

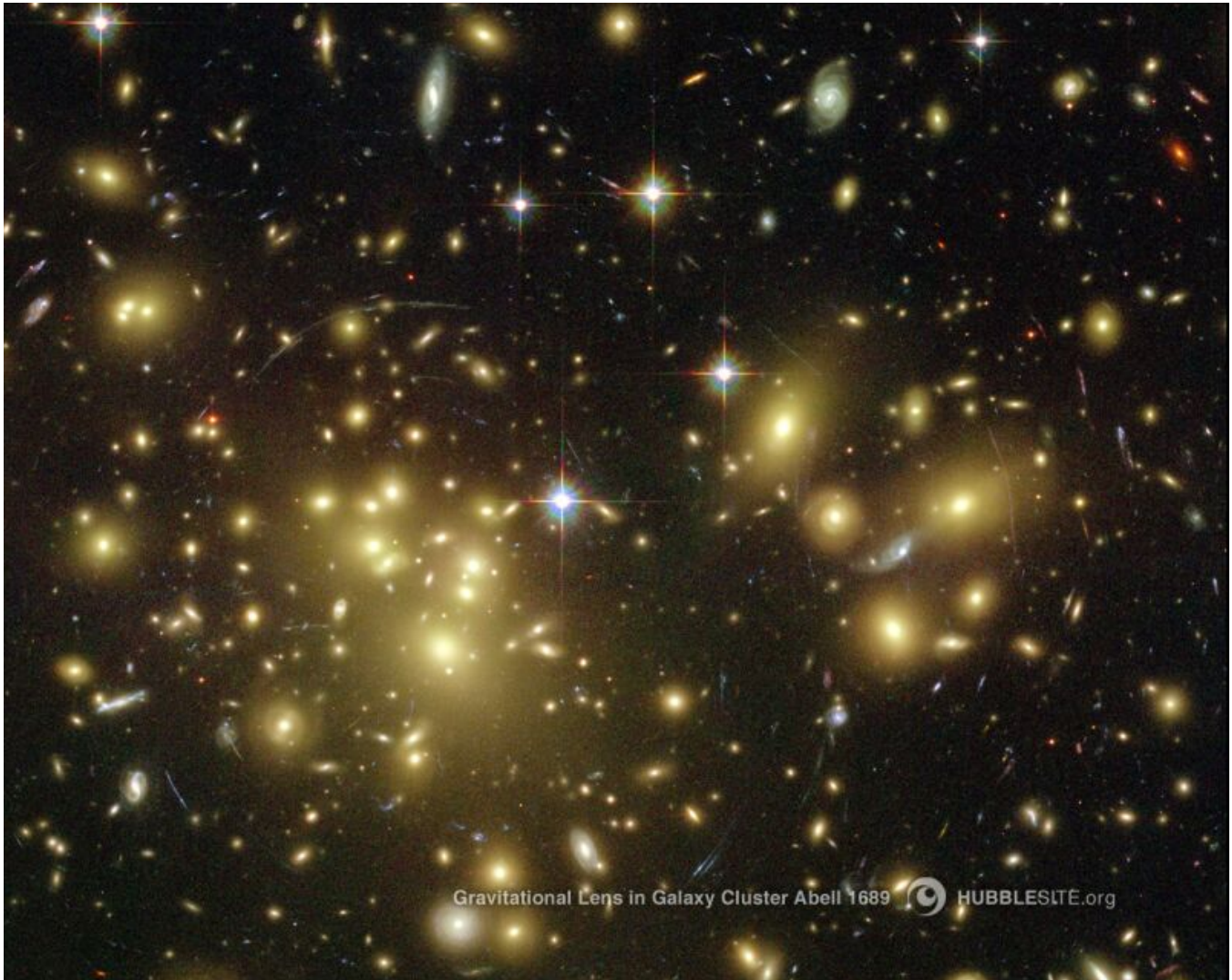


Desert Skies

Tucson Amateur Astronomy Association

Volume LV, Number 4

April, 2009



Gravitational Lens in Galaxy Cluster Abell 1689
(Hubble Space Telescope)

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Cover Photo: Gravitational Lens in Galaxy Cluster Abell 1689 (Hubble Space Telescope)

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| TAAA Board Of Directors | All Board Members | | taaabod@tucsonastronomy.org |

Membership in the TAAA

Annual Fees

| | |
|--|---------|
| Individual membership | \$25.00 |
| Family (includes two adults plus minor children) | \$30.00 |
| Youth under 18 years must join as a family upon parental or guardian acknowledgement of participation in TAAA events. Ask the Treasurer for the required form. | |

Discounts (one discount allowed, subtract from above rates)

| | |
|--|---------|
| Seniors (over 60 years) | \$2.00 |
| College Students, Teachers (K - 12) | \$8.00 |
| Youth under 18 yrs (form required, contact the treasurer)..... | \$13.00 |

Options (add to above membership rates)

| | |
|---|---------|
| Tucson society of the Astronomical League (TAL) fees..... | \$ 7.50 |
| Sky & Telescope Magazine 1 year (12 issues) | \$32.95 |
| Astronomy Magazine 1 year (12 issues) | \$34.00 |
| 2 years (24 issues) | \$60.00 |
| Postage for New Member Pack | \$ 4.80 |

Donations are accepted for the following funds: SA-IDA/Light Pollution, TIMPA, Education, 30" Telescope & Land, and General/Undesignated.

Renewal Information

- Your membership expires as indicated on your mailing label.
- TAAA members may join the Tucson society of the Astronomical League (TAL) at the time they join or renew.
- Discounted Sky & Telescope or Astronomy magazine subscriptions are available to members and can be started or renewed at anytime. Rates are given above. Allow 3 months for processing. Subscriptions must be sent through the TAAA. *Do not send money directly to the*

magazines. To change an individual subscription to the group rate, pay the subscription amount to the TAAA treasurer. Include your magazine renewal notice.

- Please include a note explaining what you are paying for. Credit cards are not accepted. Write one check or money order for fees plus any options or donations. Make it payable to TAAA and send to:

Tucson Amateur Astronomy Association
PO BOX 41254 Tucson, AZ 85717

Mailing Address or Email Changes - Send to address above or email the treasurer.

TAAA Mission Statement - The mission of the Tucson Amateur Astronomy Association is to provide opportunities for members and the public to share the joy and excitement of astronomy through observing, education and fun.

Desert Skies Publishing Guidelines - All articles, announcements, news, etc. must be submitted by the newsletter deadline. Materials received after that date will appear in the next issue. The editor retains all submissions unless prior arrangements are made. Submissions should be submitted in Word compatible files via e-mail or on a recordable media.. All material copyright Tucson Amateur Astronomy Association or specific author. No reproduction without permission, all rights reserved. We will not publish slanderous or libelous material! Send submissions to:

George Barber
TAAA/Desert Skies Editor
15940 W Ridgemoor Ave
Tucson AZ 85736

Join our Email Lists on YahooGroups

Announcements: <http://tinyurl.com/e7o3y> (TAAA news, no posting allowed, 15/month)
TAAA Forum: <http://tinyurl.com/hwoau> (general astronomy discussion, posting allowed, 75/month)
TAAA Dark Site: <http://tinyurl.com/3d8ts9> (discussion of dark site issues, posting allowed)

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President's Message

I would like to begin this month with a mention of last month's Astro Photo group presentation. It was a testament to the talent we have within the club. I would like to congratulate all of the presenters on the fantastic work they do. You are all truly world class.

Spring is upon us at last, and for Southern Arizona that means great nights for astronomy. With the pleasant temperatures and steady seeing, we have wonderful opportunities to enjoy taking final looks at the winter constellations, and some late night introductions to the summer constellations.

For TAAA it means the busiest time of the star party season. We have quite an agenda with the school star party schedule, and the 100 Hours of Astronomy, as part of the International Year of Astronomy. Please take time to help out with one of the events on our calendar. If you have never volunteered to assist in a star party, I am sure you will find it as fun and rewarding as the people who are attending.

Activities are moving forward with the dark site plans, and we should be seeing some of the construction projects begin soon. We have seen a great deal of generosity from all of the volunteers, and from member donations. As we move forward with the construction of phase 1, we begin to look forward to what we would like to do in the next phases, and when. These plans will require us first to conduct an aggressive fund raising activity to raise the money needed to begin these projects. If you have suggestions that can help, please talk with a board member or a member of the Dark Site Strategic Planning Committee. We would love to hear your ideas.

I would like again to thank all of our volunteers for their generosity. It is the help of our members that make all of the club activities possible.

Clear Skies,

Ken Shaver
TAAA President

Meeting Information and Calendar of Events

TAAA MEETING DATE: Friday, April 3, at the Steward Observatory Auditorium - Room N210

ASTRONOMY ESSENTIALS: 6:30 pm

Title: Glass and Mirrors - An inside look at telescopes

Speaker: Terri Lappin

Glass and Mirrors - An inside look at telescopes is the newest Night Sky Network toolkit to arrive on TAAA's doorstep. This is the ninth hands-on toolkit that we've received since the NSN program began in March 2004. *Glass and Mirrors* was created in recognition of the first eyeballs to see star light through a telescope. Those eyes belonged to Galileo - what a stir his observations caused!

Terri Lappin, who coordinates the use of our Night Sky Network toolkits, will present toolkit materials and explain how they can be used at outreach events. In the process, some novice members may learn something about how telescopes work. After the lecture, toolkit materials will be available for members to try out themselves.

GENERAL MEETING: 7:30 pm

Title: Galaxy Clusters

Speaker: Bill Gates

Galaxy clusters are the largest gravitationally-bound objects to have arisen thus far in the cosmos. Groups and clusters can contain between ten and ten thousand galaxies! The clusters themselves are often associated with larger associations called superclusters, and are gathered into filaments and walls surrounding vast voids.

This month, TAAA member Bill Gates will give a presentation on Galaxy Clusters which will feature beautiful images of the distant universe taken by some of the world's preeminent observatories. Amateur astronomers have observed galaxy clusters with large Dobsonian telescopes and cluster members can be glimpsed with small instruments. A few observations of galaxy clusters will also be featured.

BOARD OF DIRECTORS MEETING: Wednesday, April 8, 6:30 pm. The meeting is held at Steward Observatory Conference Room N305.

STAR PARTIES AND EVENTS:

04 April - TAAA Star Party at TIMPA
06 April - Astro-Imaging SIG at China Rose
07 April - Ft. Lowell ES/ Camp Cooper Star Party
08 April - Castlehill Country Day School Star Party
09 April - Tucson Country Day School Star Party
16 April - Sonoran Academy/Broadway Star Party
19 April - UofA Astronomy Students Star Party
22 April - Pima College Earth Day
23 April - Hohokam MS/ Las Cienegas Star Party
25 April - TAAA Star Party at Las Cienegas
28 April - Bank's ES Star Party
30 April - Agua Caliente ES Star Party

NEWSLETTER SCHEDULE: Deadline for articles: Sat, April 18. The newsletter is published at least one week prior to the following month's General Meeting.

Club News

Report of the TAAA Nominating Committee

The TAAA Nominating Committee has compiled a list of candidates for the election of TAAA Board Members to be held during the May 1st general meeting. All listed candidates have agreed to have their names placed on the ballot. The candidates for the Board positions are:

Ken Shaver - President
 Keith Schlottman - Vice President
 Luke Scott - Secretary
 Teresa Bippert-Plymate - Treasurer
 John Croft - Member-at-Large
 George Barber - Member-at-Large
 John Kalas - Member at Large

Nominations for write-in candidates shall be accepted from the floor at the May 1st general meeting. Write-in candidates must accept their nomination in person or in writing before the vote is taken. Any member who has been a member for one year, and is a member in good standing, may be nominated for office. All members of the Board of Directors must be at least 18 years of age.

Meet the Candidates:

Ken Shaver has been a member of TAAA for six years, a Board Member for four, and he currently serves as President. Ken's favorite activity in astronomy is outreach, especially with kids, and is active in Project Astro with Vail's Sycamore Elementary Astronomy Club. He is also a judge for the Vail Science Fair and the Southern Arizona Regional Science and Engineering Fair. Ken constructed his own roll-off roof observatory "EyeSoar" in the Santa Rita Mountains, where he enjoys visual observing and occasional astro-imaging. He is an electrical engineer for an avionics company, and enjoys hunting, fishing, and shooting.

Keith Schlottman has been a TAAA member since 1993 and has served as Vice-President and Board Member-at-Large. He is also a member of the Huachuca Astronomy Club, the Society for Astronomical Sciences, and the Society of Amateur Radio Astronomers. Keith's special interests in astronomy include astro-imaging, spectroscopy, photometry, and radio astronomy. Keith is a CPA, an avid runner and member of the Southern Arizona Roadrunners Club, and he and his wife and three sons are active in Boy Scouts and the Pantano Disaster Action Team.

Luke Scott has been a member of TAAA since 1998 and has served as Board Member-at-Large and Secretary. His favorite club activity is the school star party program and he and his wife Ann support parties in the east and northeastern areas of Tucson. Luke's principal interests in amateur astronomy are visual observing and web camera imaging from his backyard observatory. He is a systems engineer, and he enjoys reading, sketching, and his aquarium fish.

Teresa Bippert-Plymate is a long-time member of TAAA and has served as Board Member-at-Large and Librarian. She is on the Strategic Planning Committee for the club's new Dark Site in Cochise County.

Teresa is a Technical Specialist at the University of Arizona Steward Observatory, Center for Astronomical Adaptive Optics (CAAO)), subgroup Large Binocular Telescope Interferometer (LBTI).

Teresa's special interests include solar astronomy and exoplanet searches, but she enjoys hardware the most - fixing and twiddling with telescopes and equipment.

Teresa is an avid runner, biker and hiker and classical dressage enthusiast.

John Croft is an 8-year member of TAAA, and has worked with the Dark Site Planning group and the committee which is developing rules for the Site. He served four years on the Texas Astronomical Society Board of Directors, and was in charge of several projects at its Atoka dark site, including the building of a 12-bed bunkhouse. He especially enjoys astrophotography.

John is a CPA, and his other interests include birding, backpacking and hiking.

John Kalas is a 15-year member of TAAA and served as President from 1999 to 2001. He has coordinated Astronomy Services (paid star parties) for TAAA for 10 years, an activity which has generated over \$66,000.

John is a member of the Perseus Group which donated land for the club's new dark site in Cochise County, and serves on the Strategic Planning Committee, presently coordinating the Phase 1 construction project.

John is especially interested in lunar and planetary observing and imaging. He is a manufacturing engineer, and his hobbies include collecting minerals, meteorites, Indian fetishes, and Lionel trains.

George Barber has been a member of TAAA for nine years, and served three terms as Board Member-at-Large. He has also performed the duties of TAAA newsletter editor for more than five years.

George participates in many school star parties and in Project Astro at Picture Rocks Intermediate School, and serves as a telescope operator at Flandrau Planetarium. His favorite outreach event is the Grand Canyon Star Party. George is a test systems engineer at Raytheon, and his many interests include SCUBA diving, photography, and travel.

Submitted by the Nominating Committee:

Mary Turner
 Twila Peck
 Bob Gilroy

Astro-Imaging SIG Meeting

Monday, April 6, 7pm

China Rose, NE corner Speedway/Rosemont

Our presentations feature CCD images, planetary webcams, and film. Come see some of the state of the imaging art over some Chinese food. Just show up and

Club News (cont.)

enjoy the show! For more information, contact Steve Peterson.

TAAA Apparel

Looking for a special gift or a way to make that fashion statement? Try on something from our fine line of club apparel. We have got hats, T-shirts, denim shirts, and patches. We take cash and checks.

We are looking for a member to take on the club apparel sales program. After 8 years selling apparel and calendars, Ann Scott would like to take a break. The club usually orders apparel twice a year and takes special orders for jackets in the fall. Anyone who can attend meetings regularly and is interested in helping the club with this activity should contact a Board member.

Astronomy Fundamentals Special Interest Group AFSIG for April

Because of the AFSIG Beginner's Class this month, the regularly scheduled AFSIG meeting for April is cancelled. Join us again on the second Thursday in May. Watch for details in the May newsletter.

Also, the AFSIG will not officially participate in the observing night at TIMPA on April 4. The 14" telescope will NOT be available for observing.

AFSIG Needs Your Help!

By J.D. Metzger

The Astronomy Fundamentals Special Interest Group (AFSIG) committee has put together an exciting curriculum of basic astronomy education for TAAA members. However, the committee needs skilled volunteers to help develop and conduct some hands-on workshops. If you are interested in creating and leading workshops in one or more of the following areas, please contact an AFSIG committee member at novice@tucsonastronomy.org:

- Solar Filter
- Tripod Blinky Lights
- Optics Cleaning
- Scopemaker

- Newtonian & SCT Collimation
- Sketching / Logging

Also, if you have ideas for additional workshops, please let us know!

Sharing The Sky Public Star Party

National Astronomy Day
May 2, 2009

What better way to celebrate National Astronomy Day during the International Year of Astronomy than to participate in the Sharing the Sky Public Star Party fundraiser hosted by David and Wendee Levy. You will have the opportunity to do so on Saturday, May 2nd from 3:00 to 10:00 PM on the University of Arizona Mall across from Flandrau Science Center. The Sharing the Sky Foundation is a 501c (3) organization that is dedicated to motivating and teaching the public about the night sky.

As in years past, we will have telescopes set up for solar viewing in the afternoon and night sky viewing in the evening. Because it is National Astronomy Day, there will also be some special hands-on activities for children and adults. We will need members to help with these activities, so if you don't have a telescope and want to help, we would appreciate your assistance with the special activities and collecting donations. We would like to request that members supporting the event, who have canopies, bring them and set them up to enhance the early-afternoon sun protection of the donation tables and hands-on activities.

David and Wendee would like to thank all of you for helping with this worthwhile event. Support from the TAAA is essential for the success of this activity. There will be sign up sheets at both the April and May club meetings or you can call or e-mail Liz Kalas at 620-6502, lizkalas@cox.net.

Upcoming Lectures

If you have a suggestion for either an Astronomy Essentials or Invited Lecture, or if you want to give one yourself, let Terri Lappin know. See page 2 for contact information.



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| Club News (cont.) | | |
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|-------|---|---|
| Apr 3 | <i>Astronomy Essentials</i> | Telescope Toolkit Terri Lappin |
| | <i>Invited Lecture</i> | Galaxy Clusters Bill Gates |
| May 1 | Members Night Presentations by TAAA Members Meeting begins at 6:30pm NO Astronomy Essentials Lecture | |
| Jun 5 | <i>Astronomy Essentials</i> | Binoculars Steve Marten |
| | <i>Invited Lecture</i> | NASA Reduced Gravity Mission David Levy |
| Jul 3 | <i>Astronomy Essentials</i> | Seasonal Objects Mary Turner |
| | <i>Invited Lecture</i> | <i>OPEN</i> |

that location. For further information and current status on the North Rim, please check at <http://www.saguaroastro.org/content/2009GrandCanyonStarPartyNorthRim.htm>

Thanks,
Jim O'Connor
gensp@tucsonastronomy.org
Skylook123@aol.com
James_W_Oconnor@raytheon.com



Ninth Toolkit has Arrived!

We have received the newest Night Sky Network Toolkit which was developed with the International Year of Astronomy theme in mind. It was 400 years ago that Galileo first turned a very poor quality telescope (by our standards) on the heavens. This toolkit will be highlighted during the March Astronomy Essentials lecture. This toolkit will be available for use at TAAA outreach events like public or school star parties – anywhere we have an opportunity to tell someone how telescopes work.

Below is a list of the Night Sky Network Outreach Toolkits developed by the Astronomical Society of the Pacific under contract with NASA. These toolkits are specifically developed for amateur astronomers and are perfect for those early hours at a star party before its dark enough to observe. Some projects are well suited for use when it's dark. They are best when used in a small group as you might have around your telescope at a school star party.

Here's a complete list of the NSN Outreach Toolkits we have:

- PlanetQuest:** explains planet detection techniques
- Our Galaxy, Our Universe:** scale model of the Milky Way galaxy and the Universe
- Black Hole Survival Kit:** what is a black hole and how does it affect objects nearby
- Telescopes – Eyes on the Universe:** explains basic principles of optics, the human eye, and observing
- Shadows and Silhouettes:** covers lunar phases, eclipses, and transits
- Exploring the Solar System:** scale model of solar system and NASA exploration of planets
- GLOBE at Night:** light pollution principles
- Supernova!** life cycle of massive stars, touches on life cycle of sun-like stars
- SolarScope:** provides a white light image of the sun suitable for small group viewing.
- Mirrors and Glass – An inside look at telescopes:** how telescopes work

Grand Canyon Star Party - Time for Reservations! 13-20 June, 2009

It's about time to lock down plans to attend the 2009 edition of the Grand Canyon Star Party. GCSP '09 is the 19th annual collaboration between the National Park Service and astronomers from around North America to bring astronomy outreach to Park visitors.

General information regarding GCSP is found at <http://www.tucsonastronomy.org/gcsp.html>
If you intend to participate this year, email your intentions to:
gensp@tucsonastronomy.org.

For those astronomers intending to stay 6 or more nights, there are plans for a limited number of no-cost campsites to be available. Requests for a free campsite will be accepted beginning March 1. Campsites will be assigned in order of request received beginning March 1 until none remain. They go fast, so if you intend to participate for six or more nights and wish consideration for a free site, please send an email March 1 to the above address to get on the list.

Other lodging at the Grand Canyon fills fast, so make your plans and reservations as soon as possible. For the North Rim, word is that the veranda is already filled with telescopes for the entire week. However, there is an attempt to man a satellite location at Kaibab Lodge on the North Rim; there are two complementary camp sites available for anyone willing to do the party for the week at

Club News (cont.)

We appreciate all who have put the toolkits to use in past years. In 2008, we logged 12 public outreach events where the toolkits were used. The TAAA is still way behind other clubs in NSN toolkit usage. If you're interested in getting involved, talk to Terri Lappin.

Each toolkit contains several projects. You pick and choose which part you want to demonstrate. They contain essentially all the materials needed. All NSN toolkits include a Resources CD and a training DVD. You can request a copy of the CD and DVD set from Terri Lappin. The CDs contain PowerPoint presentations, along with scripts and background information should you be presenting to a larger audience.

Anyone can borrow the toolkits, TAAA membership is not required. Contact Terri Lappin (see page 2) to make arrangements. Terri can also provide one-on-one training for all toolkits.

TAAA Website - Login/Password Required

The TAAA website now has more resources for members viewing. Members must login using the user name and

password that has been distributed by email. If you haven't received the email message, it may mean we do not have your latest email address in our records. Please contact the treasurer to update your information. This is also how to ensure that you receive the newsletter. We currently have a common user and single password that everyone uses. You do not enter your email address or any other personal information to gain access to the member's pages. Should you not have email and want the user name\password, contact any board member.

Name Badges

Please remember to pick up your name badge if you ordered one. They will be available at the General Meeting.

If you didn't order one, the next order will be placed something this summer. Watch the newsletter for the announcement.

Member's Events

TAAA Star Party at TIMPA

Saturday, April 4

Come on out and enjoy the Spring skies! TIMPA star parties are great for both beginners and experienced observers. Our novice members can get help with observing issues or equipment problems, as there are many experienced members there who would be happy to help. If you don't own a telescope, come anyway, because there are lots of telescopes set up and everyone is invited to look through them. This is a great way to check out different telescope designs before you make that all important decision to buy. We'll do our best to get you the answers you need. If you have friends or relatives who are curious about amateur astronomy, feel free to bring them along. The TIMPA site features a large parking area, and full restroom facilities. Directions to the TIMPA site are located on the outside flap of this newsletter.

Due to other commitments, the 14" telescope will NOT be available for observing.

TAAA Star Party at Las Cienegas (Empire Ranch)

Saturday, April 25

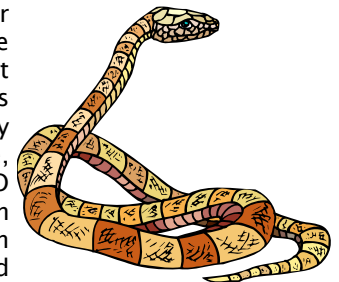
Las Cienegas (formerly Empire Ranch) has been our normal dark-sky observing site for quite a number of years. Please try to arrive before sunset. Plan to stay as long as you like, but let everyone know when you are ready to leave; someone may be taking astro-images. Bring a telescope if you have one, but you don't need one to attend. Any member would be glad to let you look

through their telescope. And, there are now restroom facilities at the site... Las Cienegas is at 4000 feet so be prepared for cold temperatures after sunset. Attendees should park their vehicles either perpendicular to the airstrip facing toward the center of the strip, or parallel to the airstrip along either side facing west. That way, when you are ready to leave, you will not have to back up and turn on your bright white backup lights. See the directions to Las Cienegas on the outside flap of this newsletter.

Rattlesnake Alert!

It's spring again, and our reptilian friends have come out of hibernation. Be alert for rattlesnakes! Rattlesnakes are generally aggressive only if disturbed. If you see one, keep a safe distance and DO NOT try to interact with it in any way. Snakes are much faster than our reflexes, and should be handled only by professionals. Wear boots and long jeans. For more information, go to

<http://www.friendsofsaguaro.org/rattlesnakes.html>.



Along with rattlesnakes, other desert critters, such as gophers and ground squirrels, make their home wherever they want. These residents can leave holes and other potential tripping hazards, so be careful when walking.

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| Items of Interest |
|--------------------------|

Websites: Trips On The Internet Super-Skyway

By Rik Hill

Double your pleasure

Since 1963 one of the things I have enjoyed the most in amateur astronomy is the observation of double stars. It started with my first copy of T.W.Webb's *Celestial Objects for Common Telescopes Vol.2*. Since then I have built and used filar micrometers, diffraction micrometers (one of the more esthetically enjoyable ways to observe doubles) and now imaging with webcam. But where does one get accurate comparison information to see if your measures are even in the ballpark? (In this article "double star" shall be taken to mean "multiple stars" too since many are triple or more.)

One great reference is Peter Weinerroither's Photographic double star project at:

<http://homepage.univie.ac.at/Peter.Wienerroither/pwafodse.htm>

Peter has taken some beautiful images (with great color!) of numerous of the more popular and well know doubles. I particularly liked Sigma Ori. But most of his photos are of relatively wide doubles and one could wish for a better image scale.

The standard reference for multiple star systems is the Washington Double Star Catalog or simply the WDS. It is continually updated and a wonderful resource for the very serious double star observer. This catalog is produced by the U.S. Naval Observatory under direction of the Chief of Naval Operations (Your tax dollars at work!) You can access this voluminous work at:

<http://ad.usno.navy.mil/wds/>

Expect a bit of a learning curve as you learn to navigate this ocean of information! There is a lot to read and cruise through and you can easily spend an evening here. If this is intimidating try a nice user friendly search engine front end provided by Alcyone Software at:

<http://www.alcyone.de/SIT/>

With this browser based software you can search catalogs looking for a single star or reorganize catalogs in a format more useful to your observing style. It's a tremendous resource and I use it a lot.

But for some stars, like a number I've imaged recently, you need to get a current ephemeris because they have such short periods. Stars like Beta Mon, Zeta Cnc, Gamma Vir all change so rapidly that you need a way to calculate their positions for a given night. Brian Workman, in Phoenix, has developed the Binary Star Calculator which is available as a free Excel spreadsheet on the Saguaro Astronomy Club download webpage at:

<http://www.saguaroastro.org/content/downloads.htm>.

This spreadsheet is very easy to use and an ingenious way to solve this problem. It contains over 1750 star systems which is probably more than you'll ever need but it would still be easy for you to add one using Brian's format. You'll use this a lot if you get into the observation of these rapidly changing stars, and its fun to see this kind of change among stars in our galaxy!

You can see some of my double star results with the Questar at:

<http://www.lpl.arizona.edu/~rhill/questar.html>.

I hope it inspires you to try your hand with your telescope.

As always, if you have a topic you'd like explored or have some interesting URLs you've turned up, drop me a line at: rhill@lpl.arizona.edu

SARSEF Report

by Steve Marten

The Southern Arizona Regional Science and Engineering Fair was conducted March 17-19 with TAAA members Steve Marten, Molly Hancock and Dennis Nendza offering their services as SARSEF and TAAA judges. Our first task was to evaluate and critique 16 physics entries involving various forms of energy, Magnetism, basic elements and the environment.

After discussing and submitting our critiques we scoured the entire fair for Astronomy related projects. Sadly, we found only ten such projects but we were thrilled with several entries showing innovation and a strong curiosity of the universe.

We judged the entries below as the TAAA winners for this year. Note that one of last year's winners, 7-year old David Quinones, had another winning project for 2009.

1st Place - Elisabeth Cole, 8th Grade, Z Home School - Friedman for *Victory Over Variable Stars*

2nd Place - Payson Mayerle, 3rd Grade, Sotori Charter School for *Craters and Ejecta Blankets*

3rd Place - David Quinones, 3rd Grade, Mesquite Elementary School for *Star Shine, Star Bright*

Public Star Parties and Community Events

All members are asked to support the TAAA School Star Party program and other community events listed below. TAAA either sponsors or co-sponsors these events. These are great opportunities for beginners as you may only need to know a few objects in the sky. Even without a telescope, you can be valuable in other capacities. Sign up sheets for many events can be found at the meeting or contact a TAAA officer.

Ft. Lowell ES/ Camp Cooper Star Party **West**
 Tuesday, 4/7/2009 No. of Scopes: 2

Ft. Lowell ES/ Camp Cooper will be holding Planets in View, Moon for an estimated attendance of 25 students and parents at 5745 W. Trails End Rd. Drive west on Speedway or Anklam Road. Just beyond the intersection of Speedway and Anklam turn right (north) on to Camino De Oeste. Turn left (west) on to Trails End Road. Drive one mile. Cooper ESC is on the left (south) side of the road. Viewing will be at the telescope designated location at Camp Cooper. Contact person Celeste Aho can be reached at 520-232-7159 or email celeste.aho@tusd1.org. Set-Up Time: 7:15pm. Observing will be from 7:45 pm to 8:30 pm. Sunset: 6:52pm Dark Sky: 7:46pm Moon Phase: near Full Moon.

Castlehill Country Day School **Foothills**
 Wednesday, 4/8/2009 No. of Scopes: 3

Castlehill Country Day School will be planning Astronomy Night for an estimated attendance of 75 students and parents at 3225 N Craycroft Rd. East on Speedway, Left on Craycroft, past Ft. Lowell Park to St Gregory Light, Turn left at light, turn right at first driveway, the Castlehill office is the brick house on the right. Viewing will be on the field or playground. Contact person Hilary Peterson can be reached at 795-0008 or email IMAHILLA-BEANS@YAHOO.COM. Set-Up Time: 6:00pm. Observing will be from 6:30 pm to 8:30 pm. Sunset: 6:53pm Dark Sky: 7:47pm Moon Phase: near Full Moon.

Tucson Country Day School Star Party **East**
 Thursday, 4/9/2009 No. of Scopes: 5

Tucson Country Day School will be hosting Astronomy Night for an estimated attendance of 150 students and parents at 9239 E. Wrightstown. Speedway to Kolb, North on Kolb, East on Tanque Verde, continue on to Wrightstown, will be 2 miles down on left. Viewing will be on the field. Contact person Tara Rayan can be reached at 296-0883 or email trayan@tcdcharterschool.com. Set-Up Time: 7:15pm. Observing will be from 7:45 pm to 9:45 pm. Sunset: 6:53pm Dark Sky: 7:48pm Moon Phase: Full Moon.

Sonoran Academy/Broadway Star Party **North**
 Thursday, 4/16/2009 No. of Scopes: 2

Sonoran Academy/Broadway will be preparing for Exploring the Night Sky for an estimated attendance of 30

students and parents at Geology Vista. East on Speedway to Wilmot. North on Wilmot to Tanque Verde. East on Tanque Verde to Catalina Hwy. Follow Catalina Hwy to Geology Vista pull off. Viewing will be at the Geology Vista pull off. Contact person Shannon Miller can be reached at 751-2401 or email shannonsspirit@hotmail.com. Set-Up Time: 7:15pm. Observing will be from 7:45 pm to 9:15 pm. Sunset: 6:58pm Dark Sky: 7:53pm Moon Phase: (no moon during viewing).

UofA Astronomy Students Star Party **West**
 Sunday, 4/19/2009 No. of Scopes: 6

UofA Astronomy Students will be planning Star Party for UofA Students for an estimated attendance of 75 students at Saguaro Nat'l Park West. Take Speedway Blvd. west past I-10 and continue about 3.5 mi. where Speedway becomes Gates Pass Road. Go over Gates Pass and continue about 5 mi. west to Kinney Road. Turn right (north) on Kinney Road and continue past the Desert Museum. Viewing will be in the parking lot of the Visitor Center. Contact person Tom Fleming can be reached at 621-5049 or email taf@viking.as.arizona.edu. Set-Up Time: 7:30pm. Observing will be from 8:00 pm to 10:00 pm. Sunset: 7:00pm Dark Sky: 7:56pm Moon Phase: (no moon during viewing).

Pima College Earth Day **Northwest**
 Wednesday, 4/22/2009 No. of Scopes: 2

Pima Community College, Northwest Campus will be hosting Earth Day. Contact person Denise Meeks can be reached at 206-2247 or email dmeeks@pima.edu. Lunch will be available for TAAA volunteers! Set-Up Time: 8:30am. Solar Observing will be from 9:00am to 1:00pm.

Hohokam MS/ Las Cienegas Star Party Southwest
 Thursday, 4/23/2009 No. of Scopes: 3

Hohokam Middle School/ Las Cienegas will be planning Youth in Wilderness at Las Cienegas for an estimated attendance of 75 students and parents at 7400 S Settler Avenue. Take Turn left off of highway 83 South toward Las Cienegas NCA. Take road past Information kiosk. Kiosk is 0.8 mi. from 83 turn-off. Continues past kiosk 2.1 mi. to where road makes a "T". Turn left and stay on this road for 4.8 mi. You will pass the corrals and wooded areas. Road will end at a Stop sign. Turn left and drive 0.4 mi. Make the next left hand turn. There are two left hand "turns" The first is a hard/switchback turn and the second left actually veers off of the road. Take the hard switchback left turn. Drive 0.5 miles to the campground.

Public Star Parties and Community Events (cont.)

The road curves around to the right about the mid-way point on this road. Contact person Stacia Reeves can be reached at 908-3700 or email Stacia.Reeves@tusd1.org. Set-Up Time: 7:30pm. Observing will be from 8:00 pm to 10:00 pm. Sunset: 7:03pm Dark Sky: 7:59pm Moon Phase: Late Crescent.

Banks ES Star Party

Tuesday, 4/28/2009

South
No. of Scopes: 4

Banks ES will be holding Night With the Stars for an estimated attendance of 100 students and parents at 3200 S. Lead Flower Ave. From Speedway and the Freeway, go South on frontage to 22nd, West on 22nd to Mission, South on Mission to Ajo, West on Ajo to Kinney, North on Kinney to Bopp, West on Bopp to Lead Flower, North on Lead Flower follow signs to the school. We are located approximately 5 miles West on Bopp from Kinney Rd. on the Viewing will be on the outside play ground. Contact person Veronica Vironet can be reached at (520) 908-5700 or email Veronica.Vironet@tusd1.org. Set-Up Time:

6:30pm. Observing will be from 7:00 pm to 9:00 pm. Sunset: 7:07pm Dark Sky: 8:04pm Moon Phase: near First Quarter.

Agua Caliente ES Star Party

Thursday, 4/30/2009

East
No. of Scopes: 6

Agua Caliente ES will be School Star Party for an estimated attendance of 200 students and parents at 11420 E. Limberlost Rd. Go east on Tanque Verde, turn left (north) on Catalina Hwy. Turn right (east) on Prince, past Houghton, then Melpomene, go to end (Homestead), take left (north). Less than a block on left side. Viewing will be Playing field east of school building. Pass school, take right onto Homestead. Access gate to field/setup is on right. Drive onto field. Contact person Dan Beach can be reached at 520-749-2235 or email dbeach14@cox.net. Set-Up Time: 7:30pm. Observing will be from 8:00 pm to 10:00 pm. Sunset: 7:08pm Dark Sky: 8:05pm Moon Phase: near First Quarter.

Dark Skies for April 2009

DARK SKIES (no twilight, no moonlight) for Tucson in 24-hour MST: 18=6pm, 20=8pm, 22=10pm, 0=12am
RISE, SET, VISIBILITY for sun and bright planets: rise for morning object, set for evening object

| | | | | | |
|-------------|---------------|-------------|---------------|-------------|--------------|
| Tu/We 31/ 1 | 0:34 - 4:49 | Sa/Su 11/12 | 20:16 - 21:22 | Tu/We 21/22 | 20:25 - 4:02 |
| We/Th 1/ 2 | 1:31 - 4:48 | | | We/Th 22/23 | 20:26 - 4:18 |
| Th/Fr 2/ 3 | 2:21 - 4:46 | Su/Mo 12/13 | 20:17 - 22:21 | Th/Fr 23/24 | 20:27 - 4:17 |
| Fr/Sa 3/ 4 | 3:03 - 4:45 | Mo/Tu 13/14 | 20:18 - 23:16 | Fr/Sa 24/25 | 20:28 - 4:16 |
| Sa/Su 4/ 5 | 3:39 - 4:44 | Tu/We 14/15 | 20:19 - 0:06 | Sa/Su 25/26 | 20:29 - 4:14 |
| | | We/Th 15/16 | 20:20 - 0:51 | | |
| Su/Mo 5/ 6 | 4:12 - 4:42 | Th/Fr 16/17 | 20:21 - 1:30 | Su/Mo 26/27 | 21:17 - 4:13 |
| Mo/Tu 6/ 7 | - - - | Fr/Sa 17/18 | 20:22 - 2:05 | Mo/Tu 27/28 | 22:25 - 4:12 |
| Tu/We 7/ 8 | - - - | Sa/Su 18/19 | 20:23 - 2:36 | Tu/We 28/29 | 23:26 - 4:11 |
| We/Th 8/ 9 | Full Moon | | | We/Th 29/30 | 0:18 - 4:09 |
| Th/Fr 9/10 | - - - | Su/Mo 19/20 | 20:23 - 3:05 | Th/Fr 30/ 1 | 1:02 - 4:08 |
| Fr/Sa 10/11 | 20:15 - 20:20 | Mo/Tu 20/21 | 20:24 - 3:33 | Fr/Sa 1/ 2 | 1:40 - 4:07 |

| Weekend | Sun | Sun | Mercury | Venus | Mars | Jupiter | Saturn | | | | |
|---------|-------|------|---------|---------|---------|---------|--------|---------------|------------------|--|--|
| Sa/Su | Set | Rise | Set Vi | Rise Vi | Rise Vi | Rise Vi | Set Vi | Vi=Visibility | | | |
| 4/ 5 | 18:44 | 6:05 | 19:07 - | 5:02 1 | 4:53 5 | 3:34 -1 | 5:01 1 | -3 | brilliant | | |
| 11/12 | 18:49 | 5:56 | 19:49 5 | 4:34 -1 | 4:40 5 | 3:10 -1 | 4:33 1 | 0 | conspicuous | | |
| 18/19 | 18:54 | 5:48 | 20:23 3 | 4:11 -2 | 4:27 5 | 2:46 -2 | 4:04 1 | 3 | moderate | | |
| 25/26 | 18:59 | 5:40 | 20:40 3 | 3:53 -2 | 4:13 4 | 2:22 -2 | 3:36 1 | 6 | naked eye limit | | |
| 2/ 3 | 19:04 | 5:34 | 20:35 5 | 3:38 -3 | 4:00 4 | 1:57 -2 | 3:08 1 | 9 | binoculars limit | | |

By Erich Karkoschka

Constellation Report by Chris Lancaster

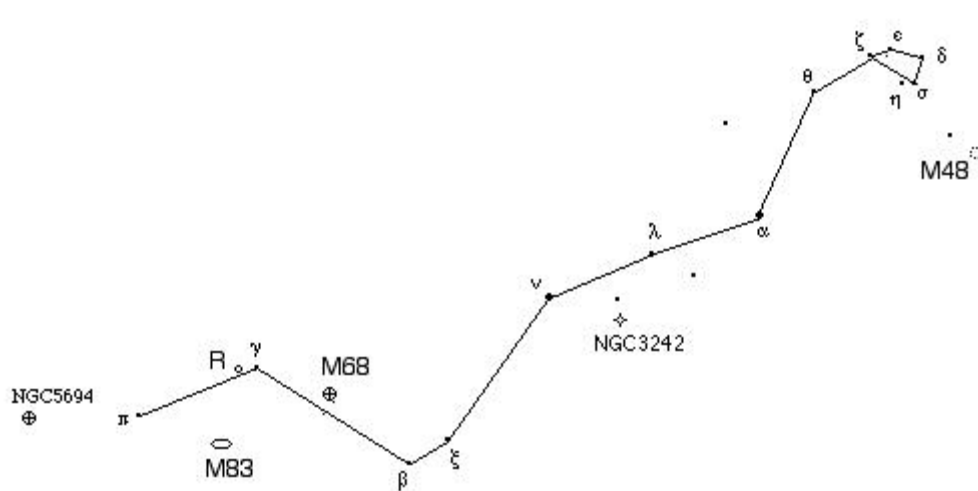
Hydra

The sea serpent or female water snake

Hydra plays several roles in mythology. One portrays Hydra in a battle with Hercules, who was able to defeat the multiple-headed monster by cutting off each head and then cauterizing the wounds with a torch to prevent another head from

Constellation Report by Chris Lancaster (cont.)

immediately growing back. A meeker Hydra appeared in a story involving Corvus, the crow. Corvus had a task to bring back some spring water for Apollo but spent some time next to a fig tree waiting for the fruit to ripen. After eating some figs, Corvus finally returned with some water along with Hydra, using the story that Hydra had attacked him and thus was the reason for his delay. Myth also says that Hydra was a fearsome giant who fought with the gods of Olympus and was finally killed by one of Zeus' thunderbolts.



To observe Hydra in its entirety is to spend most of the night under its stars. Its vast size makes it stretch almost 100 degrees from end to end, or more than a quarter of the celestial sphere. Its head is south of Cancer, the crab, and its body curves its way through the heavens past Crater, Corvus, and Virgo to finally end with its tail bordering Libra. Its name suggests a feminine gender, and is not to be confused with the southern constellation Hydrus, or the male water snake.

A logical method of observing Hydra is to go from east to west, and the first object to view is also one of the more satisfying--M48.

Tucked against the western boundary of the constellation is this galactic cluster of large proportions. It glows with a magnitude of 5.8 and covers about 50'. Through binoculars it appears as a cloudy area with a few embedded bright stars. In the telescope you'll see an expansive and loose collection of stars filling the full field of view of your eyepiece at low power. It is located in a rather blank area at RA 8h 13.8m Dec -5d 48.0'. If finding it without setting circles, it will easily be visible through your finder scope about 11 degrees southwest of the serpent's head.

Looking east we will find NGC3242, a planetary nebula with an intriguing nickname--the "Ghost of Jupiter." It is fairly bright at magnitude 9 and a diameter of 16", so most telescopes can capture it well. Many observers are struck by its blue color. An 8-inch scope is all that's necessary to show an inner, elliptical structure surrounded by a circular halo, all set aglow by the magnitude 12 central star. Large instruments in the 12-inch neighborhood may show layered structure within the brightest parts of the nebula.

Patience prevails for those who watch the full length of Hydra rise. The meridian bisects the constellation by 11pm during the middle of March and we see more deep-sky wonders in Hydra's eastern half. M68 is a globular cluster located south of Corvus. You can find it in a couple of ways. Follow the line formed by Delta and Beta Corvi going south. About half the distance that is between these two stars past Beta is a 5.4 magnitude star. M68 is half a degree to the northeast from this star. Otherwise, look about 2/3 the distance from Zeta to Gamma Hydrae or zoom in at RA 12h 39.5m Dec -26d 45.0'. M68 is an easy globular at magnitude 8.2 forming a ball 12' in diameter. Its 13th magnitude stars are resolvable in 8-inch and larger telescopes, and smaller instruments will see a mottled glow.

The role of Hydra's showpiece object can be given to M83, a bright spiral galaxy almost equally distant from Gamma and Pi Hydrae. M83 is to the southwest of a line drawn between these two stars (or RA 13h 37m Dec -29d 52.1'). This is one of the brightest galaxies in the sky. Its magnitude 8.1 light is spread across a size of 12.9' x 11.5'. It has two bright arms which are first noticed, and a third, dimmer arm which have caused some to call this galaxy a 3-armed spiral. It presents its full face to us, and many clumps of nebulosity and star clusters have been observed throughout the arms. There is an unusual amount of hot, giant stars in this system, and many supernovae have occurred here with a frequency about 15 times the average.

Looking above M83 is the long period variable star R Hydrae. It is located 2.5 degrees east of Gamma Hydrae. Along with Mira, this variable was one of the earliest to be noticed. This one was first measured in the 17th century when its light curve spanned about a year and a half. Since then its period has shortened to 389 days as it widely pulsates between 3.5 and 10.9. As is typical with the Mira type variables, its sporadic behavior may have it waxing and waning again through 18 months a few centuries from now.

Lastly, look to the eastern edge of the constellation to NGC5694. This very distant globular cluster shines across space at magnitude 10.2, and is 3.6' in size. Its located 2 degrees southwest of a curved pattern of four stars of magnitudes 5 to 7. NGC5694 will appear as a round glow with some mottling present. (RA 14h 39.6m Dec -26d 32'.)

TAAA Board of Directors Meeting - 11 March 2009

Attending: Board members present (7): Ken Shaver (presiding), Keith Schlottman, Terri Lappin, Luke Scott, George Barber, Bill Lofquist, and Teresa Plymate. Members Present (3): Claude Plymate, Paul Moss, Bob Gilroy.

The president called the meeting to order at 6:34 pm.
Minutes from the February Board meeting were approved.

Member Feedback

- Some members noted that the February meeting ran long.

Announcements for Record

- TAAA is partnered with IDA to host the 2010 ALCON Expo in Tucson. A planning committee has been formed with Keith Schlottman and Bob Gent as co-chairs. The tentative date for the Expo is 24-26 June, 2010.

Treasurer's Report

- Terri Lappin reported that each paper newsletter costs approximately \$10.80 per year to print and mail.
- The Board discussed the invoicing process for expenditures related to development of the Dark Site and decided that a single person will be designated to receive and forward invoices to the Treasurer for payment by TAAA. John Kalas will receive and forward invoices related to current work, and the policy will be extended to other groups and activities as warranted.
- A quote of \$297 for general liability insurance was received from Koty-Leavitt. TAAA ownership of the Dark Site land was not factored into the quote, and a second quote factoring in land ownership will be requested.

Dark Site Land Development

- A motion was entered that Ken Shaver serve as the TAAA representative to the Eridanus well-share group. The motion was approved unanimously.
- Bill Lofquist reported that 2 of 3 bids solicited for Phase 1 construction of the restroom, parking spaces, and walkways have been received. Receipt of the third bid is expected within a week.

Master Calendar

- Incorrect dates for the TIMPA and Las Cienegas star parties were published in the March newsletter. Correct dates will be sent via e-mail and the TAAA Announcements and TAAA Forum groups. Members receiving paper newsletters will be contacted by telephone.

ALCON 2010

- Suggestions for speakers and tours during the ALCON Expo are needed.

Earth Hour

- Paul Moss reported that Tucson city planners have selected El Presidio Park as the center for lights out during Earth Hour on 28 March. The club will set up telescopes at El Presidio. Setting up telescopes at other parks requires that the city and county be notified; other parks will be supported if astronomers are available.
- The club information and logo need to be sent to the city for inclusion in publicity material.

Nominating Committee

- One member-at-large seat remains open; all other positions have at least one candidate. George will include an article on club elections in the April newsletter.

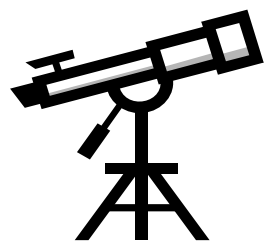
Other

- For options for secure storage of critical documents, Terri Lappin will get rental costs for a safe deposit box from Chase Bank, and George Barber will research cost of a fire-proof storage box.
- Bill Lofquist will give a collection of old astronomy magazines and club newsletters to Terri Lappin for review and possible addition to the club's archives.
- Keith Schlottman motioned that the Board create an appointed position of Club Historian. The motion was approved unanimously. A notice regarding the position will be placed in the newsletter.
- A motion was made to recognize Deborah Malmos for her contributions to the TAAA website. The motion carried unanimously.

Meeting adjourned at 9:10 pm.

Respectfully submitted,
Luke Scott, Secretary

Telescopes for Borrowing



Free service



Only for Members

Don't own a telescope?
Our Loaner Program is your answer!

These telescopes are in the program

- Sears 60mmf/15 on equatorial mount
- Unitron 62mmf/14.5 on equatorial mount
- Meade 90mm ETX
- Coulter Odyssey8 8-inch f/4.5 Dobson
- Meade 8-inch f/4 Schmidt-Newtonian LX D-55
- Meade 10-inch f/4.5 on equatorial mount
- Meade 10" LX200 GPS (requires training session)

Beginners, here's your chance to learn and observe the sky before buying any equipment. The Loaner Program is available to any current member after meeting requirements detailed in the TAAA Loan Policy. Contact the Equipment Loan Coordinator (see page 2) or any club officer for details about these telescopes.

Desert Skies Classified

| | |
|----------|--|
| FOR RENT | The residence at the TIMPA site will be available for rent in April. The house is a 3 bedroom, 1 bath. The rent is \$450/mo. but will be discounted \$100 if the renter is willing to empty the trash cans for TIMPA. They may have additional credits for other duties at the site. Please contact TIMPA President Mike Cummins at 299-0593. e-mail michael@mcummins.com |
| FOR SALE | Celestron Ultima 11 with accessories. See http://sites.google.com/site/saleofatelescopenow/ for more information. [06/09] |
| FOR SALE | Almost new 8"XLT SCT ASGT with "Flash" upgradeable. Excellent condition. Works "dead on". Used about 4 times as "get and go" scope for public events, etc. Purchased this year (2008). Still under warranty. Includes a 2" back and 2" Williams Optics Diagonal. \$1200. List price \$1615. Contact Jerry Farrar 520-731-1104 (C#.520-403-2404).e-mail.jandkfarrar@msn.com [04/09] |
| FOR SALE | Meade LX 200 12" go to telescope Multi coated, ultra high, Schmidt-Cassegrain catadioptric, D=304.8mm F=3048mm F/10 with a solar filter, Orion superwide 22mm, Meade super Plossi 26 mm, Meade Barlow 2x teleneegative amplifier, planet filters, and of course everything that the scope came with. Works great in excellent condition optics are perfect. Only used scope about 10 to 15 times. Works perfectly. Selling for \$2,500.00 paid \$6,000 including accessories. Moving to china on Jan 20th so please call before the 20 th of Jan. Ask for James. 480-797-3061, jedwards@libertyone.com [04/09] |
| FOR SALE | 12" LX-200GPS. Comes with field tripod, Meade super wedge, 3D counterweight system, Losmandy mounting plate system. Needs focuser if used for imaging. \$3,000.00. Contact Jim Charboneau StellarObservatory@starband.net . [04/09] |
| SERVICE | Green laser pointer need repair or tune up? Contact Donald Arndt at (415) 215-2409 or donaldja@pacbell.net . Typical repairs cost \$25-50, including return shipping. |

Your ad will run for 4 months unless specified. Month and year of last appearance is last item of ad. For additions or changes to this list, call or e-mail the newsletter editor.

Want better observing?
Join the group that's keeping the sky dark
International Dark Sky Association
Southern Arizona section

We get people to use better lighting, so we'll have a dark sky

Some of the things we do:

- Talks to schools and organizations
- Demonstrations at Desert Museum
- PowerPoint presentations on CD

- Work with government agencies
- Identify non-compliant lighting in So AZ

Monthly meetings
2nd Wednesday, 5:30 - 7 pm.
3225 N. First Ave

Contact: Joe Frannea
sky@sa-ida.org
www.sa-ida.org

To preserve and protect the nighttime environment and our heritage of dark skies through quality outdoor lighting

Tucson Amateur Astronomy Association
P.O. Box 41254
Tucson, AZ 85717

Address Service Requested

Please consider renewing your membership on time. Renewal month and dollar amount appears on your address label. Magazine subscriptions are not included. TAL fee is included if participating in TAL. See details on page 2.

Directions to TIMPA and Las Cienegas

Directions to TIMPA Site

GPS coordinates: 32 deg 15.868' N, 111 deg 16.390' W

From the North:

1. Take Ina Rd. west about three miles past I-10.
2. Turn left (south) on Wade Rd.. Wade Rd. becomes Picture Rocks Rd. when the Rd. bends to the right (west).
3. Take Picture Rocks Rd. west to Sandario Rd..
4. Turn left (south) on Sandario Rd. to Manville Rd..
5. Turn right (west) on Manville Rd. to Reservation Rd..
6. Turn left (south) on Reservation Rd. (dirt Rd.) and go about two miles. The TIMPA entrance is on the left.

From the East:

1. Take Speedway Blvd. west and it turns into Gates Pass Rd..
2. Go over Gates Pass and continue west to Kinney Rd..
3. Turn right (north) on Kinney Rd. and continue past the Desert Museum.
4. Kinney Rd. bends left at the entrance to Saguaro National Park West and becomes Mile Wide Rd..
5. Take Mile Wide Rd. west about five miles to Reservation Rd.. Mile Wide Rd. ends at Reservation Rd. and you must turn right (north) onto Reservation Rd..
6. Take Reservation Rd. north about one mile. The entrance to TIMPA will be on the right.

NOTE

A gate card is required for TIMPA access. Please **DO NOT** ask the caretakers for entry to the TIMPA SITE. A list of TIMPA key keepers is available on the TAAA website, or by contacting a board member. For scheduled TIMPA star parties, a designated TAAA representative will provide access to the site.

Directions to Las Cienegas (Empire Ranch)

GPS coordinates: 31 deg 47.356' N, 110 deg 37.913' W

Take I-10 East from Tucson. Take Exit 281 (Route 83 Sonoita-Patagonia Highway South). Travel south on Route 83 for about 19 miles, watch for green and white milepost 40 sign on the right side of the road. Approximately ¼ mile past milepost 40, turn left into Las Cienegas. The road is dirt and is "washboarded" so go carefully. At about 2.9 miles, there is a fork in the road. Stay to the right. When the road ends in a "T", take a left. Cross over a concrete section of the road down in a wash. Just up the hill from the wash (about .2 mile), turn left. 0.1 mile ahead will be the end of an abandoned airstrip with a covered ramada. The club members have been setting up several tenths of a mile down the runway. If you arrive after dark, as a courtesy to other members, use only your parking lights to approach the set-up location.