



EVENT HORIZON

The SAN MATEO COUNTY ASTRONOMICAL SOCIETY

January – March • 2024 Issue

802nd General Meeting: Feb. 2

803rd General Meeting: March 1



Dumbbell Nebula

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Founded in 1960, the San Mateo County Astronomical Society is a 501(c)(3) non-profit organization for amateur astronomers and interested members of the public. Visitors may attend Society meetings and lectures on the first Friday of each month, September to June, and Star Parties two Saturdays a month. All events are free for visitors and guests. Family memberships are offered at a nominal annual cost. Detailed membership information is found at www.smcasas-tro.com/membership.html where those who want can join via PayPal. Membership also includes access to our Event Horizon newsletter, discounted costs and subscriptions to calendars and magazines, monthly Star Parties of the Society and the College of San Mateo, field trips, social occasions and general meetings presenting guest speakers and programs. For additional information, please email us at SMCAS@live.com or call (650) 678-2762.

Membership forms are available at the end of this newsletter. The Membership Application form is on the back page.

Upcoming Events

The Society and the City of San Carlos Parks Department host public Star Parties at Crestview Park, 1000 Crestview Drive, San Carlos. [Click here to see the schedule for the entire year.](#) See page 14 for guidelines and directions.

Saturday, January 6: Star Party – At sunset (5:05 p.m.) – Crestview Park

Saturday, January 13: Star Party – At sunset (5:12 p.m.) – Crestview Park

Saturday, January 20: SMCAS Annual Holiday Party, 6 p.m. to 9 p.m., Crystal Springs United Methodist Church, 2145 Bunker Hill Drive, San Mateo. See page 6 for more details.

Friday, February 2: SMCAS Pizza Social and General Meeting, 7 p.m., College of San Mateo, ISC Room (#110) and a presentation by Planetary Scientist Dr. Pascal Lee called “N ~ 1: Alone In The Milky Way,” 8 p.m. in the Planetarium. See page 15 for directions to CSM.

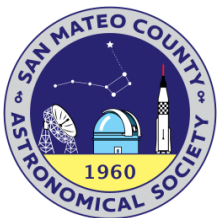
Saturday, February 3: Star Party – At sunset (5:35 p.m.) – Crestview Park

Saturday, February 10: Star Party – At sunset (5:42 p.m.) – Crestview Park

Friday, March 1: SMCAS Pizza Social and General Meeting, 7 p.m., College of San Mateo, ISC Room (#110) and a presentation by someone to be determined, 8 p.m. in the Planetarium. Please check website for details. See page 15 for directions to CSM.

Saturday, March 2: Star Party – At sunset (6:04 p.m.) – Crestview Park

Saturday, March 9: Star Party – At sunset (6:11 p.m.) – Crestview Park



EVENT HORIZON

Cover: Dumbbell Nebula, a Star Party viewing favorite, taken by SMCAS President Michael Cooke.

Editor: Michelle Morales Torres

Prez's Corner

Greetings to the Society,

In the year 2024, the world of space exploration is poised to ignite with excitement, promising a plethora of ambitious missions and awe-inspiring discoveries. As we gaze skyward, there's a celestial event that will captivate North America as a total solar eclipse gracefully traverses the continent, casting its shadow over Mexico, the United States and Canada. During this rare phenomenon, the Moon will delicately position itself between the Sun and Earth, momentarily shrouding the Sun's radiant face and enveloping the sky in an ethereal twilight.

Speaking of the Moon, NASA's Artemis program is poised to make a profound impact in 2024 with its resolute mission to return humans to the Moon in November. Beyond merely landing astronauts on the lunar surface, Artemis harbors an audacious vision – the establishment of a sustainable lunar presence, a steppingstone toward the exploration of the cosmos. Anticipate historic lunar landings and the dawn of a new era in lunar exploration as humanity takes bold strides toward the heavens.

Notably, in the same year, SpaceX's groundbreaking Starship spacecraft is scheduled for its inaugural crewed test flights. This significant milestone marks humanity's resolute journey toward becoming an interplanetary species, with the audacious dream of reaching Mars and beyond.

The year 2024 promises to be a treasure trove of celestial imagery as the James Webb

Space Telescope (JWST) continues to dazzle us with breathtaking views of the cosmos. Simultaneously, the European Space Agency's Euclid mission is set to embark on its regular science operations early in the year, further enriching our understanding of the universe's enigmatic mysteries.

On a more terrestrial note, our Society is preparing to launch an exciting new website in the first quarter of the year, offering a digital portal to explore and share our passion for space. Additionally, keep an eye out for our upcoming holiday party in January, where we'll celebrate the wonders of the cosmos and the community that shares our enthusiasm.

In summary, 2024 is poised to be an electrifying year in space exploration, with lunar ambitions, interplanetary dreams, and a celestial spectacle to behold. As we look to the stars, we embrace the infinite possibilities of the cosmos and anticipate the discoveries and adventures that await us on this cosmic journey.

Hoping for clear skies soon,



Michael Cooke
SMCAS President
tfbsaxman@hotmail.com

General Meeting, Friday: Feb. 2, 7pm & Presentation 8pm: N ~ 1: Alone In The Milky Way by Dr. Pascal Lee

Planetary scientist Dr. Pascal Lee will review our present knowledge about each term of the Drake Equation used to estimate the number (N) of advanced civilizations present in our Milky Way galaxy, which is at the heart of the Search for Extraterrestrial Intelligence (SETI). He will examine star and planet formation, geological and biological evolution, the emergence of intelligence and technology, and possible fates of advanced civilizations. Even though planets are plentiful in the Milky Way and life as a natural product of chemical and biological evolution is likely common, he reaches the surprising conclusion that the number of advanced civilizations in our Galaxy is likely a small number, most likely $N \sim 1$. Says Dr. Lee: "We might be it in the vastness of our galaxy, or there might be just one other...". Implications of $N \sim 1$ are profound and will be discussed.

Dr Pascal Lee is a planetary scientist with two non-profit research organizations, the [Mars Institute](#) and the [SETI Institute](#). He is also director of the [NASA Haughton-Mars Project \(HMP\)](#) at NASA Ames Research Center in Mountain View, California. His research focuses on Mars (in particular the history of water on Mars), asteroids, and the moons of Mars, Phobos and Deimos. He also works on advancing the human exploration of Mars. The HMP is a field research project on Devon Island in the Canadian High Arctic, that's helping plan future human missions to Mars. Most

summers you will find him on Devon Island! Dr. Lee is a recipient of the United States Antarctic Service Medal and the [Space Frontier Foundation's](#) Vision to Reality Award. His first book, *Mission: Mars*, won the 2015 Prize for Excellence in Children's Science Books from the American Association for the Advancement of Science.

Pascal Lee enjoys flying and painting (but not at the same time). He is an FAA-certified helicopter commercial pilot and flight instructor, and an artist member of the International Association of Astronomical Artists (IAAA). He lives in Santa Clara, CA, where he is walked daily by his Australian Cattle Dog, King Kong, son of Ping Pong. ♦



Dr. Pascal Lee

***You Are Invited to the SMCAS Annual Holiday Party: Jan. 20,
Crystal Spring United Methodist Church , 6pm***



Our party is a potluck and white elephant gift exchange (optional). Our board members will provide entrees, and you can bring any dish to share. If you can attend, please RSVP. When you fill out our sign-up sheet, let us know how many guests from your group, what you're bringing and if you would like to participate in the gift exchange. You can email me or our board SMCASBD@groups.io if you have questions. We look forward to seeing you soon! ◆



Michael Cooke

www.michaelkcooke.com

xsThe Annular Eclipse in Roswell, New Mexico

By Michelle Morales Torres



McDonald's in Roswell, New Mexico. Note the alien pointing up.

Although I had been told and warned that the annular eclipse wasn't as dramatic or even as good as a total eclipse, because during a total eclipse it briefly becomes night during the day, still I had to make the assessment for myself and trekked out to the annular path that was not close. As an astronomy writer, amateur astronomer, a UFO enthusiast and a believer government cover-ups, visiting Roswell, New Mexico was on high on the bucket list. So when I discovered the annular path for the Oct. 14 eclipse ran through this city, I didn't hesitate to make it my destination for this astronomical event.

I read somewhere that the Roswell, New Mexico embraces it's alien culture but still was completely unprepared by the number of alien and UFO structures and tourist shops. It seemed obvious that the stores learned that the alien and UFO swag are money makers.

It's the only place in our nation where you'll find a UFO shaped McDonald's, complete with aliens standing outside! One stands in front and pointing and looking up while the other just stands there, observing those that might pass by.

There's a 22-foot tall alien that holds a Dunkin and Baskin Robbins drive-thru sign. They even hold a UFO Festival over July 4th! That's not to mention the International UFO Museum and Research Center or even the nearby air base.

As I was told, during the peak of the annular eclipse Oct. 14, it was barely noticeable with the unaided eye – assistance is needed in order to experience it fully – such as using solar glasses or using two pieces of paper to look at a reflection of the sun, which is similar to creating a pinpoint camera.

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The Annular Eclipse in Roswell, New Mexico (cont'd)

The sun definitely looked different that day – it almost seemed both – brighter and dimmer! According to NASA, the sun gets about 10% dimmer during an annular eclipse. We went to the Cielo Grand Recreation Area, at the corner of West College Blvd. and N. Montana Avenue. Roswell's Astronomical Society was set up across the street at Spaceport Park. Since I wasn't feeling well, I didn't make any attempts to reach out to them.

When I looked about the parking lot, it was hard to notice it was dimmer. During this annular eclipse there was a sun halo that caught a few colors of the spectrum so at times it seemed brighter. Nevertheless our sun was just too overpowering for the moon that was a little further away than normal, in relation to its orbit.

I was able to catch the peak of the total eclipse on video without any solar screens so I anticipated the same for the annular but the effect wasn't as revealing as during a total eclipse. I finally used the solar glasses for recording and was able to catch the beautiful and rarely seen crescent sun. I enjoyed the rest of the eclipse through solar glasses over the lens of my camcorder.



The rest of the day was like any other as the sun shined brightly in Roswell, New Mexico.

As a timeless event, I couldn't help but think of some ancient societies that might not have possessed the knowledge of eclipses and wonder how they endured such events. Did many lose or impair their vision because they kept looking at the sun? It's most likely not since it doesn't happen instantaneously it does take several hours, like four to six hours.

Again, I had to visit Roswell since it's infamous for a 1947 UFO incident that thrust the small town in the limelight when they announced a UFO crashed near its city. Less than 24-hours later, the federal government announced that it was actually a weather balloon that crashed. Locals said that the government replaced the broken pieces of the UFO with weather balloon pieces and some even claimed to have seen or were involved with an alien autopsy.

The Roswell UFO Walking Tour takes people around to key sites as the Roswell incident unfolded except for the crash site. Due to its remote location, going to the actual site crash site wasn't included with this tour. The alleged crash site is about 70 miles from Roswell and now has a monument acknowledging the incident. Most of the walking tour was spent in a large van. The first stop on the tour was the police station. Of course it has since expanded quite a bit but the original building is still noticeable. This is where farmer, Mac Brazel, showed up with box full of debris that he said was scattered all over

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The Annular Eclipse in Roswell, New Mexico (cont'd)

his ranch. Those who saw the items described them as “not being of this world”. The police station was one of the few buildings that is still being used as it was originally intended 76 years later. The other buildings that had a place in the incident, the radio stations and newspapers, are now restaurants.

It was our tour guide that revealed the jets that dropped the bombs on Hiroshima and Nagasaki in 1945 came from the Roswell Army Air Field. It was these bombings that would eventually end World War II with Japan’s surrender. We also learned that for many years those jets were on standby with bombs, just in case.

However that isn’t entirely accurate, it was 509th Composite Group at Wendover Army Airfield, Utah who was activated Dec. 17, 1944. They were later relocated to Roswell Army Airfield Nov. 6, 1945.

The details of the event are also laid out with pictures and signed affidavits from the 1990s in the International UFO Museum and Research Center, which includes some air base history nuggets, as well.

Another thought our tour guide left us with was, “Why little green aliens? No one said that they were green.”

Our tour guide also reminded us that it was the 1989 episode of *Unsolved Mysteries* that re-introduced the world to the Roswell incident. It was the second episode of the second season.

However it was a signed sworn affidavit that was released after the death of Walter Haut, the public information officer that issued the

press release about the Roswell incident. He was sworn to secrecy by the base commander and close personal friend, Colonel William Blanchard. Haut found a way to keep his word to his friend and the government while

still revealing the truth by releasing a signed affidavit of the Roswell incident after his death. It states that there were two crash sites with flying discs and several bodies of aliens. After Haut’s death in 2005, the affidavit was published in 2007 in book titled, “Witness to Roswell: Unmasking the Government’s Biggest Cover-Up,” by Don Schmitt, UFO researcher and Thomas Carey, investigative author.

Although Roswell’s population almost makes it a budding metropolis, it has that small town feel, particularly with its older buildings downtown. For instance, the visitor’s center was once a gas station when it opened 100 years ago. What really gives it the small hometown feel are its friendly people. Everyone was really friendly and most were more than happy to talk about the City’s claim to fame.

Besides having the pleasure of visiting a different state, the trip to see the annular eclipse was worth it. Again, we rarely get to see that crescent sun and think it to be a treat, regardless of the eclipse. ♦





NASA Night Sky Notes

Connecting the 'Dots' with Asterisms

By Kat Troche

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

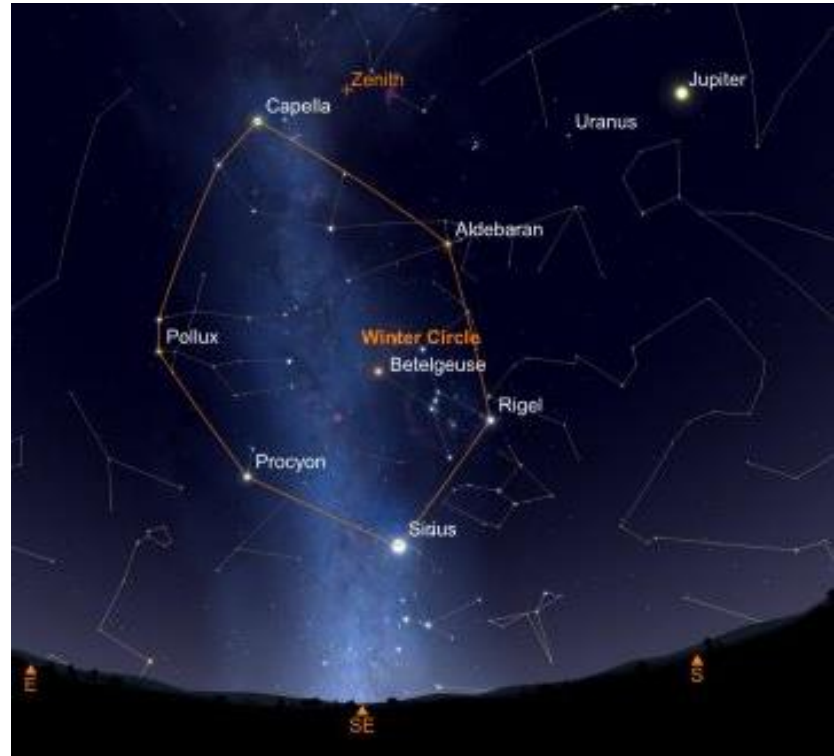
An asterism is a pattern of stars in the night sky, forming shapes that make picking out constellations easy. Cultures throughout history have created these patterns as part of storytelling, honoring ancestors, and timekeeping. Orion's hourglass is just one of many examples of this, but did you know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

Asterisms Through the Seasons

Try looking for these asterisms this season and beyond:

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

Diamond of Virgo – this springtime asterism consists of the following stars: Arcturus, in the constellation Boötes; Cor Caroli, in Canes



Stars that make up the Winter Circle, as seen on Jan. 1 with Sky Safari.

Venatici; Denebola in Leo, and Spica in Virgo. Sparkling at the center of this diamond is the bright cluster **Coma Berenices**, or Bernice's Hair – an ancient asterism turned constellation!

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

(continued on page 11)



NASA Night Sky Notes

Connecting the 'Dots' with Asterisms (cont'd)

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

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

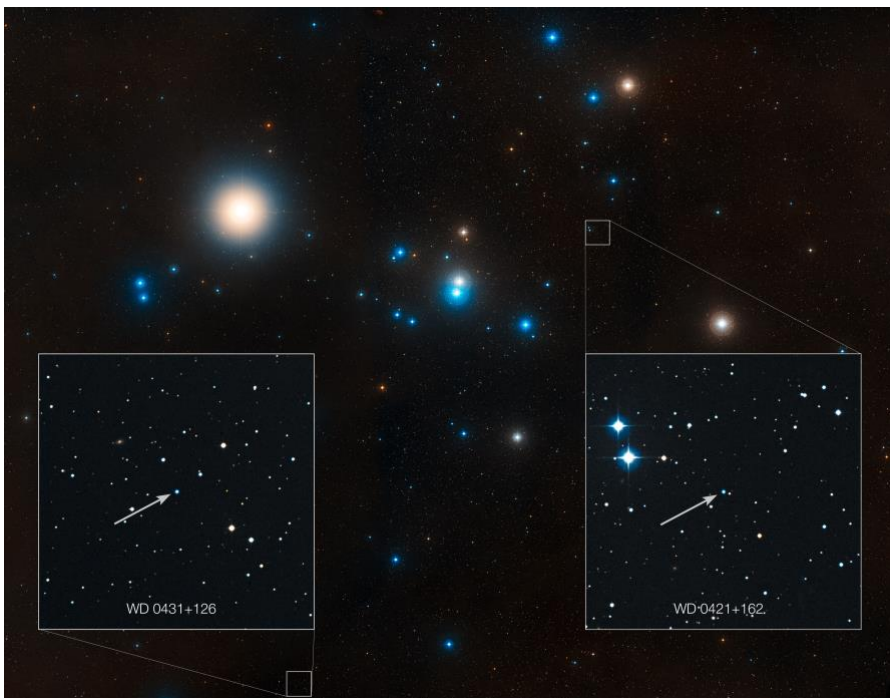
How to Spot Asterisms

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

Use Star Maps and Star Apps – Using star maps or stargazing apps can help familiarize yourself with the constellations and asterisms of the night sky.

Get Familiar with Constellations – Learning the major constellations and their broader shapes visible each season will make spotting asterisms easier.

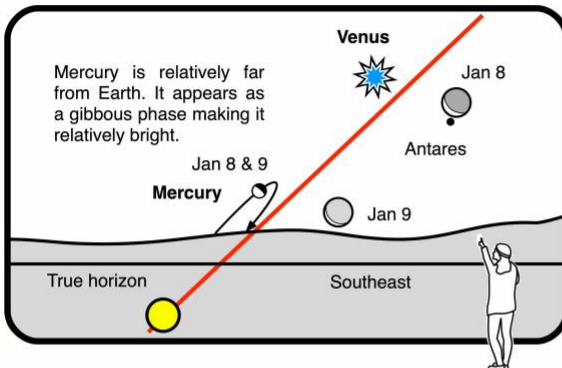
Use Celestial Landmarks – Orient yourself by using bright stars, or recognizable constellations. This will help you navigate the night sky and pinpoint specific asterisms. Vega in the Lyra constellation is a great example of this. ♦



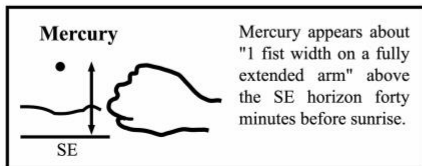
This image shows the region around the Hyades star cluster, the nearest open cluster to us. The Hyades cluster is very well-studied due to its location, but previous searches for planets have produced only one. A new study led by Jay Farihi of the University of Cambridge, UK, has now found the atmospheres of two burnt-out stars known as WD 0421+162 and WD 0431+126.

Astronomical League January Activities

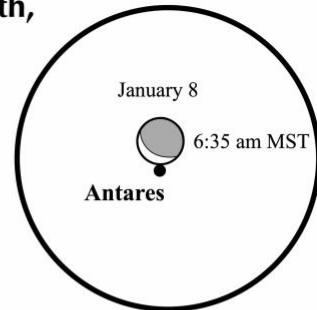
If you can observe only one celestial event this month, see this one:



**January 8 and 9, 2024:
Mercury, Venus, and the moon
forty minutes before sunrise
in the southeast**



View through
10x50 binoculars
on January 8



The Scene:

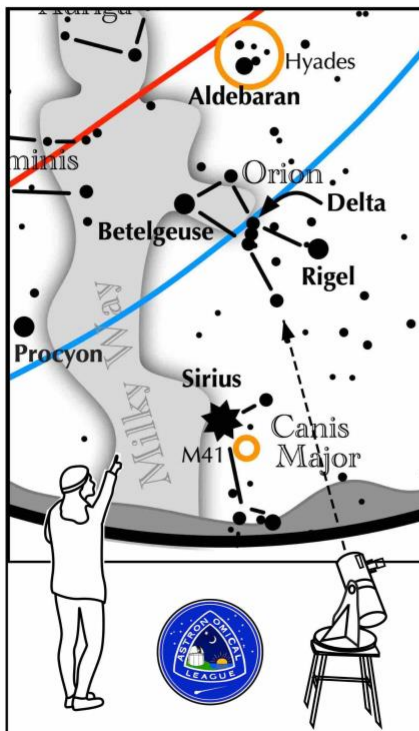
The crescent moon, Antares, Venus, and Mercury in the morning twilight

On January 8, the crescent moon approaches Antares low in the southeast 90 minutes before sunrise.

- The moon occults Antares for viewers living in the southwestern portion of the US. (NM, UT, AZ, and So CA.)
- The event begins at 6:39AM MST, location dependent.
- Use common household binoculars to watch the occultation and begin viewing at 6:35 MST.
- * The very bright object to the moon's left is Venus.
- 40 minutes before sunrise, look for Mercury low in the southeast to the far lower left of Venus.

On January 9, an even thinner crescent moon lies right of Mercury and below brilliant Venus.

ASTRONOMICAL LEAGUE Double Star Activity



Other Suns: Delta Orionis (Mintaka)

How to find Delta Orionis on a January evening

Face southeast. Look at Orion above Sirius. Orion's Belt is the three stars of equal brightness between bright Rigel and Betelgeuse. Delta Orionis is the western star of the Belt.

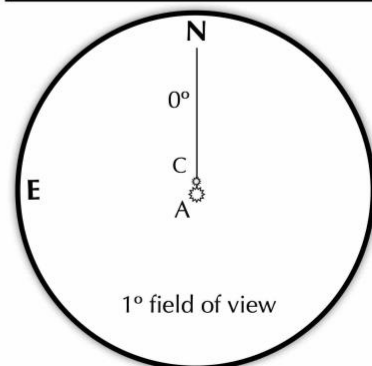
Delta Orionis

A-C separation: 53 sec
A magnitude: 2.4
C magnitude: 6.8
Position Angle: 0°
Colors:

yellow-white
blue-white

Component B is a 14th magnitude star, not visible in most small telescopes.

Suggested magnification: >20x
Suggested aperture: >3 inches

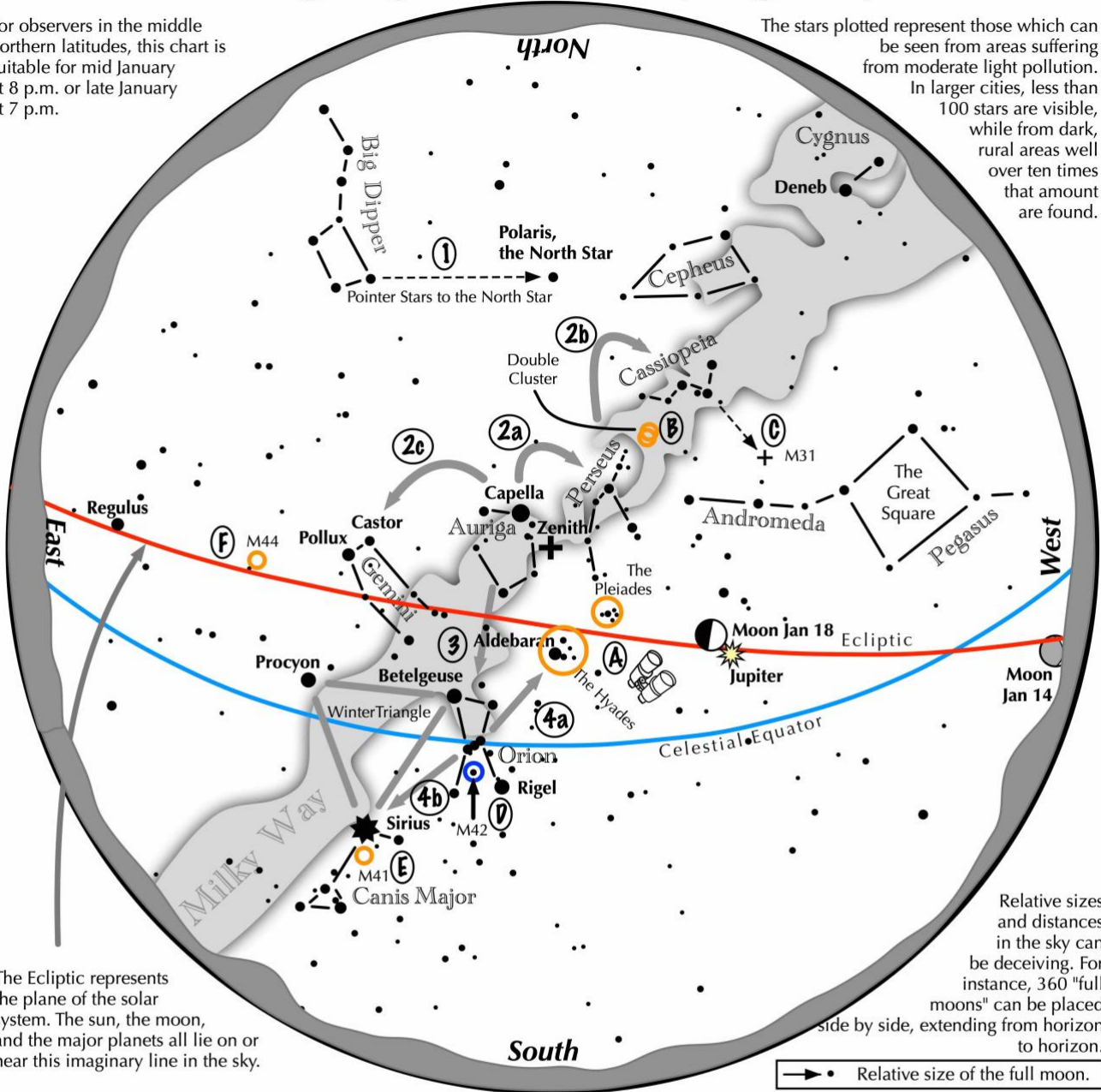


Astronomical League January Activities (cont'd)

Navigating the mid January Night Sky

For observers in the middle northern latitudes, this chart is suitable for mid January at 8 p.m. or late January at 7 p.m.

The stars plotted represent those which can be seen from areas suffering from moderate light pollution. In larger cities, less than 100 stars are visible, while from dark, rural areas well over ten times that amount are found.



The Ecliptic represents the plane of the solar system. The sun, the moon, and the major planets all lie on or near this imaginary line in the sky.

Relative sizes and distances in the sky can be deceiving. For instance, 360 "full moons" can be placed side by side, extending from horizon to horizon.

→ • Relative size of the full moon.

Navigating the winter night sky: Simply start with what you know or with what you can easily find.

- 1 Above the northeast horizon rises the Big Dipper. Draw a line from its two end bowl stars upwards to the North Star.
- 2 Face south. Overhead twinkles the bright star Capella in Auriga. Jump northwestward along the Milky Way first to Perseus, then to the "W" of Cassiopeia. Next Jump southeastward from Capella to the twin stars Castor and Pollux of Gemini.
- 3 Directly south of Capella stands the constellation of Orion with its three Belt Stars, its bright red star Betelgeuse, and its bright blue-white star, Rigel.
- 4 Use Orion's three Belt stars to point to the red star Aldebaran, then to the Hyades, and the Pleiades star clusters. Travel southeast from the Belt stars to the brightest star in the night sky, Sirius.

Binocular Highlights

A: Examine the stars of the Pleiades and Hyades, two naked eye star clusters. **B:** Between the "W" of Cassiopeia and Perseus lies the Double Cluster. **C:** The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval. **D:** M42 in Orion is a star forming nebula. **E:** Look south of Sirius for the star cluster M41. **F:** M44, a star cluster barely visible to the naked eye, lies to the southeast of Pollux.



Astronomical League www.astroleague.org/outreach; duplication is allowed and encouraged for all free distribution.

Directions to SMCAS Public Star Parties (Weather Permitting)

From Hwy 101 or El Camino: Take Brittan Avenue in San Carlos, west (toward the hills). Follow Brittan 2.3 miles (from El Camino) to Crestview Drive. Turn right on Crestview. In half-a-block, you will see a small, blue-posted sign with an arrow, indicating the entry road into Crestview Park. It lies between houses with addresses 998 and 1000 Crestview Drive.

From Highway 280: Take Edgewood Road exit. Go east (toward the Bay) about 0.8 miles. Turn left at Crestview Drive. Go 0.5-mile uphill to where Crestview meets Brittan. Again, drive the half-block, to the small blue sign on the right, and the entry road on the left.

From Hastings and Club Drives: From Belmont, take Carlmont Drive to Hastings Drive. Follow Hastings about 1.5 miles, first uphill, then down, to San Carlos where it becomes Witheridge Road, then ends a block later at Club Drive. Turn right and climb Club Drive to Crestview Drive. Turn left and continue some 2 miles, first up, then down past Leslie Drive, to the small blue

Crestview Park sign on the left. Turn right into the Crestview Park entry road.

From San Carlos, take San Carlos Avenue to Club Drive, and climb to the 5-way intersection. Take the half-right to continue on Club Drive past Witheridge Road to Crestview Drive. Proceed as above to Crestview Park.

Crestview Park - San Carlos

*Come on out, and bring the kids,
for a mind-blowing look at the Universe!*

Bring your binoculars, telescopes, star guides, and lounge chairs for some informal star gazing at Crestview Park.

Dress warmly and wear a hat. Only visitors with telescopes should drive in. Others should park on the street and walk in or arrive before dark so that car headlights don't affect the observers' dark adaptation. Bring small flashlights only, covered with red cellophane or red balloon.

These measures avoid safety issues of maneuvering in the dark, as well as ruining the night vision of the viewers.

Please don't touch a telescope without permission. And parents, please don't let children run around in the dark.

Note: If bringing a telescope and arriving after dark, please enter the Park with your headlamps and white interior lights off. **If you aren't bringing a telescope, whether before or after dark, please park along Crestview Drive, and walk in.**

Crestview Park is residential, adjacent to homes and backyards. Before inviting potentially noisy groups, please call Ed Pieret at (650) 595-3691 for advice and advisories. **Call Ed also to check the weather and 'sky clock' and to see whether the Star Party is still scheduled.**

Crestview Star Party schedule is here:

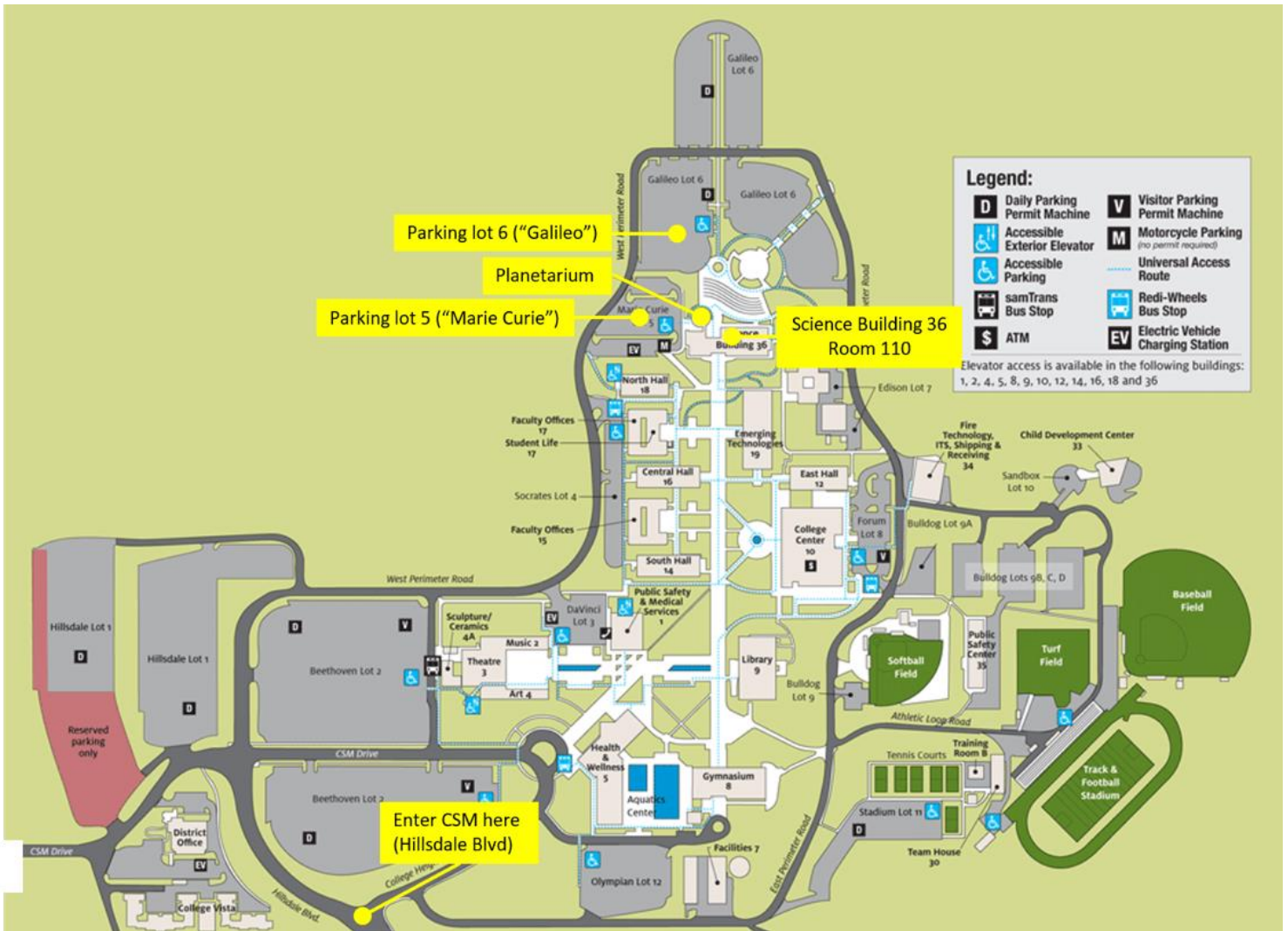
<http://www.smcasastro.com/crestview-park.html>



Directions to SMCAS Meetings at The College of San Mateo:

Directions to the CSM Planetarium for Meetings:

After exiting Hwy 92 at Hillsdale Blvd, climb the hill towards CSM, passing two traffic lights to the stop sign at the top of Hillsdale Blvd. Continue straight onto West Perimeter Road and follow it until you reach Lot 5, "Marie Curie", or Lot 6, "Galileo." Science (ISC) Bldg. (36) and the Planetarium lie straight ahead. Enter Bldg. 36 either through the door facing the lot or walk around the dome to the courtyard entrance. We meet in ISC room, #110 for pizza and soft drinks one hour prior to the talk in the Planetarium (Pictured below.)





San Mateo County Astronomical Society Membership Application

rev 02272020

SMCAS@live.com; P.O. Box 974, Station A, San Mateo CA 94403; (650) 678-2762

Become an SMCAS Member Today! Here's what you get:

- **Members Community**

Friendly advice and guidance from experienced recreational astronomers; access to SMCAS group emails, which provide general orientation information, announcements of astronomy events, file access and exchange.

- **SMCAS Events**

General meetings are held the first Friday of most months, at 7pm in the Integrated Science Center (ISC) Room and Planetarium in the Science Center (Bldg. 36) at the College of San Mateo (CSM), 1700 W. Hillsdale Blvd., San Mateo. Meetings include lectures and presentations on space science, an activity session, and refreshments (usually pizza).

We also offer stargazing two Saturdays a month, weather permitting. Visitors and those without telescopes are welcome; members are glad to share! SMCAS also has sponsored dark-sky campouts at Fremont Peak State Park, field trips to SLAC, KIPAC and Lick Observatory, plus **member-only events, including Star-B-Ques and quarterly potlucks.**

- **Subscriptions (free with your membership)**

The Event Horizon, SMCAS' newsletter, with SMCAS and member information, viewing tips and articles.

The Reflector, published quarterly by the Astronomical League, a national alliance of astronomy groups like SMCAS.

- **Significant Discounts on Equipment and Publications**

Discounts on purchases at Bay Area astronomical equipment retailer Orion Telescope Center, on sky calendars and ephemerides, and on such periodicals as *Sky & Telescope* and *Astronomy*.

- **Access to Loaner Equipment**

Use of SMCAS loaner telescopes and other astronomy equipment.

- **Sharing your Appreciation of Astronomy and Space Science with the General Public.**

Your SMCAS membership helps bring astronomy to interested lay people, especially students and children

Annual Dues: (SMCAS is a tax-exempt non-profit 501(c)(3). Dues may be tax deductible; consult your tax advisor):

\$30 Regular Family Membership; \$15 Student Membership

Every membership includes all members of your immediate family, (including your kids).

To join you can:

Send application (see reverse side), with payment, to: SMCAS, P.O. Box 974, Station A, San Mateo CA 94403.

- Bring the completed application and payment to a meeting or event and give it to any SMCAS officer.
- Go online at <http://www.smcasastro.com>, click on the Membership tab and pay via PayPal.

Membership Application on next page



San Mateo County Astronomical Society Membership Application

rev 02272020

SMCAS@live.com; P.O. Box 974, Station A, San Mateo CA 94403; (650) 678-2762

Date: _____ Please check one: New Member or Renewal

\$30 Regular Family Membership; \$15 Student Membership

All members, please indicate areas of interest below. New members, please complete entire form. Renewing members, please provide your name and any information that has changed in the last year.

We will list your name, address, email address, and phone number(s) in our membership roster unless you have checked the box preceding that information. The membership roster is distributed to active members only.

Each member's name and mailing address must be provided to the Astronomical League (AL), SMCAS' umbrella organization. If you don't want AL to have your phone number and email address, indicate below.

Name(s) _____ Email Address _____

Address _____

City & Zip Code _____

Phone Number(s): _____ Do not provide my phone number(s) to the AL.

Don't provide my email address to the AL. (Checking this means you can ONLY get **The Reflector** by regular mail)

Please check one: send **The Reflector** by mail, or by email.

Areas of Interest:

SMCAS encourages member involvement. We invite you to provide additional information about your interests, skills, occupation and prior experience. Please identify SMCAS projects and functions that you might like to help facilitate.

Please indicate which of the following activities might be of interest to you:

___ Star Parties - Do you own a telescope you can bring: Yes () No ()

___ General Meetings - Finding (or being) a Speaker. Official greeter. Set up or take down ISC or refreshments.

___ Family Science Day & Astronomy Festival (Usually at CSM the first Saturday in October).

___ Social Events - Equinoctial and Summer Solstice potlucks, Summer Star-B-Que, Holiday Potluck.

___ SMCAS Membership and Promotional Drives

___ Communications – 'Event Horizon' Newsletter, Website(s), Facebook page, group email, Publicity posting.

___ Educational Programs – School, museum and library star parties, Bay Area Astro teacher assistants.

Other/Comments: _____