

September 2006

The Voyager

East Valley Astronomy Club

Volume 20 Issue 9



From the Desk of the President by Steven Aggas, 2006 EVAC President

On September 22nd, there will be an Annular Solar Eclipse. The path of annularity will begin off the coast of Brazil and move east and south through the Atlantic Ocean where it will end just off the coast of Antarctica. The partial eclipse will be visible throughout most of South America and western Africa! If you're unable to travel, don't worry, on September 23rd there will be the Autumnal Equinox which occurs in the northern hemisphere

at 04:03 UT. There will be equal amounts of day and night and is also the first day of fall. For those wanting to observe, Mercury will be 1.8° north of Moon on September 15th. There are all kinds of things to do in astronomy! Keep looking up (or around if you're going to witness the equinox)!

As for our speaker for the September EVAC General Assembly meeting, we will have Mr. Gerry Rattley give us a presentation on the recent Solar Eclipse!

Join us at the Southeast Regional Library (Gilbert Public Library) on Friday, September 15th at 7:30PM. The GPL is located at the Southeast corner of Greenfield and Guadalupe Roads.



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The Backyard Astronomer Unusual Star Names by Bill Dellenges

Let's start with the noted case of Sualocin and Rotanev, Alpha and Beta Delphini respectively. These names first appeared in the Palermo Observatory (Sicily) Catalogue of 1814. The observatory's director, Giuseppe Piazzi (1746-1826), apparently wanted to honor his assistant, Niccolò Cacciatore, by naming these two stars after him. First he latinized the name to Nicolaus Venator, and reversed those letters. Credit for discovering the "hoax" is often given to the

English astronomer Reverend Thomas W. Webb (1807-1885). Interestingly, we will likely hear more about Piazzi in the near future due to the impending decision of the I.A.U. to upgrade the asteroid Ceres to planetary status. Ceres, the largest asteroid (583 miles in diameter) in the Asteroid Belt, was the first one to be discovered on January 1, 1801 by - you guessed it - G. Piazzi. He was one of 24 astronomers, the "Celestial Police", who were to search for the

missing planet predicted by the Titius/Bode Law to be 2.8 astronomical Units from the sun. But before the program got off the ground, Piazzi found Ceres by accident!

Our next specimen is Gomeisa, Beta Canis Minoris. The name itself is not so funny, but I never fail to get a laugh at public star parties when I explain to the group that the name is from an Arabic word meaning "Little bleary

(Continued on page 2)

September Events:

- *Public Star Party in Gilbert - September 8*
- *General Meeting at Southeast Regional Library - September 15*
- *Local Star Party at Boyce Thompson - September 16*
- *Deep Sky Star Party at Vekol Road - September 23*

The Backyard Astronomer

(Continued from page 1)

eyed one with a filthy fluid in the corner of the eye”, per Kunitzsch in Short Guide to Modern Star Names.

How can you not love the sound of Zubenelgenubi? Don't you love to throw that at the public? Otherwise known as Alpha Librae (magnitude 2.8), this is one of the 30% of constellations where the “Alpha” designation star is not the brightest star in its constellation. Beta Librae, Zubeneschamali, is a magnitude 2.6. Hey, that's kind of funny to say too!

In Serpens Cauda (the eastern half or tail of the Serpent), can be found the multiple star (Struve) $\Sigma 2375$ or ADS 11640. Sue French had a nice write-up on this star in the August 2001 S&T. It's a double-double but forget about splitting the close pairs which have separations of only 0.1”. But the AB x CD (Mag 6.4, 6.7) pair is relatively easy at 2.5”. I split it with a C-8 at 166x. Now, it seems that in 1953, astronomer W.S. Finsen noticed the two pairs had identical orientations and as a result, coined them “Tweedledee and Tweedledum after characters in Lewis Carroll's “Through the Looking-Glass.” I don't know if this was recognized by the I.A.U. but the names are shown in the notes column of this double star

in Sky Catalog, Vol.2, P.118. To find this star, look for it one degree east of the open cluster I.C. 4756 at RA 18h 45.5m +5° 30'.

The two stars just above and below M44, the Beehive Cluster, in Cancer are Asellus Borealis (Gamma Cancr) and Asellus Australis (Delta Cancr), the northern and southern asses. Asellus is from the Latin asinus for ass or in polite circles, donkey. Since M44 is also called the Praesepe (manger), the equines seem to be looking for a free meal.

Does the star Sidus Ludoviciana (Luwig's Star) ring a bell? Didn't think so. The next time you're observing the popular double star, Mizar, note between Mizar and Alcor there is a dim 8th magnitude background star. In 1722, J.G. Liebknecht, a German professor of mathematics and theology, thought he detected motion of this star relative to Mizar and Alcor. Thinking he had possibly discovered a new planet, he named it after his monarch, Landgrove Luwig. Other astronomers where dubious and the matter was quickly disregarded. For more, see Astronomical Scrapbook by J. Ashbrook, page 367.

Someone really tried to pull a fast one regarding Regor, Dnoces, and

Navi as detailed in Ed Krupp's Sky and Telescope column of October 1994, page 63 (and S&T April 2003, p. 90). Regor is Gamma Velorum, Dnoces Iota Majoris, and Navi Gamma Cassiopeiae. According to Krupp's article, astronaut Virgil Ivan Grissom and planetarium director Tony Jenzano conspired to create three new star names to add to a list of 37 navigation stars for the Apollo moon project. He reversed his middle name Ivan to Navi. Edward White the Second had the second reversed to Dnoces, and Roger Chaffé's first name is reversed to Regor. For a time S&T's old blue background center star charts reflected these “new” star names. Most other star charts have dropped the use of these names – if they ever did use them. Perusing my books, I could only find them listed in The Cambridge Guide to the Constellations (Michael Bakich, 1995). Surprisingly, they can also be found listed under star names in the Celestron CPC database. Sadly, the three astronauts perished in the Apollo 1 cabin fire on January 27, 1967.

So it looks like Grissom tried to pull another Sualocin/Rotanev caper. I wonder, is that where he got the idea?

STS 115: Atlantis

Atlantis Set for Construction Mission

The Space Shuttle Atlantis is set to launch from NASA's Kennedy Space Center no earlier than Sunday, Aug. 27.

With the final launch rehearsal completed, the STS-115 crew gathers on the 215-foot level of the fixed service structure on Launch Pad 39B. From left are Pilot Christopher Ferguson, Mission Specialists Heidemarie Stefanyshyn-Piper and Joseph Tanner, Commander Brent Jett, and Mission Specialists Steven MacLean and Daniel Burbank.

Commander Brent Jett and his five crewmates will travel to the International Space Station to install a new 17-ton segment of the station's truss backbone, adding a new set of giant solar panels and batteries to the complex. Three spacewalks are planned.

Photo credit: NASA/Cory Huston



It's Your Club

It's almost that time of year again... time to elect club officers for next year.

The EVAC governing body consists of four executive offices - President, Vice President, Secretary and Treasurer - each subject to a two-year term limit. The five Directors are the voting members that enable the President's proposals to be submitted to the membership for ratification. This Board is also subject to a two-year term limit. The remaining five administrative positions do not carry term limits, rather they are filled by willing volunteers appointed by the President. These positions include Event Coordinators, Properties Director, Newsletter Editor, Webmaster and Observatory Manager.

Unfortunately, there hasn't been much voting in the EVAC elections. Usually an open position receives a solitary nomination, and this person is *elected* by default.

Maybe this year we'll start a new tradition, one in which every office will be contested. In fact, every office may be challenged. Simply announce your intention to seek office prior to the official October nominations, and count the votes in November!

As the table to the right depicts, the club has to fill some very important positions for 2007: President, Treasurer, Secretary and one slot on the Board of Directors. Some incumbents have reached their term limit and must be replaced as mandated by the club's bylaws, some have decided to vacate their office after one year.

All positions may be contested, but if you are looking to take an active role in your club, please consider throwing your hat into the ring for one of the vacant positions.



Office	Officer	Eligible in 2007
President	Steven Aggas	No
Vice President	Silvio Jaconelli	Yes
Secretary	Tom Polakis	No
Treasurer	Wayne Thomas	No
Director	Claude Haynes	Yes
Director	Martin Thompson	Yes
Director	John Holmquist	No
Director	Chuck Crawford	Yes
Director	Howard Israel	Yes
Event Coordinator	Randy Peterson	No term limit
Property Director	David Hatch	No term limit
Webmaster	Marty Pieczonka	No term limit
Newsletter Editor	Peter Argenziano	No term limit
Observatory Manager	Chuck Crawford	No term limit

Participate in Your Club!

Important Dates

October 14: Nominations are announced at the October general meeting and close at the start of the November meeting.

November 17: Elections held at the November general meeting.

January 1: All offices officially begin.

Where is M13?

by Peter Argenziano

In the constellation Hercules, you say? True enough. We can glean this bit of information, along with much more, from our favorite astronomy atlas or planetarium program. But, until now, the really fundamental question of where M13 (along with 838 other deep sky objects) is located remained a mystery.

Enter Bill Tschumy (Think Astronomy) and his terrific Java-based software aptly named *Where is M13?* This unique application provides a modest amount of detail on its database of objects: name; object type; galactic longitude and latitude; luminosity; size and distance. And it provides the basic apparent data: right ascension; declination; magnitude and size. But, where the program comes into its own is in its presentation of an object from a three-dimensional perspective, thereby allowing the user to visualize the object's location with respect to the center and plane of our galaxy.

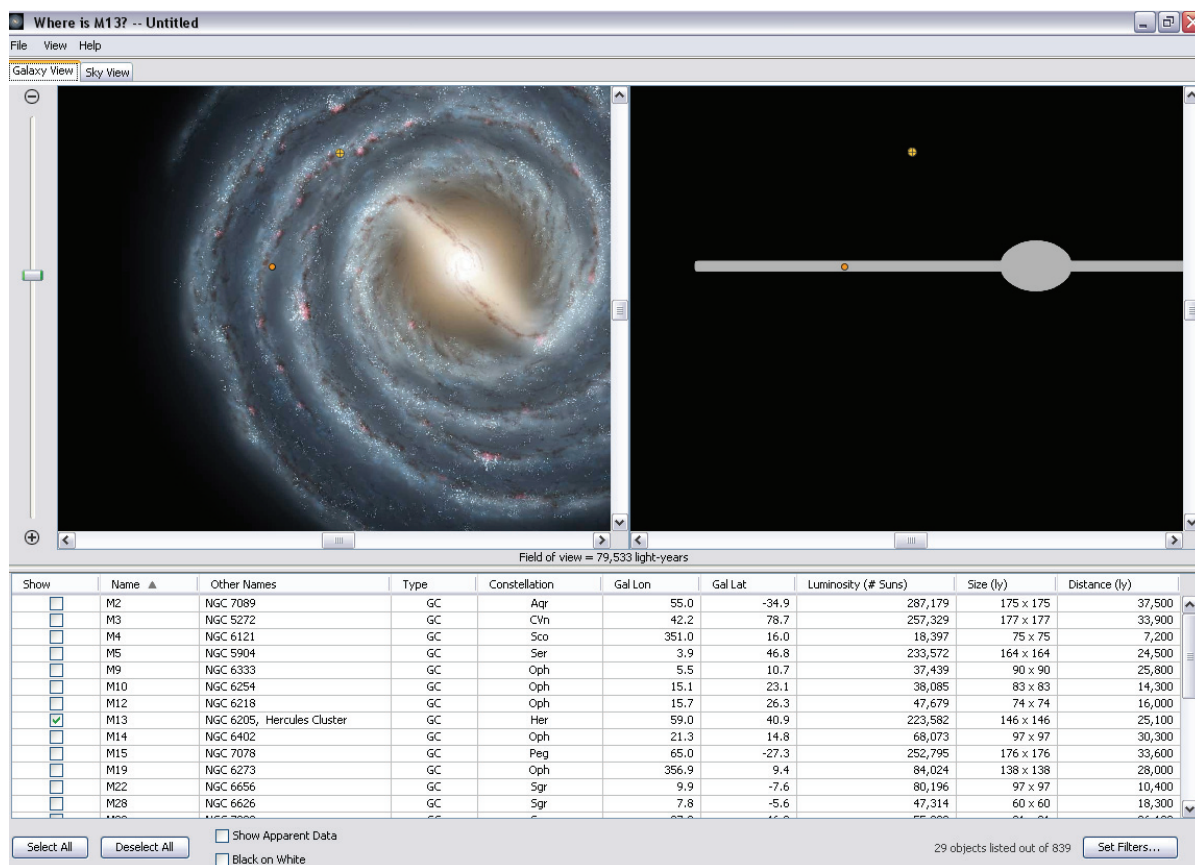
Upon launching the program, the opening screen is displayed in Galaxy View and is divided into three sections: side-by-side views of our galaxy (face-on and edge-on) and an object list. With no objects checked to display, a solitary orange dot appears in each galaxy depiction, symbolically representing You Are Here. It is from this baseline that we can understand the location of all other objects. Selecting the Sky View tab displays all selected objects in the more famil-

iar planetarium program presentation with one notable difference: the chart is displayed using galactic coordinates instead of the more common equatorial coordinates.

It is the program's use of the galactic coordinate system that enables us to

as to label the spiral arms in our galaxy.

Besides being an excellent educational tool for yourself or when used in an outreach capacity, *Where is M13?* is just plain fun to use!



visualize the relationship between us and the displayed objects.

A *Set Filters* button allows the user to set which type of objects are displayed, as well as from which catalog.

The user can zoom in and out from within the Galaxy or Sky View by using a vertical slider control, thereby allowing for precise control of the display.

A checkbox allows the default color image to be rendered in printer-friendly black on white.

Menu commands allow the user to toggle displayed object labels as well

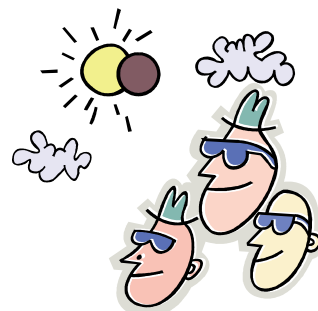
Where is M13? is available for download from Think Astronomy's website. Version 1.6 can be freely downloaded and will run fully-featured and unlicensed for ten days. After that time period you will need to obtain a license. The cost for licensing this program is a mere \$19. The program requires that you have Java 1.4 or higher installed on your computer. The application will run on Windows, Mac or Linux.

<http://www.thinkastronomy.com/M13/common/download.html>

September Guest Speaker : Gerry Rattley

This month's guest speaker is noted deep sky observer Gerry Rattley. He will recount an annular solar eclipse that he had the good fortune to observe back in 1983.

Other than being a very active observer on the local amateur astronomy scene, Gerry is probably most well-known for being one of the first (if not *the* first) person on record to have completed a Messier Marathon. He accomplished this feat on March 23/24, 1985 from an observing site off of Dugas Road (about five miles north of Cordes Junction).



2006 All-Arizona Star Party

It's almost time. The 2006 Monsoon season is winding down, and we can all (finally) get back to observing again! And what better way to do that than with a big star party?

The 2006 All-Arizona Star Party is scheduled for Friday, October 20 and Saturday, October 21 at the Farnsworth Ranch site, south of Arizona City. You'll find a map and driving direction on page 15.



Sunset is at 5:48 pm on the 20th and 5:47 pm on the 21st. Astronomical twilight ends at 7:10 pm on the 20th and 7:09 pm on the 21st. The Moon is a waning crescent with 2% disk illumination on Friday, and new on Saturday.

The hospitality tent will be setup at 11:00 am on Friday, in time to provide some nice afternoon shade. The tent will be the venue for a potluck get-together at 4:00 pm. Bring something to share with your fellow star partiers. After dinner plan on getting set up before sunset to observe all night, or as long as you can stay awake! Remember, no white lights after 7:00 pm.

On Saturday there will be shade and water available under the hospitality tent all day long. So, bring your chair and socialize with all your friends. The tent will be the site for an astro swap meet from 12 noon until 2:00 pm. Bring your stuff to sell or trade. At 3:00 pm we'll start the dinner under the tent. At 5:00 pm we'll have the drawing for prizes. Then, once again, it's time to get ready for a night of observing. Remember, no white lights after 7:00 pm.

There will be coffee and muffins under the hospitality tent at 7:00 am. Then it's time to say 'so long' until next year!

Please remember that this site is undeveloped and is on private property, but there will be portable *facilities* onsite for this event.

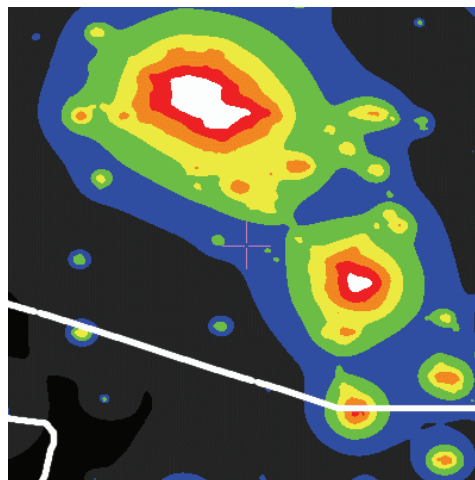
Probably not a bad time to review general star party etiquette:

- Please pack out all trash.
- No white lights after dark, use only dim red flashlights. Also be aware of light emanating from laptop computers. Before the event inspect your car to see if the dome light can be disabled.
- Bring plenty of water to drink.
- Plan your arrival well before dark so that you have adequate time to get set up.
- If you plan to leave during the night, please park near the entrance and position your vehicle so as to cause minimum disruption

during your departure. Please announce your impending exit so as to allow others the ability to preserve their dark adaptation.

- Don't be the last to leave. The last two vehicles should leave together so as to avoid anyone being stranded with a disabled vehicle.
- Please be considerate of other observers with regards to noise.
- Generally pets and small children do not enjoy star parties (there are exceptions). Please leave them at home if at all possible. If you bring a pet, please clean up after it.
- Attendees are responsible for the behavior of their guests.

Thank you for observing these common courtesies during the star party.



Light pollution map of AASP site

Classified Advertisements

10" F4.5 Meade Starfinder

1994 Meade 10-inch, f/4.5 Starfinder equatorial Newtonian. This is the AC-powered Starfinder. Upgrades include an 8x50 finderscope and a JMI NGF-3 low profile focuser that accepts 2-inch eyepieces. The focuser comes with a 2-inch extension tube, which is needed for visual observing. Remove the extension for photography at Newtonian focus. The declination tangent arm in the photo is not included. Asking \$600 and am willing to drive halfway to finalize the transaction with Arizona buyers.



If interested, please contact Bill Ferris:

Phone: 928-773-9900

Email: BillFerris@aol.com

Meade LX-200 Schmidt-Cassegrain Telescope

I am selling my 12" LX-200 GPS UHTC in order to fund another project. Everything is in perfect working order. I sent it to Meade for refurbishing in January 2006 and it has all new electronics and metal drive gears. For all practical purposes it's a new scope. Although it's heavy (75 lbs), the Get-a-Grip handles make it an easy lift for two people and a doable lift for one if you are in shape. Performs wonderfully as a visual instrument and it has worked magnificently with a F3.3 focal reducer and a StellaCam-II video camera. See: <http://www.eastvalleyastronomy.org/class-ads.html>

Package includes:

12" LX200-GPS UHTC

All Original Equipment
(including Giant Field Tripod, Manual,
26mm eyepiece, original box, etc.)

Upgrades/Extras:

Mounting Plate (\$99)

Get-A-Grip handles (\$130)



Meade warranty including shipping until 12/29/2006 (\$299/year)

A new 12" LX200R is \$4694.00, your price is \$3000.00

Marty Pieczonka (480) 983-0915

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Advertisements for astronomical equipment or services will be accepted from current EVAC members only. Ads will be published as space permits and may be edited. Ads should consist of a brief text description and must include a current member name and phone number. You may include your email address if you wish. Ads will be published until canceled (as space allows), so please inform the editor when your item has sold.

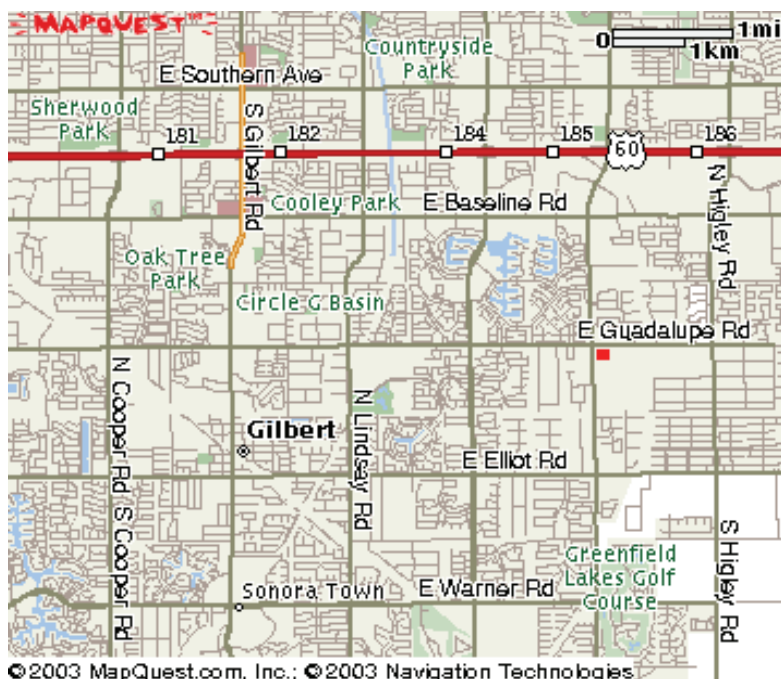
Ads should be emailed to: news@eastvalleyastronomy.org

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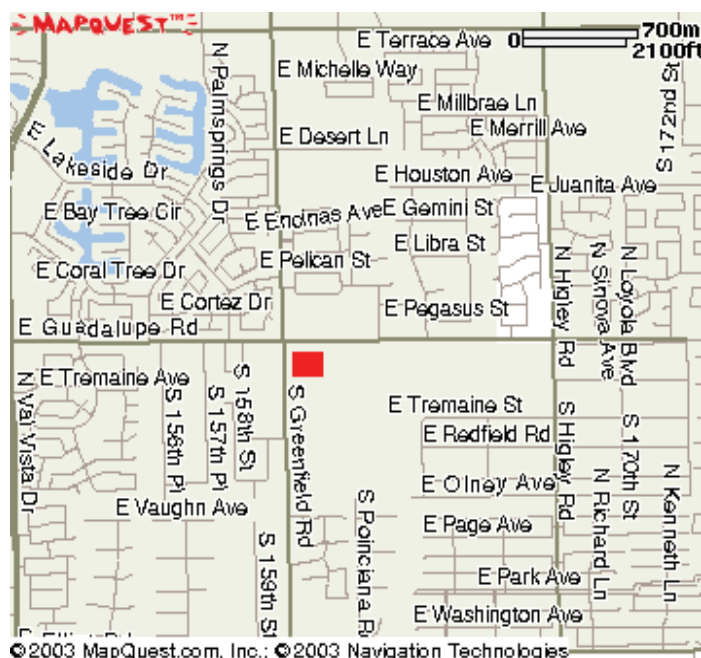
www.starizona.com



The monthly general meeting is your chance to find out what other club members are up to, learn about upcoming club events and listen to presentations by professional and well-known amateur astronomers.

Our meetings are held on the third Friday of each month, at the Southeast Regional Library in Gilbert. The library is located at 775 N. Greenfield Rd., on the southeast corner of Greenfield and Guadalupe Roads. Meetings begin at 7:30pm.

Visitors are always welcome!



Southeast Regional Library
775 N. Greenfield Road
Gilbert, AZ 85234



All are welcome to attend the pre-meeting dinner at 5:30 PM. We meet at **Old Country Buffet**, located at 1855 S. Stapley Drive in Mesa. The restaurant is in the plaza on the northeast corner of Stapley and Baseline Roads, (near the Walmart Supercenter) just south of US 60.

Old Country Buffet 1855 S. Stapley Drive in Mesa

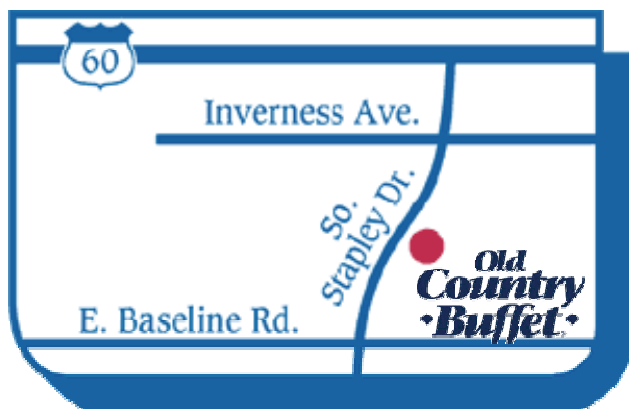
2006 Meeting Dates

September 15

October 14 *Special date to accommodate the All-Arizona Star Party*

November 17

December 15



September 2006

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

Schedule of Events

- September 8 - Public Star Party at Riparian Preserve in Gilbert
- September 15 - General Meeting at Southeast Regional Library in Gilbert
- September 16 - Local Star Party at Boyce Thompson Arboretum State Park
- September 16 - 24 - Okie-Tex Star Party, Camp Billy Joe near Kenton, Oklahoma
- September 23 - Deep Sky Star Party at Vekol Road
- September 23 - Five Mile Meadow Star Party

Minutes of August General Meeting

Meeting date: Friday, August 18, 2006

Meeting location: Southeast Regional Library in Gilbert

The meeting was opened by President Steven Aggas. Following the officer introductions, two visitors introduced themselves.

Steven Aggas encouraged those in attendance to consider running for office in 2007. He displayed a slide indicating that some positions will be vacant, as the incumbents have reached their term limit.

Randy Peterson provided an update on events, which just included the regularly scheduled star parties. No school activities are planned. Gwen Grace provided an update on the All-Arizona Star Party and urged folks to register early (if they want to get in on the prize giveaway).

Peter Argenziano had a table full of handouts: THEMIS information sheets, STEREO Mission press release packets, August Voyager, and high-resolution prints of M1 (Crab Nebula) as taken by Hubble's WFPC2.

Wayne Thomas provided the monthly Treasurer's report. He also made a pitch for anyone interested in becoming EVAC's Treasurer next year.

Steve Coe announced Saguaro Astronomy Club's Novice Group meeting at the Cherry Road site, and invited any EVAC members who wanted to attend.

After the extended announcement portion of the meeting, Steven filled in for the vacationing Howard Israel in conducting the Question and Answer session.

After a brief break, Silvio Jaconelli introduced the guest speaker, Chris Schur. Chris' talk was entitled "Off the Beaten Track: Imaging the Unusual, Unphotographable, and Generally Unknown." Chris talked about his unique approach to imaging, and how he distinguishes himself from other astrophotographers. He discussed how he has created a niche for himself by not imaging the common objects, such as the Orion Nebula, or the Whirlpool or Andromeda Galaxies, but rather concentrating on the more interesting and much lesser known objects. Many of these objects are overshadowed by their brighter brethren in the sky. They are often located near brighter objects. Such examples include the galaxy Leo-1, which can be resolved into stars, yet lies 0.3° north of Regulus or the planetary nebula Abell 12, situated near Mu Orionis.

Chris explained that many of his subjects have never been imaged in color before, and that this provides inspiration. He explained his process for locating his subjects, many of which aren't plotted in popular star atlases. He also discussed some of the techniques he employs to image low surface brightness objects with his CCD-equipped F5 Newtonian.

After an interesting talk about object selection and imaging techniques, Chris showed a series of slides that illustrated the concepts he had discussed. The images were simply breathtaking, and demonstrated not only Chris' technical skills, but also his artistic expression and creativity.

At the completion of the slide presentation, Chris fielded questions from the audience.

The meeting was adjourned at 9:30 pm, and several attendees met at the Village Inn for a snack and more astronomy talk.

"Space is big. You just won't believe how vastly, hugely, mind-bogglingly big it is. I mean, you may think it's a long way down the road to the chemist's, but that's just peanuts to space."

Douglas Adams, The Hitchhiker's Guide to the Galaxy

East Valley Astronomy Club -- 2006 Membership Form

Please complete this form and return it to the club Treasurer at the next meeting or mail it to EVAC, PO Box 2202, Mesa, Az, 85214-2202. Please include a check or money order made payable to EVAC for the appropriate amount.

IMPORTANT: All memberships expire on December 31 of each year.

Select one of the following:

- ☐ New Member ☐ Renewal ☐ Change of Address

New Member Dues (dues are prorated, select according to the month you are joining the club):

- | | |
|---|---|
| <input type="checkbox"/> \$30.00 Individual January through March | <input type="checkbox"/> \$22.50 Individual April through June |
| <input type="checkbox"/> \$35.00 Family January through March | <input type="checkbox"/> \$26.25 Family April through June |
| <input type="checkbox"/> \$15.00 Individual July through September | <input type="checkbox"/> \$37.50 Individual October through December |
| <input type="checkbox"/> \$17.50 Family July through September | <input type="checkbox"/> \$43.75 Family October through December |
- Includes dues for the following year*

Renewal (current members only):

- ☐ **\$30.00 Individual** ☐ **\$35.00 Family**

Magazine Subscriptions (include renewal notices):

- ☐ **\$34.00** Astronomy ☐ **\$33.00** Sky & Telescope

Name Badges:

- ☐ **\$10.00** Each (including postage) Quantity: _____

Name to imprint: _____

Total amount enclosed:

Please make check or money order payable to EVAC

- ☐ Payment was remitted separately using PayPal ☐ Payment was remitted separately using my financial institution's online bill payment feature

Name:

Phone:

Address:

Email:

City, State, Zip:

☐ Publish email address on website

URL:

How would you like to receive your monthly newsletter? (choose one option):

- ☐ Electronic delivery (PDF) *Included with membership* ☐ US Mail **Please add \$10 to the total payment**

Areas of Interest (check all that apply):

- | | |
|--|---|
| <input type="checkbox"/> General Observing | <input type="checkbox"/> Cosmology |
| <input type="checkbox"/> Lunar Observing | <input type="checkbox"/> Telescope Making |
| <input type="checkbox"/> Planetary Observing | <input type="checkbox"/> Astrophotography |
| <input type="checkbox"/> Deep Sky Observing | <input type="checkbox"/> Other |

Please describe your astronomy equipment:

Would you be interested in attending a beginner's workshop? ☐ Yes ☐ No

How did you discover East Valley Astronomy Club?

**PO Box 2202
Mesa, AZ 85214-2202
www.eastvalleyastronomy.org**

All members are required to have a liability release form (waiver) on file. Please complete one and forward to the Treasurer with your membership application or renewal.

Liability Release Form

In consideration of attending any publicized Star Party hosted by the East Valley Astronomy Club (hereinafter referred to as "EVAC") I hereby affirm that my family and I agree to hold EVAC harmless from any claims, liabilities, losses, demands, causes of action, suits and expenses (including attorney fees), which may directly or indirectly be connected to EVAC and/or my presence on the premises of any EVAC Star Party and related areas.

I further agree to indemnify any party indicated above should such party suffer any claims, liabilities, losses, demands, causes of action, suits and expenses (including attorney fees), caused directly or indirectly by my negligent or intentional acts, or failure to act, or if such acts or failures to act are directly or indirectly caused by any person in my family or associates while participating in an EVAC Star Party.

My signature upon this form also indicates agreement and acceptance on behalf of all minor children (under 18 years of age) under my care in attendance.

EVAC only recognizes those who are members or invitees and who also have a signed Liability Release Form on file as participants at an EVAC Star Party.

Please print name here

Date

Please sign name here



PO Box 2202
Mesa, AZ 85214-2202
www.eastvalleyastronomy.org

Deadly Planets

by Patrick L. Barry and Dr. Tony Phillips

About 900 light years from here, there's a rocky planet not much bigger than Earth. It goes around its star once every hundred days, a trifle fast, but not too different from a standard Earth-year. At least two and possibly three other planets circle the same star, forming a complete solar system.

Interested? Don't be. Going there would be the last thing you ever do. The star is a pulsar, PSR 1257+12, the seething-hot core of a supernova that exploded millions of years ago. Its planets are bathed not in gentle, life-giving sunshine but instead a blistering torrent of X-rays and high-energy particles.

"It would be like trying to live next to Chernobyl," says Charles Beichman, a scientist at JPL and director of the Michelson Science Center at Caltech.

Our own sun emits small amounts of pulsar-like X-rays and high energy particles, but the amount of such radiation coming from a pulsar is "orders of magnitude more," he says. Even for a planet orbiting as far out as the Earth, this radiation could blow away the planet's atmosphere, and even vaporize sand right off the planet's surface.

Astronomer Alex Wolszczan discovered planets around PSR 1257+12 in the 1990s using Puerto Rico's giant Arecibo radio telescope. At first, no one believed worlds could form around pulsars—it was too bizarre. Supernovas were supposed to destroy planets, not create them. Where did these worlds come from?

NASA's Spitzer Space Telescope may have found the solution. Last year, a group of astronomers led by Deepto Chakrabarty of MIT pointed the infrared telescope toward pulsar 4U 0142+61. Data revealed a disk of gas and dust surrounding the central

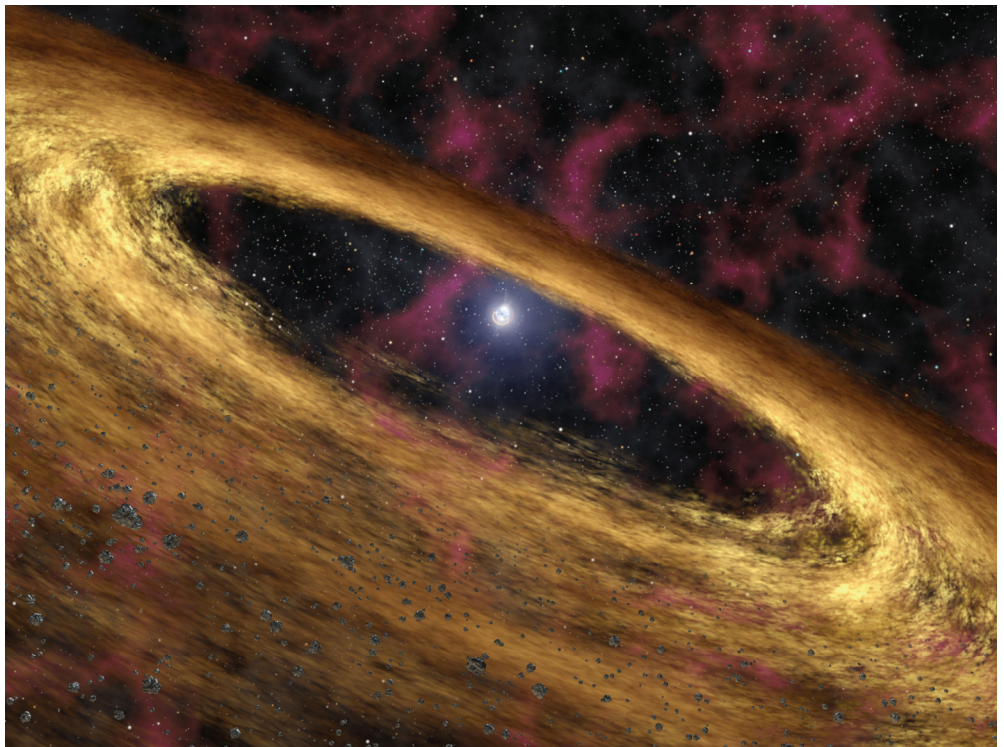
star, probably wreckage from the supernova. It was just the sort of disk that could coalesce to form planets! As deadly as pulsar planets are, they might also be hauntingly beautiful. The vaporized matter rising from the planets' surfaces could be ionized by the incoming radiation, creating colorful auroras across the sky. And though the pulsar would only appear as a tiny dot in the sky (the pulsar itself is only 20-40 km across), it would be enshrouded in a hazy glow of light emitted by radiation particles as they curve in the pulsar's strong magnetic field.

Wasted beauty? Maybe. Beichman points out the positive: "It's an awful

place to try and form planets, but if you can do it there, you can do it anywhere."

More news and images from Spitzer can be found at <http://www.spitzer.caltech.edu/>. In addition, The Space Place Web site features a cartoon talk show episode starring Michelle Thaller, a scientist on Spitzer. Go to <http://spaceplace.nasa.gov/en/kids/live/> for a great place to introduce kids to infrared and the joys of astronomy.

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



Artist's concept of a pulsar and surrounding disk of rubble called a "fallback" disk, out of which new planets could form.

If it's Clear...

by *Fulton Wright, Jr.*
Prescott Astronomy Club

September 2006

Shamelessly stolen information from Sky & Telescope magazine, Astronomy magazine, and anywhere else I can find info. When gauging distances, remember that the Moon is 1/2 a degree or 30 arc minutes in diameter. All times are Mountain Standard Time unless otherwise noted.

On Thursday, September 7, at 6:59 PM (11 minutes after sunset) the full moon rises making faint fuzzies hard to see all night. Since the Moon will be only 1 hour from perigee (closest point to earth), it will look even bigger than usual as it rises.

Also Thursday, September 7, in the early evening, you will have your last chance for a few months to see a bunch of events with Jupiter's moons. You will want a medium (6 inch)

telescope to watch them. It will be too light to see the first 3 events listed here. They are included so you know where the satellites are when you first find the planet.

5:38 PM Io moves in front of Jupiter

5:43 PM Europa moves in front of Jupiter

6:43 PM Io's shadow falls on Jupiter (1 shadow)

6:48 PM (Sun sets)

6:59 PM (Moon rises)

~7:15 PM (Dark enough to find Jupiter)

7:48 PM Io moves from in front of Jupiter

7:58 PM Europa's shadow falls on Jupiter (2 shadows)

8:20 PM Europa moves from in front of Jupiter

8:52 PM Io's shadow leaves Jupiter (1 shadow)

9:30 PM Jupiter sets

On Saturday, September 9, in the early evening, you can see Ganymede's shadow on Jupiter.

6:02 PM Ganymede's shadow falls

on Jupiter

~7:10 PM (Dark enough to find Jupiter)

7:52 PM Ganymede's shadow leaves Jupiter

On Friday, September 15, about 7:20 AM, you can see the Moon at its highest in the sky. The crescent moon will be a little more than 6 degrees from the zenith. The sun will be up so this isn't a particularly good time to observe the Moon, but, since it hasn't been this high for 37 years, it might be fun to catch this extreme. Watch your neck.

On Thursday, September 21, it is new moon so you have the whole evening to look for faint fuzzies.

On Wednesday, September 27, and the next few days, in the early evening, you can see the northern part of the Moon at its best. The advancing terminator as the Moon approaches first quarter phase will reveal some new features each night near the north pole which libration tips toward us.

 **First Quarter Moon on August 31 at 15:57**

 **Full Moon on September 7 at 11:41**

 **Last Quarter Moon on September 14 at 04:16**

 **New Moon on September 22 at 04:46**

 **First Quarter Moon on September 30 at 04:04**

STEREO: Solar Terrestrial Relations Observatory

STEREO (Solar TERrestrial Relations Observatory) is the third mission in NASA's Solar Terrestrial Probes program (STP). This two-year mission will provide a unique and revolutionary view of the Sun-Earth system. The two nearly identical observatories will trace the flow of energy and matter from the Sun to Earth as well as reveal the 3D structure of coronal mass ejections and help us understand why they happen. One observatory will be placed ahead of Earth in its orbit ("A") and the other behind ("B"), nearly in Earth's orbit; one is a little closer to the sun, and the other a little further from the sun. Spacecraft "A" orbits the sun every 346 days while "B" orbits every 388 days. From the perspective of the sun, the observatories separate by 45 degrees every year and will eventually be behind the sun. STEREO will also provide alerts for Earth-directed solar ejections, from its unique side-viewing perspective adding it to the fleet of space weather detection satellites.

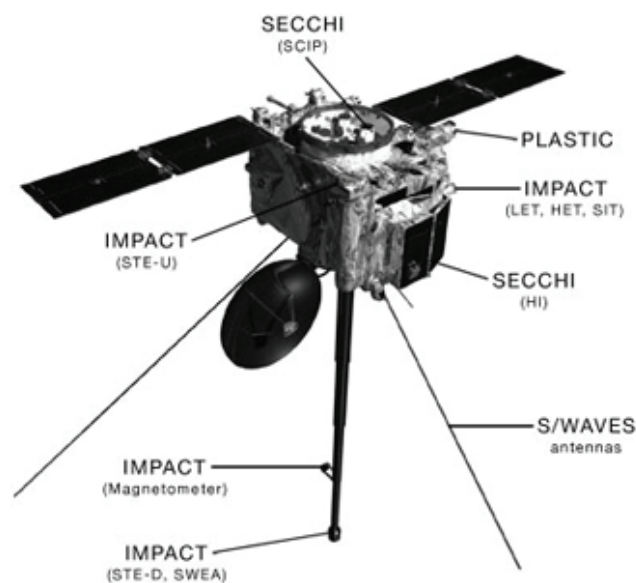
Why the need for STEREO?

Coronal mass ejections (CMEs), are powerful eruptions that can blow up to 10 billion tons of the Sun's atmosphere into interplanetary space. Traveling away from the Sun at speeds of approximately one million mph (1.6 million kph), CMEs can create major disturbances in the interplanetary medium and trigger severe magnetic storms when they collide with Earth's magnetosphere.

Large geomagnetic storms directed towards Earth can damage and even destroy satellites, are extremely hazardous to astronauts when outside of the protection of the Space Shuttle or

the International Space Station performing Extra Vehicular Activities (EVAs), and they have been known to cause electrical power outages.

Solar ejections are the most powerful drivers of the Sun-Earth connection. Yet despite their importance, scientists don't fully understand the origin and evolution of CMEs, nor their structure or extent in interplanetary space. STEREO's unique stereoscopic images of the structure of CMEs will



Mounted onto the STEREO Spacecraft are four instrument packages: SECCHI, SWAVES, IMPACT, and PLASTIC. Image Credit: APL

enable scientists to determine their fundamental nature and origin.

Each of the two spacecraft will be outfitted with the following instrumentation:

Sun Earth Connection Coronal and Heliospheric Investigation (SECCHI) will have four instruments: an extreme ultraviolet imager, two white-light coronagraphs and a heliospheric imager. These instruments will study the 3-D evolution of CME's from birth at the Sun's surface through the corona and interplanetary medium to its eventual impact at Earth.

Principal Investigator: Dr. Russell Howard, Naval Research Laboratory, Washington, D.C.

STEREO/WAVES (SWAVES) is an interplanetary radio burst tracker that will trace the generation and evolution of traveling radio disturbances from the Sun to the orbit of Earth. Principal Investigator Dr. Jean Louis H. Bougeret, Centre National de la Recherche Scientifique, Observatory of Paris, and Co-Investigator Mr. Michael Kaiser of Goddard, lead the investigation.

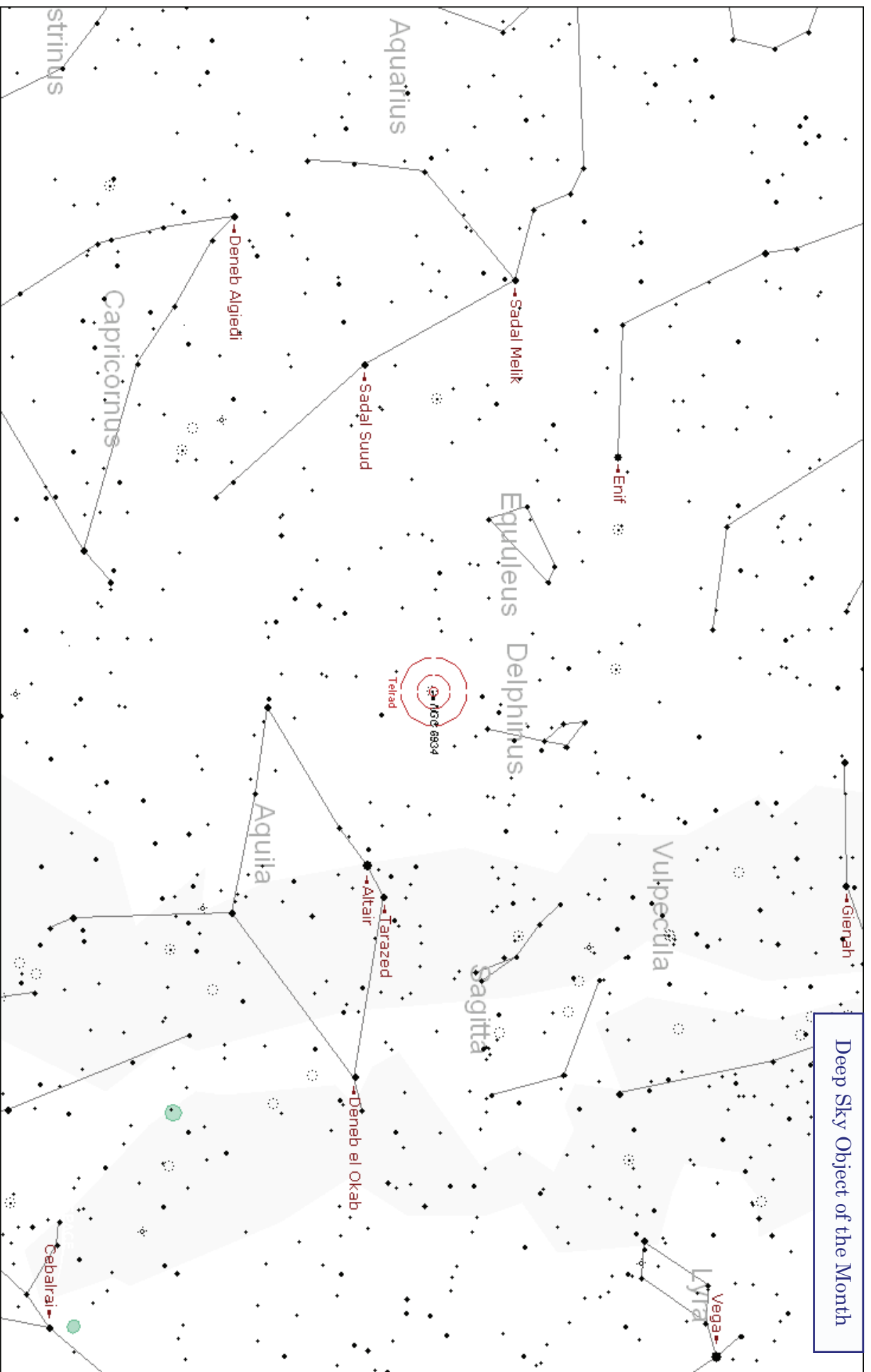
In-situ Measurements of Particles and CME Transients (IMPACT) will sample the 3-D distribution and provide plasma characteristics of solar energetic particles and the local vector magnetic field. Principal Investigator: Dr. Janet G. Luhmann, University of California, Berkeley.

PLASMA and SupraThermal Ion Composition (PLASTIC) will provide plasma characteristics of protons, alpha particles and heavy ions. This experiment will provide key diagnostic measurements of the form of mass and charge state composition of heavy ions and characterize the CME

plasma from ambient coronal plasma. Principal Investigator: Dr. Antoinette Galvin, University of New Hampshire.

The mission cost is about \$478 million plus approximately \$60 million from European contributions. That includes all development costs, launch costs, two years of operation and three years of data analysis.

STEREO is set to be launched between August 31 and September 4 aboard a Delta II 7925-10L rocket from launch pad 17-B at Cape Canaveral.



NGC 6934 Globular Cluster in Delphinus

Magnitude: 8.9 Size: 7.1'

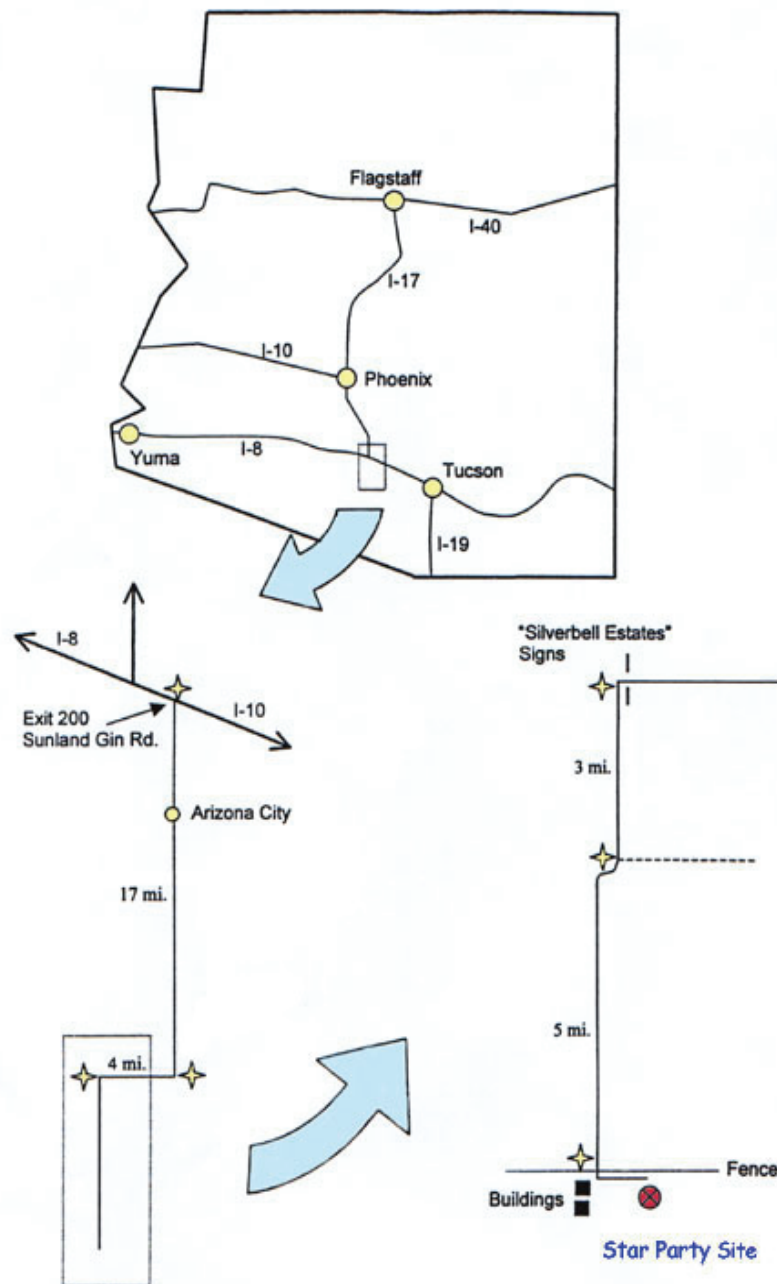
RA 20h 34m 52.0s Dec +07° 24' 15"

All-Arizona Star Party Directions

Farnsworth Ranch is the site of the annual All-Arizona Star Party. The observing field is located midway between Phoenix and Tucson, west of Interstate 10. The site offers the right combination of dark skies, good visibility and temperate nights that will encourage you to stay up well past your bedtime! There are the predictable light domes from Phoenix and Tucson, but not much else to complain about. The nearby cotton fields make this another very dusty place, especially when stirred up by 100 or so arriving astronomers. Please limit your driving speed to 5 mph on the observing field. Most of the flora is small creosote bushes, so horizons are very low.

To get to the site of the All-AZ Star Party: Take I-10 to Exit 200, Sunland Gin Road. Take this road south (a right turn if coming from Phoenix, a left turn if coming from Tucson). Note: this is your *last chance* for gas, food and general provisions after leaving the interstate. The road continues for 17 miles, through Arizona City, then it turns sharply to the west (right). Continue west for 4 miles. The main road turns south (left) just past the "Silverbell Estates" sign. Continue south for 3 miles past the sign, where the road veers off to the west (right). Continue on the road for another 5 miles, where it passes through a gate. Take an immediate left after the gate, and continue for 0.7 miles. Take the next right that leads onto the observing field.

If you must leave early, please park toward the north end of the field with your vehicle facing the exit (so as not to disturb observers with your headlights). Likewise, if you are spending the night, park to the south end of the field.



Coming in October... our guest speaker will be Wes Lockwood, whose presentation is entitled on 'Impact of Solar Activity on the Climate'.

Star Party Disclaimer

The East Valley Astronomy Club (EVAC) is not responsible for the property or liability of any star party participant, nor will the club be held liable for their actions or possessions. EVAC is not responsible for any vehicular damage, theft, or mechanical difficulties that may occur while attending a star party. EVAC strongly recommends adherence to the doctrine of 'safety in numbers' when it comes to remote observing sites. In the interest of safety it is recommended that you don't go to remote sites alone and that someone knows where you have gone each time you go out observing.

The Voyager is published monthly by the East Valley Astronomy Club and made available electronically (PDF) the first week of the month. Printed copies are available at the monthly meeting.

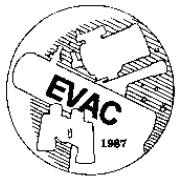
Please send your contributions, tips, suggestions and comments to the Editor (Peter Argenziano) at:

news@eastvalleyastronomy.org

Contributions may be edited.

www.eastvalleyastronomy.org

Keep Looking Up!



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