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The Observer

The Newsletter of Central Valley Astronomers of Fresno

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CVA Calendar

Sept 6-Riverpark Star Party- sunset at 7:15

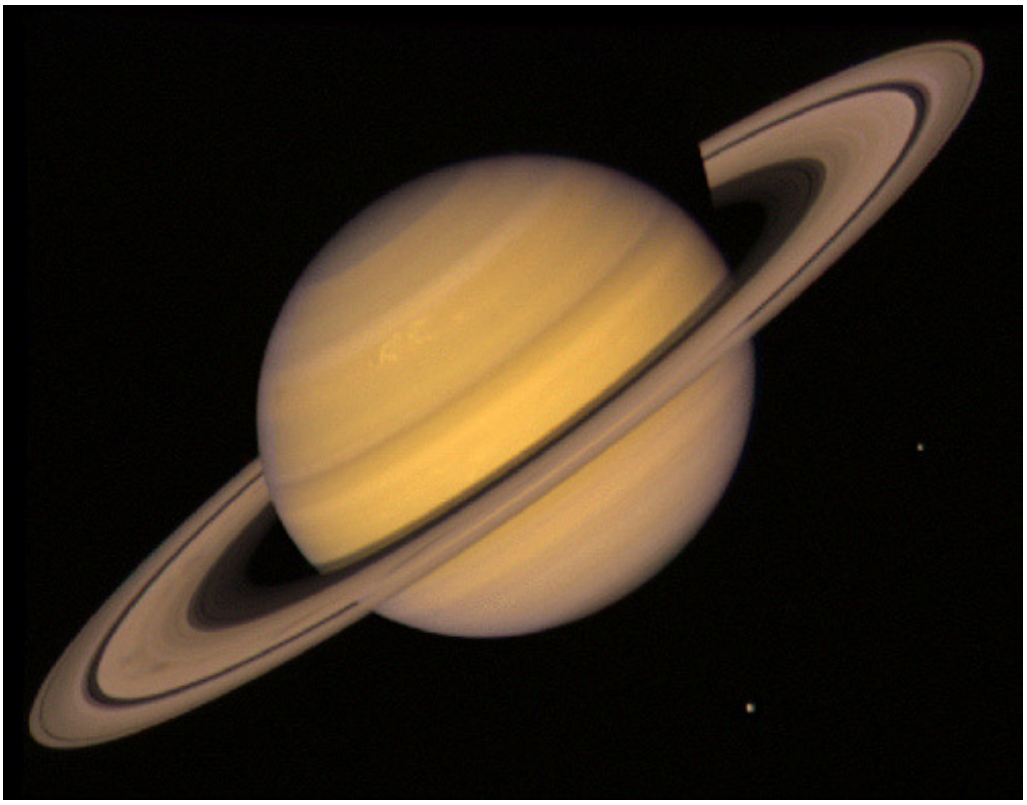
Sept 13-14-PATS(Pacific Astronomy and Telescope Show) in Pasadena

Sept 27-Annual CVA Star-Be-Que at Hensley Lake

Oct 10-Riverpark star party-sunset at 6:25

Oct 11-CVA meeting at CSUF 7PM

Oct 25-CVA Star Party at Hensley Lake



Astronomical Object of the Month

Saturn, the jewel of the solar system, with two of its over 50 moons. NASA image

Quote of the Month:

There is a saying among astronomers that five billion people concern themselves with the surface of the Earth, and ten thousand with everything else. These people are the practitioners of what is said to be the world's oldest science, although astronomy is possibly younger than the science of flaking chert.

Richard Preston, from *First Light*

○ Full Moon Sept 15 ● New Moon Sept 29 ○ Full Moon Oct 14 ● New Moon Oct 28

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The President's Message

August heralds the end of another summer of viewing. Hopefully it was better for you than for me. At least three times when I went out, the smoke from the fires obscured all but Jupiter and Saturn. From the club members I found out that the weather cooperated for Glacier Point, the smoke cleared out Thursday evening and Friday and Saturday had great skies. Randy and I gave our annual Perseid Meteor Shower tour with the guests at Tenya Lodge. We boarded the bus and arrived at Glacier around 10:30 pm and enjoyed very pleasant weather and some of the best dark skies at Glacier that I've seen for many years. The double cluster in Perseus and M31 were clearly visible to the unaided eye. Of course randy saw other faint objects with his "Steiner-vision". Once the moon went down we were seeing about 20 an hour.

Brian Bellis has offered us an opportunity you won't believe. I traveled to the High Sierra Camp. It is a short one mile hike up to the camp. Here you will fine quality camping and food. The meals were served by a chef who introduced each of the five courses with a description of ow they were prepared. Camp food never tasted so good. At 8300 ft, the skies were very clear. The campers were tired from a full day of hiking and by 11pm, I had the scope to myself. Next summer if your schedule permits, you should experience this type of camping.

This year we decided to take the telescopes to the public. We chose Riverpark because it has the densest population in the Central Valley. It has been a resounding success. There have been several hundred of people exposed to astronomy through a telescope. The property management is estastic over the public response. Several people have called the office to ask when the "Starmen" will be back out. It has gone so well that the property management is working to put us on the news. So in September or October there may be a television crew out there. They also would like us to come out in November. For next year they would like a schedule and put us on their monthly calendar with a promotion on their new-upcoming website. Hope to see you at the Star-be-cue in September.

...Steve Harness

Announcements from the President

1.If you have any pictures/images you've taken an wish to submit them for the 2009 calendar the please send them to Fred Lusk, Lusk5@pacbell.net or Greg Morgan, gmorgan@oldstarlight.com. They would like to have them as soon as possible in order to get the calendar out for the November or December meeting.

2. Riverpark Star party Saturday, September 6th. Sunset at 7:15

3. Star-ba-cue at Hensley lake Sept 27th

4. Riverpark Star party Friday, October 10th Sunset at 6:25

Profiles in Astronomy

MaximilianWolf 1863-1932



Wolf was born and raised in Heidelberg, Germany. He attended local schools, and then the University of Heidelberg, where he received a doctorate in physics in 1888. After two years of research in Stockholm, Sweden, he joined the staff of Heidelberg in 1890, became a professor of astrophysics, and worked at its observatory for the rest of his life.

Wolf was a pioneer in astrophotography, and used it to make many discoveries. He realized that photographs taken of the same space of sky on successive nights could reveal moving objects, and he used this idea to discover over 200 asteroids. His first was 323 Brucia in 1891. He also discovered the first two Trojan asteroids, and several of the Earth-crossing Amor asteroids. He also discovered several comets, which are named after him. Using his photographic techniques on the deep sky, he discovered several thousand nebulae(which have now been identified as galaxies). He also used spectrographic analysis to show that their spectra is similar to stars and different from gaseous nebulae, the first indications that they might be galaxies in their own right. In stellar studies, he discovered the stars Wolf 359, one of the closest to Earth, and Wolf 424 AB, among many others. He also discovered dozens of variable stars.

As an outgrowth of his astrophotography work, Wolf invented one of the most useful devices in finding moving objects in the nighttime sky: the blink comparator. He designed it and persuaded Carl Zeiss, the famous German optics company, to build it. With it, two plates of the same portion of the sky taken on different nights could be studied simultaneously. Wolf used his new invention to find many of his asteroids and comets, other astronomers used it as well, and eventually, young Clyde Tombaugh used one at Lowell Observatory to discover the planet Pluto.

Wolf has a lunar crater named after him, and the prestigious Wolf Prize(the astronomical equivalent of the Nobel Prize) is also named for him.

Sources:

http://en.wikipedia.org/wiki/Max_Wolf

http://www.phys-astro.sonoma.edu/BruceMedalists/Wolf/

Patrick Moore(ed). International Encyclopedia of Astronomy. NewYork:Orion Books, 1987.

Saturn, the Jewel of the Solar System

Not counting Earth, Saturn is the best known planet in the solar system, due mostly to its brilliant and beautiful rings. When scientists first studied them almost four centuries ago, they thought there were only four or five. Now, thanks to spacecraft like Voyager and Cassini, we know that there are over a thousand, including the mysterious "braided" F ring. Lately, scientists have come to believe that Saturn's rings are recent, formed only in the last 2-3 million years. They are made largely of ice and some rock, and held in place by small "shepherd" moons. Saturn also has over 50 moons, the largest being Titan, which has an atmosphere and lakes which probably consist of liquid methane. In 2005, ESA's Huygens probe landed on Titan and took the first images from the surface of that body.

Only slightly smaller than Jupiter, but much lighter, Saturn was one of the six planets known to the ancients. It is 900 million miles from Earth; spacecraft traveling to it take almost four years on their journey. It's a long trip, but worth it.

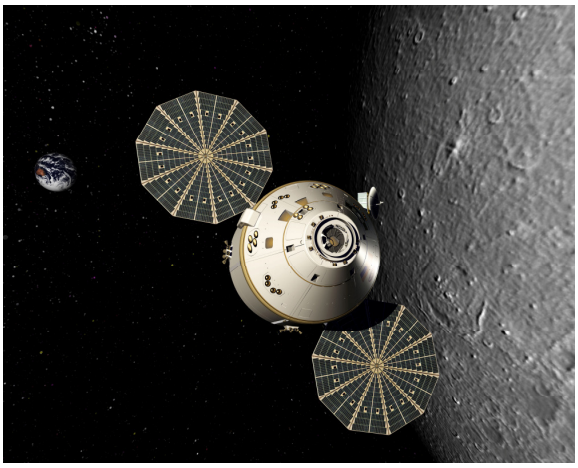
CVA Calendar for September and October 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 Labor Day First day of Ramadam	2	3 Saturn in conjunction with the Sun	4	5	6
7	8	9 California Admission Day	10	11	12 Uranus at opposition Moon occults Neptune	13 CVA field trip to PATS RTMC Pacific Telescope and Astronomy Show
14 RTMC Pacific Telescope and Astronomy Show	15 ○ Harvest Moon Full Moon	16	17	18	19 Moon occults the Pleiades	20
21	22 Fall Equinox	23	24	25	26	27 CVA Star-B-Que and Star Party
28	29 ● New Moon Rosh Hashanah Begins	30	October 1 NASA established 1958	2	3	4
5	6	7 Draconid Meteor Shower	8 Yom Kipper Begins	9	10	11 CVA meeting at CSUF 7PM EE 191
12	13 Columbus Day Observed	14 ○ Hunter's Moon Full Moon	15	16	17 Moon occults the Plieades	18
19	20	21 Orionid Meteor Shower	22	23	24	25 CVA Star Party at Hensley Lake
26	27	28 ● New Moon	29 John Glenn, oldest person in space (77) launched in 1998	31	31 Halloween	November 1 All Saints Day
2 Daylight Savings Time ends	3	4	5	6	7	8

What's New in Space

NASA Makes Moon Base Plans

NASA has asked a number of leading aerospace and engineering companies to submit plans for a permanent Moon base, which the space agency hopes to have occupied by 2024. NASA officials recently met with company executives and asked them to get their creative juices flowing to create a modular facility which would house four or more astronauts for stays starting at a month, and possibly extending up to six months or more. NASA emphasized that such a base would have to be self-sufficient, lightweight, easy to construct, and have all the necessary equipment for long term occupation and research. NASA said that, the base, which will probably be located near the Moon's south pole, will likely have solar panels for power, but might also use a small nuclear reactor. The base should also include vehicles that will allow astronauts initially to travel up to 100 kilometers (62 miles) away from the main facility. Eventually, NASA says, astronauts will travel over a thousand kilometers away from the base.



Currently, NASA plans to land astronauts on the Moon as early as 2018, using the Orion CEV, the Aeries 5 rocket, and a lunar landing module that looks basically the same, but is much larger than the LM of the 1960s and early 70s. For the initial Moon missions, four astronauts will crew the CEV, and all four will descend in the lander, leaving the CEV in orbit while they spend up to two weeks on the surface carrying out their exploration program. China has already announced that it plans to land men on the Moon by 2018 as well, and U.S. officials feel that the Chinese will probably beat them. However, aside from vague statements, China has not announced any plans for a Moon base. Russia has announced plans to send cosmonauts to the Moon by 2025 and have a permanent Moon base by 2032.

In a announcement made August 8, 2008, NASA is pushing back the first scheduled manned Orion CEV launching, due to budget cuts. It had been planned for June 2013; now the space agency says, the earliest date will be September 2014. NASA is scrambling to notify its contractors and associates, and also the Russian Space Agency, which is contracted to send American astronauts to the International Space Station via Soyuz flights. NASA still hopes to send Americans to the moon by 2018, but even that may be in jeopardy; an agency task force gave its report on August 11, criticizing NASA for neglecting safety in its design and construction of the Orion CEV, and the entire Constellation program. It is unknown if this report will result in any further delays in the program.

Billionaire Geeks in Space-and Private Space Flights

Sergy Brin, the billionaire co-founder of Google, has put down a $5 million deposit for a flight to the International Space Station aboard a Soyuz spacecraft in 2011. Space Adventures, a Virginia-based company that arranges for tourist flights aboard Soyuz craft, announced that it is reserving seats for a 2011 flight, and that Brin might be one of these who occupies them. Space Adventures, which has already arranged for five previous space tourist flights, is getting ready to send a sixth person up in October; he is Richard Garriott, son of former NASA astronaut Owen Garriott, and the vice-chairman of Space Adventures. Space Adventures emphasized that it is chartering the entire 2011 flight: one Russian cosmonaut pilot, and two tourist passengers, and it will pay for all the mission expenses, which includes a Soyuz specially made for the mission

RKA, the Russian Space Agency, has announced that it will allow regular paying tourist flights up through 2010, but is uncertain about schedules after that, due to the planned retirement of the U.S. Space Shuttle at the end of that year. Starting in 2011, Soyuz passenger seats will be taken up by American astronauts traveling to and from ISS. The U.S. will be without a manned spacecraft until at least 2012, when the first manned Orion CEV flights may be made(but don't be surprised if NASA extends the Shuttle program into 2011 or even 2012). All of this, though, will have no effect on the 2011 Space Adventures flight; it is a completely separate mission, and will probably go up no matter what U.S. or Russian manned space plans end up being. Space Adventures has also been advertising seats on a proposed Soyuz mission as early as 2013 which will take two paying passengers on a loop around the Moon and return them to Earth. Cost :$100 million.

From: NASA Jet Propulsion Laboratory

100 Years of Space Rock: The Tunguska Impact

At around 7:17 on the morning of June 30, 1908, a man based at the trading post at Vanavara in Siberia is sitting on his front porch. In a moment, 40 miles from the center of an immense blast of unknown origin, he will be hurled from his chair and the heat will be so intense he will feel as though his shirt is on fire. The man at the trading post, and others in a largely uninhabited region of Siberia, near the Podkamennaya Tunguska River, are to be accidental eyewitnesses to cosmological history.

"If you want to start a conversation with anyone in the asteroid business all you have to say is Tunguska," said Don Yeomans, manager of the Near-Earth Object Office at NASA's Jet Propulsion Laboratory. "It is the only entry of a large meteoroid we have in the modern era with first-hand accounts."

While the impact occurred in '08, the first scientific expedition to the area would have to wait for 19 years. In 1921, Leonid Kulik, the chief curator for the meteorite collection of the St. Petersburg museum led an expedition to Tunguska. But the harsh conditions of the Siberian outback thwarted his team's attempt to reach the area of the blast. In 1927, a new expedition, again lead by Kulik, reached its goal.

"At first, the locals were reluctant to tell Kulik about the event," said Yeomans. "They believed the blast was a visitation by the god Ogdy, who had cursed the area by smashing trees and killing animals."

While testimonials may have at first been difficult to obtain, there was plenty of evidence lying around. Eight hundred square miles of remote forest had been ripped asunder. Eighty million trees were on their sides, lying in a radial pattern.

"Those trees acted as markers, pointing directly away from the blast's epicenter," said Yeomans. "Later, when the team arrived at ground zero, they found the trees there standing upright -- but their limbs and bark had been stripped away. They looked like a forest of telephone poles."

Such debranching requires fast moving shock waves that break off a tree's branches before the branches can transfer the impact momentum to the tree's stem. Thirty seven years after the Tunguska blast, branchless trees would be found at the site of another massive explosion --Hiroshima, Japan.

Kulik's expeditions (he traveled to Tunguska on three separate occasions) did finally get some of the locals to talk. One was the man based at the Vanara trading post who witnessed the heat blast as he was launched a few yards. His account:

> Suddenly in the north sky... the sky was split in two, and high above the forest the whole northern part of the sky appeared covered with fire...
>
> At that moment there was a bang in the sky and a mighty crash... The crash was followed by a noise like stones falling from the sky, or of guns firing. The earth trembled.

The massive explosion packed a wallop. The resulting seismic shockwave registered with sensitive barometers as far away as England. Dense clouds formed over the region at high altitudes which reflected sunlight from beyond the horizon. Night skies glowed, and reports came in that people who lived as far away as Asia could read newspapers outdoors as late as midnight. Locally, hundreds of reindeer, the livelihood of local herders, were killed, but there was no direct evidence that any person perished in the blast.

"A century later some still debate the cause and come up with different scenarios that could have caused the explosion," said Yeomans. "But the generally agreed upon theory is that on the morning of June 30, 1908, a large space rock, about 120 feet across, entered the atmosphere of Siberia and then detonated in the sky."

It is estimated the asteroid entered Earth's atmosphere traveling at a speed of about 33,500 miles per hour. During its quick plunge, the 220-million-pound space rock heated the air surrounding it to 44,500 degrees Fahrenheit. At 7:17 a.m. (local Siberia time), at a height of about 28,000 feet, the combination of pressure and heat caused the asteroid to fragment and annihilate itself, producing a fireball and releasing energy equivalent to about 185 Hiroshima bombs.

The 2008 PATS –Pacific Astronomy and Telescope Show

PATS, the Pacific Astronomy and Telescope Show, sponsored by the Riverside Telescope Makers and Celestron, will be held at the Pasadena Convention Center September 13-14, 2008. It is the biggest show of its kind on the west coast, with all kinds of telescope equipment, workshops, tours of CalTech and the Mt. Wilson Observatory, and much more. For more information, go to the PATS website at http://:www.rtmcastronomyexpo.org/PATS.html.

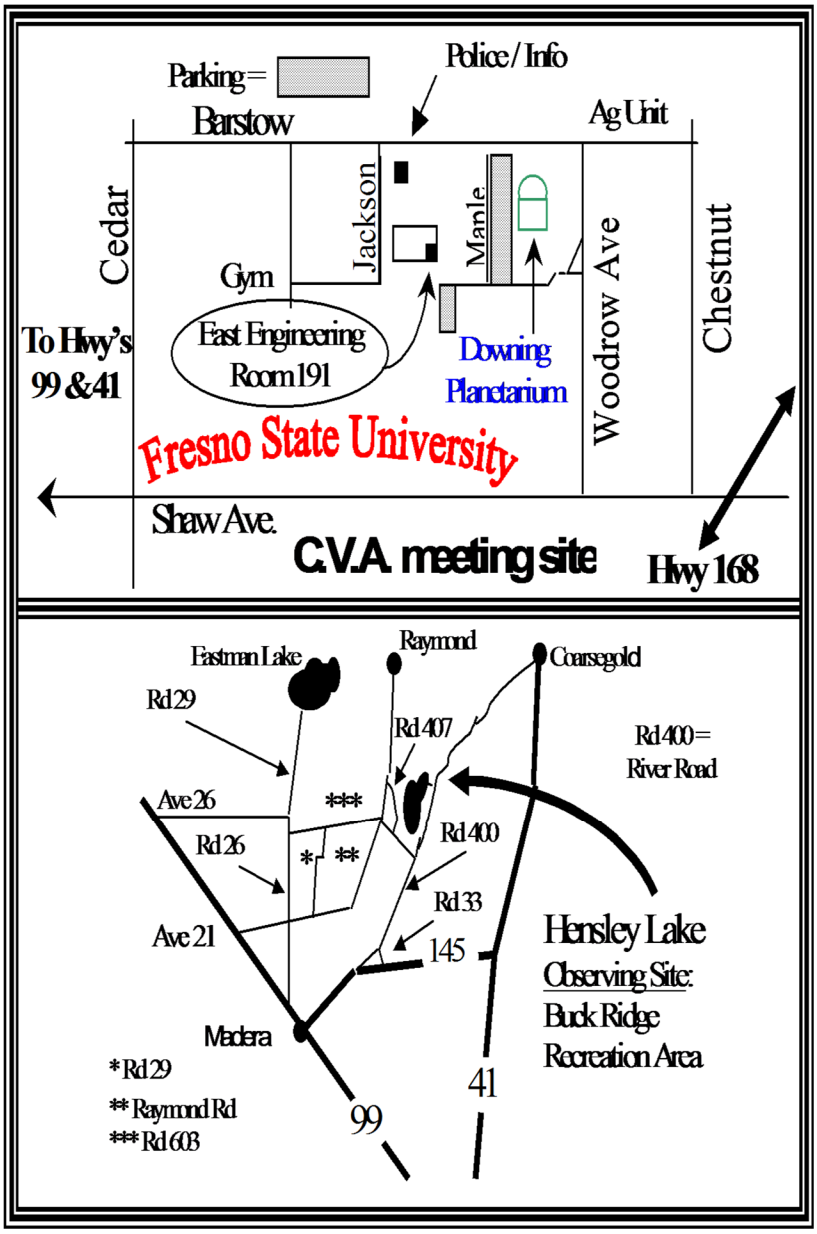
Don't miss the annual CVA Star-Be-Que, Saturday, September 27 at the Hensley Lake observing site!

Astronomical Trivia

Last issue's astronomical trivia question:
What was the name that Johannes Kepler gave to his third law of planetary motion?

Chris Denny is on the ball again! He came up with the right answer the day he got his issue. It was the Harmonic Law, or sometimes the Law of Harmony, because Kepler believed that it showed the stability of the planets' orbits.

This issue's astronomical trivia question:
What well known object is also called Inne's Star?



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Deadline for articles submission to The November-December ***Observer*** will October 13 and the issue will be mailed on October 25

Please submit articles in Microsoft Word format

Astronomical Joke

Where to astronomers go to get coffee during long nights of work?

At Starbucks.

Did you know-

The ancient Greek name for Venus was Kythera. Venus was the Roman name for the goddess of love, and the planet was thought to make people fall in love. Even today, venereal diseases such as syphilis are literally the "diseases of love."

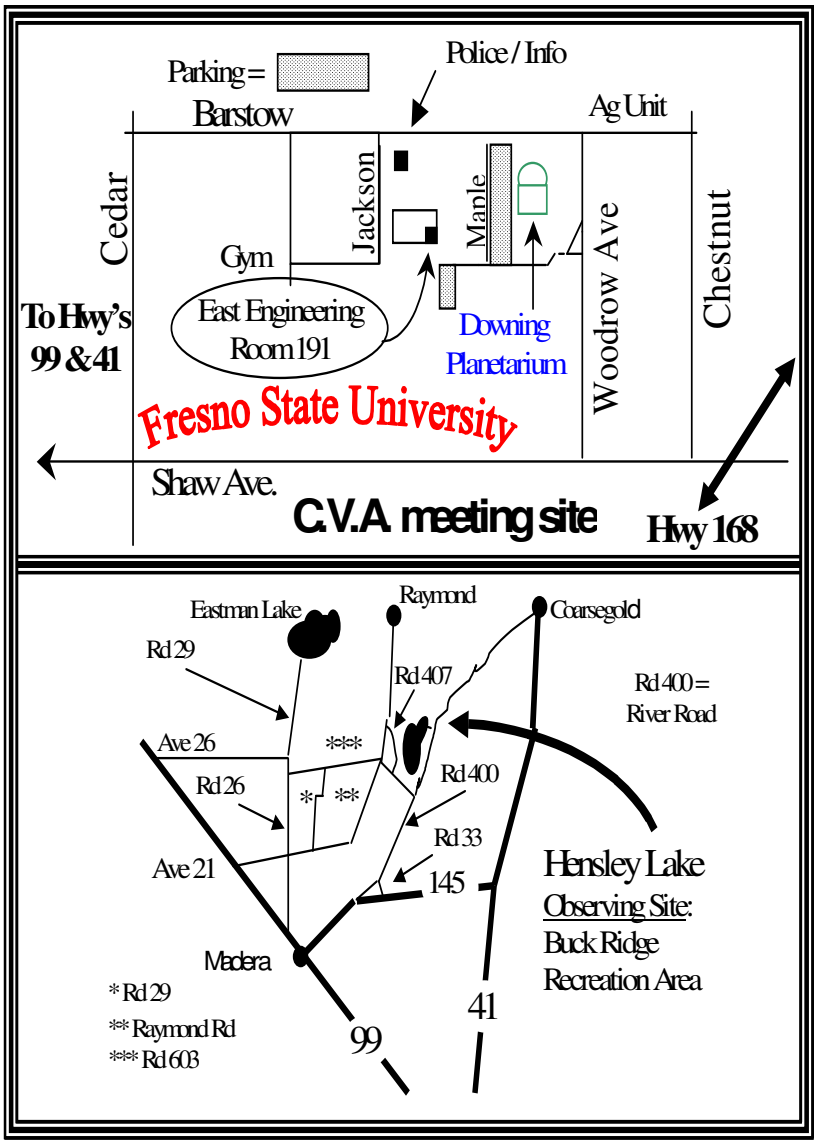
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What well known stellar object is also known as Inne's Star?

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Organization

Business Name

Primary Business Address
Your Address Line 2
Your Address Line 3
Your Address Line 4

Phone: 555-555-5555
Fax: 555-555-5555
E-mail: someone@example.com

Your business tag line here.

We're on the Web!
example.com

Back Page Story Headline

From: NASA Jet Propulsion Laboratory



Caption describing picture or graphic.