September-October
2010
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Issue 5

The Observer

The Newsletter of Central Valley Astronomers of Fresno

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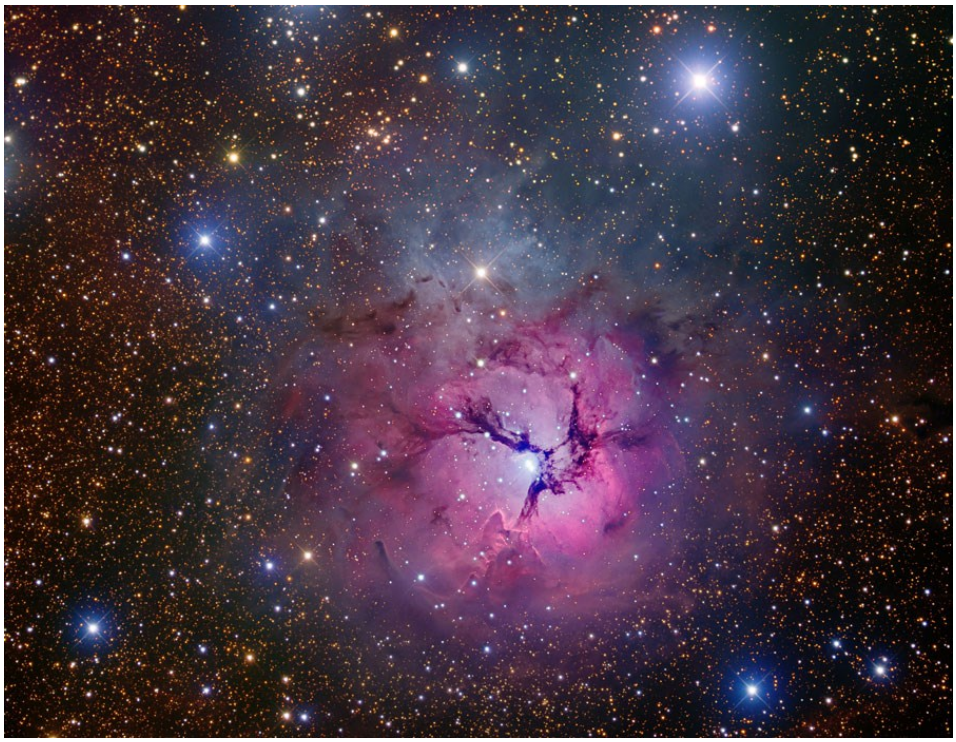

CVA Calendar

Sept 4-CVA star party at Millerton Lake

Sept 11-CVA Bar-Be-Cue at Hensley Lake

Sept 18-Public Star party at River Park

Sept 25 CVA meeting CSUF -7pm

Oct 9-Star Party at Henslely Lake

Oct 16-Public star party at River Park

Oct 23-CVA meeting CSUF-7pm

Astronomical Object of the Month
M20, The Triffid Nebula

The Triffid Nebula in Sagittarius, M20, is always a special object to view. It and the Lagoon Nebula(M8) are part of the "steam" from the Sagittarius Teapot. See it before Sagattarius is gone for the season! For a question about the Triffid, see p. 9

Image from NASA

Quote of the Month:

Like the fifteenth century navigators, astronomers today are embarked on voyages of exploration, charting unknown regions. The aim of this adventure is to bring back not gold or spices or silk, but something more valuable: a map of the universe that will tell of its origin, its texture, and its fate.

-Robert Kishner

○ New Moon Sept 8 ● Full Moon Sept 23 ○ New Moon October 7 ● Full Moon October 22

Friday, September 18- International Observe the Moon Night!

The Observer is the newsletter of Central Valley Astronomers of Fresno
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President's Message-

The end of the summer is upon us and it's been a good astronomy viewing summer. One can't complain about the weather very much. While we've had the normal Central Valley heat, we didn't have the 110's and higher. Also the air quality was good for viewing. All in all is was a fun summer. I missed the Glacier point party but was told that it was spectacular. I hope everyone had fun there.

This summer we explored using Eastman Lake as a dark sky site. Everyone I've talked to really enjoyed it and commented on how dark the sky was. It is further away from Fresno and Madera. The low hills further block out the city lights. It is a definite plus for us. Also it is only about 10 minutes or so further than Hensley Lake and is a lot straighter road.

September eighteenth is the International Observe the Moon Night (IOMN). The RiverPark management is going to advertise the event. It will be a great way to promote astronomy education, facts about the Moon and our club. I hope as many as possible will be out there. I will bring the big club scope. It was a huge hit in July with people in line all evening long to look through it.

September 11th is our Star-Ba-Cue at Hensley Lake. Bring a side dish and we'll provide the hamburgers, dogs, condiments, and plates. Hope you all can make it.

Steve

Central Valley Astronomers of Fresno, est. 1952

Our Goals:

- Provide a place for those interested in astronomy to come together and share their hobby
- Share the wonders of astronomy with the public
- Be a source of astronomy education and information for our schools, the public, and the media

Our Interests:

- To learn about astronomy and related topics
- To enjoy the nights sky with the unaided eye, telescopes, and binoculars
- To learn from others and share what we known about astronomy from others

The Observer September-October 2010

Profiles in Astronomy

John Stanley Plaskett 1865-1941

John Plaskett was born and raised near Toronto, Canada, and, as a young man, had no real scientific interests. Instead, he worked as a machinist. Eventually, he found work with the physics department at the University of Toronto, building various types of scientific apparatus and assisting the scientists in their research. As a result, he became interested in physics, and at age 30 enrolled at the university, eventually majoring in mathematics and physics.

In 1903, Plaskett took a position at the Dominion Observatory in Ottawa, Canada's capital city. There, his astronomical career really started, with work on radical velocity and spectrographic studies of stars. He continued his work at the Dominion Astrophysics Observatory in British Columbia, where he moved to in 1917. Plaskett made a number of discoveries concerning spectrographic binaries, and also on the interstellar medium, which he found was not empty at all, but made up of various elements, especially calcium and sodium. He was one of the first to realize that the interstellar medium was just as important as the stars that inhabited it.

Plaskett won many honors for his studies, including the Gold Medal from the Royal Astronomical Society, the Bruce Medal from the Astronomical Society of the Pacific, and the Henry Draper Medal. A crater on the Moon, a star, and an asteroid are all named after him. His son also became a famous astronomer, winning the Royal Astronomical Society gold medal as well.

Sources: Wikipedia, www.nnbd.com/people

Don't Forget!
The CVA Online Store!

On it, we have a wide variety of merchandise with the CVA logo, including shirts, sweatshirts, hats, mugs magnets, and other mementos. Some of the clothing items come in several colors, but you have to go to the individual product pages to see them.

Each product includes a donation to CVA

The CVA Online Store:
http://www.cafepress.com/CVAFresno

CVA Calendar for September and October 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1 Pioneer 11 flies by Saturn in 1979	2	3	4 CVA star party at Millerton Lake
5	6 Labor Day	7	8 Rosh Hashanah begins New Moon	9 California Admission Day	10 CVA Courtright star party begins	11 CVA Star-b-que
12	13	14	15	16	17 Yom Kippor begins	18 CVA public star party at Riverpark International Observe the Moon Night
19	20	21	22 Fall Equinox	23 Discovery of Neptune by Adams and Leverrier New Moon	24	25 CVA meeting 7pm CSUF
26	27	28	29	30	Oct 1	2
3	4 Sputnik 1 launched in 1957	5 Hubble discovers Cepheid variables in M31-1923	6	7 New Moon Luna 3 takes first pictures of Moon's far side-1959	8	9 CVA Star party at Hensley Lake
10	11 Columbus Day	12	13	14	15	16 CVA public star party at Riverpark
17	18	19	20	21	22 Full Moon Venera 9 lands on surface of Venus-1975	23 CVA meeting at CSUF-7pm
24	25	26	27	28	29	30
31 Halloween	Nov 1	2	3	4	5	6

What's New in Space

Compromise Space Budge Approved, Shuttle's Life Extended

On July 15, a Senate panel approved President Obama's plans for deep space missions, and also gave a reprieve to the Space shuttle program. The Senate commerce committee voted in favor of a three year NASA budget that would allocate funding for a heavy lift booster rocket and an eventual manned mission to an asteroid. The committee also agreed to a compromise that will extend the shuttle program for another year, though 2011, citing concerns by several senators that its ending this year would compromise U.S. leadership in space and also cause several thousand NASA and aerospace employees to lose their jobs during a time of high unemployment. The overall budget, which still has to be approved by the full Congress, would be $19 billion for the fiscal 2011 year, and remain steady for the next two years after that. Part of it includes $1 billion a year to promote commercial manned spaceflight development, which NASA is heavily relying on once the shuttle is retired. Many feel that the compromise came about after several veteran astronauts, especially Neil Armstrong, the first man to walk on the Moon, blasted Obama's decision to end the shuttle program and the Constellation-CEV program earlier this year. The heavy lift booster rocket is an especially important project, and NASA has put it on a "fast track" for development and operation.

SpaceShip2 and WhiteKnight Man Tested

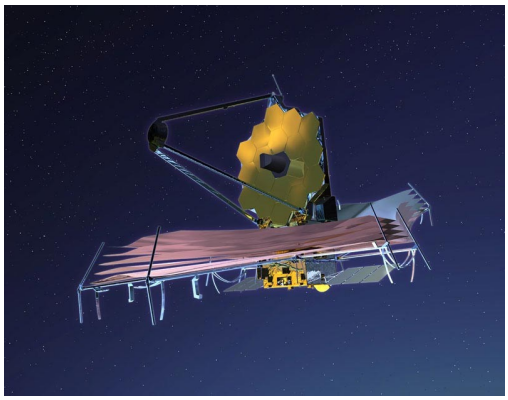
On July 17, Richard Branson's Virgin Galactic reported that SpaceShip2, its manned commercial space vehicle had been successfully tested in flight with people aboard. According to the Virgin Galactic website, SS2 with two crewmembers aboard, was taken up to 50,000 feet under the wing of the WhiteKnight "mother" craft. While flying at that altitude, the crew tested the instruments and controls of the craft for six hours before coming back to land at the Mojave Airport in the Southern California desert. SS2 and WhiteKnight have been undergoing testing for several months, but this was the first flight with crewmembers aboard the craft. Scaled Composites, the company that built SS2, and Virgin Galactic have a number of more test flights planned into 2011 for eventual FFA certification. As of now, the company's plans are to start regular operational commercial space flights in the fall of 2011.

SS2 is a larger version of Scaled Composites' SS1, which made history and won the X-Prize in 2004, by being the first commercial vehicle to go into space and safely return. Over 500 people have signed up at $200,000 each, for suborbital flights in SS2, which can accommodate two pilots and up to six passengers. Branson has already announced that he will be on the first commercial flight, along with Dick Rutan, the head of Scaled Composites. It is rumored that Stephen Hawking, the famed physicist, will be a passenger aboard the first flight as well.

Former NASA Head hurt in Plane Crash that kills ex-Senator

On August 9, former NASA chief administer Sean O'Keefe was seriously injured in a plane crash in Alaska, one that killed former Alaskan senator Ted Stevens. The group was flying to a fishing lodge in southwestern Alaska when bad weather and heavy fog reduced the pilot's visibility, causing the plane to go off course and crash into a mountainside. O'Keefe, his son, and another passenger survived; Stevens, four others, and the pilot were killed. Stevens and O'Keefe were close friends from the days when Stevens was the head of the Senate Appropriations Committee and O'Keefe was one of the government's main budget experts. O'Keefe was the head of NASA from 2001 to 2005, leaving shortly after President Bush announced the constellation program.

Webb Space Telescope Under Fire



NASA's James Webb Space Telescope, the successor to the Hubble Space Telescope, is coming under increasing criticism for its delays and cost. Originally planned to be ready for lunch in 2011, the telescope is now three years behind schedule and $1.5 billion over cost, leading some in Congress to wonder whether it's worth it or not. To head off the situation, NASA has convened a special independent panel to look into Webb's problems. Astronomers and space scientists are complaining that Webb's cost overruns are pulling money from other smaller projects. The Webb Telescope is partly finished, its foldup mirror is starting tests, and the whole ensemble is now scheduled to be complete and launched in 2014. Unlike Hubble, which orbits the Earth every ninety minutes, it will be put into one of the "L" points, a spot along Jupiter's orbit that is highly stable and will provide unprecedented view of the universe. The telescope is named after James Webb, NASA's second chief administrator, from 1961-1968.

Space-X's Dragon Craft Undergoes Successful Practice Landing

On August 19, Space-X's Dragon spacecraft underwent a successful drop and parachute landing in the Pacific Ocean. The craft, which may someday carry American astronauts to the International Space Station, was lifted by helicopter to an altitude of 14,000 feet, then released. The drogue chute opened as planned, then the main parachutes carried the capsule to a gentle splashdown in the Pacific Ocean off the coast of California. Space X engineers declared it a total success, and are preparing for the next test: a December mission in which an unmanned Dragon craft will be launched to automatically dock with ISS. If all goes well with the December mission, Space-X, headed by .com billionaire Eldon Musk, may receive a NASA contract next year to carry American astronauts to and from ISS as early as 2013. The spacecraft, which consists of a cylindrical service module and a cone shaped crew module, can carry up to seven people and is designed as a space "taxi," for short term missions in low Earth orbit. The Dragon spacecraft and its companion Falcon rocket have been in development since 2005.

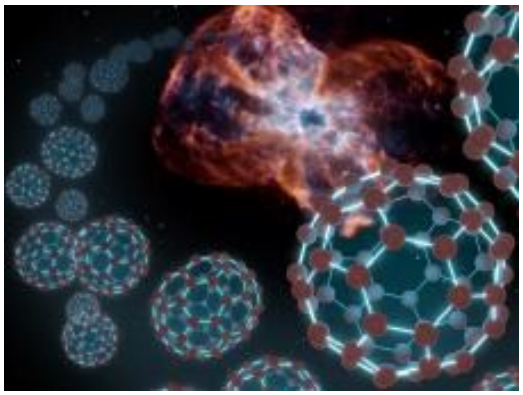
The End of the Shuttle-ISS Era

Even though Congress has tentatively extended Space Shuttle flights into 2011, those will probably be the end of the Shuttle Era, coming at the 50th anniversary of manned space flight. April 1961 seems so long ago, but it was the beginning of the Space Age. Who could have foreseen all the progress and missions in space at that time? Here, then is a quick summary of manned space flight since that April morning when Yuri Gagarin circled the Earth once and then landed.

Total number of manned spaceflights(to Sept 2010)-296
Number of American manned spaceflights-179
Number of Soviet/Russian manned spaceflights-114
Number of Chinese manned spaceflights-3
Total number of people in space-525
Number of men in space-467
Number of women in space-58

Youngest person in space-Gherman Titov in Vostok 2-age 25
Oldest person in space-John Glenn in STS-95-age 77
People with the most spaceflights-Jerry Ross, Franklin Chang-Diaz, and Michael Foale, each with seven space missions
Person who has spent the most time in space-Sergei Krikalev, with 803 days in space during five missions

NASA TELESCOPE FINDS ELUSIVE BUCKYBALLS IN SPACE FOR FIRST TIME

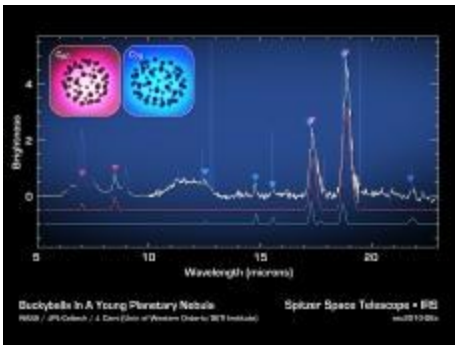


Astronomers using NASA's Spitzer Space Telescope havediscovered carbon molecules, known as "buckyballs," in space for the first time. Buckyballs are soccer-ball-shaped molecules that were first observed in a laboratory 25 years ago. They are named for their resemblance to architect Buckminster Fuller's geodesic domes, which have interlocking circles on the surface of a partial sphere. Buckyballs were thought to float around in space, but had escaped detection until now.

"We found what are now the largest molecules known to exist in space,"said astronomer Jan Cami of the University of Western Ontario, Canada, and the SETI Institute in Mountain View, Calif. "We are particularly excited because they have unique properties that make them important players for all sorts of physical and chemical processes going on in space."

Buckyballs are made of 60 carbon atoms arranged in three-dimensional, spherical structures. Their alternating patterns of hexagons and pentagons match a typical black-and-white soccer ball. The research team also found the more elongated relative of buckyballs, known as C70, for the first time in space. These molecules consist of 70 carbon atoms and are shaped more like an oval rugby ball. Both types of molecules belong to a class known officially as buckminsterfullerenes, or fullerenes.

The Cami team unexpectedly found the carbon balls in a planetary nebula named Tc 1. Planetary nebulas are the remains of stars, like the sun, that shed their outer layers of gas and dust as they age. A compact, hot star, or white dwarf, at the center of the nebula illuminates and heats these clouds of material that has been shed. The buckyballs were found in these clouds, perhaps reflecting a short stage in the star's life, when it sloughs off a puff of material rich in carbon. The astronomers used Spitzer's spectroscopy instrument to analyze infrared light from the planetary nebula and see the spectral signatures of the buckyballs. These molecules are approximately room temperature; the ideal temperature to give off distinct patterns of infrared light that Spitzer can detect. According to Cami, Spitzer looked at the right place at the right time. A century from now, the buckyballs might be too cool to be detected. The data from Spitzer were compared with data from laboratory measurements of the same molecules and showed a perfect match.



"We did not plan for this discovery," Cami said. "But when we saw these whopping spectral signatures, we knew immediately that we were looking at one of the most sought-after molecules."

In 1970, Japanese professor Eiji Osawa predicted the existence of buckyballs, but they were not observed until lab experiments in 1985. Researchers simulated conditions in the atmospheres of aging, carbon-rich giant stars, in which chains of carbon had been detected. Surprisingly, these experiments resulted in the formation of large quantities of buckminsterfullerenes. The molecules have since been found on Earth in candle soot, layers of rock and meteorites.

The study of fullerenes and their relatives has grown into a busy field of research because of the molecules' unique strength and exceptional chemical and physical properties. Among the potential applications are armor, drug delivery and superconducting technologies.

Sir Harry Kroto, who shared the 1996 Nobel Prize in chemistry with Bob Curl and Rick Smalley for the discovery of buckyballs, said, "This most exciting breakthrough provides convincing evidence that the buckyball has, as I long suspected, existed since time immemorial in the dark recesses of our galaxy."

Previous searches for buckyballs in space, in particular around carbon-rich stars, proved unsuccessful. A promising case for their presence in the tenuous clouds between the stars was presented 15 years ago, using observations at optical wavelengths. That finding is awaiting confirmation from laboratory data. More recently, another Spitzer team reported evidence for buckyballs in a different type of object, but the spectral signatures they observed were partly contaminated by other chemical substances.

NASA RELEASES STUNNING HUBBLE TELESCOPE 20TH ANNIVERSARY BOOK

NASA set out on a monumental journey with the launch of the Hubble Space Telescope in April 1990. Since then, it has captured the minds and imaginations of people around the world. To celebrate the 20th anniversary of this scientific icon, NASA has collaborated with leading illustrated book publisher Abrams to release a dynamic and unique collection of Hubble images and commentary.

"Hubble: A Journey Through Space and Time" takes an in-depth look at this unique, ground-breaking telescope. It serves as an authoritative account of the observatory, which has revolutionized astronomy and photography. The book highlights Hubble's spectacular visual legacy to humanity in stunning images and includes what many consider Hubble's 20 most important scientific findings to date. The classic images, all selected by NASA astronomers, show stars being born and dying; galaxies colliding and reforming; and the young universe in the throes of creation.

"This book represents a sampling of 20 years of Hubble discoveries that have forever changed the view of the universe and our place within it," said Ed Weiler, associate administrator for NASA's Science Mission Directorate in Washington and the book's author. "The new and improved Hubble will continue to have a positive impact on the world for decades with many of its greatest discoveries yet to come."

Complementing the stunning imagery are commentaries by notable scientists and testimonies by the veteran astronauts who manned NASA's missions to repair and maintain the telescope. NASA Administrator Charles Bolden, who piloted the space shuttle that launched the telescope, contributed the foreword. The result is a firsthand, complete story of one of history's most important astronomical tools. The book is available at bookstores.

For more information about "Hubble: A Journey Through Space and Time,"
visit:
http://www.abramsbooks.com

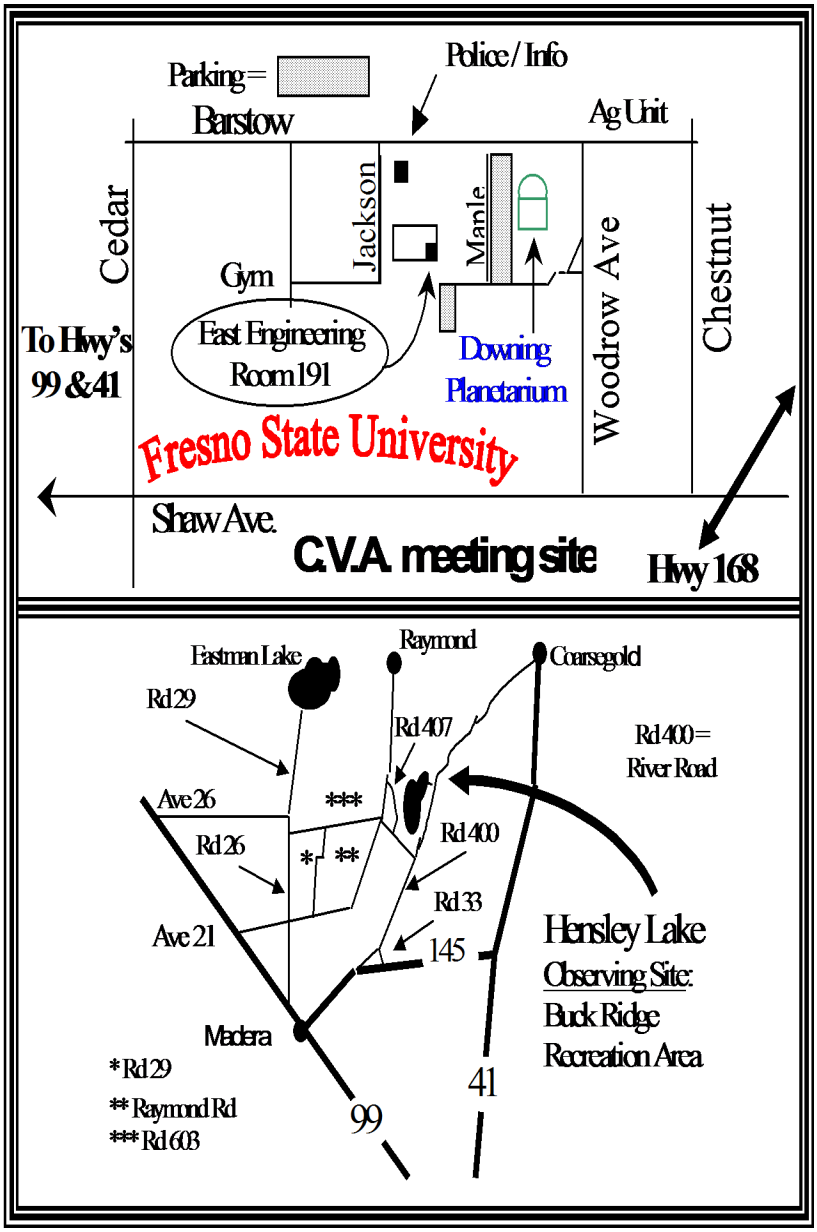
One of the images from the "new and improved" Hubble: this spectacular image of galaxy NGC 4911 in the Coma cluster was taken shortly after Hubble was outfitted with the WFP 2 camera and the Advanced Camera for Surveys in 2009. It is a composite image that took 28 hours to complete.

Number of extra-solar planets found as of August 2010-474
How many more are out there?

Astronomical Trivia

Last issue's trivia question-What was author Mark Twain's famous saying about his birthdate and possible death date? was answered correctly by Brian Bellis. Twain said, "I came in with Halley's Comet(he was born in 1835), and I guess I'll go out with it."(Twain, born Samuel Clemens, died in 1910, the year that the comet returned to the inner solar system)

This issue's trivia question-The Triffid Nebula is this issue's object of the month. What does the term *Triffid* mean, and how did the nebula get that name?



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Deadline for articles submission for the November-December issue- November 15

Please submit articles in Microsoft Word format

To All CVA Members-

Friday, September 18, is International Observe the Moon Night!

Be at River Park with your Telescopes!