SVAS OBSERVER
Vol.72 No.6* Nov-Dec, 2015
Sacramento Valley Astronomical Society
Founded in 1945

Peace on Earth

One gets an absolutely peaceful tranquil feeling looking down at Earth from this perspective. It's a small world that's getting smaller with technology, and how we acquired this image portrays it really well.

Astronomy adjusts our overall perspective. It's a humbling experience looking up and out, at the vastness of space. We are so tiny in the scheme of things, it's inconceivable that we have all the final answers to our questions. We can't possibly be alone in the universe, so let's get ready to meet our neighbors by promoting a peaceful united world civilization, to properly represent Earthlings. There is so much to learn about where we came from, where we are going, and extraterrestrials just may have some answers!

Another great year is coming to a close for our club, and the SVAS Board wishes everyone a great holiday season and a Happy New Year! Please join us next year having even more fun making the SVAS GREAT.

Observer Editor

Inside This Issue

SVAS Event Calendar

Nov 11, Wed New Moon.

Nov 14, Sat Blue Canyon weather permitting.

Nov 20, General Meeting

Friday at 8:00pm,

Sacramento City College, Mohr Hall Room 3
3835 Freeport Boulevard, Sacramento, CA.

Dec 10, Thursday New Moon.

Dec 12, Sat Blue canyon weather permitting.

Dr. Kurt Simon

November 20th Speaker
talks about

WEIRD SCIENCE

There are several weird concepts that science has come up with to explain astronomical observations, including Cosmic Inflation, Dark Energy, Dark Matter, and Black Holes.

Dr. Simon describes these theories and the evidence for them, and then presents an alternative theory based on fundamental principles that avoid their counter-intuitive implications. This theory shows that the universe as a whole complies with the definition of a black hole and the mass in a black hole naturally goes to its radius, thus explaining dark energy and oddities about black holes.

Come listen to Dr. Kurt Simon, be prepared to be surprised!

December SVAS Meeting at Discovery Museum Planetarium!

Dec 18, General Meeting at Discovery Museum

Friday at 8:00pm

Discovery Museum, 3615 Auburn Blvd, Sacramento, CA (near I-80 and Watt) We will be back meeting at Sacramento City College in January, 2016

Star Party Schedule for 2015

Nov 14th
Dec 12th

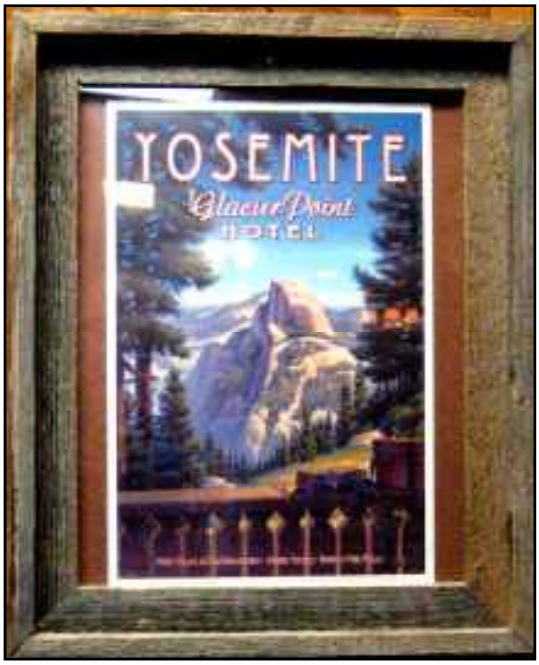
Blue Canyon Star Parties

DISCOVERY MUSEUM
Science & Space Center

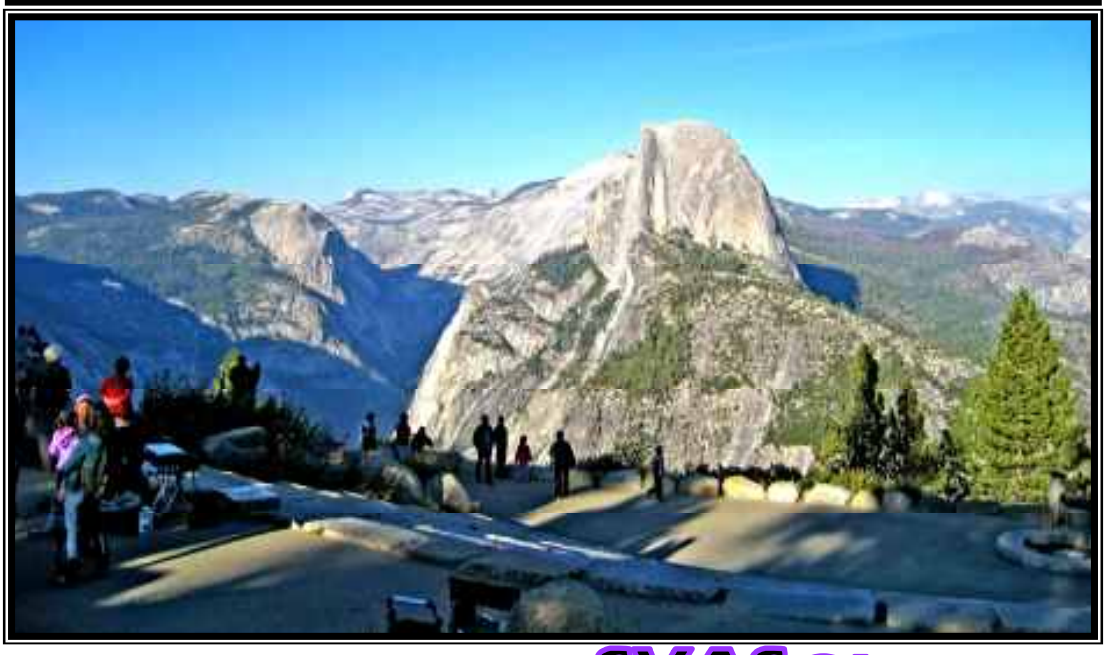
Community Star Parties

Contact Wayne Lord

I was having dinner at a restaurant in Tulsa ,OK., with my granddaughter, and to my surprise I saw a Yosemite Hotel picture hanging on the wall. I said, there was no hotel at Glacier Point! Needless to say, when I returned home I researched it and indeed there was a hotel there. It stood right where the amphitheater is now, and the views must have been breathtaking to the guests having dinner and relaxing on the balcony. It burned down in 1969, and there is no trace of it to be found anywhere.



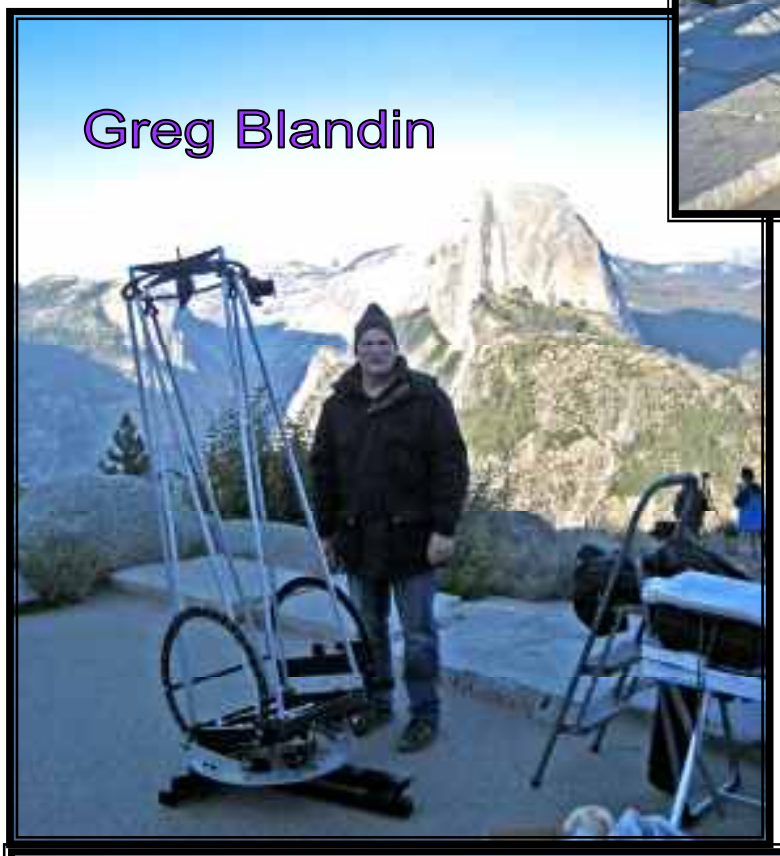
The SVAS could be found there in Sept, on Labor day weekend. We had a great time sharing our views and knowledge with folks from all over the world. We set up Friday, at the amphitheater, the Santa Cruse Astronomy Club (SCAC) joined us, and we entertained a lot of park visitors. Saturday was the busiest day by far. Jeff, the SCAC president, gave a introductory talk to an amphitheater full of tourists, and I completed the presentation by talking about my favorite subject, Galaxies. Andromeda would be rising over Half Dome after sunset, and everyone was very interested in hearing her story. She is really very close to us by galactic standards, and we probably look much the same from her vantage point. Everyone is always surprised to find out they can see her without any optical aid. I told the story of our Milky Way and how we are looking out through the edge of our galaxy, and how one day in the distant future Andromeda will collide with us creating one giant galaxy.

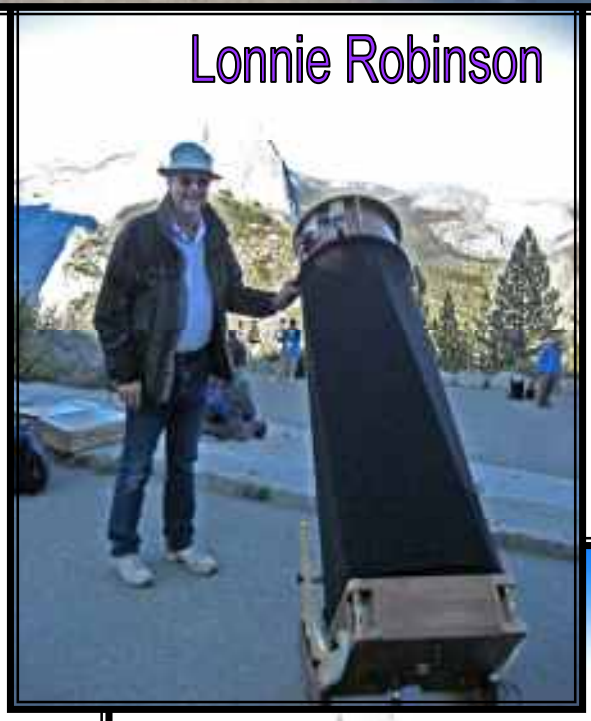


Andromeda showed up as promised after dark, and everyone was primed for a view of the amphitheater's prime topic. It really helps when observers know what that little fuzz ball is they are

looking at. We found several other great objects over the evening. Saturn was a show stopper as always, as everyone enjoys viewing the beautiful ringed planet first time or not. The skies are so dark and high altitude clear, that objects seemed to jump right into the eyepiece.

The high altitude fall air cooled down quickly, and the crowds dispersed fairly early leaving the pristine sky to us. Darn!

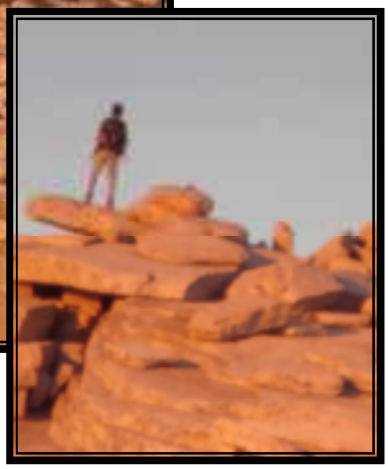




The above left photo shows the pathway heading east to Vista Point, overlooking the Yosemite valley 1300' below. The second photo is the same pathway looking south, and shows the telescope unloading area. We had to move our cars to the main parking lot after unloading, but you can see it's rather convenient for fairly large telescopes. We decided the large ladder that's required for very large Dobs, could be a bit dangerous for the visitors.

I had great fun attaching my cell phone camera to my 16" Dobsonian telescope, just before dark, watching and photographing people standing on top of Half Dome 2.5 miles away! It's like my own little Mallencam, and our guests really enjoyed viewing the phone's display. They all wanted to take their own photos through my scope.

The photos below are really special! The first set, on the bottom left, is the bridge over Vernal Falls a couple miles across the valley. It's scary to see first hand how little water is going under the bridge. The second set of photos shows guys standing on top of Half Dome over 2.5 miles away! The third photo looks like a giant eye ball looking up, but it's the Moon just rising near Half Dome. The mountain tops edge is on the bottom, and the last quarter moon's cratered terminator is on top. Nothing like a little extracurricular daytime astronomy activity.



Tom and Lisa Braun, our SVAS hosts, were amazing. They made us all feel right at home. This was my first time staying at Bridal Veil campground, and it was a beautiful place. There were huge granite boulders everywhere, as if they were plopped down at random by some prehistoric giant for his landscaping project. By the third evening it felt just like home. Fera, our speaker seeker, joined us Sunday, and had a chance to view with the SCAC guys. The rest of us decided to rest up for the long trip home. The last photo is Tom, Lisa, Greg Blandin and his wife Annette, and I'm taking the photo. A warm fire is absolutely the perfect way to end the day, and talk about our telescopic adventures at Glacier Point. Sign up early next year with Tom and Lisa, don't miss another chance to visit the most beautiful place on the west coast! Observer Editor

Prairie City Sept 27 Total Lunar Eclipse

The clouds were the story for this eclipse event, a rare fourth total eclipse in a row. The Sacramento skies were covered with clouds all afternoon, and they began to clear from the west later on. The clouds moved ever so slowly, it seemed improbable they would clear in time. We tried new and easier driving directions to Prairie City, taking Sunrise to White Rock Rd instead of the Prairie City exit off I-50. Wow, White Rock was a rough ride! By the time I arrived, the clouds had significantly receded towards the east, right where the Moon would rise!

SVAS showed up in force, and we had a great time visiting while setting up our equipment. We were all optimistic we would be treated to some great views, but I think the public believed it was a lost cause with all the clouds. My friends tell me you just never know if Blue Canyon skies will be clear, the same goes for Prairie City. We waited, and waited, and finally the clouds sluggishly moved eastward, the Moon did it's part rising while going through the first phases of the eclipse behind the clouds. Finally, it peered out from the cloud cover to put on a spectacular total eclipse! The encompassing clouds actually enhanced the view, adding interest and color to the solitary Moon.

The eclipse photos were taken with my cell phone through my 8" Meade. Sorry the quality isn't perfect, but in all fairness there were some high clouds in the first shots of the total eclipse. They added to the eerie reddish glow of the Earth's shadow.

Observer Editor


Eclipse Photo by Dave Buchla

Ralph Merletti reports on the eclipse:

Pope Francis had just taken off from Philadelphia to return to Rome. Did he see any of the lunar eclipse from high over the Atlantic? A neighbor said NBC showed an eclipse view just before halftime of the Denver Broncos at Detroit Lions game. I was glad my favorite NFL team (Denver) eventually won 24-12! My attempt to watch moonrise from the Fruitridge overpass above the 99 freeway failed, because there was still too much cloudiness in that direction. I had to wait even longer for a clearing, after returning to my residence. At about 7:34pm PDT (13 minutes before mid-eclipse) the totally eclipsed Moon appeared above the retreating cloud deck. With various instruments, I eventually gave the eclipse a preliminary Danjon luminosity/color rating of 2.5 on a scale of 0 to 4.0.

I used my 3" Swift refractor at 25x and 111x, as well as its 10x finder. I also used my 10x50 Orion Vista binoculars and my film camera. I tuned my radio to the Sunday night football game, and occasionally checked the TV broadcast inside my apartment. I found it difficult to multi-task between the game, moving equipment around, and viewing the eclipse.

I used a neighbor's ladder and attached an Earth globe on the top, the globe was oriented north-south. Northern California was positioned approximately on top to replicate the true situation. I previously determined that at the end of totality, 8:23pm PDT, the edge of the umbra would be cast from the Indian Ocean east of Madagascar. I took flash pictures at various times during the returning partial phase to show the true Earth/Moon orientation. I took finder scope photos of the edge of the umbral shadow, during the partial phase, as well as optical viewing at higher powers. Did you know that crater rim shadows can be seen (at high power) on the lunar limb after the end of the umbral phase, right where the umbral shadow was left behind?

With much on my mind, the visible last half of this lunar eclipse went fast. I did not record the time of last penumbral visibility. This was probably the 27th total lunar eclipse in my 69+ years that I've observed with the actual total phase included. In my opinion, last April's lunar eclipse failed to become total at mid-eclipse. The photo of the recent total lunar eclipse (previous page), distributed by guest speaker Dave Buchla at the Oct. 16th SVAS meeting, shows very well the range of luminosity and colors (very dark red to brighter yellow). The dark core shadow at the Moon's northern limb was because that part of the Moon was closer to the center of Earth's shadow. It was also a "super" full Moon, the Moon was closer to the Earth, producing a larger umbral shadow, which further restricted the amount of refracted sunlight that could get into the central shadow. Unfortunately, there are still no operating cameras on the Moon to show us what it looked like from there!

All in all, Sept.27th, 2015 was a very interesting evening!

SunDay FunDay is such a joyful event, I look forward to it every year. We are getting so use to having clouds, a clear sky just wouldn't seem right. They kept us in suspense, some clearing and some haze. The sun is so bright, we still managed some great views in our scopes. Clouds add dynamic action to the views, color enhancements, halos, and mystique.

Walt Heiges manned the SVAS booth, and we set up our telescopes all around it. Bill Hagbery brought his famous meteorite and his H-Alpha scope. We get some of the best photos of youngsters in awe of the weight of the meteorite, and expressing their imagination about where it came from. Kevin Normington set up his white light filtered refractor, and Kevin Heider dropped by to help out and give us a well deserved occasional break. Yours truly had his trusty 8" Meade with a white filter. You gotta like the young lady's expression trying to hold one eye shut while viewing the Sun.

Put this event on your calendar for next year, it's a must attend SVAS showcase! Observer Editor

Citrus Heights Sunday FunDay

Citrus Heights Sunday FunDay

School Star Party Report

Heritage Oak Elementary School

Breaking news for last nights school star party, Nov 30, 2015. We had a great turnout by the SVAS, lots of costumed youngsters, and the SVAS Mallincam is up and running! Wayne Lord and myself, put our varied skills together to finish up the project. Wayne is the camera expert, he is familiar with all the wiring and camera settings. I'm the Bluetooh, Sky Safari, and ATM guy, tackling Wayne's idea to mount the 24" monitor to the tripod. Not an easy task to design, but it finished up well and is easy to attach and take down. The image on the monitor is a street light across the road, we decided to call it the Mercury Nebula. There were no stars out yet. There were some great images of pine tree limbs surrounding it. It was a great success having the monitor mounted on the telescope, and everyone enjoyed viewing the Ring Nebula, m13, and Andromeda. The height and viewing angle seemed just right. I wired a serial cable for the Celestron, and we used Wayne's Bluetooth adapter. Sky Safari worked great as we slewed wirelessly from one object to another, using my 8" tablet.

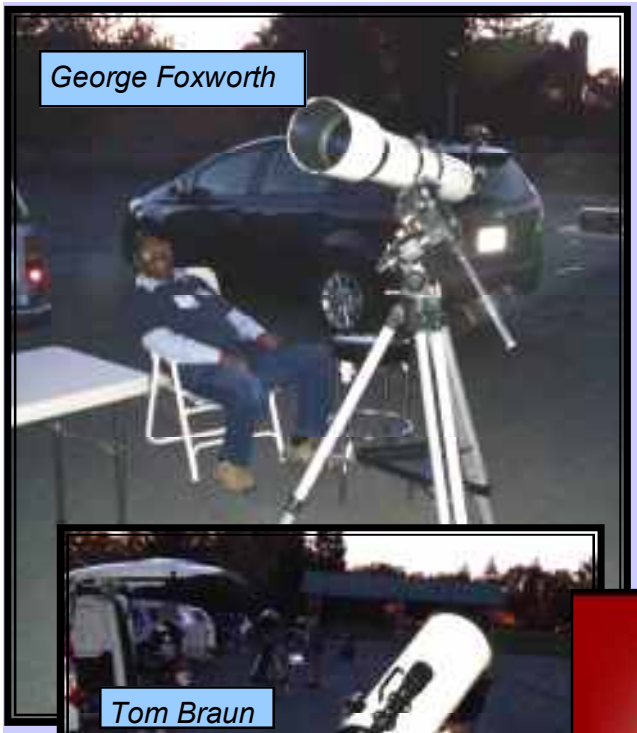
SVAS Outreach Mallincam

Nick Johonie

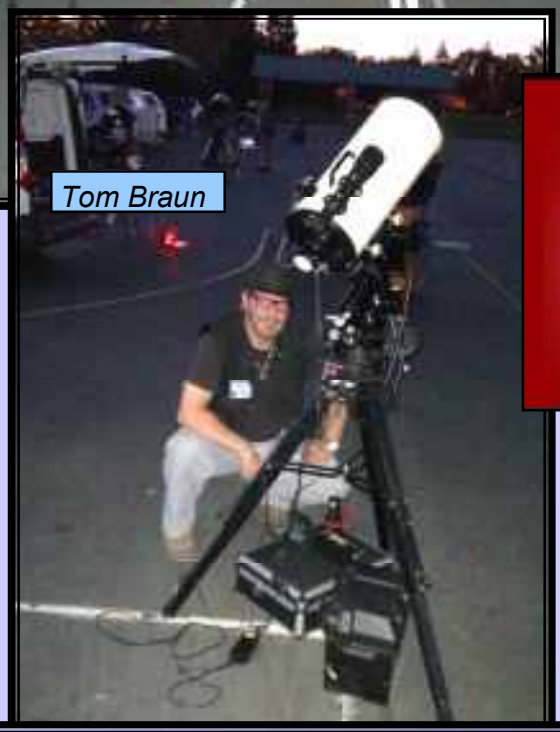
The SVAS wants to extend an extra special "THANK YOU" to Nick Johonie, photo at left with his brand new 11" Celestron, for donating the 8" Celestron (above photo) to our outreach program. It performs exceptionally well, slewing effortlessly to each object. It has typical excellent Celestron optics, providing sharp views. Nick is glad it will be used, and we are very excited to have it available for outreach. It's such a natural for the Mallincam, since all objects are viewed so much brighter, bigger aperture isn't needed. Especially helpful viewing through the city light afterglow!

I don't want to forget the ladies who attended, they make our events extra special! Tom's Lisa, Dave's Rita, Barry's family, and Jim's significant other. Your help is so much appreciated!

The Mallincam would not have happened without the special efforts and vision from the SVAS Board. It began as Tim Tingey's special project, and we are glad to see his wish fulfilled after his untimely passing. Observer Editor

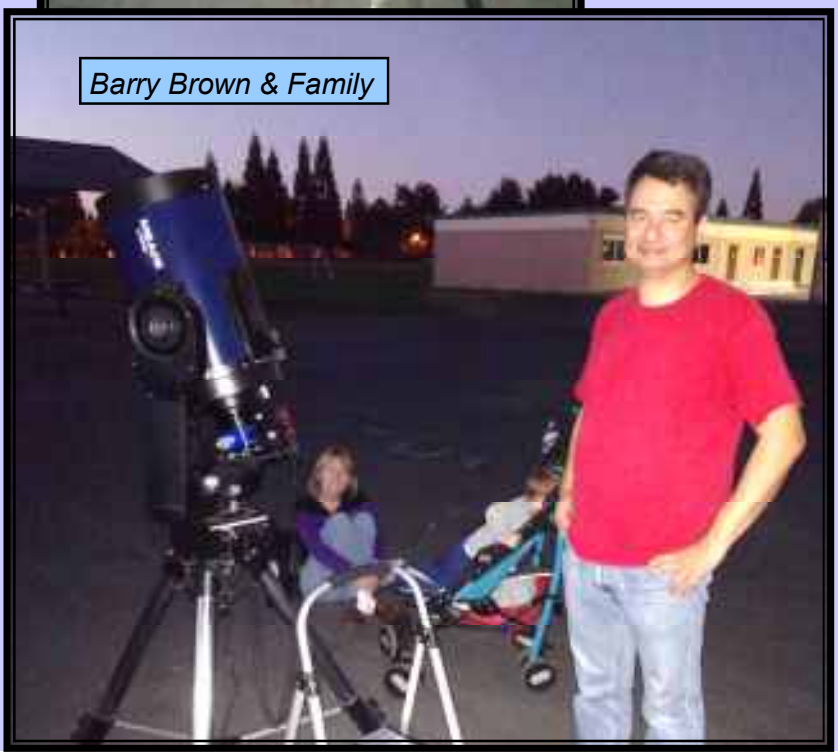

George Foxworth


Jim Head & Wayne Lord

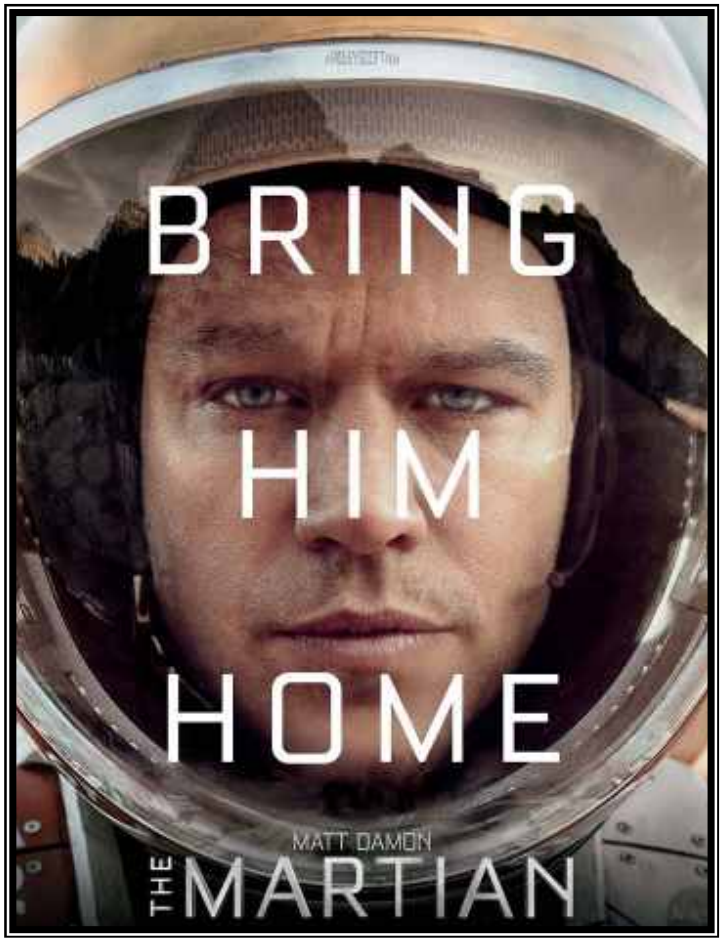

Tom Braun

Heritage Oak Elementary School


Dave Macho


Barry Brown & Family


Jim Head



Movie Review by David Macho

The SVAS is a great organization to belong to! Not only do we have all the benefits of a first class astronomy club, we also get free movie tickets!

The producers of the new Matt Damon movie, The Martian, contacted the SVAS, and asked if we would like to attend an advanced screening of The Martin, on September 21 at 7:00pm. Of course we said YES! Time was short to let our members know, since the initial contact was on Friday and the movie screening was on Monday. The SVAS leadership notified as many members as we could through announcements, the general meeting, and emails.

On Monday, over 20 SVAS members attended the screening at the Century Stadium 14 in Sacramento. After the screening several members critiqued the movie to the 20th Fox representative, who wrote down some of the comments. Several SVAS members also discussed the movies merits among themselves.

The movie centers on a plot of lone survival. An astronaut, played by Matt Damon, is stranded on Mars. How do you survive? The movie goes into the technical aspects of how to adapt a six person 31 day mission, to an extended stay for one. Water, air, food, and heat are all challenges, if any of these fail, well.... you die. Another important aspect of survival is how do you deal with being alone and best utilize your time? Once you are safe, how do you keep occupied? The movie and book explore that aspect also, and there are previous movies that relate to other lone survivor issues. Castaway immediately comes to mind. Also another movie of lone survival on Mars is the 1964 movie, Robison Crusoe on Mars. There are some similar technical issues, but both movies explore the human condition of being totally alone. The big difference was the frantic efforts to save him by NASA and his spaceship crew, creating a sense he was not alone, but possibly stranded with no chance of being rescued any time soon.

The SVAS enjoyed the movie in 3-D, and the visuals were absolutely stunning. There were a few shots of the camera panning up and over a hill, with the scene opening up to the valley floor below. It portrays a “you are there moment”, and “this really looks like Mars”!

The movie follows the book about 90 percent. The book goes into more technical detail, with a few added scenes. Both the book and the movie try to keep the technical aspects accurate based on plausible engineering. The author, Andy Weir, did admit there were two areas that were glossed over; radiation levels, and the density of the Martian atmosphere. He initially posted sections of the new book on his online blog. As fans asked for an E book version, he expanded the writing and posted it on Amazon. His book shot up the charts and a movie deal followed.

I highly recommend reading the book first, which will make the movie much more enjoyable. Don’t hesitate regardless of your scientific background, because you will enjoy “The Martian”! Humorous dialog deals with numerous super serious events, but just the right amount appropriate for real life responses you might expect in this situation. Matt Damon is simply superb, and so is Jeff Danels who plays the decisive and courageous head of NASA. The unfolding story of human interaction, loyalty, ingenuity, and yes love, will immerse your senses into sharing the emotions of every single event.

NASA Orbiter Views Sites of Fiction Film's Mars Landings

This May 2015 image from the HiRISE camera on NASA's Mars Reconnaissance Orbiter shows a location on Mars associated with the best-selling novel and Hollywood movie, "The Martian." It is in a region called Acidalia Planitia, at the landing site for the science-fiction tale's Ares 3 mission.

Images from a NASA Mars orbiter's telescopic camera reveal details of real regions on Mars where a new Hollywood movie, "The Martian," places future astronaut adventures.

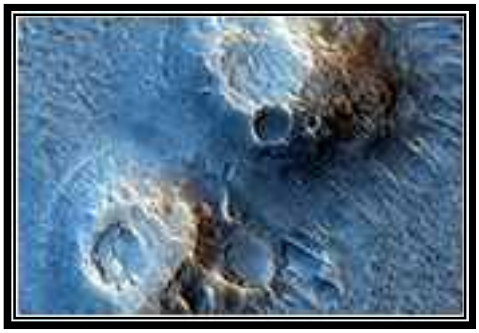
The novel of the same name used actual locations on Mars for the landing sites for its "Ares 3" and "Ares 4" missions. The landing sites for "Ares 3" is on a Martian plain named Acidalia Planitia. The base for the "Ares 4" mission was set inside a crater named Schiaparelli1

Credits: NASA/JPL-Caltech/Univ. of Arizona

The Martian

NASA Orbiter Views Sites of Fiction Film's Mars Landings

The landing sites for "Ares 3" is on a Martian plain named Acidalia Planitia. The base for the "Ares 4" mission was set inside a crater named Schiaparelli



Ares 3 and The Martian:
This region of Mars is actually far more diverse, interesting, and hazardous to drive over than depicted in Andy Weir's novel.

Ares 3 Landing Site: The Martian Revisited:
We can't see the book's Ares 3 habitat because it arrives sometime in the future, so this is the "before" image.

Ares 3 landing Site: Where Science Fact Meets Fiction:
Andy Weir, the author of "The Martian" had requested that we take a picture of the Ares 3 landing site from his novel in Acidalia Planitia, within driving distance from the Pathfinder lander and Sojourner rover.

Credits: NASA/JPL-Caltech/Univ. of Arizona

How we know Mars has liquid water

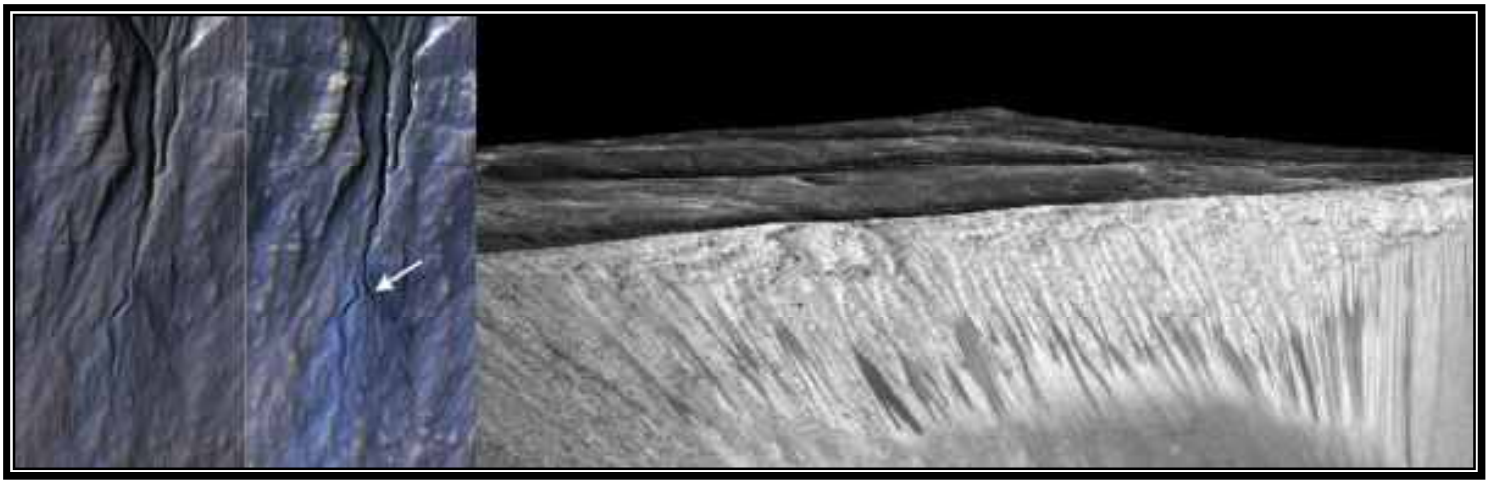
by Ethan Siegel

Of all the planets in the solar system other than our own, Mars is the one place with the most Earth-like past. Geological features on the surface such as dried up riverbeds, sedimentary patterns, mineral spherules nicknamed "blueberries," and evidence of liquid-based erosion all tell the same story: that of a wet, watery past. But although we've found plenty of evidence for molecular water on Mars in the solid (ice) and gaseous (vapor) states, including in icecaps, clouds and subsurface ices exposed (and sublimated) by digging, that in no way meant there'd be water in its liquid phase today.

Sure, water flowed on the surface of Mars during the first billion years of the solar system, perhaps producing an ocean a mile deep, though the ocean presence is still much debated. Given that life on Earth took hold well within that time, it's conceivable that Mars was once a rich, living planet as well. But unlike Earth, Mars is small: small enough that its interior cooled and lost its protective magnetic field, enabling the sun's solar wind to strip its atmosphere away. Without a significant atmosphere, the liquid phase of water became a virtual impossibility, and Mars became the arid world we know it to be today.

But certain ions—potassium, calcium, sodium, magnesium, chloride and fluoride, among others—get left behind when the liquid water disappears, leaving a "salt" residue of mineral salts (that may include table salt, sodium chloride) on the surface. While pure liquid water may not persist at standard Martian pressures and temperatures, extremely salty, briny water can indeed stay in a liquid state for extended periods under the conditions on the Red Planet. It's more of a "sandy crust" like you'd experience on the shore when the tide goes out than the flowing waters we're used to in rivers on Earth, but it means that under the right temperature conditions, liquid water does exist on Mars today, at least in small amounts.

The measured presence and concentration of these salts, found in the dark streaks that come and go on steep crater walls, combined with our knowledge of how water behaves under certain physical and chemical conditions and the observations of changing features on the Martian surface supports the idea that this is the action of liquid water. Short of taking a sample and analyzing it in situ on Mars, this is the best current evidence we have for liquid water on our red neighbor. Next up? Finding out if there are any single-celled organisms hardy enough to survive and thrive under those conditions, possibly even native to Mars itself!



Images credit: NASA/JPL-Caltech/Univ. of Arizona, of a newly-formed gully on the Martian surface (L) and of the series of gullies where the salt deposits were found (R).

Bill Goff's C-14 SiTech Conversion

Bill Goff sent me this picture of his Celestron C-14, and I want to share it with you. He has added ball declination bearings in place of the original bronze ones, and added a declination Byers worm gear. What really makes this upgrade special is the addition of the SiTech servo motor and controller, much the same system I installed on HGO's 16" Ritchey. This should make the C-14 drive very accurate and ultra smooth. Bill also changed out the original orange optical tube for a black carbon fiber one.

It looks really great!

Observer Editor

Pluto's Blue Sky

Pluto's haze layer shows its blue color in this picture taken by the New Horizons Ralph/Multispectral Visible Imaging Camera (MVIC). The high-altitude haze is thought to be similar in nature to that seen at Saturn's moon Titan. The source of both hazes likely involves sunlight-initiated chemical reactions of nitrogen and methane, leading to relatively small, soot-like particles (called tholins) that grow as they settle toward the surface. This image was generated by software that combines information from blue, red and near-infrared images to replicate the color a human eye would perceive as closely as possible.

Image Credit: NASA/JHUAPL/SwRI

SVAS Main Events

July

SVAS Sponsors!

DISCOVERY MUSEUM
Science & Space Center

TelescopeS.NET
by Woodland Hills Camera & Telescopes

OPT Telescopes
800-483-6287

STELLARVUE

Agena AstroProducts

For sale: A Meade 8" LX90, Schmidt Cassegrain Auto Star. This scope has been lightly used, and improvements have been made. The GOTO apparatus, with aid of the GPS make it easy to locate your favorite objects. A basic set of eye pieces are included, including a Mars filter. The pictured right angle finder scope saves craning your neck locating targets. Also included is a 12 hour power source. I'm asking $900 and will accept reasonable counter offers.
Please contact Dave Compton.

Check out Cloudy Nights Classifieds for Astro Stuff

For sale: NexStar 11 GPS with a couple extra lenses. Asking $1,500 (50% off purchase price!), will consider reasonable offers.
Contact; Kurt Robinson

The SVAS is not responsible for any advertised items For Sale.

SVAS Officers

President — *Walt Heiges*

Vice President — *Lonnie Robinson*

Secretary — *Kevin Heider*

Treasurer — *Kevin Normington*

Past President — *Ross Gorman*

SVAS Board of Directors

~ Even Year Term ~

Perry Preston Porter
Ramona Glasgow
Tom Braun

~ Odd Year Term ~

Bill Marquardt
Chuck Real
Charles Jones
David Macho

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Membership / New Members	Walt Heiges / Kevin Normington
Public Outreach Director	Walt Heiges
Star-B-Q & Resources	Walt Heiges
Yosemite Star Party	Tom Braun
Newsletter Editors	Lonnie Robinson / Walt Heiges
Speaker Seeker	Fera Zamani
SVAS Web Site	Gary Shuluk / Walt Heiges
SVAS Clothing	Charles Jones
Community Star Parties	Wayne Lord
Observatory Director	Perry Preston Porter
Help for Beginners	Perry Preston Porter
HGO Maintenance Director	Stuart Schulz
Amateur Telescope Making	Lonnie Robinson / Bill Thomas
Scholarships	Chuck Real / Kevin Normington

Where We Meet

General Meetings the third Friday of each month beginning at 8:00pm.
Board Meetings begin at 6:30 on the same day. All members are welcome.
Star Parties on weekends nearest the new Moon.

Sacramento City College
Mohr Hall Room 3
3835 Freeport Boulevard
Sacramento, CA.

WWW.SVAS.ORG

SVAS Observer - Newsletter

To Subscribe– First send in your membership application form below, with your dues, and upon approval by the Board of Directors the Observer newsletter (published bi-monthly beginning January) will be sent to your supplied email address in .pdf format. Second, request to join the SVAS Yahoo Group at http://groups-yahoo.com/group/svas-members. This group will keep you informed with the day to day current events and discussions.

Articles– Manuscripts and letters are welcome in MS Word, MS Publisher, or plain text format, and emailed to the SVAS Editor. Submission deadline is the 15th of the newsletter release month.

Advertising– Commercial, non-personal advertising, business card, and full page are available. Classified advertising is free to SVAS members.

SVAS Membership Application

Date___/ ___ /___ **Membership** *(check one)* **New:** ___ **or Renew:**___

Annual Renewal Date June 1st **(Expires July 1st)**

(Four months minimum membership is requested, please include the following year if necessary)

General Member *(Family–Individual)*	*Prorate @ $3 per month*	**$36 per yr** _____
Observatory Member *(Please read Observatory Membership)*	*Prorate @ $7 per month*	**$84 per yr** _____
Student Member *(ID required)*	*Prorate @ $2 per month*	**$24 per yr** _____

Additional Tax Deductible Contribution $ _____

Total Enclosed Amount $ _____

Print Name_____

Address_____

City _____ **Zip**_____

Phone_____ *(E-mail required for newsletter mailing)*

E-mail_____

Signature_____

SVAS.Org

Observatory Membership

Observatory Membership offers the benefits of a regular membership plus the private use of the Henry Grieb Observatory (HGO) at Blue Canyon. **To apply, you must have been a general member for six months or longer, be certified and approved by the Observatory Director, and then approved by the SVAS Board of Directors.**

Please allow 30 Days Or More for Application Approval

By signing this application, I acknowledge I have accessed the SVAS website **SVAS.org**, read and understand the SVAS bylaws and the rules governing the USFS Special Use Permit. In doing so, I agree to abide by the respective "terms and conditions" of each as they relate to using the SVAS property and facilities. I further understand and acknowledge that failure to abide by these "terms and conditions" can result in revocation of use privileges and/or SVAS membership.

Detach, *SIGN*, & mail with payment.

To: SVAS Membership Application
PO Box 15274 –0274
Sacramento, California. 95851-0274