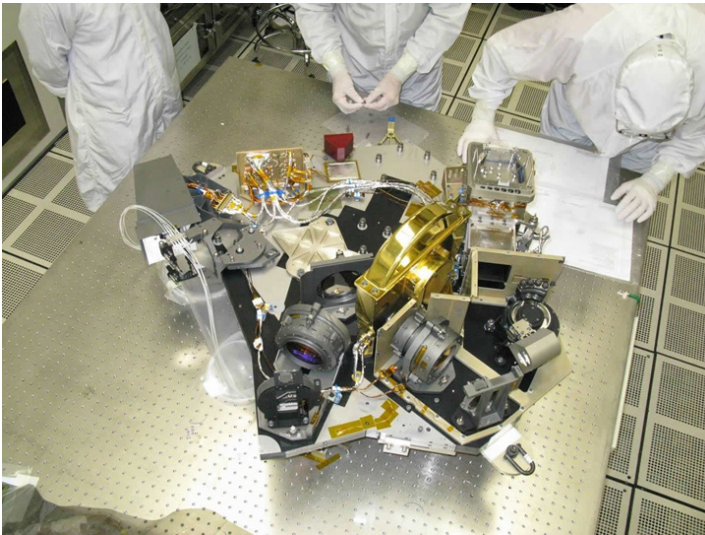
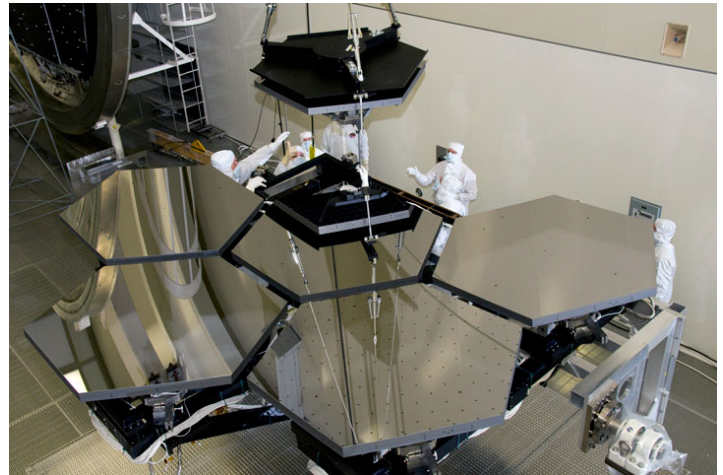
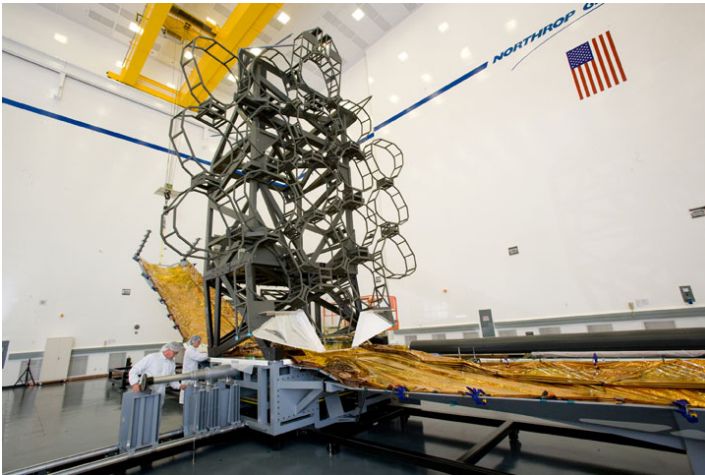


Desert Skies

Tucson Amateur Astronomy Association

Volume LVI, Number 12

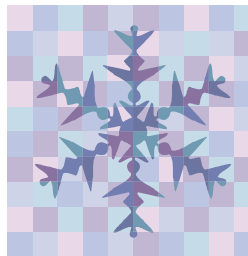
December, 2010



The James Webb Space Telescope

Inside this issue

- ◆ Constellation of the month
- ◆ TAAA Astronomy Complex Updates
- ◆ Websites: Trips On The Internet Super-Skyway



Mark your Calendar!

TAAA Holiday Party

Saturday, December 11

Cover Photo: Clockwise from upper left: backplane, mirrors, fine guidance sensor, NIRcam. Images credit: <http://www.jwst.nasa.gov/images.html>

TAAA Web Page: <http://www.tucsonastronomy.org>

TAAA Phone Number: (520) 792-6414

Office/Position	Name	Phone	E-mail Address
President	Keith Schlottman	250-1560	president@tucsonastronomy.org
Vice President	Bill Lofquist	297-6653	vice-president@tucsonastronomy.org
Secretary	Luke Scott	749-4867	secretary@tucsonastronomy.org
Treasurer	Teresa Plymate	883-9113	treasurer@tucsonastronomy.org
Member-at-Large	John Croft		mal1@tucsonastronomy.org
Member-at-Large	John Kalas	620-6502	mal2@tucsonastronomy.org
Member-at-Large	Michael Turner	743-3437	mal3@tucsonastronomy.org
Past President	Ken Shaver	762-5094	past-president@tucsonastronomy.org
Chief Observer	Dr. Mary Turner	743-3437	chief-observer@tucsonastronomy.org
AL Correspondent (ALCor)	Paul Anderson	625-5035	alcor@tucsonastronomy.org
Community Event Scheduler	Mark Meanings	826-2473	school-star-party@tucsonastronomy.org
Volunteer Coordinator	Roger Schuelke	404-6724	school-sp-volunteers@tucsonastronomy.org
TIMPA Gate Card controller	John Kalas	620-6502	timpa@tucsonastronomy.org
Chiricahua Astronomy Complex Dir.	John Kalas	620-6502	cac-director@tucsonastronomy.org
Newsletter Editor	George Barber		taaa-newsletter@tucsonastronomy.org
Web Director	Terri Lappin	977-1290	taaa-webmaster@tucsonastronomy.org
Publicist	Liz Kalas	620-6502	publicist@tucsonastronomy.org
Astro-Imaging SIG	Steve Peterson	762-8211	astro-photo@tucsonastronomy.org
Astronomy Fundamentals SIG	Robert Gilroy	743-0021	fundamentals@tucsonastronomy.org
Starry Messenger SIG	Terri Lappin	977-1290	smsig@tucsonastronomy.org
Cosmology and Space Exploration SIG	Al Anzaldua		cse@tucsonastronomy.org
Club Apparel Sales	Mae Smith	850-7137	taaa-sales@tucsonastronomy.org
	Merlin Waits	888-4550	
Equipment Loan Coordinator	Al Dohner	297-7118	elc@tucsonastronomy.org
Librarians	Claude & Teresa Plymate	883-9113	librarian@tucsonastronomy.org
Grand Canyon Star Party Coordinator	Jim O'Connor	546-2961	gcsp@tucsonastronomy.org
General Information	Luke Scott	749-4867	taaa-info@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, TAAA Astronomy Complex, 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
taaa-newsletter@tucsonastronomy.org

Join our Email Lists on YahooGroups

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)

Desert Skies is published monthly by the
Tucson Amateur Astronomy Association, Post Office Box 41254, Tucson AZ 85717.

President's Message

It's hard to believe another year is almost over. Astronomically speaking, our home planet has returned to approximately the same position with respect to the Sun that it was a year ago. Our lives change with the passage of time, but fortunately we have some repeating patterns to provide some stability. Amateur astronomers find themselves connecting the seasons to the appearance of certain celestial guideposts; thus when we think of the chill of winter, we also think of the Seven Sisters twinkling overhead and mighty Orion rising up in the East. We've enjoyed many nights of clear skies in Tucson recently, so hopefully you've had a chance to observe some of your old winter friends as they return to the skies.

Speaking of seasons, TAAA members will soon have a new tool available to keep track of the coming year. Thanks to the creativity of Claude and Teresa Plymate, a custom-designed wall calendar showcasing TAAA activities, member photos, and much more has been produced. This will likely sell out quickly so be sure to pick yours up

at the next meeting. The Plymates have done a great service to our club in creating this unique calendar.

I'd like to take a moment to thank the members who have given their time and energy at school star parties in the past year. A few of these folks have gone far beyond the call of duty and helped at numerous star parties. There is a real need for additional help, and the schools continue to ask for more, so I encourage everyone to volunteer for at least one star party. A couple of hours of your time could forever change the life of a child who looks through your telescope!

One of the club's annual events is our holiday party. You definitely don't want to miss this year's party, which will once again be held at the home of Bill and Mary Lofquist. More information is elsewhere in this newsletter - I hope to see you there! Also, don't forget our current auction. The winning bidder will walk away with an outstanding telescope on an extremely high quality mount.

Meeting Information and Calendar of Events

TAAA MEETING DATE: Friday, Dec. 3, at the Steward Observatory Auditorium – Room N210

ASTRONOMY ESSENTIALS: 6:30 pm

Title: Space Rocks – Asteroids, Comets, and Meteorites
Speaker: Terri Lappin

Space Rocks - asteroids, comets, and meteorites - are often considered left-overs from the creation of our solar system. Most asteroids are located between the orbits of Mars and Jupiter. Comets are mostly found in the colder reaches of our solar system, but can put on a spectacular show if they venture into the warm environs of our star. Meteorites, remnants of the solar system's formation, can be held in your hand! Space Rocks is also the name of the latest outreach toolkit we've received from the [Night Sky Network](#). Terri will talk about asteroids, comets, and meteorites and why they are important to the understanding of our solar system. In doing this, she'll highlight the toolkit activities designed to help us explain these objects to the public.

Terri Lappin has been a member of the TAAA since 1977 and has served in many positions including treasurer and president. She currently leads the Starry Messenger Special Interest Group. The goal of the SMSIG is to provide an environment in which TAAA members can enhance their knowledge and understanding of astronomy and related concepts with the intent of passing that information onto the public through outreach events. She received a BS degree in Physics from the UA and currently works for Steward Observatory.

GENERAL MEETING: 7:30 pm

Title: The James Webb Space Telescope and its NIRCam
Speaker: Dr Don McCarthy, Steward Observatory

The James Webb Space Telescope (JWST) will be NASA's next large space telescope, to be launched in 2015. JWST is a large (6.5 meter) cryogenic telescope optimized for observing at infrared wavelengths. It will image the first generation of stars and galaxies that became self-luminous early in the history of our Universe. It will also probe the atmospheres of extra-solar planets and study the formation of Solar Systems around other stars. Historically, scientists from Steward Observatory led the development of infrared astronomy beginning around 1965 and are now leading the development of JWST's two on-board cameras (NIRCam and MIRI). Dr Don McCarthy, NIRCam's science team member, will present this month's lecture. He will first introduce some principles of infrared astronomy and then discuss specifics of the design of the near-infrared camera (NIRCam), the science it will accomplish, and also the associated educational programs that are currently underway.

Don McCarthy is an Astronomer at Steward Observatory. Throughout his career, he has specialized in the development and application of new infrared techniques for achieving high resolution imaging through the blurring atmosphere. He is especially active in STEM (Science, Technology, Engineering, and Math) education, both formally in UA classrooms and informally via programs such as U.A.'s Astronomy Camp which he has directed since 1988. He is a member of NIRCam's science team and also leads its education efforts.

Meeting Information and Calendar of Events (cont.)

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

STAR PARTIES AND EVENTS:

04 Dec - TAAA Star Party at Las Cienegas
 04 Dec - TAAA and AF-SIG Star Party at TIMPA
 04 Dec - TAAA Star Party at CAC
 06 Dec - Astro-Imaging SIG at China Rose

06 Dec - Sierra Middle School Star Party
 07 Dec - Desert View High School Star Party
 08 Dec - KinderPrep Preschool Star Party
 09 Dec - Astronomy Fundamentals SIG
 10 Dec - Pima County Natural Resources Star Party
 11 Dec - TAAA Holiday Party

NEWSLETTER SCHEDULE: Deadline for articles: Sat, Dec 25. The newsletter is published at least one week prior to the following month's General Meeting.

Club News

TAAA Newsletter Editor Position

By George Barber

Since I have relocated to Utah to assume a new engineering position, the TAAA is looking for a new newsletter editor. The newsletter editor assembles all the articles for the newsletter each month. Articles are collected, then organized and proofread. Finally, the electronic version of the newsletter is created and sent to the webmaster. I usually dedicate one Sunday per month to perform this task. Additionally, I send out an email a week in advance to inform everyone of the approaching deadline. The ideal candidate will possess the following:

- Proficient in Microsoft Office Word and Publisher, or a similar software package
- Strong writing and proofreading skills
- Able to perform under a deadline
- Good interpersonal skills
- Adept at using a PC
- A personal computer, internet connection, and email account is mandatory
- TAAA will provide you with PC version of MS Word and MS Publisher software

If you are interested in this position, please contact me or a board member.

TAAA Holiday Party

Put the Annual TAAA Holiday Party on your Calendar!

The TAAA Holiday Party will be held on Saturday, December 11. It will begin at 5:30 pm, so come and visit with fellow members and guests before, during and after the meal.

The Holiday Party will be held again this year at the home of Bill and Mary Lofquist. It will be a potluck again this year as well. For the past several years we have had a door prizes with members bringing things related to astronomy.

We all probably have things that we have collected over the years that we don't use much and that might be just the thing that someone else can use and enjoy.

The Holiday Party is a great time for members to visit and enjoy each other's company. We won't have a structured program except for the door prizes.

As for the food, bring some hors d'oeuvres, an entree, a vegetable, or a dessert. Some canned drinks would also be a good contribution. There always is enough to go around. There will be coffee, tea, hot chocolate and water.

Bill and Mary live at 1935 West Harran Circle. That is near the Foothills Mall. If you start at the intersection of Ina Road and La Cholla Boulevard, go south on La Cholla Boulevard to the traffic light at Omar Drive. Turn east (left) at Donaldson School. Go about 100 yards past the tennis courts and turn right (south) on Amahl. Go one half mile and turn left on Harran Drive. The next left is Harran Circle. It is a short cul-de-sac, and we are the first house on the left at the turnaround circle.

If you get lost, or if you have any questions, give us a call at 297-6653. You can also contact us at wlofquist[at]comcast.net.

We look forward to seeing you at the Holiday Party!

Member News

We welcome these members who have recently joined the TAAA: Debra Phelps, Michael & Gwen Elbert, Richard Fedele, Rick Foster, Chuck Hendricks & Cheryl Kelli. Glad to have all of you join! New members can pick up a members pack at a meeting if they didn't request it by mail. Hope you'll make it to our star parties or meetings so we can all get to know you. (Updated membership lists are available at our website after logging in as a member. You can also pick one up at most meetings.)

Astro-Imaging SIG Meeting

Monday, Dec 6, 7pm
 China Rose restaurant, 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 enjoy the show! For more information, contact Steve Peterson.

Club News (cont.)

Cosmology & Space Exploration SIG

Due to the Holidays, the CSE SIG will not meet in December. However, SCE SIG leader, Al Anzaldua, is presenting a lecture to the AFSIG which you might find interesting. See the AFSIG announcement below.

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 hats, T-shirts, denim shirts, and patches. We take cash and checks.

TAAA Calendars

The New TAAA calendars will be available to purchase at the Dec TAAA meeting, Board Meeting, and Holiday Party! Come check them out!

Official AFSIG TIMPA Night

December 4

If the weather cooperates, it should be a good observing night for everyone. The AFSIG will be very active that night at TIMPA. The Constellation Observing Club will introduce the next 5 constellations to its participants and the Solar System Observing club will try again to observe Jupiter and one or two other objects. Also, the Gila Monster observatory will be open for your observing pleasure. Come and join one of our activities, or observe on your own – and enjoy the camaraderie. AFSIG will open the gate at 5:00 pm.

**Astronomy Fundamentals Special Interest Group
“Living and Working in Space with Our Eyes on Mars”**

By Bob Gilroy

On December 9, 2010 we will have our regular monthly meeting. This month we will have a presentation on living

and working in space. Al Anzaldua from our Cosmology and Space Exploration special interest group will be discussing the asteroid threat, options for living and working in space and how and why we should colonize Mars.

Come and join us for this interesting discussion. Remember, we are successful only if you participate.

The Date: December 9, 2010

The Time: 6:30 pm

The Place: U.S.G.S. Building – room 253

Northeast corner of Park Avenue and Sixth Street

Parking: Free parking after 5:00 pm behind the building in the parking lot

Looking forward to seeing you there,

The Astronomy Fundamentals special interest group meets on the 2nd Thursday of every month with some stimulating discussions from both the TAAA members and members of the scientific community. In addition, when we launch a new observing program, we have a presentation about that program discussing the history, folklore and the necessary requirements to complete the program.

Kitt Peak Sunset Alignment

18 December, 2010

By Dean Ketelsen

In what is becoming a tradition of the Winter Solstice season, I'll again lead a trip up the Mount Lemmon highway to image the sun setting behind Kitt Peak National Observatory. Conveniently, there is a nice pull-off just below milepost 9 where, a couple days before, and a couple days after the Winter Solstice, the sun is in perfect alignment with the full complement of mountaintop domes. This year the dates are the 18th and 24th, so for the first time in recent memory, the early date occurs on a Saturday.

We'll meet at the McDonald's on the NE corner of Tanque Verde and Catalina Highway at 3:30, before heading up



Our Sponsors

 **Prototron Circuits, Inc.**
America's Board Shop

STARIZONA
ADVENTURES IN ASTRONOMY AND NATURE

5757 N. Oracle Rd. www.starizona.com
Tucson, AZ 85704 292-5010

Since 1986

Stellar-Vision Astronomy Shop

3721 E. 37th Street
Tucson, AZ 85713
(520) 571-0877
Credit Cards Accepted.

www.stellarvisiontucson.com

Club News (cont.)

the road. I prefer to set up and get focused on the observatory before the sun moves into the field, so it is better to get there earlier rather than later. Please let me know you will be joining the group, preferably with your phone number so you can be contacted in case of uncooperative weather (ketelsen[at]email.arizona.edu).

If you are considering imaging the alignment, nothing works better than practicing a time or two from your backyard, with the very-low-elevation sun. If weather is an issue, the 24th is also an option if you need something to do on Christmas Eve! Come join us - it sure beats Christmas shopping!

TAAA Auction: A 7" Maksutov-Cassegrain Telescope on a Losmandy GM 8 Equatorial Mount.

As announced at the November, 2010 TAAA General Meeting, we are auctioning a 7" Maksutov-Cassegrain Telescope on a Losmandy GM 8 Equatorial Mount. The telescope has a carrying case and a manual. It has been donated by Wally Rogers to be used as a fundraiser for the Phase 2 development of the Chiricahua Astronomy Complex.

Claude Plymate put the scope through a rigorous test and his write-up of the critique is available for the asking. Call Bill or send him an email as listed below. Claude's report is quite balanced. He has included an assessment of the strengths of the scope and makes some suggestions for how it might be improved by the lucky winner.

Wally purchased the scope in November, 2002 and it has been used only three or four times. He paid \$1,595 at that time, and the Losmandy GM 8 Mount is currently listed at \$1,495.

The opening bid will be \$1,000. The bidding period will close on January 28, 2011 at 5:00 PM.

To place a bid, call or send an email to Bill Lofquist. I can be reached at 520-297-6653, or by email to wlofquist[at]comcast.net. Please call me if you would like to know the latest bid so you can place your own.

I will send a message to the membership each weekend to review the bidding.

The telescope and mount will be on display at the December and January General Meetings and at the Holiday Party on December 11.

If anyone would like to see the scope to take a closer look at it, it will be at my home at 1935 West Harran Circle. Please give me a call to let me know you would like to see it and to arrange a time to come by.

The telescope will be presented to the highest bidder at the February 4, 2011 General Meeting.

Upcoming Lectures

Here is the upcoming lecture schedule. Contact Terri Lappin at terrilappin[at]tucsonastronomy.org to suggest speakers or topics.

Jan 7	<i>Astronomy Essentials</i>	Mary Turner Seasonal Objects
	<i>Invited Lecture</i>	Thomas Matheson Gamma Ray Bursts
Feb 4	<i>Astronomy Essentials</i>	Astrophotography SIG Presentations
	<i>Invited Lecture</i>	
Mar 4	<i>Astronomy Essentials</i>	OPEN
	<i>Invited Lecture</i>	Ari Spinoza Mars
Apr 1	<i>Astronomy Essentials</i>	Mary Turner Seasonal Objects
	<i>Invited Lecture</i>	Yancy Shirley Topic TBD
May 6	<i>Members Night Starts at 6:30pm</i>	Theme: TAAA members who work in the field
Jun 3	<i>Astronomy Essentials</i>	OPEN
	<i>Invited Lecture</i>	Dr Marcia Neugebauer Solar Physics



Night Sky Network Toolkits

We have received the long-awaited Space Rocks toolkit. Thank you to all who have used our toolkits, as this is how we qualify for new toolkits. Space Rocks has two parts: *Our Rocky Neighbors* and *Earth Impacts*. *Our Rocky Neighbors* includes a model of the 4 largest asteroids scaled to a 1-meter diameter Earth. *Earth Impacts* includes two meteorites mixed among Earth rocks with the goal of sorting the *Meteorites* from the *MeteorWrongs*. It also explains why meteor impacts appear so vividly on the moon's surface but not on the

Club News (cont.)

Earth's. This toolkit will be highlighted at the Astronomy Fundamentals lecture this month.

Below is a list of our Night Sky Network Outreach Toolkits and other resources for teaching astronomical concepts. NASA, through its sponsorship of the Night Sky Network, recognizes the essential role that amateur astronomers play in public astronomical education. These toolkits are available for use at any outreach event. If your scope is not well suited for public events, or if you want a change of pace, consider bringing a toolkit to a community star party. Toolkits are also great backups for cloudy nights. Each themed toolkit contains several projects; you pick and choose what you want to use. A Resources CD and a Training DVD is included. Individual training in their use is available upon request. Please make arrangements with Terri Lappin (smsig[at]tucsonastronomy.org) to borrow these toolkits.

Night Sky Network Toolkits:

Space Rocks – Asteroids, Comets, and Meteorites: meteorite samples, asteroid detection

Exploring the Solar System: scale model of solar system

Our Galaxy, Our Universe: scale model of the Milky Way galaxy and the Universe

Shadows and Silhouettes: lunar phases, eclipses, and transits

Black Hole Survival Kit: gravity concepts

Supernova!: life cycle of massive stars, earth's protective atmosphere

Mirrors and Glass – An inside look at telescopes: how telescopes work

Telescopes – Eyes on the Universe: basic principles of optics, the human eye, and observing

PlanetQuest: demonstrate planet detection techniques

Other Resources:

SolarScope: provides a white light image of the sun suitable for small group viewing.

Dark Skies Education Kit: light pollution principles, includes a Sky Quality Meter

Comet Chef: an apron (with a comet on it) and chef's hat to wear when mixing up comets



Starry Messengers SIG -
Opening Minds to the Universe

TAAA Booth at Tucson Festival of Books
March 12 and 13, 2011

The Starry Messenger SIG has begun planning for the TAAA's Tucson Festival of Books exhibit. Our participation last March was very successful in reaching about 1400 people, including many young people. Your support of next year's event will go a long way towards its success. Our exhibit in 2011 will have adult and kid-friendly hands-on activities as well as solar viewing.

Over the next couple months, we need TAAA members who are creative thinkers – people who can lend their support to coming up with great ideas for the booth that target both kids and adults. If this is you, be sure to send your thoughts to smsig[at]tucsonastronomy.org, or speak to Terri Lappin.

We will also need support during the two day event (March 12 and 13). Sign-up sheets for 2-3 hour time slots will start appearing in January and February. If you have the necessary equipment for safe solar viewing, watch for the solar observing sign-up sheet. Not only the public, but those involved in planning the booth will be very appreciative of your time. The earlier you sign-up, the more time slot choices you'll have to choose from. You will receive training for the activities that will be at the booth.

The Festival of Books is a wonderful family event. For general information about the festival, visit <http://tucsonfestivalofbooks.org/>.

The Starry Messenger Special Interest Group provides an environment in which TAAA members can enhance their knowledge and understanding of astronomy and related concepts. We offer tools and techniques for explaining astronomy to people of all ages. Any TAAA member involved in astronomy outreach is supporting the goals of the Starry Messenger SIG. Even if you have never attended a SMSIG workshop or meeting, you can consider yourself a member of the SMSIG. We value your contribution.

TAAA Website Changes

If you've visited the "member's side" of the TAAA website, you've likely seen changes in how our calendar of events are displayed. We are now using the Night Sky Network's calendar. Hovering over an event will display the time of the event. To see other details, you need a Night Sky Network login. (Details also appear in the newsletter, of course.)

Currently we are evaluating the NSN for our future needs. Upon approval of the TAAA Board, all TAAA members will receive a NSN login in February. If you don't want to wait that long you can sign-up now. You can also participate in the evaluation of the NSN for our needs. To add yourself to the Night Sky Network use this form:

<http://nightsky.jpl.nasa.gov/club-apply.cfm?>

[Club_ID=78&ApplicantType=Member](http://nightsky.jpl.nasa.gov/club-apply.cfm?Club_ID=78&ApplicantType=Member)

Your request for a user account will be reviewed and approved, assuming your dues are current.

Full implementation in February will give us better management of our club records and communication with members. In addition, members will see the following benefits.

- Your own personal user name and a private password (both are user editable)
- Ability to update your contact information
- Check when your membership dues need to be paid

Club News (cont.)

- Control over your online privacy and communications
- Easy access to up-to-the-minute information about TAAA events (new events, cancellations)
- Enter and track your volunteer hours (including mileage for tax purposes) to gain recognition for your service
- One-touch directions to our events as well as time of sunset, moon phase, weather forecast, and a simple sky chart for that evening
- "One-stop shopping" for regional/national amateur events



Here's a video that tells you more:
<http://www.youtube.com/watch?v=qw5CyNEYHks>

The Privacy Policy of the Night Sky Network website can be found here:
<http://www.jpl.nasa.gov/copyrights.cfm>.

If you do not have email, your contact information will still be provided to the NSN. However, you will not be given a login username or password. The Treasurer will continue to maintain your contact information. As always, you will continue to receive Desert Skies by mail. Should you get an email address, you will be issued a login account.

Any member may opt-out of the NSN membership. If this is your preference, please wait for instructions for opting out which will appear in the January Desert Skies.

Should you have questions about the NSN online services, contact the TAAA web director, Terri Lappin, at [terrilappin\[at\]tucsonastronomy.org](mailto:terrilappin[at]tucsonastronomy.org) (or call 579-0185).

Introduction to Fundamentals of Astronomy
 Story submitted by Bob Gilroy and Pictures by John Croft

On October 23, October 30 and November 6 AFSIG held another Basic Astronomy Education Class entitled "Introduction to Fundamentals of Astronomy". Instructors were:



Each day of the class was devoted to a different aspect of Amateur Astronomy. Day 1, "Basic Astronomy", included presentations on the Celestial Sphere, and discussions of the various types of celestial objects; on Day 2, "Equipment Basics", topics included telescopes, eyepieces, filters, mounts, and accessories; Day 3, "Observing Basics", was all about observing tips and techniques, and getting started.



It was an intensive 3 days that included solar viewing.

Club News (cont.)



Solar Viewing



Waiting for sunset and clear skies. We got the sunset, but unfortunately, the sky was cloudy except for a few sucker holes. Some of us diehards stayed and used those holes to see some deep sky objects when possible. However,



Discussion of the day's topic

Participants attended the classes, which began at 9:00 AM and concluded at about 4:00 PM each Saturday. Despite parking problems on day one, very little disruption of the classes developed. The classes were held in room 253 at the USGS Building on the UA campus.



On the last day, November 6, the class enjoyed a celebratory pot-luck dinner and a star party at TIMPA.



Club News (cont.)



even we gave up after about an hour. We did have a great time socializing and felt a sense of accomplishment for what we did see.

Feedback from the attendees has been very positive. Here are a few comments taken from the class survey:



"Wonderful Class!! Great Presentations! Plenty of Props - N.P.

"Very helpful in teaching new people about what to find in the sky with different sources and skill levels" - E.M.

"Lots of wonderful information in lectures and workbook" - C.M.T.

"I learned a lot." - J.M.

"I like the instructors...who added to their presentation from their vast knowledge" - M.E.

These were just some of the comments submitted. All the comments are appreciated and will be utilized to tweak the program to present meaningful and timely presentations. I want to thank the students for their time and effort and participation in our program.

Also, I want to thank our presenters - Great job!

...And special thanks to Dennis McMacken who not only helped in planning and executing the program but also procured the classroom for us and acted as moderator for the entire three days.

Plans are to offer the class again sometime within the next six months. Details will be published in a later newsletter.

Night Sky Network iPhone Application

If you use an iPhone, the NSN has an App for you! "Go StarGaze" will give you a list of astronomy events in your area. You can download it free at <http://itunes.apple.com/us/app/go-stargaze/id380833895?mt=8>. Tell your friends about it, too.

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

Items of Interest

Websites: Trips on the Internet Super-Skyway

By Rik Hill

A Super Hobby

A couple years ago I did a column on seeing clusters in M31, M32, M33 and NGC205. But have you ever tried to see a single star in another galaxy? All the stars you see in our night sky are in the Milky Way. You need a sizable telescope to see clusters and nebulae in nearby galaxies. But a few times a year supernovae can be observed with smaller backyard telescopes.

First, you need to know how faint a star your telescope and eye or telescope and camera can see. This can be nicely accomplished with the website for Photometry Reference Images hosted by the Astronomy Section of the Rochester Academy of Science in Rochester, New York: <http://www.rochesterastronomy.org/snimages/reference/>. Here you will find accurate two color magnitudes for select stars around hundreds of galaxies. There will always be one on the meridian!

Next go to another ASRAS page at: <http://www.rochesterastronomy.org/supernova.html> to see a list of the current bright supernovae. At this writing there is a current 13.3 mag. Supernova which would be visible in a 6" telescope at a dark site. There are a few this bright each year. You will be awed, as you view this, to know that you are seeing a single star in a distant galaxy, even if it is in the process of destroying itself!

There is a fairly active group of Hungarian astronomers that specialize in supernovae: <http://astro.u-szeged.hu/~sn/>. These people are very serious about this work and include amateurs as well as professionals.

Another good reference site of supernovae information is at: <http://www.supernovae.net/snimages/snlinks.html>. There are so many links here it will take several nights to exhaust all that is available.

Want to find one for yourself? Well, that will be a bit difficult in this age of all-sky surveys with professional sized instruments (especially with LSST coming up in the next decade). But interesting accounts of how this has been accomplished are available at Mr. Galaxy's (Wayne Johnson) website hosted by the Huachuca Astronomy Club at: <http://www.hacastronomy.com/sn/>. He has a lot of good reference links on this site that will provide you with hours of super supernovae reading. He even has a presentation on his supernova hunting at: http://www.hacastronomy.com/speakers/Johnson_Wayne/MrGxy_SNe%20Discoveries.pdf. You can also email him about supernova topics at: [mrgalaxy\[at\]juno.com](mailto:mrgalaxy[at]juno.com)

Let me know if there are any other topics you'd like to see explored here by dropping me a line at [rhill\[at\]jpl.arizona.edu](mailto:rhill[at]jpl.arizona.edu)

Member's Events

TAAA and AF-SIG Star Party at TIMPA

Saturday, Dec. 4

Come on out and enjoy the winter 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. There is no scheduled talk for this activity, just come out and enjoy. 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. Be prepared for cold temperatures. Directions to the TIMPA site are located on the last page of this newsletter.

TAAA Star Party at Las Cienegas (Empire Ranch)

Saturday, Dec. 4

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. 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 his/her telescope. And, there are now restroom facilities at the site. Las Cienegas is at 4000 feet so be prepared for cold temperatures. See the directions to Las Cienegas on the last page of this newsletter.

TAAA Star Party at CAC

Saturday, Dec. 4

The Chiricahua Astronomy Complex (CAC) is the club's newest observing site. Located in Cochise County approximately 100 miles from the center of Tucson, the site includes a full bathroom facility. At an elevation of 4800 feet, be prepared for cold temperatures. Try to arrive before sunset. Unlike the other two club observing sites, TIMPA and Las Cienegas, the CAC site requires that

Member's Events (cont.)

members make reservations for both monthly club star parties and private member use. We are restricted by a 60 person/30 vehicle maximum limitation. If you would like to attend, contact CAC Director John Kalas via e-mail at [jkalas\[at\]cox.net](mailto:jkalas[at]cox.net) or by phone at 620-6502. Reservations will be on a first come – first serve basis. Depending on the number of members interested in attending, guests may not be allowed.

Directions to CAC:

The Chiricahua Astronomy Complex is about 90 miles and a 1½ hour drive from the TTT Truck stop at Craycroft Road and Interstate 10.

- Take I-10 East from Tucson past Benson.
- Exit I-10 at Dragoon Road (Exit #318) – Turn right onto Dragoon Road at bottom of exit ramp.
- Travel 13.5 miles southeast to intersection with Route 191 and turn right (south).

- Travel 17.9 miles south (past Sunsites and Margie's Corner Café at High St. on the right and Border Patrol checkpoint) to intersection with Route 181 at Sunizona and turn left (east).
- Travel 10.9 miles east to intersection with S. Price Ranch Road and turn right (south). S. Price Ranch Rd. is a dirt road just before you reach mile post 49 (cluster of mailboxes on right on Rte. 181).
- Travel ½ mile south on S. Price Ranch Rd. to intersection with E. Perseus Way (wide dirt road with E. Perseus Way street sign on left) and turn left (east).
- Travel east on E. Perseus Way slightly more than ¼ mile to entrance of Chiricahua Astronomy Complex, address 9315 on right (twin brown gates flanked by white rail fences set back 50 feet from road). Look for TAAA sign on left side of entry road.

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.

Sierra Middle School Star Party

Date: 2010-12-06 (Monday)

South

No. of Scopes: 4

Sierra Middle School will be doing an Exploring the Night Sky for an estimated 70 students and parents at 5801 S. Del Moral Blvd. Turn south on Campbell Blvd. from Speedway Blvd. Continue to take Kino Pkwy (Campbell) which will turn into S. Campbell. Continue to drive down Campbell (past Irvington) until you arrive at Drexel Rd. Turn west on Drexel Rd. and drive about one block west until you arrive at Del Moral Blvd. Turn left (south) on Del Moral Blvd. Viewing will take place on the field that is east of the school. Contact person Deborah Dimmett can be reached at 520-545-4875 or [deborah_dimmett\[at\]msn.com](mailto:deborah_dimmett[at]msn.com). Observing will be from 7:00pm to 9:00pm, with setup 30 minutes prior to start.

Desert View High School Star Party

Date: 2010-12-07 (Tuesday)

South

No. of Scopes: 4

Desert View High School will be doing a Starry Night for an estimated 75 students and parents at 1900 E. Summit St. Head south on Alvernon Way. Pass Valencia Rd and Alvernon will begin to veer right and will turn into Hughes Access Road. Continue west on Hughes Access until you read a stoplight at Nogales Hwy. Turn left (south) on Nogales Hwy. Continue until you see a sign for Old Nogales Hwy. Turn left onto Old Nogales Hwy. Continue on Old Nogales Hwy, then turn left onto Summit St. The school is on the right. Viewing will take place on the basketball court on the SE side of the school. Contact person Layne Trinkley can be reached at 545-5128 or [laynet\[at\]susd12.org](mailto:laynet[at]susd12.org). Observing will be from 6:00pm to 8:00pm, with setup 30 minutes prior to start.

KinderPrep Preschool Star Party

Date: 2010-12-08 (Wednesday)

~~THIS EVENT~~ Other

~~CANCELLED~~ No. of Scopes: 3

KinderPrep Preschool will be doing an Exploring the Night Sky for an estimated 35 students and parents at 18825 S. La Canada Dr. Get on I-10 heading east. Merge onto I-19 South via Exit 260. Go approx. 20 miles and take the Duval Mine Rd exit #69. Turn right onto W Duval Mine Rd. Turn right onto S. La Canada Dr. 18825 S. La Canada Dr is on the right. Viewing will take place in the parking lot. Contact person Amber Slentz can be reached at 520-577-3729 or [kinderpreppreschool\[at\]gmail.com](mailto:kinderpreppreschool[at]gmail.com). Observing will be from 6:30pm to 8:00pm, with setup 30 minutes prior to start.

Pima County Natural Resources Star Party

Date: 2010-12-10 (Friday)

West

No. of Scopes: 4

Pima County Natural Resources will be doing a Night with the Stars for an estimated 50 students and parents at 7300 W. Hal Gras Road. 1.5 miles south of Gates Pass Road or 3.8 miles north of Ajo Way. Viewing will take place at the Ironwood Picnic Area, near restrooms on right side of road. Contact person Sandy Reith can be reached at 520-615-7855 x104 or [sandy.reith\[at\]pima.gov](mailto:sandy.reith[at]pima.gov). Observing will be from 6:30pm to 8:30pm, with setup 30 minutes prior to start.

CHIRICAHUA ASTRONOMY COMPLEX

Facility Update

John Kalas – Construction Coordinator/CAC Site Director

Cloudy weather adversely affected the November CAC Star Party on 11/6. Five vehicles with six people attended but only two vehicles stayed all night. There is a new restaurant, Sandy's Place, that has opened for breakfast and lunch and it is very convenient to the CAC Site. It is located at the intersection of Route 181 and Route 191.

On Saturday, 11/13, Robert Crawford, Michael Turner and John Kalas visited the site to install the video surveillance system. The first task was to pull a communication cable through the underground conduit that was laid from the bathroom facility to the well house during Phase 1 development. Unfortunately, the conduit was pinched closed in several locations by rocks during backfilling of the trench and we were unable to successfully install the cable to join the two buildings. The work session was cut short. It was decided to install two separate systems with

DVR's in both buildings. A second DVR will be purchased. The next work party will take place after the additional DVR has been received. This will be after the Thanksgiving holiday.

Phase 2 development is progressing toward initiation. Phase 2 has been divided into two areas. Phase 2a is the "public area" consisting of the ten 12'x12' concrete telescope pads with electricity, a 12'x14' roll-off roof observatory, the amphitheater and two additional steel storage containers. Phase 2b is the four RV spaces. The drawings indicating the exact clearing dimensions have been generated. TAAA Member and local Sunizona resident Jeff Kreamer is a recently retired surveyor, and he has volunteered to assist the club in laying out the clearing areas. This will facilitate the "plucking" of the mesquite vegetation and the preliminary grading of each area. After clearing, the electrical trenching and installation will take place before construction begins.

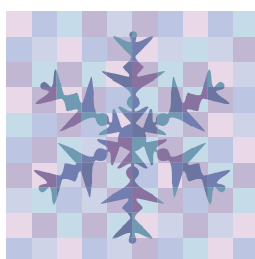
Dark Skies for December 2010

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	30/01	18:45	-	2:48	Sa/Su	11/12	23:11	-	5:48	Tu/We	21/22	-	-	-
We/Th	01/02	18:45	-	3:55						We/Th	22/23	18:52	-	19:08
Th/Fr	02/03	18:46	-	5:03	Su/Mo	12/13	0:04	-	5:49	Th/Fr	23/24	18:52	-	20:16
Fr/Sa	03/04	18:46	-	5:43	Mo/Tu	13/14	0:57	-	5:49	Fr/Sa	24/25	18:53	-	21:23
Sa/Su	04/05	18:46	-	5:43	Tu/We	14/15	1:52	-	5:50	Sa/Su	25/26	18:53	-	22:30
					We/Th	15/16	2:48	-	5:50					
Su/Mo	05/06	18:46	-	5:44	Th/Fr	16/17	3:45	-	5:51	Su/Mo	26/27	18:54	-	23:35
Mo/Tu	06/07	18:46	-	5:45	Fr/Sa	17/18	4:45	-	5:52	Mo/Tu	27/28	18:55	-	0:41
Tu/We	07/08	19:22	-	5:45	Sa/Su	18/19	5:45	-	5:52	Tu/We	28/29	18:55	-	1:46
We/Th	08/09	20:22	-	5:46						We/Th	29/30	18:56	-	2:52
Th/Fr	09/10	21:20	-	5:47	Su/Mo	19/20	-	-	-	Th/Fr	30/31	18:56	-	3:57
Fr/Sa	10/11	22:16	-	5:47	Mo/Tu	20/21	LUNAR ECLIPSE			Fr/Sa	31/01	18:57	-	5:00

Weekend	Sun	Sun	Mercury	Venus	Mars	Jupiter	Saturn							
Sa/Su	Set	Rise	Rise	Vi	Set	Vi	Set	Vi	Set	Vi	Rise	Vi	Vi=Visibility	
04/05	17:17	7:08	18:37	4	3:53	-4	18:14	8	0:59	-2	2:31	1	-3	brilliant
11/12	17:18	7:13	18:23	7	3:46	-4	18:10	9	0:34	-2	2:06	1	0	conspicuous
18/19	17:20	7:18	Rise	-	3:43	-4	18:06	9	0:10	-2	1:41	1	3	moderate
25/26	17:23	7:21	6:13	7	3:43	-4	18:03	-	23:46	-2	1:15	1	6	naked eye limit
01/02	17:28	7:23	5:45	3	3:47	-4	18:01	-	23:22	-2	0:49	1	9	binoculars limit

By Erich Karkoschka

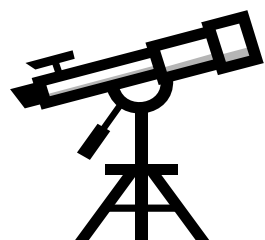


Mark your Calendar!

TAAA Holiday Party

Saturday, December 11

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 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 SALE	Vixen ED80Sf on AZ4 alt-azimuth mount with NEQ5 steel tripod. Includes 0.8X field flattener for astrophotography, owner's manual, and padded aluminum carrying case, plus 8x50 finder and very smooth 2-inch Crayford focuser. Provides beautiful images of both terrestrial objects and the nighttime sky. Asking \$775.00 for the complete package. Photos available via email. Contact Robert at 520-648-1421 or email rewoerner[at]gmail.com . [03/11]
FOR SALE	Vixen VMC95L Cassegrain with Mini-Porta Mount; Vixen Dot Finder; Vixen NPL25mm eyepiece; Celestron 32mm Plossl eyepiece; Celestron 15mm Plossl eyepiece. All items for \$300.00 OBO Contact - Neal Scofield, RetiredBadge[at]comcast.net 883-5456 [03/11]
FOR SALE	Coronado (Pre-Meade) SolarMax 60mm Hydrogen Alpha scope with BF10 blocking filter. In excellent to mint condition. Includes CEMAX eyepieces 25mm, 12mm, and 18 mm + 2x Barlow, Clamshell mounting rings, Hard case (a few scuffs). Asking \$2200, OBO. Contact John Barnes (520)663-4174. [03/11]

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.

TAAA Board of Directors Meeting - 10 November 2010

Attending: Board members present (8): Keith Schlottman (presiding), Luke Scott, Bill Lofquist, Teresa Bippert-Plymate, John Croft, John Kalas, Michael Turner, and Ken Shaver. Members present (5): Robert Crawford, Bob Gilroy, Paul Anderson, Claude Plymate, and Terri Lappin

Call to Order: The President called the meeting to order at 6:30 pm.

Minutes: Minutes from the October Board meeting were approved unanimously.

Member Feedback

- Some members noted that the CAC status presented at the November meeting ran long.

Announcements for Record

- None.

Upcoming Meetings

- Astronomy Essentials lecture for March is open.
- The Board noted that there is a need to solicit members to participate in Members' Nights and will consider devoting the May Member's Night to hands-on projects.

Treasurer's Report

- The club has \$58604.72 in checking. There were no unusual expenses in the preceding month.

TAAA Board of Directors Meeting - 10 November 2010 (cont.)

- Tax returns for TAAA for 2010 have been delivered to the Treasurer.

Special Interest Group Status Reports

- Astronomy Fundamentals (Bob Gilroy):
 1. The Basic Astronomy course was completed on 6 November. Of 24 members who enrolled, 16 attended and completed the class, including 2 Flandrau Science Center docents.
 2. Four observing programs are underway.
 3. The 8-inch Coulter loaner telescope needs a focuser installed. Help will be solicited on the Forum.
 4. A 2011 budget proposal was submitted to the Board.
- Astro-Imaging: No report.
- Starry Messengers: Terri Lappin suggested that support for the SARSEF and the math and science Funfest could be part of the Starry Messenger SIG activities.
- Cosmology and Space Exploration: Bob Gilroy reported that 8 people attended the second meeting of the SIG.

Astronomical League Coordinator

- Paul Anderson reported that AL observing books have been ordered at a cost of \$154.00.

School Star Parties

- The Board noted that more school star party volunteers are needed and will encourage more members to participate.

Web Site

- Terri Lappin reported that club events are being posted to the Night Sky Network calendar.

Las Cienegas Observing Site

- The Board discussed whether this location should continue to be publicized by TAAA as a star party site. A motion was entered by Keith Schlottman and seconded by Ken Shaver to remove the Las Cienegas Star Party from the 2011 Master Calendar, but continue to recognize Las Cienegas as a viable observing site. The motion was approved unanimously. John Kalas will re-write the Las Cienegas newsletter announcement to reflect this change.

CAC

- John Kalas reported that most components needed for the video surveillance system have been purchased. John Kalas, Robert Crawford, and Michael Turner will install the system on Saturday, 13 November.
- A motion was entered by Bill Lofquist and seconded by Keith Schlottman to reallocate 30-inch telescope funds to CAC Phase 2 construction costs. The motion was approved by a vote of 7-1.

Other

- John Kalas reported that the Astronomy Services business is picking up.
- Ken Shaver and Michael Turner will organize a red light workshop to be held in spring 2011.
- The newsletter editor position is still open; no volunteers have stepped forward.

Meeting adjourned at 9:10 pm.

Respectfully submitted,
Luke Scott
Secretary

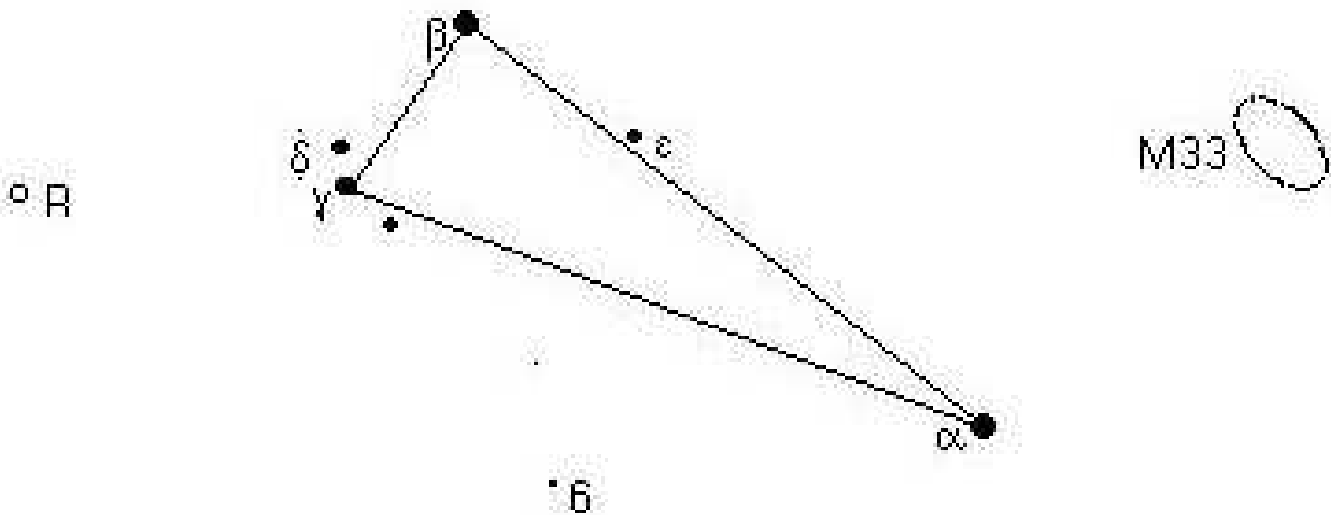
Constellation Report by Chris Lancaster

Triangulum

There are many fanciful stories from mythology that those from ancient civilizations tied to the stars to explain the origins of the constellations. Triangulum, by contrast, has a more worldly derivation. Just as we see a simple triangle, so did the Romans who named this group of three stars Deltotum from its resemblance to the Greek letter Delta. Other explanations for why the stars of Triangulum caught the attention of early astronomers say that it was because the simple shape is reminiscent of the Nile delta or the island of Sicily. But no matter what the origin, it has a fitting name. Triangulum is easy to spot near the zenith on November nights between the double arcs of stars forming Andromeda and the short hook pattern of Aries.

Constellation Report by Chris Lancaster (cont.)

If Triangulum were a rock band, then it would be a one hit wonder. That's because it has an object that out-classes every other point of interest within the constellation. This is, of course, M33, or the Pinwheel Galaxy. Along with M31 (the Andromeda Galaxy), and our own Milky Way, M33 is the third large galaxy in the Local Group, which is composed of several mostly dwarf sized galaxies within 2 to 3 million light years of each other. M33, at 2.8 million light years distant, is slightly farther away than M31, and is also smaller--50,000 light years across compared to around 100,000 for M31. And, adding to the comparison between the two, we see M33 more face-on, while M31 is tilted more toward an edge-on orientation. What all this leads to is the fact that M33 covers a large part of the sky--60'x 40', or well exceeding the area of the moon. This means that to capture the entire galaxy in an eyepiece, low power, such as 40 to 50 times, is essential. In addition, its magnitude 6 light is spread over such a large extent that dark, transparent skies are also a requirement to see its diffuse glow. It is this nature of M33 that makes it difficult to find at times.



With that said, point your telescope a bit less than 4.5 degrees west of Alpha Trianguli, the star that marks the apex of the triangle (or at RA 1h 33m 51s Dec +30d 39' 37"). M33 will show a soft glow at its nucleus, which decreases gradually outward. It has two major arms, which have a lumpy, convoluted structure and trace a stretched-out "S" shape. With enough aperture and sky transparency, there is enough contrast to easily see its spiral form.

Once centered on M33, you can increase power to study some of the details within it. Its fat arms are knotted with star clusters and nebulae. One of the largest H II regions known in any galaxy is near the edge of M33's visible face. This is NGC604, an expansive hydrogen emission nebula and associated star cluster that is close to 1,000 light years in diameter. In medium-sized scopes, it will appear as a distinct fuzzy clump of material about 10' to the NE from the center of the galaxy. The chemistry of this region of M33 is similar to the Orion nebula. It should be easy to spot as the most prominent feature of the galaxy besides the galactic nucleus itself.

While it is easy to forget that Triangulum has other things to offer besides M33, let's mention a couple of other objects before leaving this region of the sky. A nice, close double star, 6 Trianguli, is on the opposite side of the triangle from M33 below the line connecting Delta and Alpha Trianguli. Use high power to overcome the 3.8" separation to see a magnitude 5.2 primary and 6.6 secondary. While some historical accounts of 6 Trianguli describe a yellow or gold primary and a blue or sapphire secondary, my experience with this double, which match a small sampling of others' descriptions, is of two similar pale yellow stars, with the secondary showing a slightly gray-yellow tint. The spectra of these two stars are G5 and F6, which indicate that some color difference may be apparent.

The best variable star in Triangulum is the long period variable R Triangulum, which is four degrees east of the corner of the triangle marked by Gamma Trianguli (RA 2h 37m 16.6s Dec +34d 15' 54"). It is just beyond naked eye visibility at its maximum magnitude of 5.7, and then over a period of 266 days it oscillates between that and a feeble magnitude 12.5

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.

Directions to Las Cienegas (Empire Ranch)

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.

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.