galaxy	Vir	12h 37m 44s	+11° 49.1'	10.4	17:58	00:35	07:11
M68	NGC4590	Globular	Hya	12h 39m 28s	-26° 44.5'	9.0	19:55	00:36	05:18

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ID	Common Name	Type	Const	RA	Dec	Mag	Rise	Transit	Set
M104	Sombrero Galaxy	Galaxy	Vir	12h 39m 59s	-11° 37.3'	9.2	19:07	00:37	06:07
M59	NGC4621	Galaxy	Vir	12h 42m 02s	+11° 38.7'	10.7	18:03	00:39	07:15
M60	NGC4649	Galaxy	Vir	12h 43m 40s	+11° 33.1'	9.8	18:05	00:41	07:16
M94	Croc's Eye Galaxy	Galaxy	CVn	12h 50m 53s	+41° 07.1'	8.9	16:14	00:48	09:22
M64	Black Eye Galaxy	Galaxy	Com	12h 56m 44s	+21° 41.0'	9.3	17:46	00:54	08:01
M53	NGC5024	Globular	Com	13h 12m 55s	+18° 10.1'	8.5	18:14	01:10	08:06
M63	Sunflower Galaxy	Galaxy	CVn	13h 15m 49s	+42° 01.7'	9.3	16:33	01:13	09:53
NGC5139	Omega Centauri	Globular	Cen	13h 26m 48s	-47° 29.0'	3.6	22:35	01:24	04:13
NGC5169		Galaxy	CVn	13h 28m 10s	+46° 40.3'	14.0	16:09	01:25	10:41
NGC5204		Galaxy	UMa	13h 29m 36s	+58° 25.1'	11.3	Circ	01:27	Circ
M51	Whirlpool Galaxy,	Galaxy	CVn	13h 29m 52s	+47° 11.7'	8.9	16:06	01:27	10:48
Arp85	M51B	Galaxy	CVn	13h 29m 58s	+47° 16.0'	9.6	16:05	01:27	10:48
NGC5182		Galaxy	Hya	13h 30m 41s	-28° 09.0'	13.0	20:52	01:28	06:04
NGC5214		Galaxy	CVn	13h 32m 49s	+41° 52.3'	14.0	16:51	01:30	10:09
M83	Southern Pinwheel Galaxy	Galaxy	Hya	13h 37m 00s	-29° 51.8'	8.0	21:05	01:34	06:03
HR5144	HD119055	Triple	Boo	13h 40m 40s	+19° 57.3'	5.8	18:36	01:38	08:39
NGC5283		Galaxy	Dra	13h 41m 06s	+67° 40.3'	14.0	Circ	01:38	Circ
M3	NGC5272	Globular	CVn	13h 42m 11s	+28° 22.5'	7.0	18:08	01:39	09:11
NGC5286	C84	Globular	Cen	13h 46m 24s	-51° 22.0'	7.6	23:36	01:43	03:50
NGC5292		Galaxy	Cen	13h 47m 40s	-30° 56.4'	14.0	21:20	01:45	06:10
NGC5356		Galaxy	Vir	13h 54m 59s	+05° 20.0'	14.0	19:34	01:52	08:10
NGC5363		Galaxy	Vir	13h 56m 07s	+05° 15.2'	10.2	19:36	01:53	08:10
NGC5447	III-787	Neb	UMa	14h 02m 29s	+54° 16.3'		14:36	01:59	13:22
M101	Pinwheel Galaxy	Galaxy	UMa	14h 03m 13s	+54° 20.9'	8.2	14:33	02:00	13:27
NGC5461	III-788	Neb	UMa	14h 03m 42s	+54° 19.0'		14:35	02:01	13:26
NGC5485		Galaxy	UMa	14h 07m 11s	+55° 00.0'	11.5	Circ	02:04	Circ
NGC5460		Open	Cen	14h 07m 27s	-48° 20.6'	5.6	23:23	02:04	04:45
NGC5669		Galaxy	Boo	14h 32m 44s	+09° 53.4'	12.0	19:59	02:30	09:00
NGC5689		Galaxy	Boo	14h 35m 30s	+48° 44.5'	11.9	16:56	02:32	12:09
M102	Spindle Galaxy (duplicate of M101?)	Galaxy	Dra	15h 06m 30s	+55° 45.7'	10.8	Circ	03:03	Circ
NGC5875		Galaxy	Boo	15h 09m 13s	+52° 31.6'	13.0	16:35	03:06	13:38
NGC5907	Splinter Galaxy	Galaxy	Dra	15h 15m 54s	+56° 19.7'	11.4	Circ	03:13	Circ
M5	NGC5904	Globular	Ser	15h 18m 33s	+02° 04.9'	7.0	21:07	03:15	09:24
Barnard228	B228	DkNeb	Lup	15h 44m 00s	-34° 30.0'		23:31	03:41	07:51
IC4593	White Eyed Pea	P Neb	Her	16h 11m 44s	+12° 04.3'	11.0	21:32	04:09	10:46
IC4592	Jabbah	Neb	Sco	16h 11m 59s	-19° 27.4'		23:03	04:09	09:15
M80	NGC6093	Globular	Sco	16h 17m 03s	-22° 58.5'	8.5	23:19	04:14	09:09
IC4601		Neb	Sco	16h 20m 18s	-20° 04.9'		23:13	04:17	09:21
Abell38		P Neb	Sco	16h 23m 17s	-31° 44.9'	11.7	23:59	04:20	08:42

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ID	Common Name	Type	Const	RA	Dec	Mag	Rise	Transit	Set
M4	Cat's Eye	Globular	Sco	16h 23m 35s	-26° 31.5'	7.5	23:38	04:21	09:03
NGC6181		Galaxy	Her	16h 32m 21s	+19° 49.5'	11.9	21:28	04:29	11:30
NGC6171		Globular	Oph	16h 32m 32s	-13° 03.1'	8.1	23:04	04:29	09:55
NGC6178		Open	Sco	16h 35m 47s	-45° 38.6'	7.2	01:28	04:33	07:37
NGC6193	C82	Open	Ara	16h 41m 18s	-48° 46.0'	5.2	02:01	04:38	07:15
M13	Great Hercules Cluster	Globular	Her	16h 41m 41s	+36° 27.5'	7.0	20:31	04:39	12:46
NGC6210	Turtle Planetary Nebula	P Neb	Her	16h 44m 30s	+23° 48.0'	9.0	21:27	04:41	11:56
NGC6204		Open	Ara	16h 46m 09s	-47° 01.0'	8.2	01:50	04:43	07:36
M12	Gumball Globular	Globular	Oph	16h 47m 14s	-01° 56.8'	8.0	22:47	04:44	10:42
NGC6231	Table of Scorpius	Open	Sco	16h 54m 00s	-41° 48.0'	2.6	01:20	04:51	08:22
IC4628	Prawn Nebula	Neb	Sco	16h 56m 58s	-40° 27.3'		01:15	04:54	08:33
NGC6254		Globular	Oph	16h 57m 09s	-04° 05.9'	6.6	23:03	04:54	10:45
Barnard47	B47	DkNeb	Oph	16h 59m 42s	-22° 38.0'		00:01	04:57	09:52
M62	Flickering Globular	Globular	Oph	17h 01m 13s	-30° 06.7'	8.0	00:30	04:58	09:27
M19	NGC6273	Globular	Oph	17h 02m 38s	-26° 16.0'	8.5	00:17	05:00	09:43
Barnard51	B51	DkNeb	Oph	17h 04m 44s	-22° 15.0'		00:05	05:02	09:59
IC4637		P Neb	Sco	17h 05m 10s	-40° 53.1'	14.0	01:26	05:02	08:39
Barnard56	B56	DkNeb	Sco	17h 08m 48s	-32° 05.0'		00:45	05:06	09:26
Barnard59	Pipe Nebula	DkNeb	Oph	17h 11m 23s	-27° 29.0'		00:30	05:08	09:47
NGC6302	Bug Nebula	P Neb	Sco	17h 13m 42s	-37° 06.0'	9.6	01:13	05:11	09:08
M92	NGC6341	Globular	Her	17h 17m 07s	+43° 08.1'	7.5	20:26	05:14	14:02
M9	NGC6333	Globular	Oph	17h 19m 12s	-18° 31.0'	9.0	00:07	05:16	10:25
NGC6326		P Neb	Ara	17h 20m 46s	-51° 45.2'	12.0	03:16	05:18	07:19
NGC6357	Lobster Nebula	Neb	Sco	17h 24m 43s	-34° 12.1'		01:11	05:22	09:33
IC4651		Open	Ara	17h 24m 52s	-49° 56.5'	6.9	02:57	05:22	07:46
Abell41		P Neb	Ser	17h 29m 04s	-15° 13.3'	13.9	00:07	05:26	10:45
Abell42		P Neb	Oph	17h 31m 31s	-08° 19.1'	14.6	23:49	05:28	11:08
Barnard78	B78	DkNeb	Oph	17h 32m 00s	-25° 35.0'		00:43	05:29	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  
UMa - Ursa Major  
UMi - Ursa Minor  
Vel - Vela  
Vir - Virgo  
Vol - Volans  
Vul - Vulpecula

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