



Desert Skies

Tucson Amateur Astronomy Association

Volume LVII, Number 11

November 2011



Last Month's First Light with the John Zajac 18" Obsession Telescope

General Meeting November 4th

Steward Observatory Lecture Hall, Room N210

Member's Night

Meeting starts at 6:30pm!

Affiliates



TAAA Meeting Friday, November 4

Steward Observatory Lecture Hall, Room N210



6:30pm

Title: Members' Night

Theme: Astronomy in Culture & the Arts

The theme for this season's TAAA Member's Night is *Astronomy in Culture & the Arts*. Whether it's David Bowie's haunting *Space Oddity* or Vincent van Gogh's *Starry Night*, astronomy or more precisely the night sky, has inspired a wide range of artists. Artwork adorns many ancient astronomical instruments and some old star charts contain more art than stars. The space age of the 50's and 60's, backed by national pride, gave us such things as rocket fins on cars and the space saucer design of the Los Angeles International Airport (LAX). Might it be true that no other science has this kind of effect on cultures, current or ancient?

Any member can offer a presentation about this topic. We'll also have more traditional member's astronomy presentations about their astronomy projects. It should give us a fast paced, light hearted look at the many ways astronomy touches our lives.

Contact Terri Lappin if you want to give a presentation. Note that there is no Astronomy Fundamentals lecture but will start the Member's Night presentations at 6:30pm instead.

Presenters: Jim O'Connor (*Searching For Light - The Sky And Our Need To Know*); Mike Finerty (poems he has written with astronomy topics); Al Anzaldúa (building a Dobsonian telescope); Terri Lappin (*Space Era Architectural Gems*); Liz Kalas (*Astronomy in Comics*), Loretta McKibben (astronomy in science fiction). We'll also have a couple CAC updates.



Van Gogh's, *Starry Night* (left) is one of the best representations of astronomy depicted in art. It's on permanent display at the Museum of Modern Art in New York City.

The Flammarion engraving (right), artist unknown, first appeared in Flammarion's 1888 book "*The Atmosphere: Popular Meteorology*." It represents medieval cosmology, with a flat earth, and a solid celestial sphere embedded with stars.



Note from the Editor

This time of year seems like the calm before the storm. I'm referring to the craziness that surrounds the American Holiday Season, with all its commercialism and associated rude shoppers and tired sales clerks.

The TAAA has something of a craziness all its own. Our community outreach star party program shifts into high gear around this time of the year. This month's schedule includes eleven venues, requires 41 members (with telescopes) volunteering a total of 100 man/woman hours, and serves over 800 people (kids and adults) in our community—and we repeat this observing frenzy in the spring, and again over the summer at the Grand Canyon Star Party.

Anyone participating in our outreach program will tell you it's a lot of work! But, it's also one of the most gratifying things I do. Others will echo that same sentiment. Have you signed up to bring a scope to a school near your home or work place? Give it a try—your effort will be appreciated by many and you'll have a great time. Check out our community events listing on pages 6 and 7.

We have the start of a great Member's Night this month. Check out the article above. If you want to give a short presentation about anything astronomical that can be considered art, contact me. I'd like to see someone locate a video on the internet of the northern lights put to music. There's no requirement that it be your artistic abilities in the limelight.

Terri Lappin

Upcoming Lectures

2-Dec	<i>Astronomy Essentials</i>	Terri Lappin The Search for Life Toolkit
	<i>Invited</i>	Bill Gates High Latitude Galactic Cirrus
6 Jan	<i>Astronomy Essentials</i>	Mary Turner Seasonal Objects
	<i>Invited</i>	Connie Walker Globe at Night
3 Feb	<i>Astronomy Essentials</i>	OPEN
	<i>Invited</i>	Steve Coe Wide Field Astrophotography

Lectures are arranged by Terri Lappin. She's always open to suggestions.

Cover Photo

First Light of John Zajac's 18" Obsession Telescope was celebrated at last month's Chiricahua Astronomy Complex. John Zajac was a long time member of the TAAA who passed away in 2007, never having used the telescope. Photo by Bill Lofquist.

This Month in Brief

<i>Event</i> <i>Contact Person*</i>	<i>Date</i> <i>Location</i>	<i>Time</i>	<i>See</i> <i>Page</i>
General Meeting	Nov 4 (Fri) Steward Observatory Room N210 933 N Cherry Ave	6:30pm	2
Astro-Imaging SIG Larry Phillips	Nov 7 (Mon) Coco's Restaurant 6095 E Broadway	6:00pm	4
Astronomy Fundamentals Meeting Ben Bailey	Nov 10 (Thurs) USGS Building - Room 253 520 N Park Avenue	6:30pm	5
Academy of Tucson Star Party Bill Lofquist	Nov 10 (Thurs) Academy of Tucson 9209 E Wrightstown	6:00pm	6
Cub Scout Star Party Bill Lofquist	Nov 10 (Thurs) St. Andrews Presbyterian Church 7650 N Paseo Del Norte	5:30pm	6
UA Students Star Party John Kalas	Nov 15 (Tues) Saguaro Park West Red Hills Visitor Center	6:00pm	6
Family Astronomy Night Jim & Elaine Miller	Nov 15 (Tues) Wilmot Library 530 N Wilmot Rd	6:00pm	5
Board Meeting Keith Schlottman	Nov 16 Steward Observatory Room N305 (Special night this month)	6:30pm	9
Space Exploration SIG Meeting Al Anzaldua	Nov 17 (Thurs) Woods Memorial Library 3455 N First Ave.	6:45pm	4
Corpus Christi Star Party Bill Lofquist	Nov 18 (Fri) Corpus Christi Catholic Church 300 N Tanque Verde Loop Road	6:30pm	6

<i>Event</i> <i>Contact Person*</i>	<i>Date</i> <i>Location</i>	<i>Time</i>	<i>See</i> <i>Page</i>
SW Univ Visual Arts Star Party Bill Lofquist	Nov 18 (Fri) SW University of Visual Arts 2525 N Country Club Road	7:30pm	6
TIMPA/AFSIG Star Party Ben Bailey	Nov 19 (Sat) TIMPA Site	5:15pm	8
UA Students Star Party John Kalas	Nov 20 (Sun) Saguaro Park West Red Hills Visitor Center	6:00pm	6
Chiricahua Astro. Complex Star Party John Kalas	Nov 26 (Sat) Chiricahua Astronomy Complex		8
Tucson Int'l Academy Star Party Bill Lofquist	Nov 29 (Tues) Tucson International Academy 2700 W Broadway	6:00pm	6
Library Presentation Terri Lappin	Nov 30 (Sat) Woods Memorial Library 3455 N First Ave.	6:00pm	6
Hohokam Middle School Star Party Bill Lofquist	Nov 29 (Tues) Hohokam Middle School 7400 South Settler	6:00pm	6
Library Presentation Terri Lappin	Dec 3 (Sat) Wheeler Abbett Library 7800 N Schisler Dr	2:00pm	7
Peace Garden Star Party Bill Lofquist	Dec 3 (Sat) Manuel Herrera Jr. Park 5801 S Liberty	6:00pm	7

*** Unless otherwise noted, contact information will be found in the section called "How to Contact Us", found on page 15 of this issue of *Desert Skies*.**

Future Dates

Dec 2	TAAA General Meeting
Dec 5	Astro-Imaging SIG Mtg
Dec 10	TAAA Holiday Party
Dec 15	Space Exploration SIG Meeting/Lecture
Dec 17	Chiricahua Astronomy Complex Star Party
Dec 17	TIMPA Star Party/AFSIG Observing Clubs

Member News

We welcome those who recently joined the TAAA: Douglas Cain, Michael Daugherty, Stephen Ferris, Deborah Moyer, Diana Raz, Martin Roe, Gregory Schneider & Lindsay Wilson, Tadd Spicer, Bob Tindall & Linda Lynn, James Wilmot, and Joyce Wu. Glad to have you join! Hope you'll attend star parties and meetings so we can meet you.

Members packs are available from the Treasurer at meetings or by mail. An updated membership roster is available on our website after entering your Night Sky Network login.



Newsletter Deadline

The deadline for the November issue is Wed, Nov 16. *Desert Skies* is published at least one week before the General Meeting. See the publishing guidelines for details.

Astro-Imaging Special Interest Group (AISIG)

Meeting: Nov 7 (Monday) 7pm

Coco's Restaurant (Broadway between Wilmot & Craycroft)

Contact: Larry Phillips

The Astro-Imaging SIG meets at 7pm usually on the first Monday of the month. Come early, anytime after 6 PM and enjoy dinner before the meeting. We will meet in the

banquet room which is to the far left after you enter the restaurant proper. Our program consists of members sharing their images, setups, problems, or suggestions. Meetings end no later than 9 PM.



Starry Messengers SIG (SMSIG)

Contact: Terri Lappin

Now begins the fall rush for star parties at area schools, churches, and all other venues. These are all wonderful outreach opportunities for TAAA members to participate in. Please be sure to sign up at a meeting or set your RSVP to Yes on our calendar. There are a lot of kids depending on us. Let's not disappoint them.

You don't need to know a lot of astronomy for these events. Just be enthusiastic about our hobby. You can bring a telescope or a Night Sky Network Toolkit. You'll likely remain on one or two objects during the hour or so event. The internet can help you find information about your objects, such as distance, size, and the circumstances of its discovery. Put this into terms that the public will understand. For example, instead of saying Jupiter is X Astronomical Units or YYY millions of miles away, say that if a light bulb were turned on, you wouldn't see the light bulb for 40 minutes as the light traveling to us. The public will more likely remember that. Or, tell them you'd need 11 Earths to span the width of Jupiter. (Even this may be difficult for the public to grasp!)

Remember you can sign out one of our Night Sky Network Toolkits. See the article elsewhere in this newsletter for details about our Night Sky Network Outreach Toolkits.



Starry Messengers SIG -
Opening Minds to the Universe

Our Light Pollution Workshop was held last month. Considering how important dark skies are to our hobby, it was surprisingly that only 5 members attended. Public Affairs Director Scott Kardel gave a presentation about the issues surrounding light pollution including its effect on wildlife and the economic toll it takes to light up the sky. He also gave us pointers about approaching the public about this important issue. His lecture was followed by Paul Anderson who talked about the Globe at Night initiative. This is a global awareness program coordinated by NOAO. Connie Walker will talk to the TAAA in January about this important program.

The Starry Messenger SIG provides an environment in which TAAA members can enhance their knowledge and understanding of astronomy and related concepts, all with an emphasis on conveying that information to people of all ages. Any TAAA member involved in astronomy outreach can consider themselves a member of the Starry Messenger Special Interest Group. If you have never attended a SMSIG workshop or meeting but are participating in TAAA outreach activities, you are supporting the goals of the Starry Messenger SIG. We value your contribution.

Space Exploration Special Interest Group (SESIG)

Meeting & Lecture

Nov 17

6:45pm

Woods Memorial Branch Library

Contact: Al Anzaldua



Think space development is a waste of money? Al Anzaldua on November 17 will explain the good, bad, and the ugly (and exciting future) of space exploration and development with his presentation, Space: Boon or Boondoggle? The event will begin at 6:45 pm at the Woods Memorial Branch Library (3455 N. 1st Ave., just south of Prince Rd.). Al will emphasize recent advances by private space companies such as Space X, Virgin Galactic, and Bigelow Aerospace.

How the heck can we tell meteorites from ordinary rocks? UA LPL's Dolores Hill on December 15 will give answer this and other questions about meteors. If you missed her AFSIG presentation last September, this is your chance to attend this fascinating and informative talk! Venue and time TBD.

Is anthropogenic global warming a hoax? UA LPL Professor Emeritus Robert Strom, author of the book, Hot House: Global Climate Change and the Human Condition, will on January 19, 2012 give his presentation, Global Warming: How Serious is It? Professor Strom's presentation will begin at 7:00 pm in room 308 in the Kuiper Space Sciences Building, 1629 E University Blvd on the UA Campus.

Other future presentations:

Feb 16 What's the big deal with comets, and why do they have two tails? By Dr. Nalin Samarasinha of the Planetary Science Institute

March 15 *Industrial-Scale Stratospheric Platforms for Astronomy, Solar Power, and Space Launch Systems* By Systems Engineer Conrad Schneiker.

Sign-up sheets for SESIG talks will be provided at the general membership meetings. You can also RSVP by contacting Al Anzaldua or through the TAAA online calendar.

Astronomy Fundamentals SIG (AFSIG)

AFSIG Monthly Meeting

Nov 10 (Thurs)

6:30 pm

520 North Park Avenue (U.S.G.S. Building – Room 253)
Contact: Ben Bailey

On Thursday, November 10, we will hold our regular monthly meeting. AFSig is dedicated to building astronomy knowledge and practical skills among our members. The USGS Building is on the northeast corner of Park and 6th Street. Free parking at 5pm behind the building in a paved lot. Please join us.

AFSIG Observing Clubs

AFSIG Observing Clubs are open to all members of TAAA at no charge. They are guided programs which means that at the scheduled observing sessions, there is someone there to guide you in finding the objects or features needed for successful completion of the program. You can join the programs at any time and can either attend the guided sessions or work on your own. A certificate is awarded at the completion of all the requirements. All observing programs are patterned after those of the Astronomical League, so you can continue on to complete the additional requirements and get your AL certificate.

Solar Observing Club meets on the 3rd Saturday of every month from 9 am until noon at Fort Lowell Park (Craycroft at Glenn) near the southeast corner. The purpose of this club is to observe the activity that is occurring on the Sun and record those observations – like sunspots, solar flares and other interesting features. The beauty of this observing program is that our Sun offers great flexibility in observing and recording the different features – you don't have to be concerned about light pollution, night vision, or traveling great distances to find dark skies. If you are interested in participating in the Solar Observing Program or if you just want to be added to our email list to keep posted about our activities and solar news, email Dennis Dawson at dennisldawson[at]gmail.com.

Lunar Observing Club meets sporadically depending on schedule compatibility and the moon cycle. The purpose



of this club is to identify and log 30 specified lunar features – some of which are easy while others are more difficult. This is a great club in which to participate as it is ideal for observing from your back yard or patio. Dark skies are not really necessary and some features are even visible through light clouds. If you are interested in participating in the Lunar Observing Club or if you just want to be added to our email list to keep posted about our activities, email Robert Gilroy at bobgilroy[at]tucsonastronomy.org.

Constellation Observing Club meets monthly on our regularly scheduled TIMPA night. The purpose of this club is to identify and log 20 constellations, their brightest stars and deep sky objects. This is a great way to learn your way around the night sky. If you are interested in participating in the Constellation Observing Club or if you just want to be added to our email list to keep posted about our activities, email Paul and Cathy Anderson at paulanderson[at]tucsonastronomy.org

Solar System Observing Club meets monthly on our regularly scheduled TIMPA night. The purpose of this club is to observe and log the different features and actions of the planets and their moons and other interesting solar system objects. If you are interested in participating in the Solar System Observing Club or if you just want to be added to our email list to keep posted about our activities, email Mike Finerty at mfinerty1[at]msn.com.

Double Star Observing Club meets monthly on our regularly scheduled TIMPA night. The dark night sky is filled with millions and millions of stars. Some are close by (relatively speaking) but most are far away. Some are single stars (like our sun) but others are multiple star systems. Of these multiple star systems, we can detect and split many double stars with our equipment. The purpose of this club is to observe and log the different types and colors of double stars. If you are interested in participating in the Double Star Observing Club or if you just want to be added to our email list to keep posted about our activities, email Tom Watson at watson1987[at]cox.net.

AFSIG Family Astronomy Program

Contact Person: Jim & Elaine Miller

On October 18th, we conducted our first Beginning Astronomy Class at the Wilmot Library. Our goal is to have this program lead into the Astronomical League's; Sky Puppies & Universe Sampler observing programs.

We began the evening with a mom and her 2 small children and two men joined us a little later. The young boy who just turned 5 and the mom seemed very interested in the presentation Paul and Cathy Anderson did with PowerPoint during the first hour. We then spent several minutes teaching the kids how to aim a telescope at a sky chart on the wall, we used a GalileoScope and a 3 inch Celestron FirstScope, they did much better by using the FirstScope that has a finder scope.

For the second hour we went out to use the telescope that we set up in courtyard behind the Library. We initially set

See the Kid's Page, page 14.



up the 8 inch Celestron on the grassy area but as Jim was setting up, the automatic sprinkler system went off so we had to quickly move the telescope under the roof overhang so there was not as much sky to view (or stars to align the telescope with). Bob Gilroy came and helped Jim explain how to use the Telescope to the small children. Jupiter and the four moons were viewed through the Galileo Scope as the 8 inch Celestron was not able to see Jupiter through the tree in the back of Library until much later.

We hope to generate more interest in the program by having more advertising out for the November 15th class. Let others know about this program; it starts at 6:00 pm with observing at 7:00 pm, we could start the observing even earlier in November.

Community and Educational Events

Members are asked to support our outreach events. TAAA either sponsors or co-sponsors these events. This is a great opportunity for beginners as you can remain on a single object if you like. You can even contribute without a telescope. Sign up sheets will be at the meeting. You can also contact the star party leader or the volunteer coordinator, see the section "How to Contact Us" on page 15 of this issue. Maps can be obtained from the TAAA website calendar.

Academy of Tucson Elementary School Star Party

Nov 10 (Thurs) **Set up: 6:00pm**
 General Area: East 3 scopes
 Location: 9209 E Wrightstown
 Star Party Leader: Bill Lofquist No. of Guests: 125

For elementary age kids and their families. Take Camino Seco North to Wrightstown Road. Turn east (right) onto Wrightstown Road. Travel east about 1/2 mile. The school is on the north side of the street. If you make the turn to the south onto Harrison, you've gone too far. The school is set back quite a ways from the road. The event starts at 6:30pm and ends at 8:30pm.

Cub Scout Star Party

Nov 10 (Thurs) **Set up: 5:30pm**
 General Area: Northwest 3 scopes
 Location: 7650 N Paseo Del Norte
 Star Party Leader: Bill Lofquist No. of Guests: 50

Boys in grades 3 to 6. From Oracle and Ina, go one block west to Paseo del Norte. Turn north onto Paseo del Norte and continue north to the church which is at the NW corner of Paseo del Norte and Chapala Drive. The event starts at 6:00pm and ends at 8:00pm.

UofA Astronomy Students Star Party

Nov 15 (Tues) **Set up: 6:00pm**
 General Area: Far West 10 scopes
 Location: Red Hills Visitor Center-Saguaro Natl Park West
 Star Party Leader: John Kalas No. of Guests: 150

Dr. Tom Fleming, UofA astronomy professor, has again requested us to support a star party for his astronomy students. The event starts at 7:00pm and ends at 9:00pm.

Corpus Christi Star Party

Nov 18 (Fri) **Set up: 6:30pm**
 General Area: Far east 4 scopes
 Location: 300 N Tanque Verde Loop Road
 Star Party Leader: Bill Lofquist No of Guests: 75
 Take Broadway east of Houghton Road to Tanque Verde Loop Road. Turn north onto Tanque Verde Loop Road. The church entrance is the next road on the right (east), about 1/3 mile north of Broadway. The event runs from 7:00pm to 9:30pm

Southwest University of Visual Arts Star Party

Nov 18 (Fri) **Set up: 7:30pm**
 General Area: Central 2 scopes
 Location: 2525 N Country Club Road
 Star Party Leader: Bill Lofquist No. of Guests: 25

Star party for adult students. The university is one block north of Grant on Country Club Road, west side of Country Club. Event starts at 8pm and ends at 9:30pm.

UofA Astronomy Students Star Party

Nov 20 (Sun) **Set up: 6:00pm**
 General Area: Far West 10 scopes
 Location: Red Hills Visitor Center-Saguaro Natl Park West
 Star Party Leader: John Kalas No. of Guests: 150

Dr. Tom Fleming, UofA astronomy professor, has again requested us to support a star party for his astronomy students. The event starts at 7:00pm and ends at 9:00pm.

Tucson International Academy Star Party

Nov 29 (Tues) **Set up: 6:00pm**
 General Area: West 3 scopes
 Location: 2700 W Broadway
 Star Party Leader: Bill Lofquist No. of Guests: 50

Take Speedway to Greasewood. Turn south (left) onto Greasewood and continue south about 1/4 mile beyond Anklam Road to Broadway. Turn west (right) onto Broadway and drive west almost 1/2 mile to the school. Event starts at 6:30pm and ends at 8:30pm.

Woods Memorial Library Presentation & Star Party

Nov 30 (Wed) **Set up: 6:00pm**
 General Area: Central 2 presenters & 2 scopes
 Location: 3455 N. First Ave.
 Presenter/Leader: Terri Lappin No. of Guests: 20

For youth 6 to 14 years. A presentation of fun and noise as the kids make marshmallow carbon atoms and blow up balloons to simulate supernovas. Presentation starts at 6pm; viewing starts about 6:45pm. Event ends at 7:30pm. Located on 1st Ave just south of Prince.

Hohokam Middle School Star Party

Nov 30 (Wed) **Set up: 6:00pm**
 General Area: Far Southwest 2 scopes
 Location: 7400 South Settler
 Star Party Leader: Bill Lofquist

Take I-19 south to the Valencia exit. Go west on Valencia for 4.5 miles to Camino de Oeste. Turn south (left) on Camino de Oeste and continue about 1.25 miles to Tetakusim Road. Turn east (left) on Tetakusim Road. Continue 1/2 mile and look for the school on the north (left) side of the road. Turn north (left) onto Settler Avenue to the school entrance. Event starts at 6:30pm and ends at 8:00pm.



**For showing the
kids the stars!**

**2 more events
on the next
page**

Community and Educational Events (cont.)

Early December Community Events

Wheeler Abbett Library Presentation

Dec 3 (Sat) **Set up: 1:30pm**
 General Area: Northwest 1 presenter & 1 helper
 Location: 7800 N Schisler Dr
 Presenter/Leader: Terri Lappin No. of Guests: 20

For youth 6 to 14 years. A presentation of fun and noise as the kids make marshmallow carbon atoms and blow up balloons to simulate supernovas. Presentation starts at 2pm and ends by 3pm. Library is located near Cortaro and Silverbell Roads

Peace Garden Star Party

Dec 3 (Sat) **Set up: 6:00pm**
 General Area: South 2 scopes
 Location: 5801 S. Liberty
 Star Party Leader: Bill Lofquist No. of Guests: 80

For the families of the Sunnyside Neighborhood Association. Take I-19 South to the Irvington exit, then Irvington east to 12th Avenue. Turn south (right) onto 12th Avenue and continue south 1 mile to Drexel Road. Turn east (left) onto Drexel Road, then south (right) at the first street which will be Liberty Street. Go south on Liberty Street about 1000 feet crossing a small wash. Immediately beyond the wash, look for a block wall with a painted mural indicating the Peace Garden. Turn onto the dirt road which is the entrance to the Peace Garden. Event starts at 6:30pm and ends at 9:00pm.

Night Sky Network Outreach Toolkits

Like many clubs across the Us, the TAAA has an extensive outreach program. We enjoy spreading star light around—sunlight, too! However, there's more to our program than setting up telescopes. We are privileged to have a full set of Night Sky Network Outreach Toolkits to aid us in explaining astronomical concepts to the public.

The Night Sky Network (NSN) began as a coalition of astronomy clubs with active outreach programs; the TAAA is a charter member. Since 2004, it has grown to over 500 clubs and offers clubs much more than outreach toolkits. For example, we use the NSN online records management system for our membership records.

Since joining the NSN, the TAAA has used the NSN Outreach Toolkits at over 80 events. With the continued use of existing toolkits, we qualify for new toolkits as they are developed. We've already received the newest toolkit, *Life in the Universe*. It will be featured at the December 2nd Astronomy Essentials Lecture.

Each NSN toolkit has a theme and is related to a NASA space mission. For example, the Space Rocks Toolkit is

related to the DAWN mission currently at the asteroid Vesta snapping photos.

A toolkit contains many projects which allows the presenter to pick and choose what they want to show. All are interactive and easy to introduce to the public. Materials are included but you may be required to provide fresh batteries, scissors, or a bag of flour. The TAAA may be able to supply some of these materials. A Resources CD and a Training DVD are also included. Individual training is also available.

The complete list of Outreach Toolkits is shown below. Toolkits can be borrowed for up to a month at a time. You can keep the Resource CD and Training DVD, but all other materials in the kit need to be returned. To borrow a toolkit or receive training on their use, contact Terri Lappin.



Outreach Toolkits and Resources Available for Borrowing

Life in the Universe—Are We Alone?: origin of and search for life

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: how telescopes work

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

PlanetQuest: demonstrate planet detection techniques

Other Outreach 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

Moon Globe: 12" diameter with stand

DVDs: *A Private Universe; Cosmic Collisions*

Members' Star Parties



TAAA Star Party at TIMPA

Nov 19 (Saturday) Gate opens at 5:00pm

Contact Person: Ben Bailey

Guests are welcome, accompanied by a TAAA member.

Please come out and join the AFSig for an enjoyable evening of observing. Take part in the activities of one of our Observing Groups or simply explore the skies on your own.

The TIMPA site features a large parking area, and full restroom facilities.

The Gila Monster Observatory on Mons Heloderma, with the Meade 14" telescope will be open for your viewing pleasure.

Be prepared for cool temperatures after sunset. Insect repellent is a good idea.

TIMPA Site Notice

A gate card is required for TIMPA access. Please *DO NOT* ask the caretakers for entry to the TIMPA SITE. On scheduled TIMPA star party nights, a designated TAAA representative will provide access to the site. At other times, a gate card is available from the TIMPA Gate Card Controller.

Directions to TIMPA Site

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

The TIMPA site is about 25 minutes from Speedway & I-10, about 7 miles west of the Arizona-Sonora Desert Museum.

From the North:

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

From the East:

1. Take Speedway Blvd west. It turns into Gates Pass Rd.
2. Go over Gates Pass and continue west to Kinney Rd.
3. Turn north (right) onto Kinney Rd and continue past the Arizona-Sonora Desert Museum.
4. At the entrance to Saguaro National Park West, go towards the left onto Mile Wide Rd. (This is easy to miss so watch for the park entrance sign.)
5. Take Mile Wide Rd west about five miles to Reservation Rd. Mile Wide Rd ends at Reservation Rd and you must turn north (right) onto Reservation Rd.
6. Take Reservation Rd (a dirt road) north about one mile. The entrance to TIMPA will be on the right.



Star Party at Chiricahua Astronomy Complex

Nov 26 (Saturday)

Contact Person/RSVP to: John Kalas

The Chiricahua Astronomy Complex (CAC) is the club's dark 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 cooler temperatures. Try to arrive before sunset. Unlike the TIMPA site, the CAC site requires our members to 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, you must contact CAC Director John Kalas. Reservations will be on a first come - first serve basis. Depending on the number of members interested in attending, guests may not be allowed.

CAC Site Notice

Reservations are required at all times including scheduled star parties. On scheduled CAC star party nights, a TAAA designated representative will unlock the gate. At other times, access can be granted by the CAC Director.

Directions to Chiricahua Astronomy Complex Site

GPS coordinates: 31 deg 52.07' N, 109 deg 30.9' W

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

1. Take I-10 east from Tucson past Benson.
2. Exit I-10 at Dragoon Road (Exit #318) . Turn right onto Dragoon Road at bottom of exit ramp.
3. Travel 13.5 miles southeast to the intersection with Route 191. Turn south (right) onto Route 191.
4. Travel 17.9 miles south (past Sunsites and Margie's Corner Café at High St on the right, and the Border Patrol checkpoint) to the intersection with Route 181 at Sunizona.
5. Turn east (left) onto Route 191 and travel 10.9 miles east to the intersection with South Price Ranch Road. Turn south (right) onto South Price Ranch Rd. This is a dirt road just before you reach mile post 49 (cluster of mailboxes on right side of Route 181).
6. Travel ½ mile south on South Price Ranch Rd to the intersection with East Perseus Way. This is a wide dirt road marked with a street sign on left. Turn east (left) onto East Perseus Way.
7. Travel east on East Perseus Way slightly more than ¼ mile to the entrance of the Chiricahua Astronomy Complex on the right. The address is 9315 E Perseus Way. It is marked with a TAAA sign and twin brown gates flanked by white rail fences set back 50 feet from road.

TAAA Board of Directors Meeting

12 October 2011

Attending: Board members present (5): Keith Schlottman, President; William Lofquist, Vice President; John Croft, Treasurer; Michael Turner, Member at Large; Vernon Dunlap, Member at Large. Members present (5): Roger Schuelke, Ben Bailey, Terri Lappin, Paul Anderson, Al Anzaldua

Call to Order: The President called the meeting to order at 6:34 pm.

Approval of Minutes: The minutes of the Board Meeting held on Wednesday, September 14 were approved, moved by Michael Turner and seconded by Vernon Dunlap.

Consent Agenda: The Consent Agenda as presented by Treasurer John Croft was approved, moved by John Croft and seconded by Michael Turner. The Consent Agenda may be viewed by any TAAA member by a request to any Board member.

Member Feedback

It was reported that one member felt the content of the October General Meeting was too technical. There were several positive comments about both parts of the meeting expressed by several members.

Upcoming Meetings

Terri Lappin reported on the plans for upcoming meetings, emphasizing that we need more presenters for the November Members' Night meeting.

Special Interest Group Status Reports

Astronomy Fundamentals SIG (Ben Bailey):

- Ben Bailey reported that the classes being led by the AFSIG are full. There will be two nights at TIMPA for observing each month. More training is needed for instructors of classes for members to become operators of the 14" SCT at TIMPA, as well as for operators. Paul Anderson reported that there is a meeting for young people and their parents at the Wilmot Branch of the Library.

Starry Messenger SIG (Terri Lappin):

- Terri Lappin reported that the workshop on Light Pollution is scheduled for this Saturday and very few people have registered for it.

Space Exploration SIG (Al Anzaldua):

- Al Anzaldua reported that 16 people attended the last meeting. There are meetings scheduled for the third Thursday of each month on a variety of topics which can be checked in the newsletter.

Astro Imaging SIG (Michael Turner):

- There was no meeting in October. The next meeting will be on November 7.

Website

Roger Schuelke reported that the web pages are ready to go live, but a little more help from our contractor would be useful. The Board voted 6 to 1 in favor to approve the spending of up to \$440 to renew our contract with the contractor, and to purchase some development time to clean up a few difficult items. At this point, Roger will be able to add and update content, and improve the navigation of our website.

Other

- Discussion of our continued membership in the Tucson Convention and Tourism Bureau determined that we will look to John Kalas to make this decision as it relates to the Astronomy Services Program.
- Terri Lappin led a discussion of changes being considered in the Desert Skies newsletter. She presented mockups of three new approaches: a one-page flyer that will go into the astronomy shops each month, a longer electronic publication that includes specific information about club activities each month, and a quarterly journal that is more oriented to astronomy-related content. The Board generally liked this approach and commended Terri for her work on it. This will be considered more at future Board meetings.
- A motion was made by John Croft and seconded by Michael Turner that the Board authorize William Lofquist to become a signer with the Clubs bank account at Chase Bank. It was approved unanimously.

Meeting adjourned at 8:35 pm.
Respectfully submitted,
William Lofquist, Vice President



Next Board of Director's Meeting

Nov 16 (Wed)

6:30pm

Steward Observatory Conference Room
N305

Contact the president to have your topic added to the agenda. There may not be time for topics that are not on the agenda. The front doors at Steward Observatory will be locked. Be there by 6:30pm or call the cell phone number of someone you know at the meeting and they can let you in.



On Sale Soon!

2012

TAAA Calendar



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. Available at most monthly meetings. Coordinated by Mae Smith.

Vintage C-14 Sold to Benefit Chiricahua Astronomy Complex

By Bill Lofquist

Several months ago a Celestron 14" SCT was donated to TAAA. It had not been used for some time, and it was not in the best of condition. Claude and Teresa Plymate took it into their home and lovingly cleaned it up and put it in good working order. The scope is a vintage orange tube Celestron from the 1970s.

The club already has two 14" SCTs in good operating order, so the Board of Directors decided to use the donated one as a fundraising project to help out at CAC. We announced at the September General Meeting that our first step would be to make it available within TAAA to an interested member.

In order to make certain that we knew just what we had in this scope, we asked Dean Ketelsen if he would take a look at it and give us a clearer idea about its condition. Dean did this on October 10. After looking the scope over a bit Dean commented, "If I didn't already have a 14" SCT I would consider buying this one myself." That was what we wanted to hear.

Then on October 17 a phone call came from a TAAA member who said he was interested in the scope. When asked when he could come to look at it, he said, "How about now?" Within 30 minutes he was at the door, with checkbook in hand, to look it over.

To make a short story even shorter, we loaded the heavy scope into his car, he wrote a check for \$2,000 to TAAA, and Scott Henning rode off with an excellent new toy. We are pleased that the scope is finding a new home with a TAAA member.

We know you will enjoy the scope, Scott, and we appreciate your contribution to our new dark site.



Dean Ketelsen with the donated C-14.

Dark Skies for November 2011

By Erich Karkoschka

No twilight, No moonlight
for Tucson in 24-hour MST
18hrs=6pm, 20hrs=8pm
22hrs=10pm, 0hrs=midnight

Day	Date	Dark Time		
Mo/Tu	31/01	22:21	-	5:18
Tu/We	01/02	23:22	-	5:18
We/Th	02/03	0:21	-	5:19
Th/Fr	03/04	1:17	-	5:20
Fr/Sa	04/05	2:12	-	5:21
Sa/Su	05/06	3:05	-	5:21
Su/Mo	06/07	3:59	-	5:22
Mo/Tu	07/08	4:53	-	5:23
Tu/We	08/09	-	-	-
We/Th	09/10	-	-	-
Th/Fr	10/11	FULL MOON		
Fr/Sa	11/12	-	-	-
Sa/Su	12/13	18:50	-	18:51
Su/Mo	13/14	18:49	-	19:43
Mo/Tu	14/15	18:49	-	20:39
Tu/We	15/16	18:48	-	21:38
We/Th	16/17	18:48	-	22:38
Th/Fr	17/18	18:48	-	23:39
Fr/Sa	18/19	18:47	-	0:42
Sa/Su	19/20	18:47	-	1:46
Su/Mo	20/21	18:47	-	2:53
Mo/Tu	21/22	18:47	-	4:01
Tu/We	22/23	18:46	-	5:12
We/Th	23/24	18:46	-	5:35
Th/Fr	24/25	18:46	-	5:36
Fr/Sa	25/26	18:46	-	5:37
Sa/Su	26/27	18:59	-	5:37
Su/Mo	27/28	20:03	-	5:38
Mo/Tu	28/29	21:07	-	5:39
Tu/We	29/30	22:09	-	5:39
We/Th	30/01	23:08	-	5:40
Th/Fr	01/02	0:04	-	5:41

Mark
Your
Calendar



TAAA Holiday Party

December 10 5:30pm
Potluck at Bill & Mary Lofquist's
All invited to this family event.

Support Our Sponsors

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October Star Party Program Works Overtime

By Bill Lofquist, TAAA School Star Party Coordinator

October was an extremely busy time for the TAAA volunteers who make the program work so well. The weather has cooperated with us for the entire month, and as of this writing no events have had to be cancelled.

During the month we serviced eight regular school and other nonprofit organization events. We deployed 40 telescopes to these events. Twenty-three different TAAA members participated. Jim O'Connor was the star volunteer for the month as he participated in six of the star parties.

In addition to these events, another ten or so members provided scopes for the class that Dr. Fleming teaches at the U of A that is held each semester at Saguaro National Park West.

One of the star parties that occurred was held at Catalina State Park. This event was part of the new relationship we have entered into with the Park and IDA. We will do two more such events in the winter and spring of 2012. These outreach events will include the public from the Tucson area as well as visitors to the Park from other places. Emphasis

will be placed not only on enjoying the evening of observing but on the importance of preventing light pollution.

TAAA volunteers were responsive to the Star Party Alerts we sent out when we needed to fill the requests that we had received. Most of the spots were filled by the signups at the General Meeting, but there are always gaps, and members were most responsive.

We need to expand the number of members who participate in our star parties. They are an important part of our educational program, and those who take part in them repeatedly emphasize how enjoyable they are.

Of the 23 members who participated in October, four people took part in three or more events. The other 19 members took part in one or two events. Enlarging our pool of volunteers will not only spread the fun around, but it will help relieve those members who always seem ready to share their time, knowledge and scopes.

November will be another busy month, so we hope to see more members becoming involved.

TAAA Classifieds

For Sale	①Meade LX 200GPS 12" with field tripod, Meade super wedge, 3D counterweight system, Losmondy mounting plate system. \$1000.00 ②Meade Starfinder 16" with equatorial mount and Magellan II controller. \$1500.00 ③Anssen technologies Alhena equatorial mount with drive Motors and shaft encoders \$1500.00 ④Technical Innovations Pro Dome 10' dome with two wall rings and motorized shutter \$3000.00 ⑤Sirius 5.0m College Model \$2000.00 ⑥LeSueur pier with wedge for LX 200 \$500.00 ⑦SBIG ST 7XME astro camera with CFW8 filter wheel, RGB filter set, and AO7 adaptive optics attachment \$1500.00 ⑧Schuler UVBRI photometric filter set \$500.00 ⑨ Spare CFW8 filter holder \$50.00 ⑩SBIG ST 237A astro camera with RGB filter wheel \$500.00 Cash Only. Some prices negotiable, most not. No shipping, you come and get, domes require disassembly. All sales final. All equipment sold as is. Call Jim Charboneau @ 520-705-7482 Expires Nov 2011
For Sale	①Classic C11 OTA. Been in storage for ~10 years but should be fine; tested on the sky and achieved resolution limit for an 11" aperture; minor scuffs and scratches. Asking \$850 (\$1000 on Cloudy Nights Classifieds) ②C11 fork and base was purchased separately from the OTA and while the drive works it has never carried the OTA. Asking \$500. ③Classic Star Liner German Equatorial Mount that carried C11 OTA for many years, homemade tangent arm Dec. drive and tracks very well. This thing is massive. Asking \$600. All items are Tucson pick up only at these asking prices. Photos available at: http://www.lpl.arizona.edu/~rhill/instr.html Email Rik Hill at rhill@lpl.arizona.edu Expires Feb 2012
For Sale	SAC-7b TEC Cooled CCD Camera. The SAC7 cameras use a Sony 1/4" ICX098AK CCD which is a Progressive Scan® Hole Accumulation Diode (HAD). The CCD array of 5.6 micron square pixels is 640 x 480 pixels. It has a low dark current and a TEC cooling system. It does AVI format for planetary and FITS with the parallel cable connected to the computer for long exposures. Comes with Astrovideo, all cables and a nice metal case. Just too many cameras and this little jewel deserves to be used more! \$100 Will deliver to the Tucson area. Paul at phxbird@hotmail.com or 575-590-8303 Expires Jan 2012
For Sale	15" f/4.5 Obsession Classic. 3 years old, optically and mechanically mint. C/W nylon light shroud, aluminized sun/dust cover, JMI feathertouch focuser, heated secondary to prevent dew, counterweights, Telrad and Rigel viewfinders, barlowed laser collimation tool and wheelbarrow-type rails for transporting scope assembled. This scope has given me many hours of superb viewing both DSO, lunar and planetary. Original price was \$5,400. I will sell for \$3,800 or best offer. Will hand-deliver in Tucson area if you can wait until early January. Otherwise shipped at buyer's expense. Contact John Barr at boundarybayman@gmail.com or 604-943-6636. Expires Jan 2012
For Sale	Observatory with Home for sale - 3 BR 3 Ba Ranch home on 3.2 acres with horse facilities, huge garage/workshop and Home Observatory! Observe steps from your back door, yet easy commute to downtown Tucson. See 5150sBryce.com for details. \$210K. Thanks for looking! Claude & Teresa Plymate. 444-5979. Expires Feb 2012

Ads 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.

Chris Lancaster's Constellation of the Month

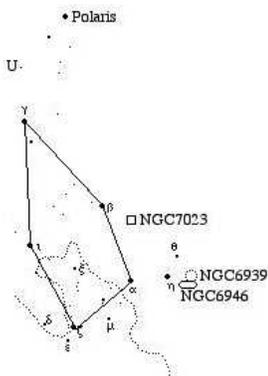
Cepheus

This constellation crosses the meridian around 10 pm and can be found in the northern sky between the cross shaped constellation of Cygnus and the "W" pattern of Cassiopeia. Its boundaries stretch all the way to Polaris, the North Star, so since it is situated so near the pole, most of the constellation remains above the horizon at all times, and even its most southerly stars rise again no more than 4 hours after setting.

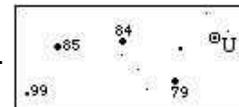
Cepheus was king of an ancient land in northern Africa with Cassiopeia as his queen. These two in addition to their daughter Andromeda form a family portrait of sorts in the sky, all sitting side by side in the area of the heavens north of +30 degrees declination and between 21h and 2h RA.

In 1784, John Goodricke discovered that Delta Cephei, in the extreme southern part of the constellation, exhibited variations in brightness which modern studies have precisely measured to be 5.366341 days. The variability results from an actual pulsation of the star rather than other phenomena like eclipses or outbursts. A multitude of these pulsating stars in the Milky Way and other galaxies have since been discovered, and are all called Cepheid variables after this star. This stellar class is very important to astronomers since the period of pulsation, which generally ranges from a few hours for the dimmest Cepheids to as long as 50 days for the brightest ones, correlates to the star's luminosity. Thus, Cepheid variables can be used as accurate measuring sticks for determining distances to other galaxies when the period and apparent magnitude of these stars are known.

Although Delta is an easier star to see, its magnitude range of 3.6 to 4.3 is less noticeable than U Cephei, which ranges from 6.8 to 9.2 magnitudes. U is an eclipsing binary at RA 1h 2.3m Dec +81d 52.5', or if you look in the area one-third the distance from Gamma Cephei to Polaris and move 1h 25m east of that line (a short distance at this declination--about 1.5 degrees), you will see a group of four stars forming a crooked line 23' long and all near 8th magnitude. U is the southernmost of this group and if glowing at its brightest it will outshine the other three. If at its dimmest, it will fall short of the others. Its period is



about 2.5 days and takes only 8 hours to dim and return to normal after spending 2 of those hours in its eclipsed phase. The finder chart below indicates magnitudes without the decimals. North is to the left, and South is to the right.



Now, point your scope to Mu Cephei. This is the famous "Garnet Star" which gets its nickname from the rich orange-red color it shows. This is an irregular variable with fluctuations spanning hundreds of days, but it always remains visible to the naked eye under suitable conditions. It forms a wide triangle with Alpha and Zeta Cephei, and if you have the patience, you may notice its variability from magnitude 3.7 to 5.0. As a point of interest, Mu is the north polar star of the planet Mars.

Among the brighter deep sky objects in Cepheus are NGC6939 and NGC6946. NGC6939 is an open star cluster made of a scattering of dozens of stars ranging between 12th and 15th magnitude in an area about 8' in size. NGC6946 is a magnitude 11 spiral galaxy of about the same size to the southeast. It looks slightly oval and is generally of uniform brightness across its face. I mention these together because they are only about 40' apart and present a contrasting duo in an eyepiece capable of about a 1-degree field of view. Center your scope at RA 20h 33m Dec +60d 20' (or about 2.5 degrees south of Theta Cephei and slightly east) and you'll see this pair.

Sharp-eyed observers will see the faint nebulosity of NGC7023. It surrounds a 7th magnitude star at RA 21h 0.5m Dec +68d 10', or 3.5 degrees southwest of Beta Cephei. Its central glow is roughly rectangular in shape and fades quickly to the edge of its total area of 18'.

There are many more galaxies, nebulae, and star clusters in Cepheus. You may use a star chart with which to guide you or simply browse the constellation on your own journey of discovery.

All the Constellation of the Month articles in one book!

Under Dark Skies

A Guide to the Constellations

By Chris Lancaster

Online for \$14.99 or get it directly from Chris for \$10

ctlancaster[at]msn.com

(while supplies last)

The Visible Planets this Month

By Erich Karkoschka

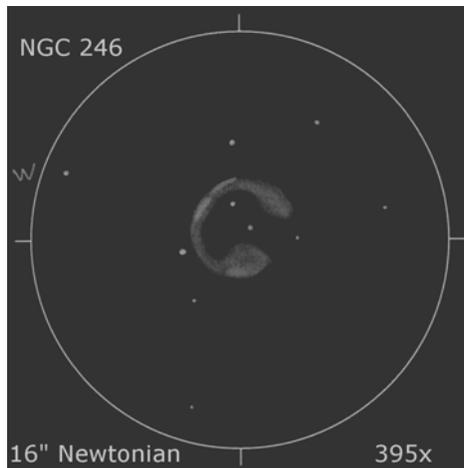
Weekend	Sun		Mercury		Venus		Mars		Jupiter		Saturn		Visibility (Vi)	
	Sa/Su	Set Rise	Rise Vi	Set Vi	Set Vi	Set Vi	Set Vi	Set Vi	Rise Vi	Rise Vi	Code	Code		
05/06		17:29 6:43	18:30 5	18:38 1	0:44 1	6:02 -3	5:04 4	-3	brilliant					
12/13		17:24 6:49	18:33 5	18:42 0	0:33 1	5:31 -3	4:40 2	0	conspicuous					
19/20		17:20 6:55	18:31 5	18:49 0	0:22 1	4:59 -3	4:16 2	3	moderate					
26/27		17:17 7:01	18:11 8	18:58 -1	0:09 1	4:28 -3	3:52 1	6	naked eye limit					
03/04		17:17 7:07	17:23 -	19:09 -2	23:56 1	3:58 -3	3:28 1	9	binoculars limit					

Chris Weis' Planetary Nebulae of the Month

IC 5148/50 and PK 114-4.1 (Abell 82)

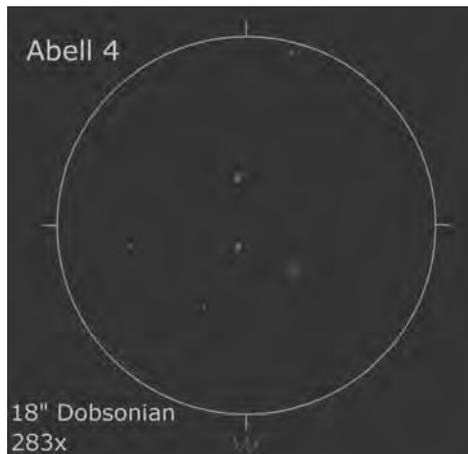
Planetary nebulae (PN) are fascinating objects that come in numerous forms of appearances. Besides the well known grand four Messiers (M27, M57, M76 and M97), there are hundreds more to explore. This article suggests two PNs, a pretty bright and easy-to-observe one and a harder one for the more ambitious observer who is equipped with a bigger scope.

The Skull Nebula NGC 246 in Cetus was discovered by William Herschel in 1785. With a brightness of some 11m and a size of 4.5 arcmin, it is quite an easy object even for telescopes as small as 5". Its odd shape and the structures one can see when equipped with a medium or larger sized telescope make it an impressive PN. I had the pleasure of observing this nebula, which sometimes is called the Cetus Bubble, in October 2010 from Sky Village, AZ with a 16" Dobsonian telescope. In this night the sky conditions were outstanding, so I was able to detect interesting structures. My notes read: Impressive PN, several foreground stars, central star is bright, several structures in the hull, big, circular but open to the east, center is not brighter than the background, UHC and [OIII] help improving the contrast; 395x, fst 7m4 (Peg)



NGC 246
 RA: 0h 47.1min
 Dec: -11° 52'
 Constellation: Cetus
 Brightness: 10m9
 Central star: 11m8
 Size: 4.5 arcmin
 Distance: 1300 ly

PK 144-15.1, better known as Abell 4, is a faint PN that was discovered by George Abell in 1964. Even though the catalog data is not really encouraging, you should give it a try when you have access to a bigger scope with, say, 14" or more aperture. More important than aperture is a dark and transparent sky because the surface brightness of this PN is very low (22m9). I observed Abell 4 in September 2011 from Scheidegg in southern Germany with my 18" Dobsonian. My notes: Faint, certainly seen at second view with 94x and [OIII] filter, cogently requires a filter, uniform and well-defined circular disk, no central star, field sweeping and black cloth help enormously; 283x, fst 6m3 (And)



PK 144-15.1 (Abell 4)
 RA: 2h 45.4min
 Dec: 42° 32'
 Constellation: Perseus
 Brightness: 14m4
 Central star: 19m9
 Size: 22 arcsec
 Distance: no data



Celestial Event—Leonid Meteor Shower

November 17/18 (Thursday—Friday)

Unfortunately, a Last Quarter moon will interfere this year, reducing the number of meteors visible.



Free service



Only for Members

Don't own a telescope?

Our Telescope Loaner Program is your answer!

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. These telescopes are in the program:

Sears 60mm f/15 on equatorial mount

Unitron 62mm f/14.5 on equatorial mount

Meade 90mm ETX

Coulter Odyssey8 8" f/4.5 Dobson

Meade 10" f/4.5 on equatorial mount

Meade 10" LX200 GPS (requires training session)

Contact the Equipment Loan Coordinator (see page 2) or any club officer for details about these telescopes.

Kid's Page

Hey Kids!



NASA's Space Place—a fun website with games and resources for kids to learn about astronomy and space sciences.

<http://spaceplace.nasa.gov/partners>

Find the following
on the NASA Space Place Page:

Exploration Activities

NASA Videos and Pictures

Math Activities

Questions and Answers by NASA Scientists

Games



Space Place Partners' Column

October 2011

The Gray Cubicle You Want to Work In

By Dr. Tony Phillips

It's another day at the office.

You're sitting in a gray cubicle, tap-tap-taping away on your keyboard, when suddenly your neighbor lets out a whoop of delight.

Over the top of the carpeted divider you see a star exploding on the computer screen. An unauthorized video game? No, this explosion is real. A massive star just went supernova in the Whirlpool Galaxy, and the first images from Hubble are popping up on your office-mate's screen.

It's another day at the office ... at NASA.

Just down the hall, another office-mate is analyzing global temperature trends. On the floor below, a team of engineers gathers to decode signals from a spaceship that entered "safe mode" when it was hit by a solar flare. And three floors above, a financial analyst snaps her pencil-tip as she tries to figure out how to afford just one more sensor for a new robotic spacecraft.

These are just a few of the things going on every day at NASA headquarters in Washington DC and more than a dozen other NASA centers scattered around the country. The variety of NASA research and, moreover, the variety of NASA people required to carry it out often comes as a surprise. Consider the following:

NASA's Science Mission Directorate (SMD) supports research in four main areas: Earth Science, Heliophysics, Astrophysics, and Planetary Science. Read that list one more time. It includes everything in the cosmos from the ground beneath our feet to the Sun in the sky to the most distant galaxies at the edge of the Universe. Walking among the cubicles in NASA's science offices, you are likely to meet people working on climate change, extraterrestrial life, Earth-threatening asteroids, black holes or a hundred other things guaranteed to give a curious-minded person goose bumps. Truly, no other government agency has a bigger job description.

And it's not just scientists doing the work. NASA needs engineers to design its observatories and build its



Some of the employees of NASA's Science Mission Directorate may work in gray cubicles, but their jobs are anything but dull. They get to study Earth, the Sun, the Solar System, and the Universe!

spacecraft, mathematicians to analyze orbits and decipher signals, and financial wizards to manage the accounts and figure out how to pay for everything NASA dreamers want to do. Even writers and artists have a place in the NASA scheme of things. Someone has to explain it all to the general public.

Clearly, some cubicles are more interesting than others. For more information about the Science Mission Directorate, visit science.nasa.gov. And for another way to reach the Space Place, go to <http://science.nasa.gov/kids>.

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 qualified 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)

Astronomical League (AL) fee..... \$7.50
 Sky & Telescope Magazine 1 year (12 issues, group rate)..... \$32.95
 Astronomy Magazine 1 year (12 issues, group rate)..... \$34.00
 2 years (24 issues, group rate)
 \$60.00
 Postage for New Member Pack \$4.95

Donations are accepted for the following funds: SA-IDA/Light Pollution,
 TIMPA, Education, Chiricahua Astronomy Complex, and General/
 Undesignated.

Renewal Information

You'll get an email reminder when it's time to renew.
 TAAA members may join the Astronomical League (AL) 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 any time. Allow 3

months for processing. New subscriptions must be sent through the
 TAAA treasurer. Renewals can be paid online through magazine websites.
 To change an individual subscription to the group rate, pay the group rate
 to the TAAA treasurer. Include your magazine renewal notice.
 Include a note about what you're paying for. Credit cards are not
 accepted. Write one check or money order for dues 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

Mail changes to address above, email them to the treasurer, or make
 them yourself online through Night Sky Network login account at <http://nightsky.jpl.nasa.gov/login.cfm>.

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

Send submissions to [taaa-newsletter\[at\]tucsonastronomy.org](mailto:taaa-newsletter[at]tucsonastronomy.org) 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 Word compatible files sent by e-mail or
 on recordable media. All copyrights retained by Tucson Amateur
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 permission, all rights reserved. We will not publish slanderous or libelous
 material!

How to Contact Us

TAAA Web Page: www.tucsonastronomy.org

TAAA Phone Number: 520-792-6414

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Secretary (elected board member)	<i>OPEN</i>		secretary[at]tucsonastronomy.org
Treasurer (elected board member)	John Croft	520-260-4687	treasurer[at]tucsonastronomy.org
Member-at-Large (elected board member)	Vern Dunlap	520-326-1964	mal1[at]tucsonastronomy.org
Member-at-Large (elected board member)	John Kalas	520-620-6502	mal2[at]tucsonastronomy.org
Member-at-Large (elected board member)	Michael Turner	520-743-3437	mal3[at]tucsonastronomy.org
Chief Observer	Dr. Mary Turner	520-743-3437	chief-observer[at]tucsonastronomy.org
AL Correspondent (ALCOR)	Paul Anderson	520-625-5035	alcor[at]tucsonastronomy.org
Community Event Scheduler	Bill Lofquist	520-297-6653	school-star-party[at]tucsonastronomy.org
Volunteer Coordinator	Bill Lofquist	520-297-6653	school-sp-volunteers[at]tucsonastronomy.org
TIMPA Gate Card Controller	John Kalas	520-620-6502	timpa[at]tucsonastronomy.org
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Upcoming Steward Observatory Public Evening Lectures

Lectures are held in the main lecture hall, N210 at Steward Observatory at 7:30pm. Observing with 21" telescope follows, weather permitting.

Nov 14	Dr Dennis Zaritsky	Trespassing and Larceny: The Sordid History of the Magellanic Clouds
Nov 28	Dr Daniel Marrone	The Cosmology of Elephants

Join the TAAA Forum on Yahoo Groups

General astronomy discussion for TAAA members
 ~75 messages/month posted by TAAA members
 Go to <http://tinyurl.com/hwoau>
 Click on "Join this Group"

Visit the TAAA Website

www.tucsonastronomy.org

View all events on our online calendar

RSVP to those you will attend

Get directions from any starting point



We're on Facebook!
 Search for "Tucson Amateur Astronomy Association"

Desert Dwellers

Be alert for rattlesnakes, especially at night! 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. Be careful when walking, especially at night.



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