

Join CVA Events in November

And December!



THE OBSERVER

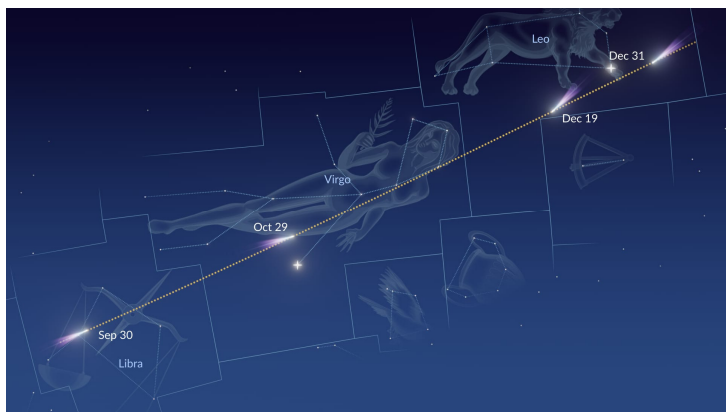
The Newsletter of Central Valley Astronomers of Fresno

November-December 2025



Interstellar Comet 3I/Atlas Will (Maybe) be Visible in December

The celestial object of the year and the third(known) interstellar visitor to our solar system, Comet 3I/Atlas, will make its closest approach to Earth on December 19. At that date, it will be just below the constellation Leo, and can be seen, given clear weather, low on the western horizon about 45 minutes to an hour after sunset. Astronomers estimate its magnitude will be anywhere between 11.5 and 14.8, so, under the best conditions, it should be able to be seen with a pair of binoculars. As it is, CVA's monthly starwatch is at Eastman Lake on December 20, so that could be a good time to view it.



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Central Valley Astronomers

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The CVA Calendar:

November 12- Private stary party at Fairmont Elementary, Sanger

November 14-Monthly meeting at Round Table, First and Bullard in Fresno

November 22-Monthly star party at Eastman Lake

December 12-Monthly meeting at Round Table Pizza

December 13-Stary Party at Discovery Center, Fresno

December 20-Monthly star party at Eastman Lake

Number of exoplanets found as of October 2025

6,028*

How many more are out there?

Tens of thousands? Hundreds of thousands?

Maybe millions?

*From NASA's Exoplanet Exploration Site

Another stunning JWST image- ARP 142, commonly known as The Penguin and the Egg, a pair of colliding galaxies 325 million light years away

Image from NASA/ESA/CSA/JWST



The President's Message

By Hubert Cecotti

We are finishing 2025 already, with events such as Halloween, Thanksgiving, and Christmas. Many CVA club members have taken advantage of Halloween to take their telescope outside and share a view of the moon. The moon and Halloween share a bond woven from shadow, light, and ancient superstition. The moon used to be the night's only lantern, guiding wanderers and illuminating the unknown. When it rose full and pale at the end of October, it cast long, haunting silhouettes across the fields, transforming the familiar into the strange. In Celtic lands, Samhain, the ancestor of Halloween, marked the thinning of the veil between worlds. The moon was seen as a silent witness to the crossing of spirits, a watchful eye in the dark as fires burned to keep the living safe. Its waxing and waning mirrored the cycle of death and return, decay and renewal, the very themes Halloween celebrates. Hence, it is relevant to show views of the moon through telescopes. It is an example about how events can serve as a bridge to bring kids and communities together and interested into STEM, in particular in astronomy. Over centuries, storytellers and poets found in the moon a perfect companion to the holiday's eerie beauty. Amateur astronomers can now talk about the numerous craters and their size. Its cold glow seemed to awaken the imagination: witches were said to ride across its face, wolves to howl in answer, ghosts to shimmer in its light. Even now, when children roam beneath streetlights rather than moonbeams, that silver orb still hangs above, quiet and eternal. It is a reminder that Halloween belongs to the night, and the night belongs to the moon, the same way that astronomers have this special relationship with the night, with or without the moon.

Another important recent event was the "Lemon comet", which refers to Comet C/2025 A6 (Lemmon). It is a comet that was visible in the night sky in October and November 2025; many CVA members were able to capture some images of the comet.

There are only two meetings left before 2026, which will start with our usual gadget night meeting. In the meantime, we will have several outreach events that are scheduled, and possibilities to gather at our dark sky locations to capture the objects of the moment such as the Pleiades and the Crab Nebula. Finally, we are waiting for Orion to rise in all its glory, bringing with him the Great Orion Nebula.

Clear skies.

Hubert Cecotti

Albert Nagler 1935-2025

Just as this issue was being finished up, Alan Birnbaum sent an article on the death of Albert Nagler, who, in the 1970s, founded TeleVue Optics and the now-legendary Nagler eyepieces for telescopes. Nagler was born and raised in the Bronx in New York City and attended the prestigious Bronx High School of Science. After college, he helped to develop optics guidance systems for NASA for both the Gemini and Apollo space programs. Afterwards, he founded his own optics company, TeleVue, as an extension of his longstanding interest in amateur astronomy. At TeleVue, he designed, built, and sold his own telescope eyepieces, which soon became known for their high quality, distortion-free viewing, and reasonable prices. Nagler eyepieces established a standard for amateur astronomers around the world and are still in wide use today. Image of Nagler from TeleVue's website



Profiles in Astronomy

Carl Charlier 1862-1934

Charlier was born and raised in Ostersund, Sweden. After local schools, he attended the University of Upsalla, where he earned a doctorate in astronomy. He worked at the Stockholm Observatory for several years and later worked at the Lund University Observatory for much of his career, where he also taught astronomy and physics.

Charlier was one of the foremost proponents for using statistical models to explain astronomical events and situations. He excelled in statistics and employed it to determine the proper motion and density of stars in the Milky Way. He also used statistics to try to solve what is known as Olber's Paradox, named after the German astronomer Wilhelm Olbers, who posed the question of, if there are so many stars, why is the sky dark at night. Charlier expanded on the work of another astronomer, Johann Lambert, in formulating a theory of cosmology through statistics, The Hierarchal Cosmology, which stated that the larger an area of space is, the less matter overall it will contain, as a partial solution of Olber's Paradox.

Charlier also contributed to the history of astronomy and physics by translating Newton's *Principia* from Latin into Swedish.

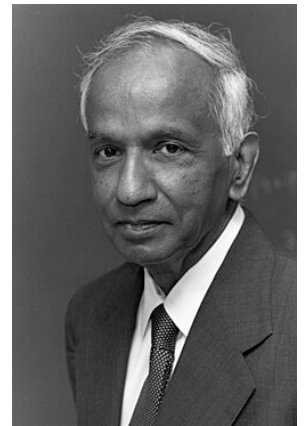
Charlier won many honors for his work, including the Bruce Medal from the Astronomical Society of the Pacific, and the Watson Medal from the U.S. National Academy of Sciences. A crater on the moon and an asteroid are named for him.



Astronomy Short(Sort of)

In 1930, Subrahmayan Chandraeskhara, then 20 years old and the nephew of the Nobel physicist Chandrasekhara Venkata Raman, spent three weeks on a ship traveling from India to England. He had been awarded a Government of India graduate scholarship to study at Cambridge University, a reward for his brilliance in mathematics and physics. Too shy to mingle with the other passengers, he spent most of his time in his cabin working on a problem he first thought of while an undergraduate at the Presidency College in Madras: Given relativity theory, what happens to a star when it exhausts its hydrogen and helium? By the time the ship docked in England, he came to the conclusion that a white dwarf star with a mass 1.44 times greater than that of our Sun would most likely collapse. Into what? He didn't know.

At Cambridge, he discussed his idea with the esteemed physicist Arthur Eddington, who dismissed it. Nevertheless, Chandra, as he was called, persisted and made it part of his doctoral thesis, and it eventually predicted objects like pulsars and black holes. The Chandrasekhara Limit, as the 1.44 mark was called, became one of the foundations of stellar evolution, and many years later, when Chandra was a professor at the University of Chicago, he, too, won the Nobel Prize for his work done during that long ocean voyage. NASA named its orbiting x-ray telescope, "Hubble's younger brother," the Chandra Observatory in his honor.



Above-Chandraeskhara 1910-1995

Star Stories

Alkaid

Alkaid is the star at the end of the handle of the Big Dipper. Also known as Eta Ursae Majoris, it is the third brightest star in the Big Dipper. It is three times the size of our sun, has six times the mass, and is classified as B3 blue-white star. It has an apparent magnitude of 1.86, an absolute magnitude of -6.7 , and according to the latest distance measurement, is 104 light years from Earth. Studies show that it has no companion stars or planets circling it.



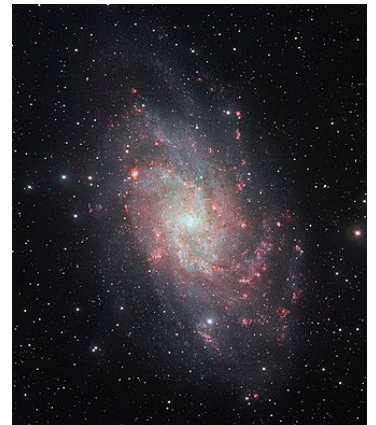
Alkaid has no overall interesting features, other than the fact that it spins very rapidly and may have a ring-like disc of material around it from the spinning. Scientists estimate that it is a very young star, only about ten million years old, and is still in the main sequence of its life.

Like many other stars, Alkaid is an Arabic name meaning "leader of the daughters of the bier," In Arab mythology, the Big Dipper represented a death bed(bier) with the daughters of the deceased standing around it. In ancient China, it was called *Beidoqi*, The Seventh Star of the northern Dipper, and the Hindus called it *Marici*, one of the seven Rishis, the wise men of ancient India.

Galaxy in the Eyepiece

M33

M33, called the Triangulum Galaxy and also designated as NGC 598, is a member of the local Group and is considered the "Third Spiral Galaxy" in the group, after the Milky Way and the Andromeda Galaxy. Some scientists consider it a satellite galaxy of Andromeda, but others say it is a galaxy in its own right. According to the latest measurements, it is 61,000 light years in diameter, making it about two-thirds the size of the Milky Way, and contains approximately 40 billion stars. It is generally classified as a type SA(s) unbarred galaxy. The most recent distance measurements show it to be 2.72 million light years from Earth.



This last figure has stimulated a good deal of debate. M33's visual magnitude is 5.7, and some people say they can see it with their unaided eyes on a clear dark night. This is at odds with those who say the Andromeda Galaxy is the most distant object that can be seen with the unaided eye. It is currently measured at 2.55 million light years away and has an apparent magnitude of 3.4. However, according to some scientists, the real magnitude, measured by computers, of Triangulum is 6.6, essentially making it beyond even the keenest human eyesight, which is widely considered to not go beyond 5.5. So, the claim that people with exceptional eyesight can see M33 with their naked eyes is subject to a good deal of skepticism.

M33 was first observed by the Italian scientist Giovanni Hodierna in 1654; it is mentioned in his journal. However, Messier independently rediscovered it in 1764, and made it the thirty-third of his comet-like objects. In 1784, William Herschel also saw it, and put it in his notebook as HV-17. Lord Rosse identified it as a "spiral nebulae" in 1850, and in 1923 both Charles Duncan and Maximilian Wolf found variable stars in it. Edwin Hubble identified these as Cepheid Variables and used them to determine the distance to the galaxy.

Currently, M33 has a number of areas of HII starburst activity, making it very active in star formation. It is also known to have at least 100 globular clusters orbiting; the interesting thing is that almost all of them appear to be much younger than the Milky Way's globulars. So far, no supermassive black hole has been found at its core. Additionally, scientists believe that M33 and M31 had an encounter of some kind about two billion years ago, and seeming to be drawing closer to each other again, suggesting that they may collide once more in about 2.5 billion years.

What's New In Space

NASA: Artemis II Ready for Launch

Slipping by almost unnoticed in all the goings-on in Washington, in mid-September NASA announced that Artemis II has completed all its tests and inspections and may be launched as early as February 2026. In contrast to most previous crewed flights which have usually been delayed by up to a year, this is actually a move up; it was originally announced to be in February, then delayed to April or May, now, it's back to February and maybe even January (let's hope it stays that way). The Orion-MPCV capsule has been ready for almost a year, and the SLS rocket has finished its assembly and all checkout tests. The Artemis II crew consisting of Americans Reid Weisman, Victor Glover, Christina Koch and Canadian Jeremy Hansen, have been training for almost three years. Artemis II will be a ten-day mission in which the spacecraft will orbit the Earth for two days, then blast out of earth orbit to make a loop around the Moon before returning to Earth. Its figure-8 loop will take it almost 5,000 miles past the Moon, making the trajectory the most distant humans have ever gone from Earth.



If Artemis II is successful, Artemis III will be a lunar landing in the region of the moon's south pole, long a coveted spot due to the possibility of water being detected there. As of now, it is scheduled for the fall of 2027. The crew of Artemis III has not yet been announced, but will probably consist of three Americans and a European, since the European Space Agency is a partner in the Artemis program. Much, though, will depend on the progress of Space-X's Starship, of which a modified version will be the lunar lander. Space-X has insisted that it will be ready in time, but with recent failures of the Starship rocket, the company is under pressure to deliver.

Just as this issue was being finished up in late October, NASA announced that the contract to build a lunar lander will be reopened, and it wants bids and proposals submitted by aerospace companies. As mentioned above, Space-X is contracted to build lunar landers, modified versions of Starship, for the Artemis III and IV missions, but, but NASA is worried whether it will have them ready by late 2027, the date for Artemis III. It is also concerned that China may move up its lunar landing date, from 2030 to 2028. or even earlier. NASA is particularly looking at Blue Origin and its Blue Moon lander, which is already scheduled to soft-land a NASA science package on the moon in early 2027. Blue Moon is currently contracted to land astronauts on the moon on Artemis V in 2030 and Artemis VI in 2031. If Starship is delayed further, the space agency may skip over it and go with Blue Origin for Artemis III. Lockheed-Martin is also working on a lunar lander, and NASA could choose it as well within the next year.

Isaacman Back at NASA?

Late in 2024, President-elect Trump named Jerod Isaacman as his choice as Chief Administrator of NASA. However, only a few days before his confirmation hearings before Congress in May 2025, his name was withdrawn and Transportation Secretary Sean Duffy was named acting head of the space agency. Now, though, stories are that Trump may resubmit Isaacman's name to be permanent chief. Isaacman and Trump had a long meeting at the White House in early October; the details of it were not disclosed, but rumors are that the software billionaire and veteran astronaut may end up running the space agency after all. After his name was withdrawn, Isaacman said he was grateful to be nominated and was willing to serve the Trump Administration in some capacity in the future. Indications are that Isaacman had disputes with Elon Musk over the future of NASA, especially its long-term manned exploration goals. Now that Musk is gone from the Administration, Isaacman may be brought back.



The Road to Apollo 13

The recent death of Apollo 13 commander Jim Lovell and the upcoming Artemis II mission to the Moon has renewed interest in the long and complicated story of the Apollo 13 mission, and especially, the men who crewed it. It's quite a tale and goes back to the earliest days of the space program.

In 1962, Donald "Deke" Slayton, one of the original seven Mercury astronauts, was scheduled to fly the second orbital Mercury mission after John Glenn's flight, in a capsule he designated Delta 7. However, three months before the flight, he was removed due to a heart problem and replaced with Scott Carpenter. For Slayton as a military pilot, this was a crushing blow,* but NASA mollified him somewhat by giving him the administrative position of supervisor of the astronaut office or "Chief Astronaut." Only a year later, Alan Shepard, who had flown the first Mercury sub-orbital flight, was also grounded when he was diagnosed with Meniere's Disease, an inner ear affliction which causes vertigo among other symptoms. He, too, stayed with the astronaut corps, and became Slayton's assistant in the astronaut office. Right-Slayton 1924-1993



One of the mysteries among the astronauts of the 1960s is that they never knew exactly who decided the crew assignments for the Gemini and Apollo missions. As some of them put it several years later, "We never found out if and when were going to fly until our names appeared on a list on a bulletin board." Others said, "We were simply asked, 'Do you want to fly with so-and-so?'" Eventually it was revealed that Slayton and Shepard chose the crews. What also became apparent early in the Gemini program was that they established a pattern: "Back up one, skip two, fly the third" that is, a crew would be backups for a flight, skip over the next two flights, and become the prime crew for the third flight afterwards. This became the standard crew selection method for Gemini and the succeeding Apollo program as well.



In 1967, following the Apollo 1 tragedy in which astronauts Grissom, White, and Chaffee were killed, Slayton and Shepard shuffled the existing crews with new assignments. The backup crew of Wally Schirra, Donn Eisele, and Walter Cunningham would fly Apollo 7, Jim McDivitt, David Scott, and Rusty Schwiebart would fly Apollo 8; Frank Borman, Lovell, and Michael Collins would fly Apollo 9; Tom Stafford, John Young, and Gene Cernan would be on Apollo 10; and Pete Conrad, Alan Bean, and Richard Gordon would be on Apollo 11. Then the changes began.

McDivitt's crew was scheduled to fly the first test mission of the lunar lander, but it wouldn't be ready until early 1969, so his crew was switched with Borman's and became Apollo 9. Borman's now Apollo 8 backup crew consisted of Neil Armstrong, Edwin Aldrin, and William Anders, so, under Deke and Al's system, it became the prime crew for Apollo 11, bumping Conrad's crew to Apollo 12. At the same time, Lovell became the backup commander for Armstrong, and his crewmates were Fred Haise and Ken Mattingly. Also, Gordon Cooper became the backup commander for Apollo 10 with the crew of Donn Eisele and Stuart Roosa. What it amounted to was that Cooper's crew would back up Apollo 10 and be the prime crew for Apollo 13, and Lovell's crew would back up Apollo 11 and become the prime crew for Apollo 14. Above left-Lovell 1928-2025

However, as 1967 passed into 1968 and early 1969, Slayton had doubts about the assignments, especially Cooper. Although he had done well with Mercury and Gemini, Cooper had lost interest in the space program by the time of Apollo. He had left his wife and become enamored with power-speed boat racing. He was continually missing planning meetings and training sessions. The same with Eisele; by the time he flew on Apollo 7 in October 1968, he too had also lost interest in the space program; it is now known that Schirra gave him a very poor performance evaluation on Apollo 7. By late 1968, Slayton decided to replace both of them. One of the things that speeded his decision was that several months before, Shepard learned of an experimental surgical procedure, developed by a Canadian doctor, which cured Meniere's Disease. He decided to undergo it, it worked, and by the end of the



year received his medical clearance and was back on active flight status. In early 1969, Slayton, even though he was hesitant to do so, told Cooper he was off the Apollo 13 crew. According to reports, Cooper flew into a rage and turned in his resignation from NASA a few weeks later. At the same time, Eisele was also replaced by Edgar Mitchell (unlike Cooper, Eisele stayed with NASA, hoping for another spaceflight, but never got it and left in 1971). So, Shepard, who desperately wanted another spaceflight, was assigned to command Apollo 13, with Roosa and Mitchell as his crew.

Shepard was a veteran test pilot and the first American in space, but he also had not, due to his ear problem, flown a spacecraft in eight years and had done very little flying in general. By mid-1969, shortly after Apollo 11, NASA decided he needed more time for training; as such, Slayton asked Lovell to take over Apollo 13 and give Shepard Apollo 14; Lovell and his crew were already trained for a lunar landing mission since they had been the backups for Apollo 11. Lovell agreed and prepared for Apollo 13, which was scheduled for April 1970.

Apollo 11 and 12 went well, and Apollo 13 was the next one; a lunar landing in the Fra Mauro region in April 1970. Lovell and his crew of Fred Haise and Ken Mattingly were prepared for it. Then fate stepped in again. A week before the flight was scheduled to be launched, Charles Duke, the backup command module pilot, was exposed to measles through a friend of his son. As such, he exposed the rest of the prime and the backup crews as well. NASA's medical records showed that all the prime and backup astronauts had previously contracted measles except Mattingly, who had never had it or ever been vaccinated. NASA, scared that he might come down with it during the flight, decided to replace him with his backup, John "Jack" Swigert, five days before launch. So, the mission was set, or everyone thought so. Above-Mattingly 1936-2023



But, unknown to NASA and the astronauts, another variable was in play, one which had been decided five years earlier, when the Apollo spacecraft was being built. North American Aviation, the prime contractor, subcontracted Beech Aircraft to design and build the oxygen tanks in the service module for both the capsule and the fuel cells. Beech technicians used Teflon-coated wiring for the tank heaters, but over time, the wires became frayed and subject to shorts. Although preflight tests indicated a possible problem, it was not considered serious enough to merit a major modification or delay. The countdown went on as a result.

Apollo 13 was launched on April 11, 1970, and the mission proceeded smoothly for the first two days. The rest is in the history books.

*Slayton is the least-known of the seven original NASA astronauts, mostly because he never flew any of the Mercury missions, but in many ways the most important, since he directed the astronaut corps and kept it going during the Gemini and Apollo years. Although he was initially upset and disheartened over his heart diagnosis in 1962, he also realized it was a wake-up call to take better care of himself. He quit smoking, cut down on drinking, and started exercising regularly and watching what he ate. In late 1963, the Air Force (he was an Air Force major at that time) permanently grounded him due to his heart condition; he quit the military and became a civilian working for NASA, which would still allow him to fly as long as a co-pilot was with him. Finally in 1971, NASA's doctors cleared him for solo flying and spaceflight, and he was assigned to then-Apollo 18. But in 1972, Apollo 18, along with Apollo 19 and 20, was cancelled. He was then given an astronaut assignment with the Skylab space station program, but, of the nine scheduled missions, six were cancelled, including his. Finally, with the US-USSR spaceflight agreement in 1973, he was assigned to the ASTP (Apollo-Soyuz Test Program) mission and flew in 1975, along with Americans Tom Stafford and Vance Brand and Russian cosmonauts Alexi Leonov and Valeri Kubasov. Afterwards, he became director of the Space Shuttle test program, and oversaw all the early shuttle test flights. According to some sources, he was offered the commander's position on STS-2, but turned it down, feeling he was too old (he would have been 57 at the time of the flight). After the shuttle test program ended in late 1982, he left NASA and became an executive for a start-up private rocket company. He died from a brain tumor in 1993.

Space Age Archeology

The Relay Satellites

Relay was envisioned as the successor to Telstar, the first true telecommunications satellite, designed to carry both audio and TV transmissions from the US to both Europe and Asia. However, like Telstar, Relay was made obsolete within a year of launch due to advances in geosynchronous satellites, such as Syncom, which was first launched in 1964 and proved the viability of Clarke Orbit satellites. Relay, then, is but a footnote in early satellite history, and has been all but forgotten today.

NASA initiated the Relay satellite program in 1960, and two were built by RCA. Both were essentially the same: roughly cylindrical, four feet four inches tall and two feet one inch in diameter, and weighing 170 Earth pounds. They carried communications receiving and transmitting electronics as well as radiation detectors (a secondary use for them, since they were put into highly elliptical orbits that took them into the Van Allen Radiation Belts, was to measure the intensity of radiation at different orbital levels). Their exteriors were completely covered with solar cells.

Relay 1 was launched from Cape Canaveral on December 13, 1962, on a Delta B rocket, into an orbit that measured 4,700 miles by 800 miles. After some early glitches that included a loss of data and irregular tracking, Relay 1 began an experimental program of transmitting data and measuring radiation levels. One of its main goals was to send a message from then-President Kennedy to Japan in November 1963, but with the assassination of the President on November 22, it instead broadcast news of the event to Japan and a few days later facilitated live transmission of the President's funeral to the Japanese people. In the summer of 1964, in tandem with the Syncom satellite, it broadcasted the Summer Olympics from Tokyo. In February 1965, it went dead after electrical and power problems. It is still in orbit today.

Relay 2 was launched on January 21, 1964, and its goals were the same as Relay 1, to test orbital communications transmissions and measure radiation levels in space. It, too, went into a highly elongated orbit of 4,800 miles by 1,100 miles. NASA ceased direct operations with it in September 1965, although it continued to transmit signals until June 1967, when it went dead. It is also still in orbit today. An interesting footnote is that in June 2025, at NORAD, the Air Force's satellite tracking system received a brief signal from Relay 2. Eventually, it was determined that the signal did not come from the satellite's transmitter itself, but from either an electrostatic discharge or a plasma outburst due to micrometeorite collision.



A Follow-up to Telstar and Relay

The early communications satellites, like Telstar and Relay, were relatively simple by today's standards. They could wirelessly broadcast a few TV channels and some phone messages, not more than three or four at a time. By contrast, today, there are almost 5,000 communications satellites, known as SATCOMs, in orbit around the Earth, which not only transmit thousands of TV and phone messages at the same time, but also high-speed internet service, classified and public data, scientific and commercial monitors, and GPS navigation and tracking services. Where the early SATCOMs were relatively small, today's satellites are often up to six feet in diameter, twelve to fifteen feet long, and weigh up to 2,000 Earth pounds. Right-a modern Intelsat communications satellite in Clarke Orbit. Intelsat, founded in 1965, has over 60 operational satellites orbiting the Earth today.



CVA Life Member Louis Mendoza Dead; His Astronomical Collection is up for Sale

On October 10, CVA received word that long-time and life member Louis Mendoza had died at age 91 and that his family was seeing about his extensive collection of astronomical equipment. Louis had been with CVA since the 1960s, was club treasurer for many years, and was also caretaker for the 20" CVA telescope, "Big Bertha." A few years ago, it was renamed "The Louis Mendoza Telescope" in honor of Louis's over 50 years of CVA service. It is currently at the Downing Planetarium at Fresno State.

Garrett Weimer, along with Louis's family, has made an inventory of his astronomical equipment and has asked anyone who is interested to contact them. This is what is currently available:

6" F8 Newtonian telescope. Tube only

8" F8 Newtonian telescope, tube, pipe mount, finder scope

12" F8 Dobsonian mount telescope

10" F5 Newtonian telescope, tube only

A German equatorial commercial telescope mount

2" eyepiece filters-blue, green, and orange

A Meade 40mm 2" eyepiece

Anyone interested in any of this-contact Steve Mendoza at 510-898-8575

Or at smendoza@berkeley.edu

Also, CVA has been in touch with Dave Dutton's family; Dave died earlier this year. He left astronomical equipment as well, which is for sale.

What is available:

10" Dobsonian telescope-in good shape

Assorted parts from a 20" Newtonian telescope, including a secondary mirror which is still in fairly good shape. The primary mirror is not.

Various 1.25" and 2" eyepieces-These will be brought to a future CVA meeting for sale

Another in a continuing series on lesser known-but still important-astronomical observatories throughout the world

The Chico(Anita Ingrao) Observatory

Just to show that not all observatories are huge university or foundation-sponsored edifices, the Chico Community Observatory is a small, privately funded institution on the outskirts of Chico, California. It was established in 2001 by the Kiwanis Club of Chico, and was for many years directed by Anita Ingrao, a local schoolteacher, who established observing programs and astronomical lessons for elementary and secondary students. After she died from cancer in 2014, the facility was named the Anita Ingrao Observatory in her honor. Today, it is still owned by the Kiwanis Club and relies on private donations and community fundraising activities for its operations. At times in the past, it has had periods of closure due to lack of funding but is currently operational. It has two permanently mounted telescopes, 14" and 12" Schmidt-Cassegrains, and its public observing sessions are managed by the local astronomical society.

Left-an arial view of the Chico Observatory,

Right-the two S-C telescopes



From the editor-

In mid-September, Aileen and I took a trip to Iceland, which has long been on our list of places to visit. One of our goals was to see the aurora borealis; in fact, I planned the dates for our tour to fall on a new moon week to ensure the darkest skies possible. All the way up to the time of our flight, the Iceland weather reports predicted clouds and possible rain all week, but when we arrived there, we had clear sunny skies(but cold temperatures) for all but the laat day. As such, we got beautiful views of the auroras. Even our tour guide said he had not seen auroras that spectacular in a long time. Here are a couple of images of them.



A Followup-

Just as I was putting together this page, I offhandedly looked at the internet business news. We flew a European no-frills airline, Play Air, from Baltimore to Iceland and back. Play Air ceased operations and cancelled all flights on September 29, a week after we flew back to Baltimore from Reykjavik. We were lucky to leave when we did.

Astronomy (Bad) Joke

**How can you tell if a burger was grilled in space?
It's a little meteor.**

Submitted by CVA member Bill Ducas