November 2006

The Voyager

East Valley Astronomy Club

Volume 20 Issue 11

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

November has two special events occurring. First we will be picking up trash along the US60 corridor like we have in the past, as a participant in the Adopt-A-Highway program. The date and time chosen is November 4, 2006 at 8:00 am. EVAC's stretch of highway is nearly centered on the overhead traffic sign used for amber alerts and highway closures in the mountainous area around Globe. This is where we'll meet. Long pants and gloves are recommended for picking up the debris out of the tall grass, please leave the snakes alone. As always EVAC will pick up the tab for your breakfast/lunch following the event at the Village Inn in Apache Junction!

November is also our elections month for voting in those who will run the club in 2007. There is still one position open, Board Member. Even if you think you don't have all that it takes, give it a shot, you may surprise yourself.

Additionally, at our November meeting we'll have Ronald Greeley of ASU as our guest speaker. Dr Greeley will give a presentation entitled 'Exploration of Mars from Orbit'. Join us at the Southeast Regional Library (Gilbert Public Library) on Friday, November 17th, at 7:30PM. The GPL is located at the Southeast corner of Greenfield and Guadalupe Roads.

The Backyard Astronomer
The Strange Case of Libra *by Bill Dellinges*

Libra: Latin for weight or measure.

In early Mesopotamian times it was recognized that a certain band of sky was special because the sun, moon, and planets traveled through it.

By 600-500 BC, the Greeks had arranged this area into what they called the zodiac (Gk. "circle" or "ring of animals"). However, Libra was not recognized as one of their twelve zodiacal constellations. In fact, the Greek zodiac had only 11 constellations. For reasons that are unclear and perhaps lost in the "mists of time", the Greeks saw the stars of Libra not as a balance scale but an extension of the claws of Scorpius (Chelae Scorpionis). In a way, this makes sense from the Greeks' point of view since a balance scale would not be consistent with a "ring of animals" (Note Libra is the only inanimate zodiacal constellation).

If you were to look up the history of Libra, you'd find numerous references to the fact that the Romans created Libra during the reign of Julius Caesar, around 46 BC, during the development of the new Julian calendar. Initially Caesar was depicted holding the scales, perhaps to convey his concern for justice (justice in 46 BC?). Later, the balances stood alone on their own merit. Another view has the scales representing the balance of day and night during the autumnal equinox, when, in that epoch, the sun was

(Continued on page 2)

Inside this issue:

November Events:

- *Public Star Party in Gilbert - November 10*
- *Local Star Party at Boyce Thompson - November 11*
- *General Meeting at Southeast Regional Library - November 17*
- *Deep Sky Star Party at Vekol Road - November 18*

The Backyard Astronomer

(Continued from page 1)

found there. Since then, precession has moved the autumnal equinox into Virgo. [In regard to the Libra equal day/night/equinox connection, it is interesting to consider there are two equinoxes. Why was the autumnal one chosen over the vernal one?].

Another puzzle regarding Libra occurs at this point in time. Greek astronomer Claudius Ptolemy of Alexandria produced his Syntaxis Mathematica around 140 AD. This was just under 200 years after Libra's creation. It is well established this work was passed on and translated into Arabic (Almagest). Since the Arabic translation of Libra's two brightest stars, Zubeneschamali and Zenbenelgenubi, mean northern and southern claw, it appears Ptolemy didn't recognize the scales. He must have passed on to the Arabs the stars of Chelae. Why? Apparently he felt more allegiance to his Greek roots regarding this part of the sky.

There are several other references concerning the history of the scales, the most commonly mentioned one would be the scales of justice held by the goddess of Justice Astraea (what we now consider Virgo, the Virgin or Maiden).

Often there is more than one version of a myth, thus we find Virgo interchangeably seen as Ceres, the goddess of the Harvest, holding in her left hand a spike of wheat represented by the star Spica (spike-Spica). Want more? How about Ceres-Cereal!

So are we to assume there were only 11 zodiacal constellations before Roman times? Probably not. There are many pieces of evidence that allude to Libra existing before Roman times. For unknown reasons, the Greeks either didn't recognize Libra or knew of it but kept it on the back burner in favor of the scorpion's claws. If they needed twelve signs of the zodiac, they could always use Chelae. Keeping in mind the scant records available to us from a period 2500 years ago, the vicissitudes of passing time, and cultural tampering here and there, we can find indications Libra existed prior to 46 BC.

Most experts on constellation lore agree that the original 48 ancient constellations have roots going back to perhaps 3000-4000 BC to Sumerian and Babylonian times. So it should be no surprise that we find:

In Star Lore, Their Lore and Meaning, Richard Allen states "The Romans added Libra to the original 11 signs in its modern revival as a distinct constellation." (p.270). And, "Impossible to trace with certainty the date of formation (of Libra), yet there was probably some figure here earlier than the Claws and formed in Chaldaea in more than one form (p.273).

A balance scale is shown on the Egyptian Dendera Temple (~36 BC) as a zodiacal constellation. While this is later than 46 BC, considering the lack of instant communications in those days, one might wonder if the Egyptians knew of something related to a scale in this part of the sky before the Romans "invented" Libra.

The Farnese Atlas, a marble statue of Atlas holding a celestial globe depicting constellations (but not individual stars) and dated variously from 200 BC to 100 AD, clearly shows a balance scale between Virgo and Scorpius. This piece is thought to be a later rendition representing the skies proposed by Eudoxus in his Phaenomena of 345 BC [The Mapping of the Heavens, p. 21, Peter Whitfield].

In William Tyler Olcott's Star Lore - Myths, Legends, and Facts, we find "The Libra of the zodiac, says Maurice, in his Indian antiquities, is perpetually seen upon all the hieroglyphics of Egypt, which is at once an argument of the great antiquity of this asterism, and of the probability of its having been originally fabricated by the astronomical sons of Misraim."[p.251]. Also, "It is not clear why the Greeks failed to discover it."[p.250].

Owen Gingerich, in The Great Copernicus Chase, states on page 8, "The balance occurs in one of the oldest known lists of zodiacal constellations, the first Babylonian tablet in the so-called mul-Apin series, dating from around 700 BC."

Ian Ridpath in Star Tales, page 85 notes "But the idea of a balance in this area did not originate with the Romans. According to historian Gwyneht Heuter, the Sumerians knew this area as ZIB-BA AN-NA, the balance of heaven, in 2000BC."

The references given here are just a few examples alluding to the possibility that Libra was recognized well before Roman times, notwithstanding the difficult if not impossible task of determining unambiguously what exactly occurred during the creation of the constellations during the last 5000 years.

So the case of Libra is indeed a strange and baffling one. Oh, by the way, on an unrelated note, I'd like to say…I miss Pluto.

2006 All-Arizona Star Party

Many thanks to Gwen Grace for organizing a fantastic AASP!

Celebrating Solar System Exploration: A Christmas Gift Idea

by Laurice Dee, Ph. D.

As I write this piece, I am still suffering from "plutoitis". I was hoping that Pluto's demotion was a dream; however, when I tried to pinch myself, I realized that it was a reality. Perhaps if I move on to other subjects in my write-ups, the "Pluto Fever" will dissipate!

Speaking of other subjects, can you believe Christmas is already 'round the corner? I'll bet many of you have been thinking about what you'd get for your family and friends for Christmas. I do have an idea here, and I would be interested to know what you think of it.

How about gazing at your favorite solar system object that is sitting on your desk while you work on your computer? How about admiring your special planet that is on your bookshelf while you retrieve a book? How about having a close-up look of your beloved celestial object that is on your window sill while you wash the dishes in the kitchen? How about marveling at a beautiful object that resembles that of a planet while holding it in your hands? How about giving something that is a favorite of yours to someone that you care about?

I came across some handmade objects for the first time while I was browsing at a gift store in the Town & Country Mall, Phoenix, AZ, back in the mid '90s. I could not get my eyes off the beautiful solar system objects that were made in glass. I marveled at their beauty and promised myself that I'd purchase one or two of them "sometime soon". However, because of my extremely busy schedule during the following years, I did not get to see the glass objects until I came across similar ones at The Gift Shop in Fiesta Mall, Mesa, AZ, earlier this year.

Whenever I see the handmade objects at The Gift Shop (one of my favorite stores at Fiesta), I always marvel at their uniqueness. Each planet, as well as the Sun and our Moon, is encased in clear or reflective spherical glass. The solar system objects come in all kinds of colors, and various materials are used to create these round objects. A little sign is available with each object, and it describes what the object is while giving a little background on its position in the solar system. There is even a little stand where each object can be displayed.

I love seeing the diversity of the handmade planetary objects in terms of colors, size, and materials being used. It is impossible for me to get my eyes off the details that had been produced for each solar system object. Whenever I look at each object, I always enjoy reflecting on its position in our celestial neighborhood.

Professional artists at Glass Eye Studio create all kinds of glass objects. They use their creativity to produce the colors and materials for the Sun, our Moon, and the rest of the solar system. Every six months, the studio releases the new versions of the same celestial objects. For example, back in the '90s, Saturn and its rings (in two dimensions) were encased in clear spherical glass. The studio now has Saturn and its majestic rings by themselves (without being encased in glass).

What is so special about the glass designs is the transmission of color through the glass, as well as the reflection of color from the surface of glass. Together, the reflected and transmitted light produce an unique two-color effect that can be identified by viewing the glass from the front (looking straight on) and when the glass is turned approximately 45 degrees. This is called Dichroic Glass. To fully experience the beauty of Dichroic Glass, the piece must be held in your hands and viewed so that the changes of light and color can be seen.

Glass Eye Studio: Quick Information
The website address for Glass Eye Studio is www.glasseye.com. The website contains all the information that you would like to know about the glass products and how you can order them online. If you prefer to see the products in person, there is a list of stores where you can take a look at them, as well as purchasing them.

Glass Designs: The Celestial Series
Once you get to the home page of the Glass Eye Studio website, go to the right column. After clicking on "Celestial" from the select-a-series column, you would view all the solar system objects created by Glass Eye Studio. You can click on any object for a close-up look and to read its description. You can also order it by following instructions from the website.

Glass Designs: Other Series
Artists at Glass Eye Studio not only create celestial objects but produce objects for the following series: Environmental, Night Sky, Artist, Garden, Vases & Bowls, Ornaments, Weights, Perfume Bottles, Limited Editions, and Other Works. You can click on any of the above to enjoy knowing what they are like.
Pluto is one of the objects displayed at The Gift Shop. I must say that it is beautiful! The colors of Pluto itself are so vibrant – dark purple and gold with little bit of black, red, white, and lilac thrown in. Pluto is encased in a reflective glass where you can see the colors from the outside. You can peer in through the clear part of the glass to see Pluto which appears from the inside.

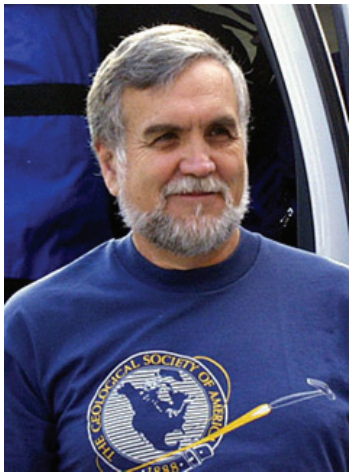
Whenever I see Pluto, I somehow feel better knowing that it is still displayed with the other celestial objects and that it is not lost altogether. Perhaps this is a way for me to overcome plutoitis!

Laurice Dee, Ph.D.

JPL Solar System Ambassador

If you have any questions and would like to comment, please do contact Dr. Dee at launchspace@msn.com or send her a fax at 480.890.7878. The website for the JPL Solar System Ambassadors Program is http://www.jpl.nasa.gov/ambassador.

November Guest Speaker : Dr. Ronald Greeley



Ronald Greeley is a Regents' Professor in the Department of Geological Sciences at Arizona State University and Director of the NASA Regional Planetary Image Facility and Interim Director of the ASU School of Earth and Space Exploration. He has been involved in lunar and planetary studies since 1967. Current research is focused on understanding planetary surface processes and geological histories. The approach involves a combination of spacecraft data analysis, laboratory experiments, and geological field studies on Earth of features analogous to those observed on the planets.

After receiving his Ph.D. in Geology in 1966, Greeley worked for Standard Oil Company of California. Through military duty, he was assigned to NASA's Ames Research Center in 1967 where he worked in a civilian capacity in preparation for the Apollo missions to the Moon. Subsequently, he remained at NASA to conduct research in planetary geology. With the results from planetary missions in the early 1970s, attention shifted to Mars and research on volcanism and aeolian processes through the analysis of Mariner 6, 7, and 9 data. Results from this work were applied as a science team member on the Mars Viking Mission, 1976-80.

In 1977, Greeley joined the faculty at Arizona State University with a joint professorship in Geology and the Center for Meteorite Studies. Current projects include study of wind processes on Earth, Mars, and Venus, field studies of basaltic volcanism, and photogeological mapping of planets and satellites. Planetary mission involvement includes science team membership on the Galileo Jupiter mission, Mars Exploration Rovers, and the European Space Agency Mars Express mission. Greeley has served on various NASA and National Academy of Science panels to assess space science and planetary geology activities. He has chaired the NASA Planetary Cartography Working Group, the National Academy of Sciences Committee on Lunar and Planetary Exploration, and the NASA Mars Exploration Program Analysis Group; he currently chairs the NASA Astobiology Institute Europa Focus Group. He is author or co-author of 14 books and more than 240 papers.

Dr. Greeley's presentation is entitled "Exploration of Mars from Orbit."

Announcement of EVAC as 501(c)(3) Organization

As many readers probably already know, EVAC was formed in 1987. Eight years later we organized as a nonprofit corporation to support education in astronomy and related sciences through various member activities and public outreach initiatives. Eleven years later we began the process of seeking federal tax exemption as a 501(c)(3) charitable organization. At the end of September 2006 we were notified that our application had been approved. EVAC is recognized by the IRS as a public charity retroactively to our incorporation date of June 19, 1995.

Contributions to the club are deductible under section 170 of the Internal Revenue Code, and shall be used for the activities that carry on the goals of the organization as specified in our Articles of Incorporation on file with the Arizona Corporation Commission.

Our specific public charity status is 170(b)(1)(A)(vi). In layman's terms, this status refers to the percentage of a contribution made to the club by an individual that is deductible to the donor. We are classified as a 50% organization. It is beyond the responsibility of the club to provide tax counsel to the general public beyond stating that any charitable contribution shall be allowed to the extent that the aggregate of such contributions does not exceed 50 percent of the taxpayer's adjusted gross income for the taxable year.

As an exempt organization EVAC is required to comply with public disclosure rules regarding certain documentation. We have elected to make all required documentation publicly available on our website, a method approved by the federal government. The web page fulfilling this requirement is:
www.eastvalleyastronomy.org/publicaccess.htm

There is also a link to this page from the main EVAC web page.

Furthermore, EVAC will provide printed copies of the documentation to anyone making such a request. In compliance with IRS guidelines there is a fee for printed copies plus the actual postage.

In addition to exemption from federal income tax and tax deductibility for donors, the club may also qualify for other benefits such as a bulk mailing permit and eligibility for government and foundation grants. Stay tuned for more information as we settle into our new status and fully explore its myriad benefits to enhance the club for its members and the community in which it operates.

Classified Advertisements

Meade LX200 Schmidt-Cassegrain Telescope

For sale is my brand new 10" Meade LX200 SCT. I am unable to use it now and would like to sell it for a good price. Included is the telescope, tripod, finder scope, manual and several eyepieces.

Will sell all for $2,200 or best offer.

Robert J. Anderson

Phone 480 854 9236

Celll 480 437 4807

Robertjboba@wmconnect.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)

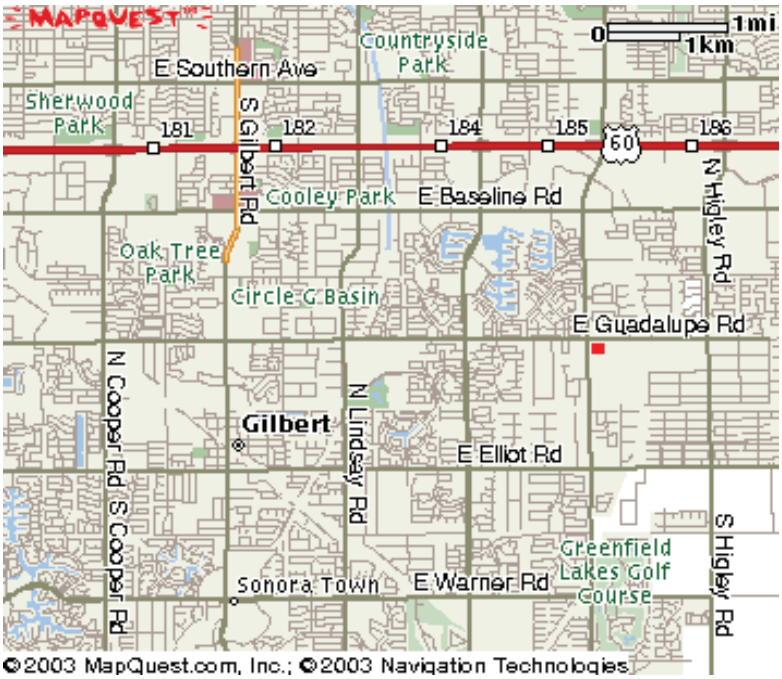
Meade warranty including shipping until 12/29/2006 ($299/year)
A new 12" LX200R is $4,694, your price is $3,000.

Marty Pieczonka (480) 983-0915

martyp@sybase.com

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.

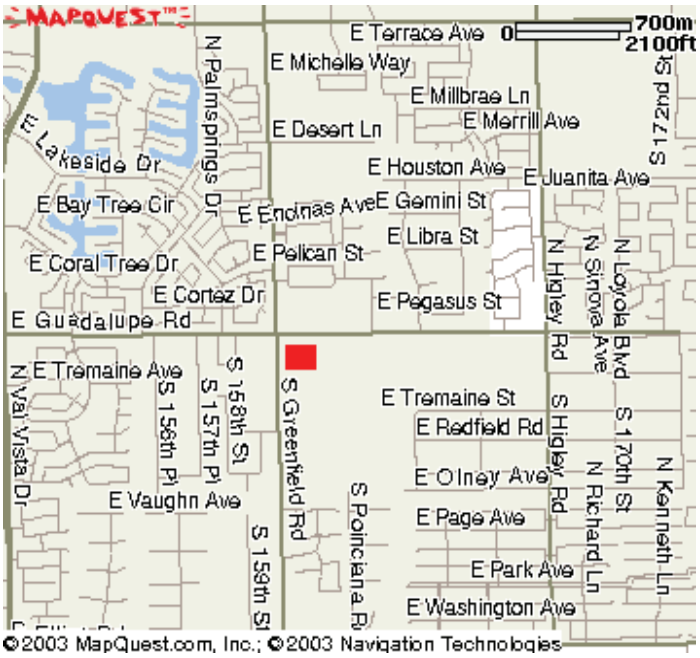
Ads should be emailed to: news@eastvalleyastronomy.org



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!



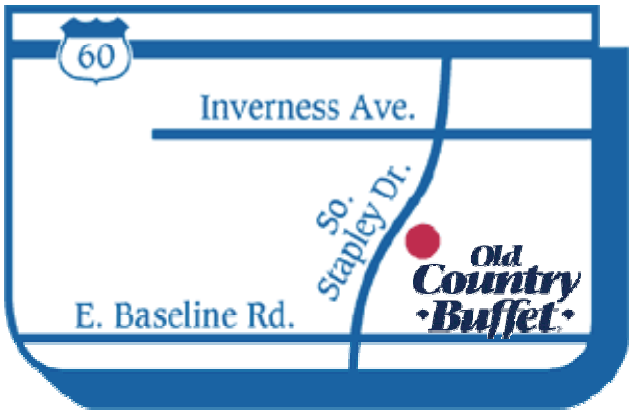
2006 Meeting Dates

November 17

December 15

Holiday Party

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

November 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		

Minutes of October General Meeting

Meeting date: Saturday, October 14, 2006

Meeting location: Southeast Regional Library in Gilbert

The meeting was opened by President Steven Aggas. After the officers in attendance introduced themselves, the visitors did the same.

Steven announced that EVAC had achieved its 501(c)(3) public charity status, due in large part to the hard work of Peter Argenziano.

Events Coordinator Randy Peterson talked about upcoming EVAC shirt orders, if there are at least a dozen people interested. He also discussed 2007 Astronomy calendar sales. Then he talked about a very busy November, with 14 club events.

Treasurer Wayne Thomas provided us with a financial update through September.

Gwen Grace reminded everyone about the upcoming All-Arizona Star Party.

In Howard's absence, Steven conducted the Question and Answer session.

After a break for refreshments, the guest speaker rounded out the evening. Lowell Observatory astronomer Dr Wes Lockwood gave a talk entitled "Impact of Solar Activity on the Climate" in which he presented the results of various studies on solar irradiation, and its subsequent effect on the Earth's climate.

After the meeting several members gathered at Village Inn for coffee and astro talk.

The Colorado River Astronomy Club

in conjunction with the Blythe Area Chamber of Commerce

Invite you to our

Second Annual Colorado River Star Stare

Friday, November 17 & Saturday November 18, 2006

The Colorado River Astronomy Club's Star Stare 2006 will be adjacent to the old Midland townsite. The site is dark and flat. The view is 360° with some low hills to the north and west. Yuma is 112 miles to the south, Las Vegas is 215 miles to the northeast, and Phoenix is 170 miles east.

To get there take I-10 west to Blythe. Exit at Lovekin Blvd and head north. Follow it 21.7 miles (it makes a curve to the west and the name changes to Midland Road) and you're there. he Colorado River Astronomy Club's Banner will mark the actual site.

Details: http://home.earthlink.net/~astroclub/id8.html

Schedule of Events

- November 2 - Webster School Reading Under the Stars
- November 3 - Arizona Science Center Adults Night Out
- November 4 - Scottsdale Stadium Starlight Sleepover
- November 8 - Mercury Transit at the Riparian Institute
- November 10 - Public Star Party at the Riparian Institute
- November 11 - Local Star Party at Boyce Thompson Arboretum State Park
- November 13 - Peralta Trail Elementary School Star Party
- November 15 - ASU Astronomy Class Star Party
- November 17 - November General Meeting at Southeast Regional Library
- November 18 - Friends of the Arboretum Star Party at Boyce Thompson Arboretum State Park
- November 18 - Deep Sky Star Party at Vekol Road
- November 28 - Lindbergh Elementary School Star Party

Colorado River Star Stare

33:51:34 North

114:40:18 West

878' Elevation

East Valley Astronomy Club -- 2007 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):

☐ **$30.00 Individual** January through March

☐ **$35.00 Family** January through March

☐ **$15.00 Individual** July through September

☐ **$17.50 Family** July through September

☐ **$22.50 Individual** April through June

☐ **$26.25 Family** April through June

☐ **$37.50 Individual** October through December

☐ **$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

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Name: _____ Phone: _____

Address: _____ Email: _____

☐ Publish email address on website

City, State, Zip: _____ 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):

☐ General Observing ☐ Cosmology

☐ Lunar Observing ☐ Telescope Making

☐ Planetary Observing ☐ Astrophotography

☐ Deep Sky Observing ☐ 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

The Planet in the Machine

by Diane K. Fisher and Tony Phillips

The story goes that a butterfly flapping its wings in Brazil can, over time, cause a tornado in Kansas. The "butterfly effect" is a common term to evoke the complexity of interdependent variables affecting weather around the globe. It alludes to the notion that small changes in initial conditions can cause wildly varying outcomes.

Now imagine millions of butterflies flapping their wings. And flies and crickets and birds. Now you understand why weather is so complex.

All kidding aside, insects are not in control. The real "butterfly effect" is driven by, for example, global winds and ocean currents, polar ice (melting and freezing), clouds and rain, and blowing desert dust. All these things interact with one another in bewilderingly complicated ways.

And then there's the human race. If a butterfly can cause a tornado, what can humans cause with their boundlessly reckless disturbances of initial conditions?

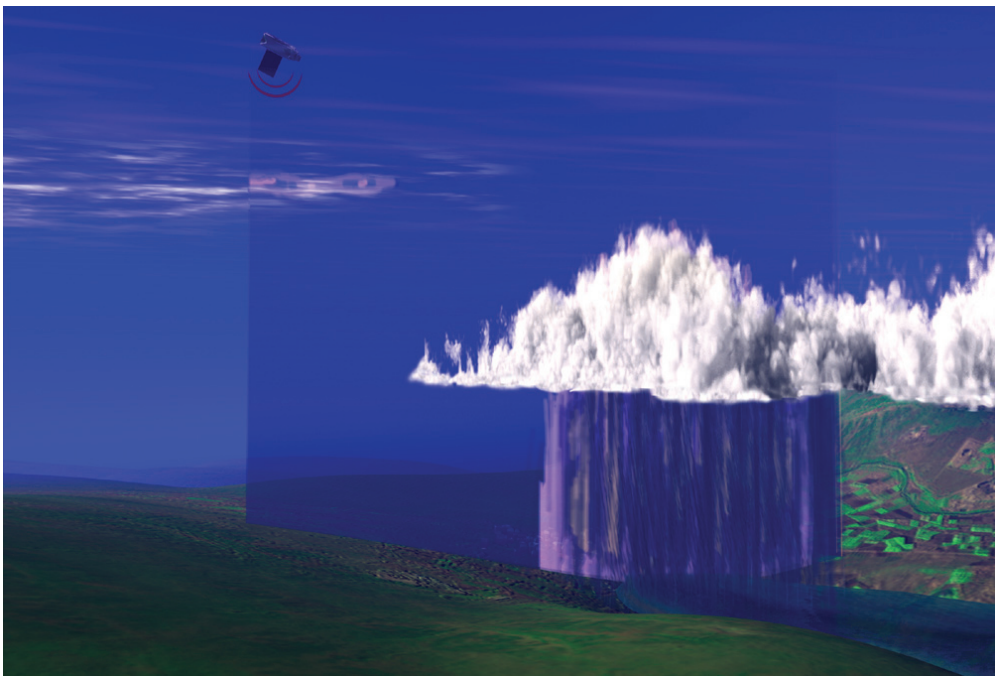
Understanding how it all fits together is a relatively new field called Earth system science. Earth system scientists work on building and fine-tuning mathematical models (computer programs) that describe the complex inter-relationships of Earth's carbon, water, energy, and trace gases as they are exchanged between the terrestrial biosphere and the atmosphere. Ultimately, they hope to understand Earth as an integrated system, and model changes in climate over the next 50-100 years. The better the models, the more accurate and detailed will be the image in the crystal ball.

NASA's Earth System Science program provides real-world data for these models via a swarm of Earth-observing satellites. The satellites, which go by names like Terra and Aqua, keep an eye on Earth's land, biosphere, atmosphere, clouds, ice, and oceans. The data they collect are crucial to the modeling efforts.

Some models aim to predict short-term effects—in other words, weather. They may become part of severe weather warning systems and actually save lives. Other models aim to predict long-term effects—or climate. But, long-term predictions are much more difficult and much less likely to be believed by the general population, since only time can actually prove or disprove their validity. After all, small errors become large errors as the model is left to run into the future. However, as the models are further validated with near- and longer-term data, and as different models converge on a common scenario, they become more and more trustworthy to show us the future while we can still do something about it—we hope.

For a listing and more information on each of NASA's (and their partners') Earth data-gathering missions, visit science.hq.nasa.gov/missions/earth.html. Kids can get an easy introduction to Earth system science and play Earthy word games at spaceplace.nasa.gov/en/kids/earth/wordfind .

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



CloudSat is one of the Earth observing satellites collecting data that will help develop and refine atmospheric circulation models and other types of weather and climate models. CloudSat's unique radar system reads the vertical structure of clouds, including liquid water and ice content, and how clouds affect the distribution of the Sun's energy in the atmosphere. See animation of this data simulation at www.nasa.gov/mission_pages/calipso/multimedia/cloud_calip_mm.html.

If it's Clear...

by Fulton Wright, Jr.
Prescott Astronomy Club

November 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 Sunday, November 5, at 5:58 AM it is full moon. That means the moonrise on Saturday (4:54 PM) and Sunday (5:32
PM, same as sunset) will show the Moon equally full and the
faint fuzzies will be hard to see all night.
On Monday, November 6, late in the evening you can see the
southeast (lower-right) part of the Moon at its best. Libration tips that part of the Moon toward us.
On Wednesday, November 8, you can see a transit of Mercury.
In Prescott it starts at 12:12:29 PM and ends at 5:09:28 PM.
Sunset is 5:30 PM. You will want at least a small (3 inch) telescope with a solar filter over the objective to observe this rare event.
On Monday, November 20, it is new moon so you can look for
faint fuzzies all night.
Around Saturday, November 25, about 6:30 AM, you can see
Mercury at its best for 2006. On the 8th you saw Mercury pass in front of the Sun. Now you can see it as far as it gets from the sun. With binoculars look for the (mag -0.5) planet just above the horizon in the east. The few days around this date will also be good.

Sentinel-Schwaar Star Gaze Saturday, November 18

The Sentinel-Schwaar Star Gaze is a chance for astronomers to meet at an Arizona dark sky site. It is sponsored by the Deep Sky Group of the Saguaro Astronomy Club in memory of Pierre Schwaar. There is no registration and no fee to attend, just show up and enjoy the night sky. In the past, folks have arrived on Friday, for two nights of observing. There are no facilities at the site; it is just a large flat area in the middle of the desert southwest. It gets both hot and cold, depending on the whim of the weather, so bring cool water and warm clothes. Please be courteous about white light, many observers and photographers are going after very dim objects.

To get to the site, drive to Gila Bend and get on the I-8 freeway going west toward Yuma. The Sentinel exit is #87, about 30 miles west of Gila Bend. Take the exit and go south, across the railroad tracks. Go straight south on the dirt road and drive 2 miles until you see a large, flat area of the desert to your left, white rocks mark the site. It is before a cattle guard.

● Full Moon on November 5 at 17:58

◑ Last Quarter Moon on November 12 at 10:46

○ New Moon on November 20 at 15:18

◐ First Quarter Moon on November 27 at 23:29

First Light at GRCO
by Steven Aggas

After more than two years of planning, it all came together on Friday, October 20, 2006. That was the long-awaited official opening of the Gilbert Rotary Centennial Observatory.

Friday night marked the informal ribbon cutting ceremony, which was free to all attendees.

The festivities continued on Saturday night with a gala grand opening First Light fundraising event.

The bushes were filled with lights, globe lights on pedestals were strategically placed throughout the grounds to the north of the observatory with tall tables next to them for guests to use for their drinks and h'ordeurves. Teriyaki duck, rice rolls, filled salami twists, and another topped with caviar were some of the available finger foods.

A small ensemble of stringed instruments played in the background while astronomy trivia questions were projected for the guests enjoyment.

Ramadas housed the donated items, including a Meade telescope, for the raffle later that night.

Almost on cue, a large bolide crossed the sky from east to west, one of the most spectacular I've seen! It was extremely bright bluish-white, with parts breaking off like deep red drips as it slowly crossed the sky.

The stage was situated to the east of the observatory, and was flanked by rows of seats for attendees to listen to "First Light" stories, with one involving Arcturus and the Chicago World's Fair, by Master of Ceremonies, Dr. Sky, Mr. Steve Kates.

Operating staff members gathered around the telescope at GRCO.

Photograph courtesy Julio Jimenez / Arizona Tribune

The ribbon cutting ceremony was performed Gilbert Mayor Steve Berman. Groups of attendees were treated to views of Uranus, Albireo, the Dumbbell Nebula with an OIII filter, NGC 7789, and the Double Cluster.

All through the night attendees could enjoy the views, the live, taped, and phone interviews in the background, and views through the scope.

Other speakers included Riparian Institute Director Scott Anderson, Dr. Win Pendleton of EVAC and the Riparian Institute and myself as we welcomed the attendees to *First Light* of the new observatory project.

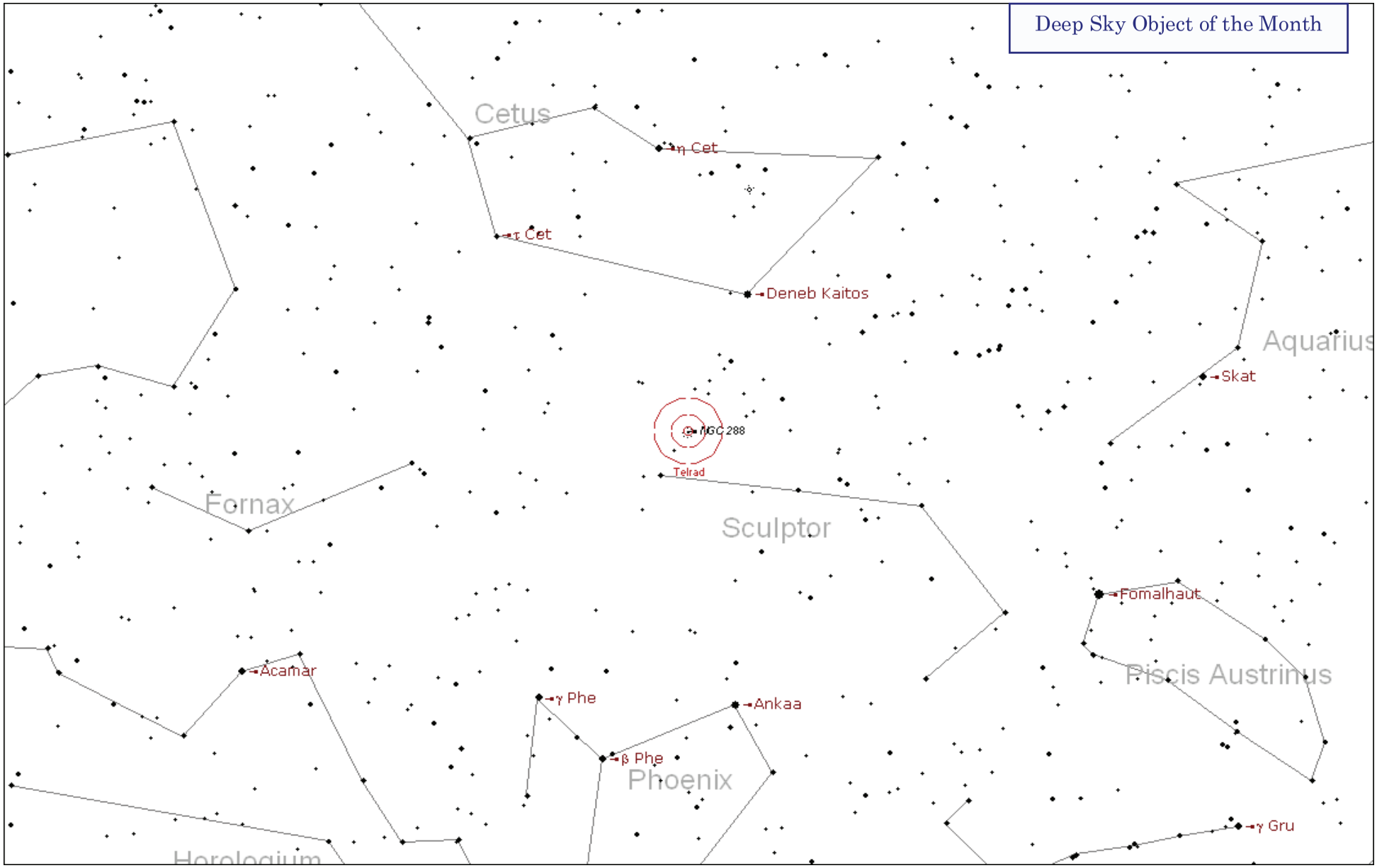
Win was also presented with a large glass award for the time and effort he has put into the observatory.

All in all, it was a great night for the event and enjoyed by all I'm sure.

EVAC Laundry

Interested in an EVAC polo shirt? We are taking orders from now until November 17 (the next general meeting). The shirts will be ready at the December 15 meeting. To order, please give your order to Randy Peterson at the public star party on November 10, or at the November 17 meeting. Or, mail in your shirt request to EVAC, PO BOX 2202, Mesa, AZ 85214 to arrive by November 16. Include the size (S, M, L, XL, XXL, XXXL) and color of your shirt (Ash, Cardinal Red, Kelly Green, Light Blue or Light Steel), accompanied by a check or money order for $16 made out to EVAC. Sorry, we cannot process credit cards. The EVAC logo and name is silk-screened on the right front side, and there is a pocket on the left front side. If we do not make the minimum order of 12 shirts, your money will be returned to you.

Are you interested in ordering an EVAC long sleeved denim shirt? The EVAC logo and name is silk-screened on the right front side, and there is a pocket on the left front side. The minimum order we can place is for 12 shirts. The cost for one of these shirts is $28 each. Please contact Randy Peterson if you are interested. If we get over 12 people who are interested, we will collect the money in advance for this shirt, order them in December for a January delivery.



NGC 288 Globular Cluster in Sculptor

Magnitude: 8.1 Size: 13.0’

RA 00h 52m 45.5s Dec -26° 34’ 51”

Chart created with Starry Night Pro software.

The Vote: 2007

Just as the October general meeting marks the date of official announcement for nominations of candidates for club offices in 2007, the November meeting heralds the actual elections. In reality, elections hardly ever occur since there is rarely more than one person nominated for any particular office. More precisely, the members in attendance will ratify the list of nominated candidates as the 2007 governing body for the club.

The 2007 ticket looks like this:

President: Claude Haynes

Vice President: Michael Prator

Secretary: Wayne Thomas

Treasurer: Bill Houston

Director: Howard Israel

Director: Martin Thompson

Director: Your Name Here

Director: Dave Coshow

Director: Ray Heinle

Property Director: David Hatch

Event Coordinator: Stu Hopper

Event Coordinator: Randy Peterson

Webmaster: Marty Pieczonka

Newsletter Editor: Peter Argenziano

Observatory Manager: Steven Aggas

Please remember that any position may be contested.

M33 (NGC 598)
Triangulum
Imaged on September 10-11, 2005
Instrument: 12.5 inch RCOS RC at F/9
Camera: SBIG STL 11000 Camera
110 Minutes Luminance; R35, G35, B35

Photograph reprinted by permission of Jon Christensen

The Triangulum galaxy is a prominent member of the Local Group of galaxies. This galaxy is small compared to its big apparent neighbors, the Andromeda galaxy and our Milky Way galaxy.

Corrected for our motion around the Milky Way's galactic center, M33 is approaching our galaxy at 24 km/sec.

This galaxy can be seen without optical aid from a truly dark site. For many people it is the most distant object visible to the naked eye. The total brightness of this galaxy is distributed evenly over an area nearly four times that of the full Moon, so its resulting surface brightness is extremely low. Therefore, it would be quite a task to view this galaxy with a telescope that did not allow for the use of low magnification. Unlike many galaxies, this one responds better to the use of low power.

Since there will be no December meeting, there will be no guest speaker. Hope to see you at the 2006 EVAC Christmas party on Friday, December 15th at Casa de Polakis!

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!

East Valley Astronomy Club

PO Box 2202

Mesa, AZ 85214-2202