

# Saguaro Astronomy Club



# SACnews

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## In the Shadow of the Moon

By Rick Tejera

Most of you who know me well, know that I have a deep interest in the history of manned spaceflight. Growing up at the height of the space race, I looked up to the Astronauts of the Apollo missions the way other kids looked up to sports stars. I'd built just about every model of a Saturn V, Apollo Command Module & Lunar Module there was. I had built & flown the Estes Saturn V, which was my pride & joy. Somewhere I still have movie film of it. Maybe for show & tell one day, if I can find it.

In the past few years I've embarked on a reading program as the memoirs of the men involved have been published. Reading about their journeys has brought back a fascination with their accomplishments that I find hard to express. To hear them tell it in their own words leaves a feeling of pride & envy that I can't explain.

Thus this past weekend when the Challenger Space Center had a Special preview of Ron Howard's film "In the Shadow of the Moon", I knew I had to see this film. The film is narrated entirely by 9 of the Apollo astronauts who recount their ex-

traordinary tales to recently unseen NASA Footage, much of it shot by the astronauts themselves during their missions. The stories they tell are deeply personal and go well beyond the documented history of the Apollo Program. They speak openly about their fears & concerns and how their journeys changed them.

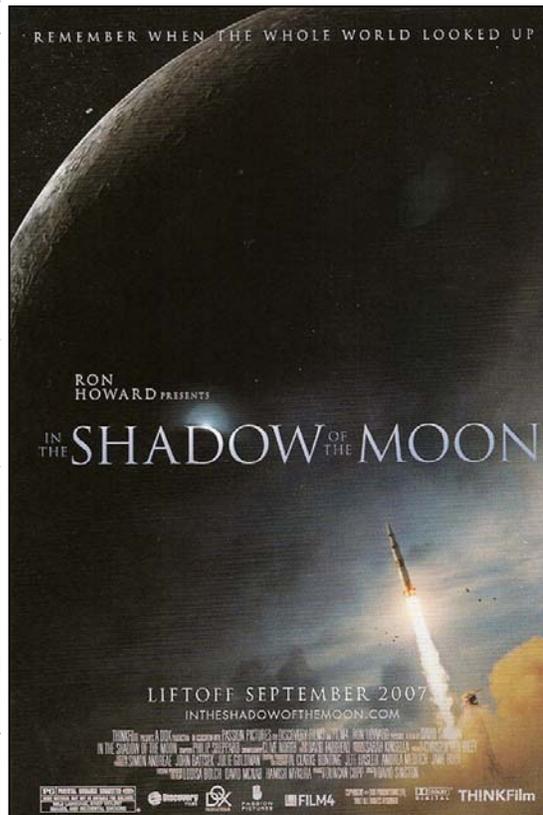
Much of the emphasis is on the race to be first on the moon and Apollo 11, but as you would surmise, the astronauts refer often to their own flights.

If there is a criticism, it would have to be that the film's documentary style can seem to drag.

The astronauts who recall their experiences are: Michael Collins, Jim Lovell, Buzz Aldrin, Alan Bean, Dave Scott, Edgar Mitchell,

John Young, Charlie Duke, Jack Schmidt & Gene Cernan. If you have any interest in Man's greatest technological Achievement, this film is a must see. It is playing in Phoenix at the Harkins CamelView Theatre.

See [www.intheshadowofthemoon.com](http://www.intheshadowofthemoon.com) for more info on show times.





## A Missile in Your Eye

by Patrick L. Barry

Satellite technology designed to catch ballistic missile launches may soon help doctors monitor the health of people's eyes.

For the last 15 years, Greg Bearman and his colleagues at JPL have been working on a novel design for a spectrometer, a special kind of camera often used on satellites and spacecraft. Rather than snapping a simple picture, spectrometers measure the spectrum of wavelengths in the light coming from a scene. From that information, scientists can learn things about the physical properties of objects in the photo, be they stars or distant planets or vegetation on Earth's surface.

In this case, however, the challenge was to capture snapshots of short-lived

events—like missile launches! The team of JPL scientists designed the new spectrometer, called a computed tomographic imaging spectrometer (CTIS), in collaboration with the Ballistic Missile Defense Organization as a way to detect missiles by the spectral signatures of their exhaust.

But now the scientists are pointing CTIS at another fast-moving scene: the retina of an eye.

Blood flowing through the retina has a different spectral signature when it is rich in oxygen than when it is oxygen deprived. So eye doctors can use a spectrometer to look for low oxygen in the retina—an indicator of disease. However, because the eye is constantly moving, images produced by conventional spectrometers would have motion blurring that is difficult to correct.

The spectrometer that Bearman helped to develop is different: It can capture the whole retina and its spectral information in a single snapshot as quick as 3 milliseconds. "We needed something fast," says Bearman, and this spectrometer is "missile-quick."

CTIS is even relatively cheap to build, consisting of standard camera lenses and a custom, etched, transparent sheet called a grating. "With the exception of the grating, we bought everything on Amazon," he says.

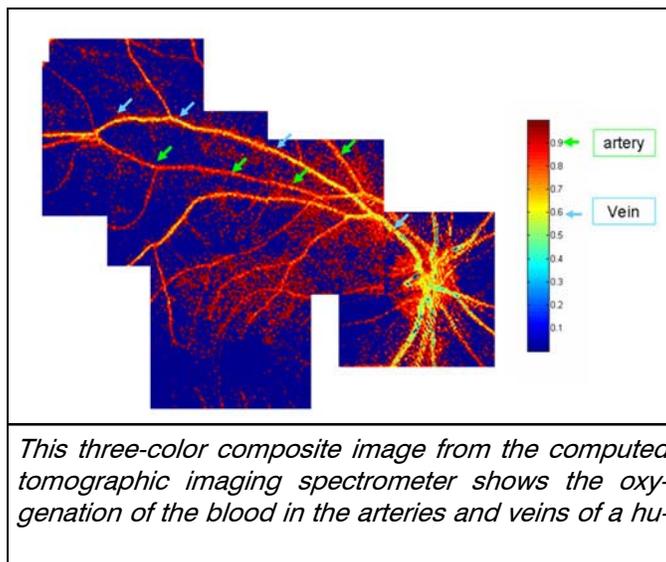
The grating was custom-designed at JPL. It has a pattern of microscopic steps on its surface that split incoming light into 25 separate images arranged in a 5 by 5 grid. The center image in the grid shows the scene undistorted, but colors in the surrounding images

are slightly "smeared" apart, as if the light had passed through a prism. This separation of colors reveals the light's spectrum for each pixel in the image.

"We're conducting clinical trials now," says Bearman. If all goes well, anti-missile technology may soon be catching eye problems before they have a chance to get off the ground.

Information about other NASA-developed technologies with spin-off applications can be found at <http://www.sti.nasa.gov/tto>.

*This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.*



## Ideal Astronomy Sight Saver

### A Product Review by Rick Tejera

When I got my laptop this past Christmas (thanks Sue), the first order of business after loading up all my astronomy software was to find a way to dim the screen for use in the field. Although SkyMap, my main observing program has a night vision mode, it does not completely darken the edges of the screen. I purchased a sheet of rubylith from Arizona Art Supply (Central & Indian School). I made a frame from foam board, the stuff that's used to mount photos. The only problem was it wasn't easy to get a smooth cut and the frame itself was pretty flimsy as there was only about 1/4 inch around the edges. It worked but just barely. I needed something a bit sturdier. Let the search begin.

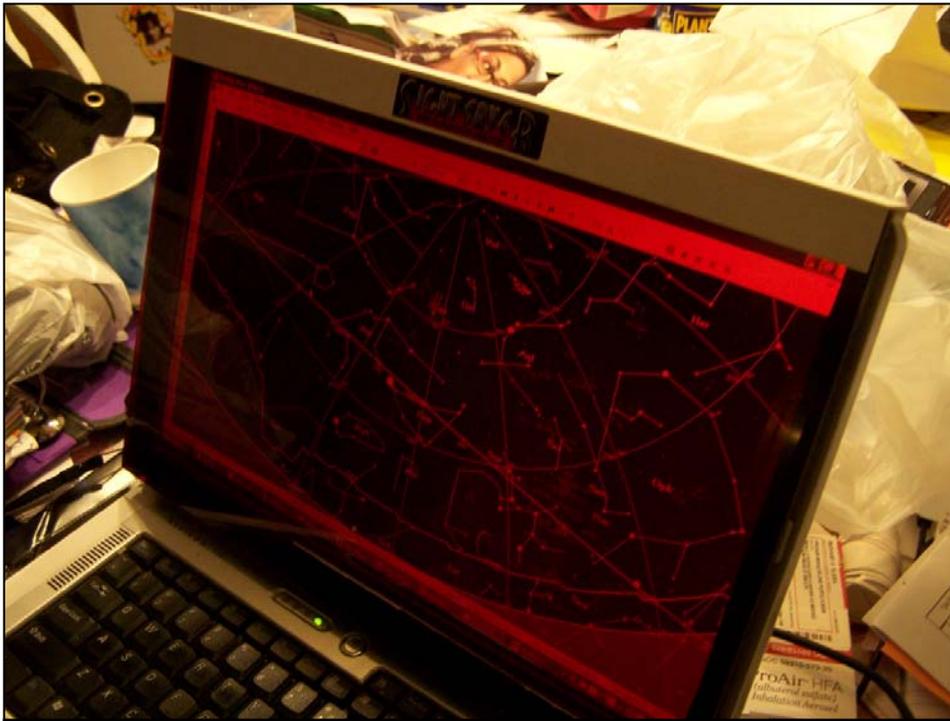
I recalled a few years back seeing a blurb in S&T or Astronomy for a plastic screen designed for the purpose. Problem was I couldn't remember the name of the company that made it. While looking for something else again entirely different, I found it! The Adirondack Video Astronomy website had a product listing for Ideal Astronomy. The name rang a bell and lo, that was it. The Ideal Astronomy "Sight Saver" comes in 4 sizes ranging in price from \$28.95

to \$34.95. The Sight Saver is made of a durable red acrylic plastic, which seems to be the same shade of red as rubylith. It has a plastic hook to hang over the top of your laptop's screen and foam lining along the edges to protect the computer and keep stray light from leaking out.

In use, I've found it to work as advertised. With the computer in night vision mode, the screen is easy to see yet dim enough to not bother ones night vision. The only problem I've had is the menus at the top of the screen are rendered almost invisible until you highlight them. Not the biggest deal as the same thing happened with the rubylith screen I'd made earlier. The Sight Saver fits nicely in my laptop bag, and has so far proven to be durable.

The Ideal Astronomy website has been "under construction" since February, but you can order from Adirondack Video Astronomy, which is where I got mine.

If you've been struggling to find a night vision solution for your laptop, the Sight Saver could certainly fill the bill.



*The Ideal Astronomy Sight-Saver fits neatly over the screen of HAL. For this picture, I didn't turn on night-vision mode*

# Call For Observations—Lyra

By A.J. Crayon

This month we have a new SAC member submitting observations for Lyra. He is David Hofland from Centre, Alabama. Last month he was sent a telescope plate for completing the Messier Catalog. Welcome aboard David and we hope to see you visit our state! Now let's take a look at the observations in Lyra.

## NGC6702 and NGC6703

**8" f6, Dobsonian, 81X;** Rick Tejera: **NGC6702**, Seen in same field as NGC 6703. Although it is smaller than 6703, it is brighter and can be seen with direct vision. It was seen as stellar with no other details readily visible. Averted vision did little to improve the view.

**8" f6, Dobsonian, 81X;** Rick Tejera: **NGC6703**, Seen in same field as NGC 6702. The larger of the two but lower surface brightness made it the more difficult to see. It was held with averted vision, noted merely as round. There is an arc of stars that points right to it making it easy to locate once you realize you'll need averted vision

**8-inch SCT at 104X;** Dick Harshaw: From suburban Kansas City, MO, **NGC6703** has a sharp nucleus but a faint halo. It is in a faint but rich field.

**8" f10, SCT, 286X;** Dan Gruber: **NGC6703** has a faint round halo about 3' diameter with a possible stellar nucleus. **NGC6702** is about 10 - 12' NNW of 6703. It is very faint with a uniform round halo less than 2' across.

**10" F4.5 Dobsonian, 163X;** Dave Hofland: In the 7mm UWAN 30" FOV an 8.1 mag yellow tinted star lies just inside the E edge, a ~15' long line of some 5-6 ~10.5-12 mag stars arcs away from that star to the SW->S. Although not immediately apparent with direct vision **NGC6703** lights up easily with averted vision, a 3-4' diameter round hazy glow, somewhat brighter centrally, overlying the fainter stars at the end of this arcing line of stars. SEDS reports Vmag 11.4, Skytools 12.4, to me it seems fainter than 11.4. **NGC6702** is much more difficult, visible only with patient AV as a ~2' diameter dim hazy spot about 12' north of the brighter **NGC6703**. The galaxy disappears rapidly when looked at directly. In the northern hemisphere of the FOV there are two side by side triangles of ~11-12+ ish stars lined up ~ E-W, the S point of the W triangle points to **NGC6702** about 3' S. SEDS reports Vmag as 12.2, Skytools says 13.4, I found the difficulty more in line with Skytools estimate.

**11-inch SCT at 193X;** Dick Harshaw. From suburban Kansas, City, MO, **NGC6703** is difficult nucleus and small halo. It forms a triangle with two 11m stars to the N.

**14.5" f4.7, Newtonian, 192X;** Paul Lind: **NGC6702**, pretty small, very faint, and gradually brighter in middle. **NGC6703** is pretty small, considerably bright, elongated, and gradually brighter in middle. Same field as 6702 but much easier.

## NGC6646

**8" f10, SCT, 182X;** Dan Gruber: A diffuse, faint round halo

less than 2' in diameter embedded near the base of a SW pointing isosceles triangle of mag 9 - 10 stars about 10' X 5'. No nucleus was observed.

**10" F4.5 Dobsonian, 163X;** Dave Hofland: Very difficult object, required concentrated averted vision, the galaxy only appears on again / off again as a dim and diffuse small ~1' diameter soft glow about halfway between 8.8 mag SAO 67027 and 9.6 mag SAO 67032 and a couple minutes SW. It disappears upon direct vision. Also popping into view a few times was another small galaxy IC 1288, a very small <1' diameter, very faint spot of glow about 20' SW.

**11-inch SCT at 98X;** Dick Harshaw: From suburban Kansas, City, MO. It is very faint and uniform disc with no concentration to a core.

**14.5" f4.7, Newtonian, 192X;** Paul Lind: pretty small, very faint, diffuse, and not brighter in middle.

## Struve 525

This is actually a quadruple star, but was billed as a double. The AB components, PA 128° separation 1.7", being the ones with color contrast. The mag 7.7 tertiary has separation of 45.4" in PA 35° and the mag 10.6 fourth has separation of 193" in PA 285°. Thanks to Dick Harshaw for jogging me to do the extra research.

**8-inch SCT at 104X;** Dick Harshaw: From suburban Kansas, City, MO. There seems to be an 11<sup>th</sup> mag star 5" from B at PA 160. Nothing shows up in TheSky here, but RealSky does show a star of this description at this location. I wonder why it is not mentioned in any of the notes and/or catalogs I've browsed. I saw both stars as white (sorry, AJ!). The spectrum of the primary is A2.

**8" f6, Dobsonian, 135X;** Rick Tejera: Seen as widely and easily separated the brighter of the two is yellow and the secondary, blue. It is very similar to Albiero and a very nice double.

**8" f10, SCT, 182X;** Dan Gruber: A widely separated (~60") pair of stars at PA 170. The primary is bluish and the slightly dimmer secondary is yellow-white. (At 286X, I was unable to split the primary which itself is a 2" double.)

**10" F4.5 Dobsonian, 46X;** Dave Hofland: The colorful pair is striking in the eyepiece and is unmistakable. The primary shines at ~6 mag and is a brilliant yellow-orange. The secondary is a bright blue ~7.5 mag, PA ~ 350 Sep ~45". The 46x was the best view, increasing the mag tended to wash out the color.

## M57

**14X70 binoculars;** Dick Harshaw: Kansas City, MO, Very faint fuzzy star between Beta and Gamma. In hazy skies, it was very difficult.

**8" f6, Dobsonian, 49X;** Rick Tejera: Dreyer described this object as:!!!, ring , B, pL, cE (in Lyra); = M57. This magnificent planetary was observed at Buckeye Hills Ring

*(Continued on page 5)*

(Continued from page 4)

shape evident, inner part of ring darker to west. Central star not resolved.

**8-inch SCT at 104X**; Dick Harshaw: Kansas City, MO, wonderful view! The planetary nebula has a greenish oval that takes high power very well. Note the very faint star just off the E edge, and a 12<sup>th</sup> mag star to the E.

**8" f10, SCT, 286X**; Dan Gruber: This planetary nebula is roughly 60" X 90" elongated E - W. It is an annulus with a darker center. Through the eyepiece it looks as though the north and south arcs of the annulus have been joined along the E - W axis. The annulus is thinner at the E and W ends where the two arcs meet than in the middle of each arc.

**10" F4.5 Dobsonian, 163X**; Dave Hofland: Bright and conspicuous at **46X**. **163X** appears as a bright ~1.5' diameter oval shape with a decreasing brightness centrally, like a tiny slightly compressed donut, elongated more or less in a NE-SW alignment. Edges are a bit fuzzy, and there is some slight degree of lacy texture apparent in the periphery with averted vision. I was not able to distinguish the central star, and I did not note any color. A faint ~12.5 mag star is seen ~20" off the Ring's east edge. Increasing the magnification to **285X** didn't improve any details, seeing average at best.

#### NGC6765

**8" f6, Dobsonian, 81X**; Rick Tejera: Seen as Small & Bright. Round with a less defined edge to the NE. Gradually brighter in the middle.

**8-inch SCT at 104X**; Dick Harshaw: From suburban Kansas, City, MO. It was an extremely faint blurred star. The central star is 16.0m.

**10" F4.5 Dobsonian, 163X**; Dave Hofland: About 1° WNW of M56; faint, small ~30" diameter round spot of glow, unable to distinguish any texture or other details or color. Two mag 9.7 stars are the brightest field companions, one ~2' W, the other ~3' ESE.

**11-inch SCT at 140X with OIII**; Dick Harshaw: Oval shaped with a star involved on the NE side. It is in a moderate field.

**14.5" f4.7, Newtonian, 192X**; Paul Lind: This planetary nebula is pretty small very faint, elongated, perhaps gradually brighter in middle.

#### RR Lyre

**8" f10, SCT, 118X**; Dan Gruber: A mag 8 yellow-white star somewhat isolated in its field. There were three possible mag 9 - 10 doubles nearby: <10' at PA 90, ~10' at PA 260, and ~10' at PA 280. I didn't observe any brightness change in several observations over about an hour.

**8" f6, Dobsonian, 135X**; Rick Tejera: Seen as Between Orange & Yellow. It seemed to flicker between the two colors depending on the seeing. Easy to identify as there is an arcing chain of 5 stars to the north.

**10" F4.5 Dobsonian, 71X**; Dave Hofland: Bright white, brightest in the FOV, based on comparisons with other

non-variable stars in the vicinity I judged it at mag 7.5 at 11:00 pm CDT tonight.

#### Call for Observations

After a while looking at potential candidates for the November column I have settled on Aquila. There is enough for two columns. So here is the list for the first. For starters take on the cometary dark nebula **Barnard 133**. Be sure to take a look in your finder to see if that is a better view. Next are two open clusters a half-degree apart. First is **NGC6755**, the larger and brighter of the two. It includes another open cluster Czernik 39 to the northwest and the diffuse nebula Cederblad 166 to the north of northwest. The second **NGC6756** is to the north of northeast from the main cluster. Next up is the globular cluster **NGC6760**, which should be small and kind-of faint. Now try the planetary nebulas **NGC6803** and **NGC6804**. NGC6804 is just 50' south of NGC6803. There is a nice arching trail of stars between the two that should easily be seen in a finder. NGC6803 is the brighter, but much smaller, like stellar; yet NGC6804 is larger but has a low surface brightness. Your choice as to which you want to find first. Last are **Barnard 142** and **Barnard 143**. Together they form Barnard's famous "E". This is best seen in your finder, but if you have an RFT try it and let us know your impression. Otherwise pan around with your lowest power eyepiece.

For December Sculptor is our choice. Star parties from desert vistas for the remainder of the year will have good southern horizons making the selection a good choice. Let's see what is in the often overlooked area of the fall sky. From a list of about 40 of the brighter objects, all but two are galaxies, so we have enough for return visits. For our first visit check out **NGC7793** to which the NGC Description says *Like a comet (1850)*. Since this is a late spiral we should expect to see more than its elongation. Next is the large, scattered open cluster **Blanco 1**, also called the  $\zeta$  Sculptoris cluster, located at R.A. 00h 04.3m Dec -29° 56'. Low powers and wide field telescopes will do a good job on this cluster that is about 90'. Moving on we go to the magnificent galaxy **NGC 253**. This galaxy and the next object, the globular cluster **NGC 288** are on the Herschel 400 list. Would you characterize it loose, tight or in-between? The **Sculptor Dwarf** will be a challenge object and will need clear, steady and transparent skies. It is located at R.A. 00h 59.9m Dec -33° 43'. Don't let its surface brightness of 17<sup>th</sup> magnitude scare you off. Just pan around the area looking for a change in the background. If you can see any stars in this galaxy please, by all means, call me over. Last will be the barred spiral, and also a member of the Herschel 400, **NGC 613**.

## President's Corner

### By Rick Tejera



Not a lot of room this month, so I'll be brief. First up, mark your calendars for October 20th. This is the date of the fall edition of the Thunderbird Starwatch. Sunset is at 1740 so get there early to set up. As usual park rangers will be available to let you onto the observing field. Directions to Thunderbird park are on page 10 of this issue. Thunderbird is our premier public event and is always well attended, so please plan on attending.

Next, it's that time of year. Elections for officers for 2008 are around the corner, so it's time to consider putting your name in the hat. All positions are open, in fact the only position that will not come on term limits is that of Secretary. All other officers must step down at the end of the year. This is your chance to help the club begin the

next 30 years of Observing in Arizona.

Per the Constitution, we will begin to accept nominations at the October meeting. Nominations will be closed at the November meeting and if necessary, an election will follow immediately on the close of nominations.

As the cooler weather sets in, our star parties will shift from Cherry Rd. As was discussed earlier this year, we need to find a replacement for Flat Iron as development there makes the site no longer available. We have two candidate sites: Saddle Mountain, near Tonopah and Dirt Rd Blvd, near Arlington. For the October star party, we'll head out to Saddle Mountain, Directions are on page 10 of this issue. For the November Star party we'll go to Dirt Rd Blvd and compare notes. We can then come to a consensus as to the best location.

Till Next Month, Clear Skies

## Monthly Trivia Question

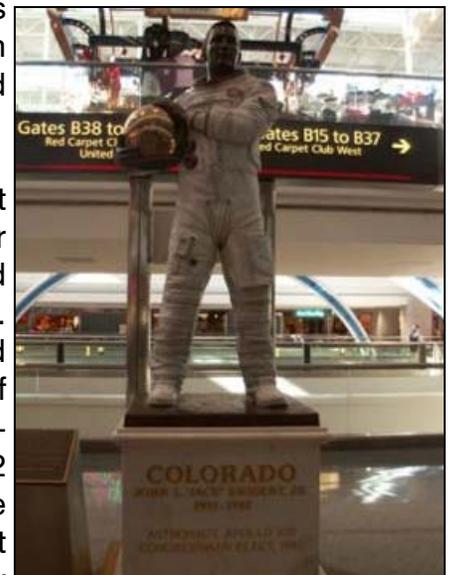
Name the only two astronauts who flew the X-15.

Last month's Answer: Who is the only astronaut honored with a statue in Statuary Hall in the U.S. Capital Building? What State was he from?

This one came to me while my family was on vacation in Washington D.C. We were touring the U.S. Capital. The tour guide had explained that each state is entitled to have two statues of notable residents in Statuary Hall (which was the original House of Representatives chamber). There are only two conditions: the persons honored must be dead, and the statues must be made of either marble or bronze. The Hall itself is not large enough to hold all 100 statues, so many are placed throughout the rest of the Capital. While looking for a restroom, we ended up down a poorly lit hallway that seemed to lead out of the building. It was here I noticed a statue that stood out from the

other nearby. I found myself looking at a bronze representation of Jack Swigert, the Command Module pilot of the ill fated Apollo 13. His statue was fully adorned in his space-suit which was painted, which made it stand out.

Swigert left NASA after Apollo 13 and entered politics. He was elected to the House of Representatives in 1982 from his native Colorado, but passed away from cancer before he could take office.



*Swigert monument at Denver International Airport, identical to the one in the National Statuary Hall Collection.*

# November 2007

SUN	MON	TUE	WED	THU	FRI	SAT
				1 ☾	2	3 SAC Star Party, Dirt Rd. Blvd.
4	5	6	7	8	9 ●	10 Sentinel Schwaar Stargaze-- Sentinel
11	12	13	14	15	16 SAC Meeting, GCU 1930	17 ☽
18	19	20	21	22	23	24 ○
25	26	27	28	29	30	

## Schedule of Events for September 2007

Nov. 1st	Moon at 3rd Quarter at 1418mst.
Nov. 3rd	SAC Star Party at Dirt Rd Blvd, Sunset 1737 End Ast. Twilight 1902, Moonrise 0314.
Nov. 9th	Moon is new at 1603mst.
Nov 9th-10th	Sentinel Schwaar Star Gaze, Friday: Sunset 1736, Ast. Twilight Ends 1900; Ast. Twilight begins 0534. Saturday: Sunset 1735, Moonset 1750, Ast. Twilight Ends 1859, Ast. Twilight Begins 0534
Nov. 16th	SAC General Meeting at Grand Canyon University at 1930, Speaker: TBA
Nov. 17th	Moon at first Quarter at 1532mst
Nov. 24th	Moon is full at 0730mst.

## Bits & Pisces, Minutes of the August 24th General Meeting By Jennifer Polakis



This was such a good meeting! There were 38 present including 3 visitors. President Rick Tejera announced that Dr. Paul Davies (see bio SACnews September 2007) will be the speaker at our 30<sup>th</sup>

Anniversary soirée on September 29<sup>th</sup>. Treasurer Paul Dickson gave a favorable report of our treasury noting we remain unscathed by the sub-prime lending industry debacle. He had received 31 reservations for the anniversary dinner.

Upcoming events include our next general meeting on Friday, September 28<sup>th</sup>, followed by the anniversary shindig on Saturday, September 29<sup>th</sup>, Star Parties on October 6<sup>th</sup> and 13<sup>th</sup>, and our big annual public star party at Thunderbird Park on October 20<sup>th</sup>. As usual note the Schedule of Events in SACnews and refer to our website as well. Not mentioned was the most phenomenal lunar eclipse I've ever experienced during the wee hours of Tuesday, August 28<sup>th</sup>. The



ALL ARIZONA STAR PARTY is October 12<sup>th</sup> & 13<sup>th</sup>—refer to [www.eastvalleyastronomy.org](http://www.eastvalleyastronomy.org) for more information.

On with the SHOW (and tells). VP Paul Lind had the coolest show and tell in the history of SAC. He was



The Slaying of the Scorpion by Joe Tucciarone (Novaspace Galleries)

recently in Chicago for the 50<sup>th</sup> Year Reunion of his Chicago Jr. Astronomical Society. Paul was the only one of the bunch who h a d n ' t changed at all.

AJ Crayon gave an account, members' observations, and a brief history of the Table of Scorpius and John Herschel's observations of it from South Africa. AJ got some of his information from the great Asterism discoverer and current President of the Astronomical Society of Southern Africa, Magda Streicher.

Jeff Hopkins presented the binary system SZ Hercules' photometry—contact Jeff @ [phxjeff@hposoft.com](mailto:phxjeff@hposoft.com) or Gene Lucas @

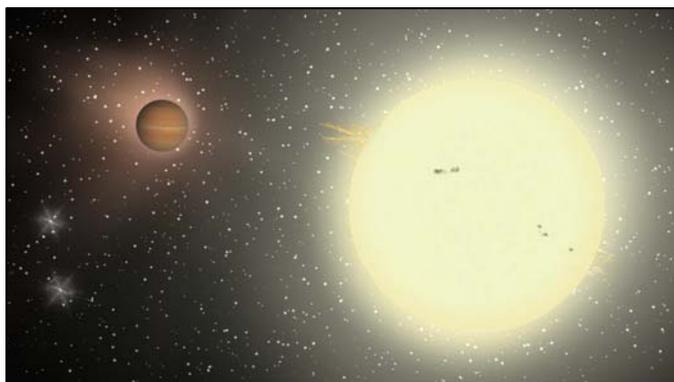
[luca@ix.netcom.com](mailto:luca@ix.netcom.com) for information on how you too

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(Continued from page 8)

can do photometry. Gene Lucas had photographs of the late Peter Manly, an amateur astronomer and former SAC member who recently passed away. Chris Hanrahan showed glorious views of the Aurora Borealis as experienced from his former home of Glenbeulah Wisconsin and Tom Polakis showed some of the astronomy related photos and time lapses of his recent raft trip through the Grand Canyon.

The speaker was Dr. Ted Dunham, Instrument Scientist for Lowell Observatory and the title of his presentation was "TrES-4 and Other Diversions". Ted &



*A computer-generated simulation of TrES-4, with its host star on the right. The planet's home star is bigger and hotter than the Sun, and is about ten times larger than the planet. Astronomers speculate that the large size and low density of TrES-4 may cause a small fraction of its outer atmosphere to escape from the planet's gravitational pull and form an envelope, or a comet-like tail around the planet. Credit: Jeffrey Hall, Lowell Observatory.*

Lowell's PSST are part of The Trans-atlantic Exoplanet Survey which is using 3 wide field small scopes for extra solar planet detection and TrES-4 is their newest discovery: Check this link for more information: <http://www.lowell.edu/media/releases.php> Ted's other diversions include S.O.F.I.A., TESS, The Discovery Channel Telescope & Kepler. SOFIA (Stratospheric Observatory for Infrared Astronomy) is a 2.5M scope in a 747 airplane; it hopefully had a closed door flight test on September 7<sup>th</sup> and following more work and tests, should be ready to do some basic science by the 2<sup>nd</sup> half of 2009. TESS (Transiting Exoplanet Survey Satellite) is a low earth equatorial orbit satellite utilizing 9 cameras to survey the sky for extra solar planets. The Discovery Channel Telescope building is done except for the dome and its 4.2m mirror is currently being ground at the University of Arizona. The Kepler Mission survived a cut and may be scheduled to launch in February 2009. Check [www.kepler.arc.nasa.gov](http://www.kepler.arc.nasa.gov) and [www.sofia.usra.edu](http://www.sofia.usra.edu) for more information. It's amazing Ted found the time to come down from Flagstaff to make such a great talk!

Twenty three of us hard core amateur astronomers and 1 real astronomer met with JB's head waitress afterward to discuss the possibility of installing an extra solar planet detecting telescope in their kitchen for Ted to use when he's down in the light dome.

## Such-A-Deal

Telescope for sale - Tasco 11TE 5  
mirror diameter 4 1/2", focal length 900mm  
mount - combination alt-az and equatorial  
owner's manual included  
the polar axis has a stud for attaching a clock drive (not included)

It has been in storage for the last 25 years and is available to the first person for \$100.00.

This is a good starter telescope for someone that is interested in visual astronomy, doesn't yet own a telescope, doesn't want to invest lots of money for one and wants a starter telescope.

Interested parties can call Hal Balough at 623-582-8047 or e-mail at [hba-lough@msn.com](mailto:hba-lough@msn.com)



# SAC Meeting and Observing Sites

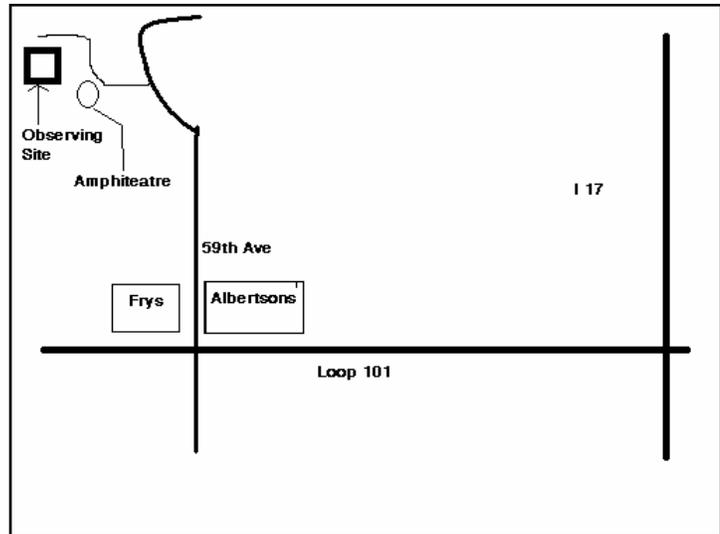
## Saddle Mountain



Take I-10 west to the Wintersburg Rd. Exit (exit 98). Head south (left over the freeway) 9.6 miles to Elliot Rd. Note the Wintersburg Road changes it's name to S 383rd Ave 7.6 miles from the freeway (Along the Baseline Rd Alignment). Turn West (right) onto Elliot for 6.1 miles. The road turns to dirt at this point and swings north onto S 435th Ave. After 1.1 miles it turns left (West) onto Dobbins Road. Go 2.5 miles and the entrance to the site is just past a bow in the road. GPS Coordinates are:  
 N33 21.863, W 113 01.904

## Thunderbird Park

Take the Loop 101 to 59th Ave. Turn North onto 59th Ave. (toward the Albertson's & Fry's Supermarkets) go about 1 1/2 miles on 59th Ave. until the road starts to climb the hill. The entrance to the park is on the left, 4/10 of a mile past the light at Deer Valley Rd. Go to the right of the amphitheater and follow the signs to the sight. Rangers will be there to guide you if you get misplaced (easy to do if you've never been there)



## Dark of the Moon Star Parties

<i>Date</i>	<i>Sunset</i>	<i>Moonset</i>	<i>Twilight</i>	<i>Location</i>
<i>May 19th</i>	<i>1931</i>	<i>2311</i>	<i>2109</i>	<i>Antennas</i>
<i>June 16th</i>	<i>1941</i>	<i>2142</i>	<i>2127</i>	<i>5 Mile Meadow</i>
<i>July 14th</i>	<i>1942</i>	<i>2019</i>	<i>2124</i>	<i>Cherry Road</i>
<i>August 18th</i>	<i>1913</i>	<i>2157</i>	<i>2044</i>	<i>Cherry Road</i>
<i>September 15th</i>	<i>1835</i>	<i>2028</i>	<i>2000</i>	<i>Cherry Road</i>
<i>October 13th</i>	<i>1804</i>	<i>1911</i>	<i>1926</i>	<i>Antennas</i>
<i>November 10th</i>	<i>1735</i>	<i>1749</i>	<i>1900</i>	<i>Antennas</i>
<i>December 8th</i>	<i>1726</i>	—	<i>1855</i>	<i>Antennas</i>

## SAC Membership Services

**Membership**— Memberships are for the calendar year and are pro-rated for new members as follows: Jan– Mar: 100%; Apr– Jun: 75%; Jul–Sep: 50%; Oct–Dec; 25%.

- \$28.00 Individual Membership
- \$42.00 Family Membership
- \$14.00 Newsletter Only
- \$10.50 Nametag for members,  
Pinned Clasp
- \$12.50 Nametag for members,  
Magnetic Clasp  
(will be mailed to address below)

### Magazine Subscription Services

The following magazines are available at a discount to club members. Check the magazines you wish to subscribe to or renew, and pay the club treasurer. Please allow 3-4 months for the order to be processed.

- Sky & Telescope      \$33.00/yr
- Astronomy              \$34.00/yr
- Astronomy              \$60.00 for 2 Years

Please Print

**Make Check Payable to : SAC**

Name: \_\_\_\_\_

**Bring completed form to a meeting or  
mail it with your remittance to:**

Address: \_\_\_\_\_

**SAC Treasurer  
c/o Paul Dickson  
7714 N 36th Ave  
Phoenix, AZ 85051-6401**

City: \_\_\_\_\_ St: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

- Check here if this is an update of information  
already on file.

E-Mail: \_\_\_\_\_

### SAC on the Internet

**SAC has several E-mail mailing lists. To subscribe, send an email to the email address and put Subscribe in the subject box.**

**SAC-Announce@freelists.org:** SAC-Announce is a mailing list for just club announcements. Typically 3-5 messages per month.

**SAC-Forum@freelists.org:** SAC-Forum is a general discussion mailing list. Topics should be related to Astronomy or SAC

**SAC-Board@freelists.org:** SAC-Board is a mailing list for discussions of club business. If you'd like to see how the club is run (or not run), or have a question about the club, this is the list to read. Typically month to month matters are discussed.

**AZ-Observing@freelists.org:** AZ-Observing while not a Sac list, is well attended by SAC members. This is the list to with observing places around Arizona. Find out where people are going and what they saw.

### Printed Newsletter

Sac can save a lot of money if you download the PDF version of the newsletter. PDF files are readable by both PC's and Macs. When the newsletter is published, a message will be sent to the address indicated above with the URL of the newsletter. Check the box below if you don't have access to the internet or if you prefer a printed copy.

- Please send me a hard Copy of the newsletter

# SAGUARO ASTRONOMY CLUB

October 2007

5643 W. Pontiac Dr  
Glendale, AZ 85308-9117

Phone: 623-572-0713

Email: [newsletter@saguaroastr.org](mailto:newsletter@saguaroastr.org)



*Videmus Stellae*



## SAC Schedule of Events 2007

### SAC Meetings

January 5th, 2007	July 27th, 2007
February 2nd, 2007	August 24th, 2007
March 2nd, 2007	September 28th, 2007
April 6th, 2007	October 26th, 2007
May 4th, 2007	November 16th, 2007
June 1st, 2007	December, 2007
June 29th, 2007	Holiday Party-TBA

### SAC Star Parties

Date	Sunset	Astronomical Twilight Ends	Moonrise	Site
Jan 13th, 2007	1725	1854	0336	F
Feb 10th, 2007	1811	1935	0223	F
Mar 10th, 2007	1835	1958	0112	F
Apr 14th, 2007	1901	2029	0447	F
May 12th, 2007	1927	2059	0311	C
Jun 9th, 2007	1940	2125	0140	C
Jul 7th, 2007	1944	2128	0013	C
Aug 11th, 2007	1920	2054	0522	C
Sep 8th, 2007	1845	2011	0415	C
Oct 6th, 2007	1809	1932	0314	F
Nov 3rd, 2007	1737	1902	0207	F
Dec 1st, 2007	1723	1851	0057	F

### Future Planning

June 15th-16th, 2007	5 Mile Meadow Star Party
Sept. 29th, 2007	SAC 30th Anniversary Celebration Dinner
November 9th-10th, 2007	Sentinel Schwaar Stargaze

F= Flat Iron; C= Cherry Road