



INSIDE THIS ISSUE:

# THE OBSERVER

## East Valley Astronomy Club

### From the Desk of the President by David Douglass

Well, January has been an interesting and fast paced month of activities for EVAC. All of our officers, board members, and committee chairs are settled in to their jobs, and EVAC is proceeding in an orderly manner. It truly has been an “eye opener” to watch as this collection of 13 other individuals perform their various functions. EVAC is truly blessed to have a collection of individuals that are willing to commit their personal time, energy, and in some cases, monies to ensure that all of our activi-

ties “happen”.

On Friday, Jan 9th, we held a Public Star Party in the GRCO parking lot at the Riparian Preserve. EVAC members supplied, setup, and manned over 20 telescopes along the parking lot sidewalk. There were over 250 people attending this event, and many of them also visited the GRCO facility. During the later part of the evening, our past president, Claude Haynes was the featured speaker at the Riparian sponsored Skywatch talk, which hosted over 45

people. These numbers were boosted by a very nice article in the Gilbert Republic featuring EVAC, and GRCO, as well as Skywatch.

Our monthly meeting on Friday, Jan 17th was eventful too. We had a large turnout. The only problem was that we could not get into the library. This, apparently due to some confusion on their part. But our fearless, and vastly experienced leaders (the other guys – not me...) know what to do. Claude

*Continued on page 15*

### The Backyard Astronomer Monoceros (Who?) by Bill Dellinges

Monoceros, the Unicorn, is a very faint winter constellation just east of Orion. It boasts no star brighter than magnitude 3.94 and thus is a challenge to identify. Make a triangle by drawing a line from Betelgeuse (in Orion) to Procyon (Canis Minor) to Sirius (Canis Major). The resulting inverted triangle will pretty much contain most of the constellation. This is your target area and mission, should you choose to accept it. When you first look there, you'll likely see nothing. Fret not; let your eyes adapt to the night as you peer into this dark triangle. Soon a few faint stars will register on your retina. As an aid, notice that Orion's Belt points southeast into the triangle. About two Belts' worth of distance in that direction takes you to the two most distinctive stars in Monoceros, Beta and Gamma Monocerotis. I use these two stars as my anchor to outline the rest of the constellation. It's

fun to try to figure out this stellar grouping with the naked eye while seated comfortably and armed with a pocket atlas and red flashlight. Identifying constellations in this way is just as rewarding as telescopic observation of their contents, in my view. But I suspect many stargazers these days pay less attention to this aspect of the hobby, especially with the advent of GOTO's – you know who you are!

Monoceros was created by the Dutch theologian/cartographer Petrus Plancius in 1613. It represents a mythical horse-like animal with one long horn sticking out of its forehead. While not a bright constellation, the winter Milky Way runs through it, so there is a fine selection of objects to enjoy. The aforementioned Beta Monocerotis is a beautiful triple star – I think the finest in the sky. The primary (A) and secondary (B) white stars are magnitudes 4.6 and 5.0 and separated

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### Upcoming Events:

- Public Star Party - February 13*
- Local Star Party - February 14*
- Monthly General Meeting - February 20*
- Deep Sky Star Party - February 21*

*Check out all of the upcoming club events in the Calendars on page 8*

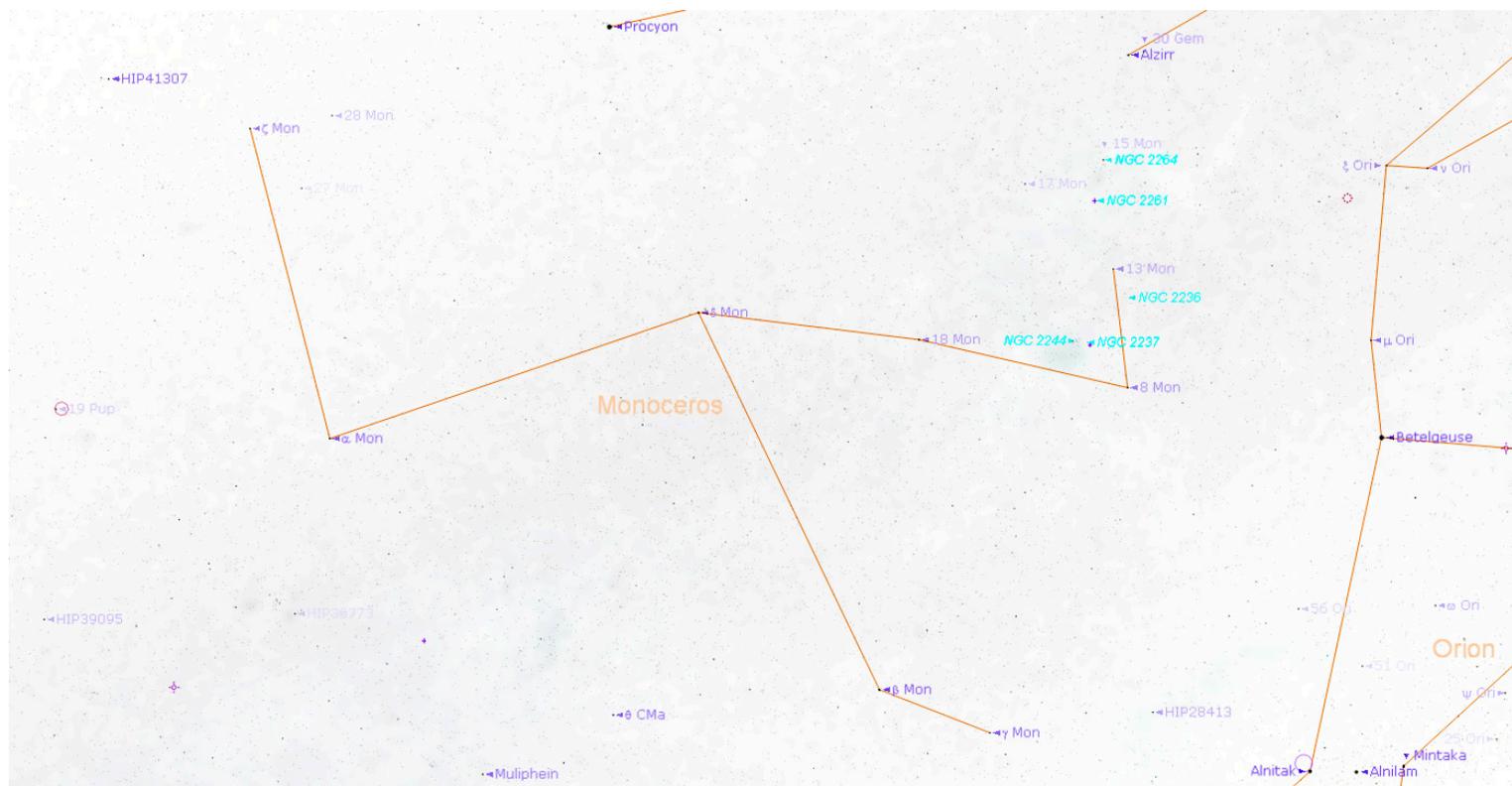
# The Backyard Astronomer

Continued from page 1 by 7.2" (arc seconds). The challenge is picking out the magnitude 5.3 C component only 2.8" from the B star. A 3.3 inch refractor at 29x will split the AB pair and pick out C at 100x in good seeing. However, most nights do not offer good seeing and on those nights, even my 11" has struggled to resolve this trio. Recently the 11" at 200x did split BC, but not as clean as I'd like. Still, when everything is right and all three stars are evident, it's a beautiful sight to behold.

A line through Beta and Gamma Monocerotis going southeast and extended about three lengths brings you to M50, a large open star cluster about 15' (arc minutes) in diameter. My 11" at 90x with

this star is NGC 2261, Hubble's Variable Nebula. This is a strange object. It's a reflection nebula shaped like a short fan-like comet emanating from the variable star R Monocerotis. This object has probably given a heart attack to a few rookie comet hunters over the years. The nebula looks fairly impressive in the 11" at 200x and a bit underwhelming at 90x.

Our last object on this tour is Monoceros' claim to fame, the Rosette Nebula, NGC 2237. This emission nebula can be found two degrees due east of Epsilon Monoceros, the southern most of the three stars representing the horse's head. This object is large and very faint. The nebula is more or less circular, with a hole in



a field of 0.9 degrees framed this cluster nicely. I counted about 50 stars, some of which spill out from the main grouping in a north-west and southeast direction.

The northern part of Monoceros is where the action is. Specifically in and around the stars forming the creature's head - three 4.5 magnitude stars in a line slanted to about 45 degrees. Look for them between Betelgeuse and Procyon and just south of Alhena in Gemini. You'll need the eyes of a lynx to see them. The top star is S or 15 Monoceros. It is one of the stars making the "base" of an upside down Christmas tree asterism, the open cluster NGC 2264. The "Christmas Tree Cluster" will fit in the 0.9 degree field of my 90x, Nagler eyepiece. But I think at that power something is lost in seeing a tree there. Use lower power if possible. I think it looked best in my 20x100 binoculars. While in the area, why not visit the double star Struve 953. From the tip of the "tree", slew south about one tree length till you hit the first bright star that appears in your field. That's it. The A and B components are magnitude 7.2 and 7.7 with a separation of 7.1". The 11" easily split it at 90x into a yellow and blue pair. Half a degree southwest of

its middle, like a giant version of the Helix planetary nebula NGC 7293 in Aquarius. But the Rosette dwarfs the Helix in size (80'x60' vs. 15'x12'). It will take a dark sky and movement of the field for your eye to spot this ghost of a donut. Actually, finding this nebula is remarkably easy, for dead center in the "hole" is the bright open star cluster NGC 2244, a fine open cluster in its own right and thought to be responsible for burning out the central hole in 2237. So this is a two for one deal - one search, two objects! But note the Rosette nebula is more of a photographic object than a visual one. But it's not impossible to spot - use a wide field instrument with a nebula filter in dark skies for best results. The Rosette was too big for my 90x, 0.9 degree field, so I slewed around its periphery and noted the brightest nebulosity to be in its northwest corner. 15x70 binoculars showed the star cluster well with a hint of "fog" around its stars.

As you can see, there's plenty of good stuff to find in this triangle of darkness. Why not try to lasso a few of them with your telescope?

# Dark Side of the Sun

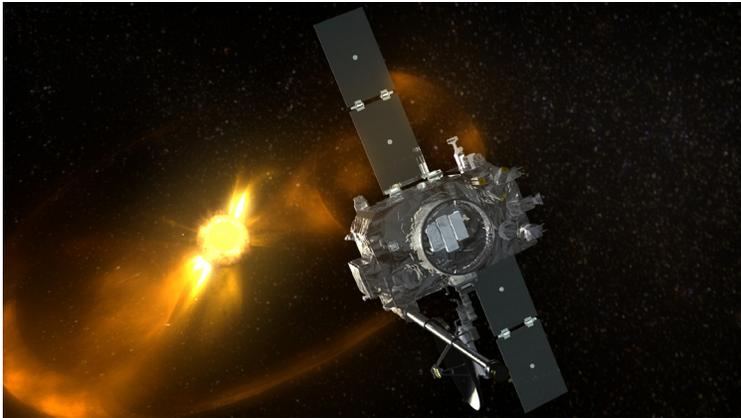
by Dr. Tony Phillips

**NASA** researchers announced an event that will transform our view of the Sun and, in the process, super-charge the field of solar physics for many years to come.

“On February 6, 2011,” says Chris St. Cyr of the Goddard Space Flight Center, “Super Bowl XLV will be played in Arlington, Texas.”

Wait ... that’s not it.

“And on the same day,” he adds, “NASA’s two STEREO spacecraft will be 180 degrees apart and will image the entire Sun for the first time in history.”



An artist’s concept of one of the STEREO spacecraft.

STEREO’s deployment on opposite sides of the Sun solves a problem that has vexed astronomers for centuries: At any given moment they can see only half of the stellar surface. The Sun spins on its axis once every 25 days, so over the course of a month the whole Sun does turn to face Earth, but a month is not nearly fast enough to keep track of events. Sunspots can materialize, explode, and regroup in a matter of days; coronal holes open and close; magnetic filaments stretch tight and—snap!—they explode, hurling clouds of hot gas into the solar system. Fully half of this action is hidden from view, a fact which places space weather forecasters in an awkward position. How can you anticipate storms when you can’t see them coming? Likewise researchers cannot track the long-term evolution of sunspots or the dynamics of magnetic filaments because they keep ducking over the horizon at inconvenient times. STEREO’s global view will put an end to these difficulties.

The global view is still two years away. Already, however, the two spacecraft are beaming back over-the-horizon images that have researchers and forecasters glued to their monitors.

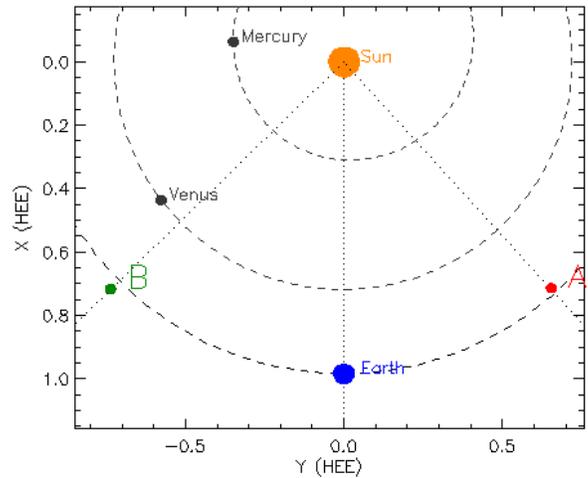
“This is a perspective we’ve never had before,” says STEREO mission scientist Lika Guhathakurta of NASA headquarters. “We’re now monitoring more than 270 degrees of solar longitude—that’s  $\frac{3}{4}$  of the star.”

“After all these years,” she laughs, “we’re finally getting to see the dark side of the Sun.”

*(Editor’s note: The Sun has no dark side. That was a solar physics joke.)*

STEREO’s journey to the “dark side” began on Oct. 25, 2006, when the twin probes left Earth together onboard a Delta II rock-

et. High above the atmosphere, they separated and headed for the Moon. What happened next was a first in space navigation. The Moon acted as a gravitational slingshot, flinging the two probes in opposite directions—STEREO-A ahead of Earth and STEREO-B behind. They’ve been spreading apart ever since, and this is where they are now:



The current positions of the STEREO Ahead (red) and Behind (green) spacecraft relative to the Sun (orange) and Earth (blue). The dotted lines show the angular displacement from the Earth.

Because of the way the Sun spins (counterclockwise in the diagram above), STEREO-B gets a sneak preview of sunspots and coronal holes before they turn to face Earth—a boon for forecasters.

“I know forecasters at NOAA’s Space Weather Prediction Center monitor STEREO-B very closely,” says St. Cyr. “It lets them know what’s coming.”

At the moment, STEREO-B enjoys a 3-day look-ahead advantage over Earth-based observatories. This has allowed researchers to predict geomagnetic storms as much as 72 hours earlier than ever before. On several occasions in late 2008, STEREO-B spotted a coronal hole spewing solar wind before any other spacecraft did. When the solar wind hit Earth, STEREO-B’s long-range forecast was validated by auroras like those seen in the image on page 4.

St. Cyr notes that experienced ham radio operators can participate in this historic mission by helping NASA capture STEREO’s images. The busy Deep Space Network downloads data from STEREO only three hours a day. That’s plenty of time to capture all of the previous day’s data, but NASA would like to monitor the transmissions around the clock.

“So we’re putting together a ‘mini-Deep Space Network’ to stay in constant contact with STEREO,” says Bill Thompson, director of the STEREO Science Center at Goddard.

The two spacecraft beam their data back to Earth via an X-band radio beacon. Anyone with a 10-meter dish antenna and a suitable receiver can pick up the signals. The data rate is low, 500 bits per second, and it takes 3 to 5 minutes to download a complete image.

So far, the mini-Network includes stations in

*Continued on page 4*

## Dark Side of the Sun

*Continued from page 3* the United Kingdom, France and Japan—and Thompson is looking for more: “NASA encourages people with X-band antennas to contact the STEREO team. We would gladly work with them and figure out how they can join our network.”

The two STEREO spacecraft rank among most sophisticated solar observatories launched by NASA to date. They are equipped with sensors that measure the speed, direction and composition of the solar wind; receivers that pick up radio emissions from explosions and shock waves in the sun’s atmosphere; telescopes that image the solar surface and all the tempests that rage there; and coronagraphs to monitor events in the sun’s outer atmosphere.

“So, really,” says Guhathakurta, “we’re not only seeing the sun’s dark side, we’re feeling, tasting and listening to it as well.”

Super Bowl Sunday may never be the same...



Photographer Brian Whittaker took this picture from the window of an airplane flying over Greenland on Nov. 9, 2008. The auroras were sparked by a solar wind impact anticipated by STEREO-B. Credit: Spaceweather.com

☾ FIRST QUARTER MOON ON FEBRUARY 2 AT 16:13

● FULL MOON ON FEBRUARY 9 AT 07:50

☾ LAST QUARTER MOON ON FEBRUARY 16 AT 14:38

○ NEW MOON ON FEBRUARY 24 AT 18:35

## February Guest Speaker: Frank Timmes

We are pleased to have as our guest speaker at the February general meeting Dr. Frank Timmes.

Frank Timmes is presently at the School of Earth and Space Exploration at Arizona State University. In past lives he has baled hay, examined semiconductor devices in Silicon Valley, taught at the School of the Art School in Chicago, bicycled through Alaska, and dabbled in weapons physics at Los Alamos.

Frank will deliver a presentation entitled *White Dwarf Supernova: Dark Energy and Astrobiology Implications*. We’ll explore supernova from white dwarf stars. We’ll talk about historical supernovae,

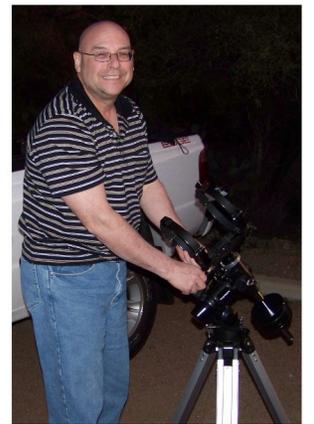
the present state-of-the-art, contributions from amateur supernova hunters, observations of the cosmic expansion history and the dark energy, near-future \$1B NASA missions, and the contributions such supernova make to astrobiology.

Mark your calendars, as this promises to be a memorable meeting.





# BOYCE THOMPSON MEMBERS NIGHT / LOCAL STAR PARTY



Bill Dellenges, Steven Aggas, Lori Aggas, Matt Houston, Peri Cline, Don Cline, David Douglass, Randy Peterson, Jerry Hyman, Gene Lucas, Dan Sharayl - BTA, Kindle Tannery, Bruce Monte, Howard Israel, Les Wagner, Mike Brown, Don Walker, Karen Walker, Dick Walker, Ethan Lorin, Roger Ronback, Herb Nissen, Carolyn Nissen and the other attendees I missed and I apologize. - Jan Douglass

January 17, 2009

### Orion 8" F10 SCT & SkyView Pro Equatorial Mount

Standards include: XLT coatings, 24mm Plossl and manual for mount.

Extras include: Pro GoTo Upgrade Kit, v 3.20, firmware upgraded, cable and documentation manual for GoTo upgrade kit, polar axis finder and 12v battery. List price \$1999.00

This equipment is 18 months old. Used sparingly because 14.5" Dob gets preference. Reason for sale is to finance an upgrade.

Sale price \$1600.00

If you are interested in seeing this telescope contact AJ Crayon at 602-938-3277 or e-mail at [acrayon@cox.net](mailto:acrayon@cox.net)



*Also, if you are thinking of a telescope for Christmas this is an ideal time to start looking and this is an ideal telescope to give.*

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*Peter Argenziano  
[news@evaonline.org](mailto:news@evaonline.org)*

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## FEBRUARY 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	<b>5</b>	<b>6</b>	7
8	9	<b>10</b>	11	<b>12</b>	<b>13</b>	<b>14</b>
15	16	17	18	<b>19</b>	<b>20</b>	<b>21</b>
22	23	24	25	26	27	28

**February 5** - Andersen Elementary School

Star Party

**February 6** - Chandler Environmental

Center Star Party

**February 10** - Las Sendas School Star Party

**February 12** - Ryan Elementary School Star Party

**February 13** - Public Star Party at Riparian Preserve in Gilbert

**February 14** - Local Star Party at Boyce Thompson Arboretum

**February 19** - Coronado Elementary School Star Party

**February 20** - General Meeting at Southeast Regional Library in Gilbert

**February 21** - Deep Sky Star Party at Vekol

## MARCH 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	<b>3</b>	4	<b>5</b>	6	7
8	9	10	11	12	<b>13</b>	<b>14</b>
15	16	17	18	19	<b>20</b>	<b>21</b>
22	23	<b>24</b>	25	26	27	<b>28</b>
29	30	31				

**March 3** - Tempe Prep Academy Star Party

**March 5** - Kyrene del Pueblo Star Party

**March 13** - Public Star Party at Riparian Preserve in Gilbert

**March 14** - IYA at Az Science Center

**March 20** - Sun Earth Day at SE Regional Library in Gilbert

**March 20** - General Meeting at SE Regional Library in Gilbert

**March 21** - Deep Sky Star Party at Vekol

**March 21** - Boy Scouts Jamboree Star Party

**March 24** - Wilson Elementary School Star Party

**March 28** - Local Star Party at Boyce Thompson Arboretum

**March 28** - All-Arizona Messier Marathon at Farnsworth Ranch

# East Valley Astronomy Club -- 2009 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"/> <b>\$30.00 Individual</b> January through March	<input type="checkbox"/> <b>\$22.50 Individual</b> April through June
<input type="checkbox"/> <b>\$35.00 Family</b> January through March	<input type="checkbox"/> <b>\$26.25 Family</b> April through June
<input type="checkbox"/> <b>\$15.00 Individual</b> July through September	<input type="checkbox"/> <b>\$37.50 Individual</b> October through December
<input type="checkbox"/> <b>\$17.50 Family</b> July through September	<input type="checkbox"/> <b>\$43.75 Family</b> 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: <input style="width: 300px;" type="text"/>	Phone: <input style="width: 300px;" type="text"/>
Address: <input style="width: 300px;" type="text"/>	Email: <input style="width: 300px;" type="text"/>
City, State, Zip: <input style="width: 250px;" type="text"/>	<input type="checkbox"/> Publish email address on website URL: <input style="width: 300px;" type="text"/>

**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](http://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 I and my family 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](http://www.eastvalleyastronomy.org)**

## Severe Space Weather

by Dr. Tony Phillips

Did you know a solar flare can make your toilet stop working? That's the surprising conclusion of a NASA-funded study by the National Academy of Sciences entitled *Severe Space Weather Events—Understanding Societal and Economic Impacts*. In the 132-page report, experts detailed what might happen to our modern, high-tech society in the event of a “super solar flare” followed by an extreme geomagnetic storm. They found that almost nothing is immune from space weather—not even the water in your bathroom.

The problem begins with the electric power grid. Ground currents induced during an extreme geomagnetic storm can melt the copper windings of huge, multi-ton transformers at the heart of power distribution systems. Because modern power grids are interconnected, a cascade of failures could sweep across the country, rapidly cutting power to tens or even hundreds of millions of people. According to the report, this loss of electricity would have a ripple effect with “water distribution affected within several hours; perishable foods and medications lost in 12-24 hours; loss of heating/air conditioning, sewage disposal, phone service, fuel re-supply and so on.”

“The concept of interdependency,” the report notes, “is evident in the unavailability of water due to long-term outage of electric power—and the inability to restart an electric generator without water on site.”

It takes a very strong geomagnetic storm to cause problems on this scale—the type of storm that comes along only every century or so. A point of reference is the “Carrington Event” of August-September 1859, named after British amateur astronomer Richard Carrington who witnessed the instigating solar flare with his unaided eye while he was projecting an image of the Sun on a white screen. Geomagnetic storms triggered by the flare electrified telegraph lines, shocking technicians and setting their telegraph papers on fire; Northern Lights spread as far south as Cuba and

Hawaii; auroras over the Rocky Mountains were so bright, the glow woke campers who began preparing breakfast because they thought it was morning!

“A contemporary repetition of the Carrington Event would cause ... extensive social and economic disruptions,” the report warns. Widespread failures could include telecommunications, GPS navigation, banking and finance, and transportation. The total economic impact in the first year alone could reach \$2 trillion (some 20 times greater than the costs of Hurricane Katrina).

The report concluded with a call for infrastructure designed to better withstand geomagnetic disturbances and improvements in space weather forecasting. Indeed, no one knows when the next super solar storm will erupt.

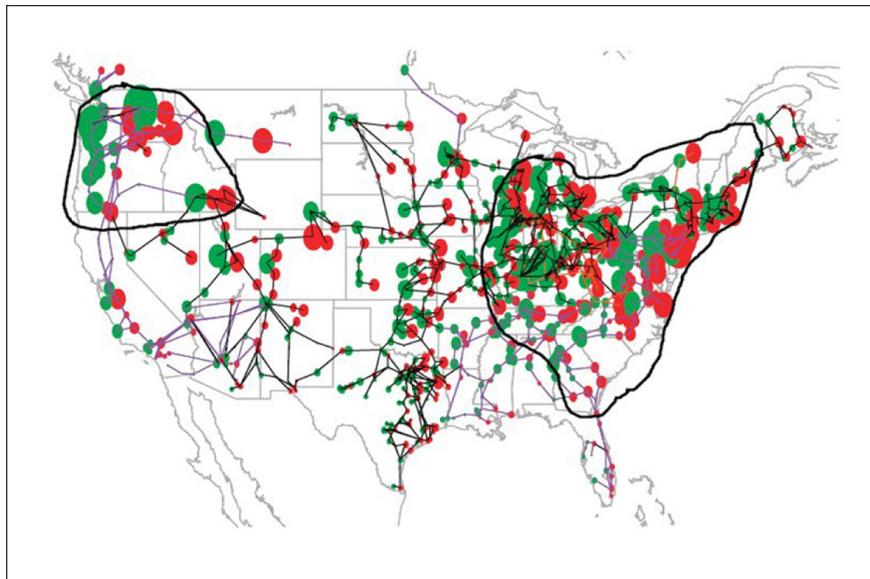
It could be 100 years away or just 100 days. It's something to think about ... the next time you flush.

One of the jobs of the Geostationary Operational Environmental Satellites (GOES) and the Polar-orbiting Operational Environmental Satellites (POES) operated by NOAA is to keep an eye on space weather and provide early warning of solar events that could cause trouble for Earth.

You can keep an eye on space weather yourself at the National Weather Service's Space Weather

Prediction Center, [www.swpc.noaa.gov](http://www.swpc.noaa.gov). And for young people, space weather is explained and illustrated simply and clearly at the SciJinks Weather Laboratory, [scijinks.gov/weather/howwhy/spaceweather](http://scijinks.gov/weather/howwhy/spaceweather).

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



*On this power-grid map of the United States, the black-circled areas are regions especially vulnerable to collapse during an extreme geomagnetic storm. Inside those boundaries are more than 130 million people. Credit: National Academy of Sciences report on severe space weather.*

# If It's Clear...

by *Fulton Wright, Jr.*

## Prescott Astronomy Club

FEBRUARY 2009

*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.*

On Monday evening, February 2, the Moon is at 1st quarter and sets at 1:32 AM (Tuesday).

On Tuesday, February 3, starting about 7:00 PM, you can see the Moon near the Pleiades. With binoculars look 80 degrees above the southeast horizon for the gibbous Moon. As the evening progresses, the Moon moves away from the star cluster.

On Friday, February 6, at 4:27 AM, you can see 2 of Saturn's moons very close together. As a matter of fact, Enceladus (mag 11.6) transits (moves in front of) Tethys (mag 10.1). They are within 1 arc-second of each other from 4:07 AM to 4:39 AM. With a medium (6 inch) or bigger telescope look 60 degrees above the southwest horizon for Saturn. The satellites are to the celestial east (upper left) of the planet.

On Sunday, February 8, at 5:30 PM (36 minutes before sunset) the full Moon rises spoiling any deep sky observing for the whole night.

On Monday, February 9, at 12:30 AM, Dione and Tethys form a 1.5 arc-second, magnitude 10 "double star" to the celestial west of Saturn. With a medium (6 inch) telescope look 50 degrees above the southeast horizon for the mag 1 planet.

On Wednesday, February 11, around 2:00 AM, you can see three of Saturn's moons near each other. With a medium (6 inch) telescope look 60 degrees above the south horizon for the mag 1 planet. To the celestial west (to the right in the sky) you can see

Rhea (mag 9.6), Tethys (mag 10.1), and Rhea (mag 10.3) within a 3 arc-second circle.

Starting Tuesday, February 17, about 6:40 AM, you can see solar system objects near each other. This morning Jupiter and Mars are close. February 22 has the Moon joining the group. February 24 has Jupiter and Mercury close. March 1 has Mars and Mercury close. All these observations will be very difficult because they happen low in the east-southeast during twilight.

On Tuesday, February 17, at 2:02 AM the third quarter moon rises, allowing most of Monday night for deep sky observing.

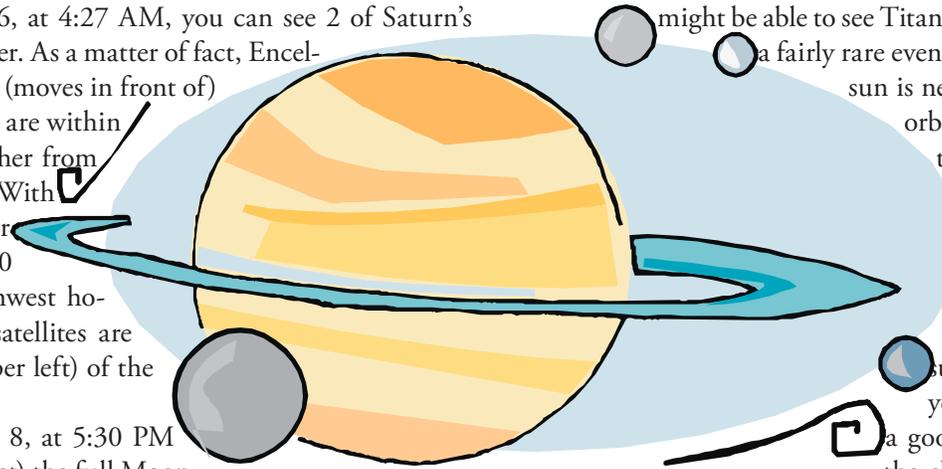
On Tuesday, February 24, it is new moon, and you can observe faint fuzzies all night.

On Tuesday, February 24, from 3:35 AM to about 5:45 AM, you

might be able to see Titan's shadow on Saturn. This is a fairly rare event. It only happens when the sun is nearly in the plane of Titan's orbit. The event this month is the first of 10 chances to see it that we will get in 2009. After that we have to wait 15 years for it to happen again. Since I have never tried to see this, I'm not sure how big a telescope you will need, but it will be a good deal harder than seeing the shadows of Jupiter's moons

on Jupiter. The shadow will be crossing near Saturn's north pole. Titan itself goes in front of Saturn at 4:20 AM. I'd be interesting in hearing from any of you who try this observation. Email me at [nancyfulton@cableone.net](mailto:nancyfulton@cableone.net).

On Friday, February 27, about 7:45 PM, you can see the Moon near Venus. With binoculars look 20 degrees above the west horizon for the pair less than 2 degrees apart. With a small (3 inch) telescope you will be able to see that they are both thin crescent phase with the horns pointing almost straight up.



## MCC Open House Events

Mesa Community College is planning three Open House events this spring on Friday nights: February 6, March 6, and April 3. The planetarium show for the first one will be *Secrets of the Sun* which runs about 26 minutes. (Shows for the other two nights are TBD at this time.) This will be shown beginning at 6 pm on the hour and on the half hour until the last show at 9:30 pm. As in the past, these events will be free to the public. Tickets for each individual show can be picked up just outside the planetarium. The planetarium seats 53 persons so anyone wishing to see the show should be able to do so.

Also on these same nights, the Astronomy department (Kevin Healy, John Griffith, Heidi Van Tassell, Milt Johnson, Melissa Bunte and Wayne Thomas) will set up telescopes for the public to view various objects in the sky. At least for the first date, the telescopes will be set up on the patio outside the planetarium. A few telescopes from EVAC members would also be useful to have shorter lines and to increase the number and variety of objects available to view.

We expect a good turnout for all three events since the two events last fall were well attended.

# 2009 - The International Year of Astronomy (IYA)

## What - When - Why - How

by David Douglass

**2009** has been declared as the International Year of Astronomy (IYA). Most of us have read something about it, but what is it? The “declaration” or “proclamation” is made by the International Astronomical Union (IAU), with support of the United Nations. It seems anybody and everybody with anything to do with astronomy is joining in. Even NASA and the ESA with their joint venture of the Hubble telescope (as well as many other telescopes) is joining the event. Local astronomy clubs all over the world are being asked to participate. But how, and why, and by doing what? From an MSNBC article by Andrea Thompson (<http://www.msnbc.msn.com/id/28470077/>) comes this quote: “It’s basically a full court press to improve scientific literacy,” said Stephen Pompea, manager of Science Education at the National Optical Astronomy Observatory (NOAO) and U.S. project director for IYA2009, during a press conference last month at the annual meeting of the American Geophysical Union in San Francisco.

There is an initiative to construct thousands of affordable telescopes, usable by children all around the world, to allow them to view the universe, with a “wow” factor. Stephen Pompea said further in the MSNBC article... “Our particular goal is to get millions of people to look through a telescope for the first time.” Known as the “Galileoscope”, the projected cost is something like \$10 to \$15 each, purchased in bulk. The Cloudy Night forum

(<http://cloudynights.com/ubbthreads/ubbthreads.php?Cat=>) which is the official forum of the 2009 IYA, reports that the units are not yet available, but should be very soon. Apparently, prototypes are available, and are somewhat impressive. The \$10 to \$15 cost would be for the ota, but will not include a tripod.

There is even going to be some magic in the air. At the opening of the US IYA 2009 ceremony set for Jan 6th in Long Beach, California, at the winter meeting of the American Astronomical Society, light collected (observed) at the Cincinnati Observatory Center, via the world’s oldest telescope still in nightly use by the general public (dates from 1842), will be virtually passed to the opening ceremony for the purpose of a virtual ribbon-cutting. This “light” will be from the observation of the Pleiades (M45, and also known as the Seven Sisters) star cluster, which is 400 light years away. That number is symbolic with the 400th anniversary of Galileo’s first telescope observations of the night sky. Information on the Cincinnati Observatory Center can be found at: <http://www.cincinnatiobservatory.org/>

And lastly, the IYA is including educational material and hosting events featuring the so-called dark skies initiatives to draw attention to the problem of light pollution.

The IYA is not a single day or night event. Not even a week long effort, or a month long effort. It is an entire year. So it is hard to

say “What will we, as the East Valley Astronomy Club (EVAC) do to celebrate the IYA?”. The IYA is about education. Education for the young, as well as the not so young. In more simplistic terms, the IYA is about “public outreach” events.

Public Outreach, is one of EVAC’s strong suits, and has been for some time. It is one of the characteristics of our group that describes us best. Not all astronomy clubs participate in regular public outreach events. Again, reading the Cloudy Nights forums IYA articles, many clubs say that they will schedule “a” public star party, or host “a” star party at a particular school, or hold “a” special public speaking engagement to discuss the event. Sound familiar? So what will EVAC do? I think we are already doing it. And we will continue to do it. Our schedule of Public Outreach events for 2009 (the IYA) include:

12 Monthly Public Star Parties, scheduled on the second Friday of each month at the Riparian Preserve in Gilbert, next to the GRCO observatory adjacent to the Gilbert Library at the corner of Guadalupe and Greenfield Roads. These Public Star Parties are free and open to the public, and start about sunset in the evening.

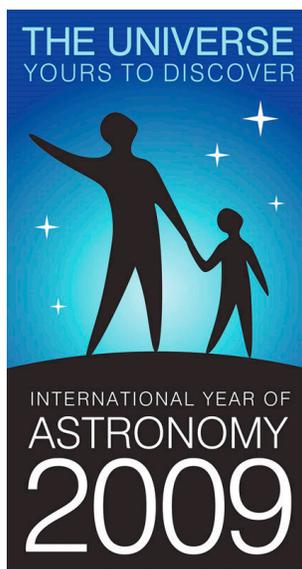
12 Monthly Lectures (Skywatch), conducted in conjunction with the Riparian Institute at the Gilbert Library, again on the 2nd Friday of each month, starting at 7:00 PM. Following the speakers presentation, participants are encouraged to visit the GRCO observatory. Information about the Riparian

Institute can be found at : <http://www.riparianinstitute.org>

52 weekend (Friday and Saturday nights) events at the Gilbert Rotary Centennial Observatory (GRCO). This observatory is open to the public, and although free, a voluntary donation of \$3.00 per person is suggested. GRCO is most appreciative of donations to offset continuing operating expenses. The observatory, built with cooperation and donations from members of EVAC, the Gilbert Rotary Club, the Salt River Project, and of course the Town of Gilbert, is operated by volunteers from EVAC and the Riparian Institute.

Between 30 and 50 public group events, mostly elementary schools, which are attended by hundreds of young people and their families. These events are scheduled through the EVAC Outreach Request Form on our website at <http://www.eastvalleyastronomy.org/> and are open to schools, clubs and groups. Coordination of these events is handled by our clubs Events Coordinator Randy Peterson, who can be contacted at [events@evaonline.org](mailto:events@evaonline.org)

Public Outreach is not new to EVAC. We have been doing it for years, and will continue to offer these services into the future. It will be our commitment to 2009, the International Year of Astronomy.



# THE DEEP SKY OBJECT OF THE MONTH

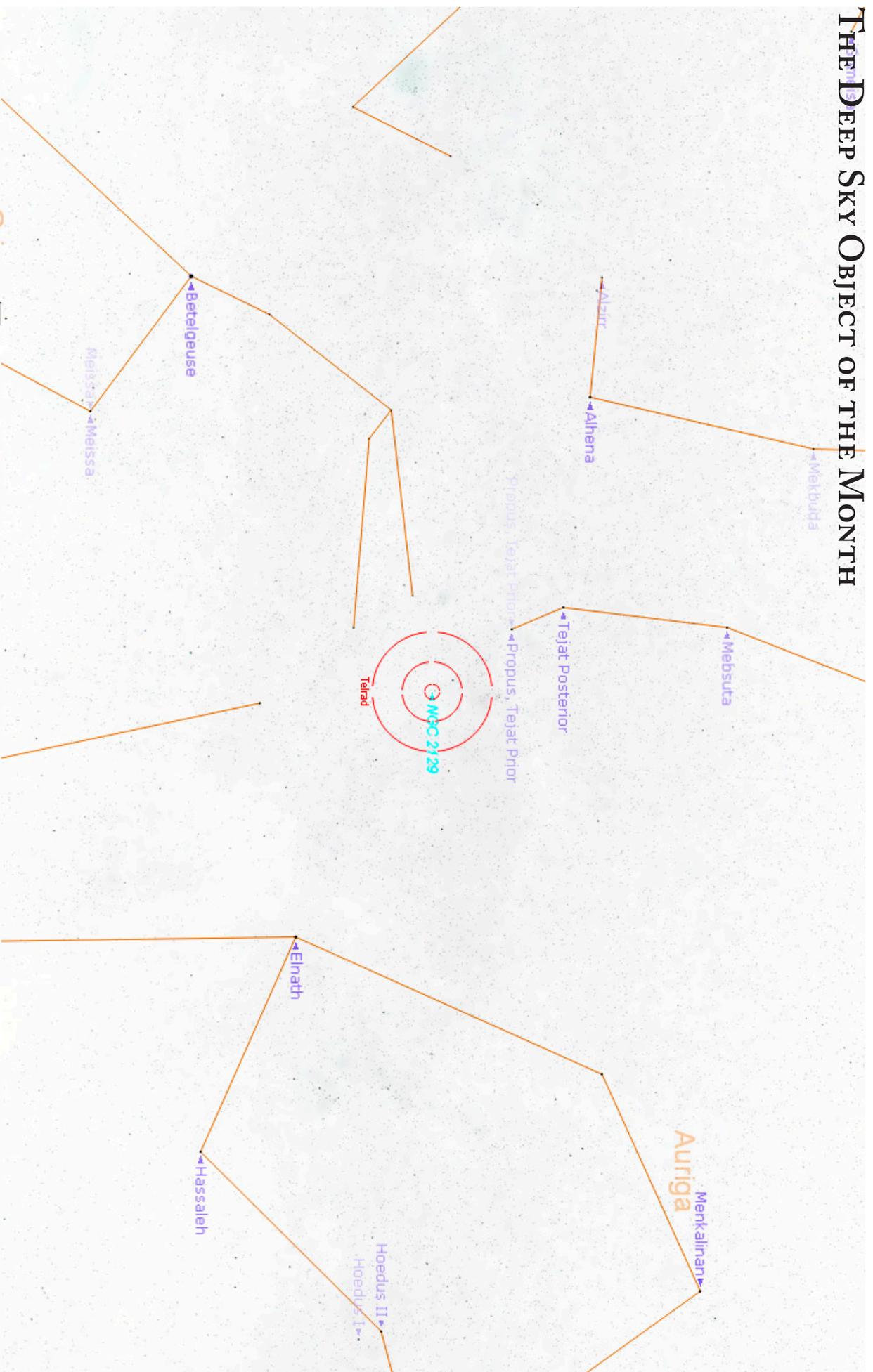


Chart generated with Starry Night Pro

NGC 2129 (Collinder 77) Open Cluster in Gemini

RA 06h 01m 07.0s DEC +23° 19' 20" Magnitude: 7.0 Apparent Size: 5.0'

# From the Desk of the President

*Continued from page 1*

Haynes went down to the Gilbert Freestone Community Building, about 1.5 miles to the west, to see if someone could come down, and let us in. Not to be! But, they had a large room we could use there. Randy Peterson was also on the phone with them, and between everyone, we made arrangements to move the meeting. A large car caravan was quickly organized, and we moved to the Freestone facility. The meeting was only delayed about 20 minutes, and I really don't think we lost anybody, and the meeting proceeded normally. I have now made notes on those names, and phone numbers, for future reference.

Saturday, Jan 18th was to be our regular Local Star Party at the Boyce Thompson Arboretum State Park, near Superior. However, we had a request from the FOBT Association (Friends of Boyce Thompson), to host a members evening to view the stars. Normally, we do this twice a year, but they wanted to try and add another viewing. It was short notice for them, and us, but a goodly number of people turned out, from both EVAC and FOBT. FOBT supplied an evening meal of brats, soups, and beverages, and EVAC supplied the telescopes. The weather was wonderful, and by 8:00 that evening, the FOBT group was heading home, and our regular evening of dark sky observing continued to about midnight. There were at least 20 telescopes there that night, and I know everyone was having a wonderful evening.

On Friday, Jan 22nd, EVAC was to host a school star party at Jacobson Elementary in Chandler, with an expected attendance of about 600 people. Many EVAC members had volunteered to provide telescopes, but alas, the weather did not cooperate, and at the

last hour the event was cancelled. It will hopefully be rescheduled. Many thanks to the EVAC members who volunteered to help in this event.

Speaking of school outreach programs, the February calendar, found on our website at <http://www.evaconline.org> is currently showing 7 school events, an Arizona Science Center event, and our usual collection of public and member star parties. Our events coordinator, Randy Peterson needs all the help he can get, so if you can volunteer to provide a telescope for one or more of these events, please contact Randy at [events@evaconline.org](mailto:events@evaconline.org) and let him know. I promise, you will enjoy it, and will want to attend more events as they are planned.

Starting with our February meeting, I would like to start a "Show and Tell" before we take our break. I am thinking of a member with something to "Show", and maybe "Tell" about. This could be hardware, software, or just an experience, such as working on one of our Observing Programs, or attending an astronomy function. There is a separate mini-article about this elsewhere in this issue of the Observer. Please take a peek, and consider this opportunity to share your experiences with our fellow members and guests.

Our February 20th speaker will be Professor Frank Timmes of the School of Earth and Space Exploration at Arizona State University. His subject is "White Dwarf Supernova: Dark Energy and Astrobiology Implications". I certainly look forward to seeing all of you then.

I wish each of you "Clear Skies". And remember, "Keep Looking Up".

## Call for Presenters

Starting with the February General Membership meeting, we will allow about 15-20 minutes, just before the break, for a "SHOW AND TELL" session, where one of our members can "SHOW" off some piece of hardware or software that they are really "into", or perhaps "TELL" about a recent astronomy related experience, such as working on one of our Observing Programs, or attending an astronomy related function.

If you would like to participate, and I hope that there are many of you who will, please email me at [president@evaconline.org](mailto:president@evaconline.org) and let me know what subject you would like to present to the club. We will only have one presentation for each meeting. A computer is available, equipped with Microsoft PowerPoint, as well as Corel Presentations. If you have slides or just images (jpg, bmp, etc) that you want to present, they can be on a "usb stick", or other usb device that works with Windows Vista (32bit), or on a CD, or DVD.

We are also considering short mini-presentations either before the general membership meeting (7:00 – 7:30), and/or during the meeting, to address issues of interest to our members. These presentations could be on hardware issues (How do I Align a GoTo Telescope? What is the difference between a Dob and an SCT?), general issues (How do I decide what to look at in the night sky

tonight?), and/or anything else astronomy related, and of interest to our members. If you would like to see a particular presentation, or perhaps host one, please email [president@evaconline.org](mailto:president@evaconline.org) with your ideas.



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*Keep Looking Up!*

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