

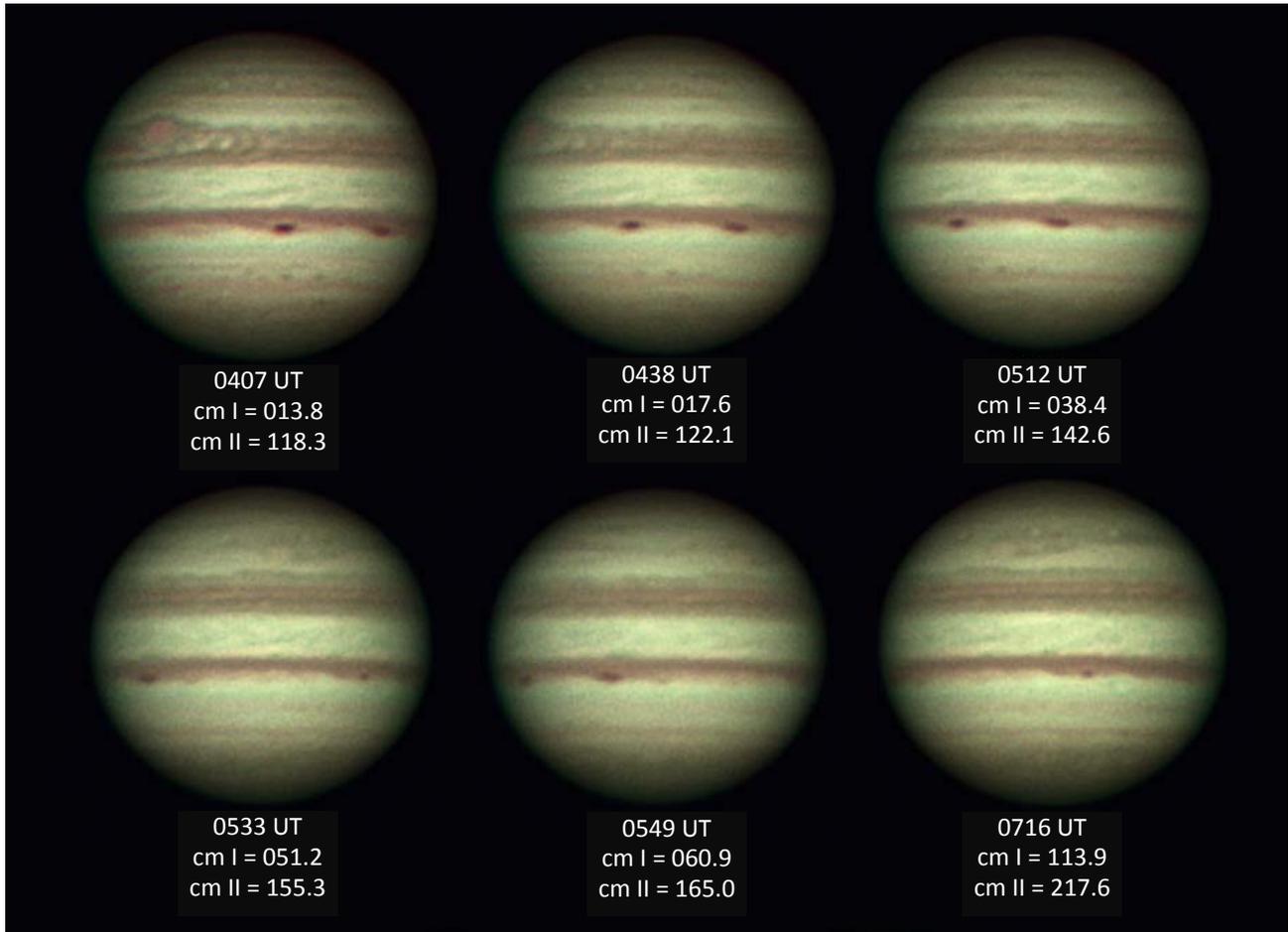


# Desert Skies

Tucson Amateur Astronomy Association

Volume LVIII, Number 1

January 2012



## Jupiter

General Meeting January 6th

Steward Observatory Lecture Hall, Room N210

Astronomy Fundamentals Lecture—6:30pm

Seasonal Objects presented by Mary Turner, Ph.D.

Invited Lecture—7:30pm

Keeping the Stars in our Eyes: Outreach Programs Promoting Dark Skies Awareness presented by Connie Walker, Ph.D., NOAO

Affiliates



*TAAA Meeting Friday, January 6*

Steward Observatory Lecture Hall, Room N210, U of A campus

**6:30pm Astronomy Essentials Lecture**

Title: Seasonal Objects  
 Speaker: Dr Mary Turner

Our Chief Observer, Mary Turner, will present objects visible this quarter best suited for small telescopes.

**7:30pm Invited Lecture**

Title: Keeping the Stars in our Eyes: Outreach Programs Promoting Dark Skies Awareness

Speaker: Connie Walker, PhD; NOAO

Discover how to preserve dark skies while conserving energy through immersive learning experiences illustrating responsible lighting, effects on wildlife, night-sky brightness measurements and more. With 8 out of 10 Americans no longer able to see the Milky Way from where they live, light pollution has limited our access to stargazing. To rescue this natural heritage that has inspired art, literature, music and science for millennia, many organizations have created successful outreach programs for their communities. While concern for the effects on wildlife tugs at our hearts and new discoveries are being made on the effect of light pollution on human health, it is energy conservation that remains the forefront concern. Connie Walker will highlight the international, citizen-science light pollution campaign GLOBE at Night and the Dark Skies Rangers program which she coordinates.

Connie Walker is an Associate Scientist and Senior Science Education Specialist at the National Optical Astronomy Observatory. She received her PhD in astronomy from the University of Arizona in 1991.

**2012 GLOBE at Night Campaigns**

January 14—23

February 12—21

March 13—22

April 11—20

<http://www.globeatnight.org/>

*President's Message*

Happy New Year TAAA Members! I hope you all had a most enjoyable holiday season. I'm looking forward to some exciting astronomy adventures for 2012, both personally as well as in our club. 2012 is going to be the best year ever for TAAA!

I recently asked members to participate in defining the TAAA's priorities. The responses I received were varied, and as might be expected, there were some strong opinions. With a club of roughly 400 members, we're not all going to agree with each other, but there did seem to be a recurring theme that TAAA activities continue to provide astronomy education and observing opportunities to both members and the public.

It was helpful to have this membership input available at a recent Board of Directors retreat held on December 11th. It helped us focus on your expectations as we discussed the many areas of activity in the club. We've seen significant growth in certain areas, and the Board is working hard to find ways to continue to improve.

The TAAA is a 501(c)(3) charitable organization as approved by the Internal Revenue Service, and as such, it's important that our priorities align with IRS requirements. Our services to the public are an important component of our charitable work, and you can be sure we will continue to provide and improve them.

While the retreat was very productive, the exercise is an ongoing effort. It's never too late to share your thoughts regarding club priorities (or any other club matters) with me or any board member. At each Board meeting we

devote time to discuss member input we've received.

One outcome of our retreat was the realization that TAAA members have diverse talents, and that our activities are highly dependent on individual member involvement. We also recognize that, like any non-profit organization, we have limited financial resources. There are great things that we can do to share this wonderful hobby with each other and the public, but to achieve them will require member involvement. If you're an active member of TAAA, you're already involved, and I'm honored to be working with you as we take the TAAA forward into the New Year!

*Keith Schlottman*

**Astronomy  
 Wall Calendars  
 Available at  
 Meetings  
 \$10 each cash or check**

*Cover Photo*

Jupiter imaged by Rik Hill on Nov 3, 2011 (UT) with a DBK21AU04 camera mounted on a C14 stopped down to a 7" aperture. Seeing was 5-7 (where 10 is best). Four-hundred stacked images (out of 2000). With UV/IR blocking filter. South at top, West to left.

## 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 Keith Schlottman	Jan 6 (Fri) Steward Observatory Room N210 933 N Cherry Ave	6:30pm	2
Astro-Imaging SIG Meeting Larry Phillips	Jan 9 (Mon) Coco's Restaurant 6095 E Broadway	6:00pm (for dinner)	4
Board Meeting Keith Schlottman	Jan 11 (Wed) Steward Observatory Room N305 933 N Cherry Ave	6:30pm	9
Astronomy Fundamentals Meeting Ben Bailey	Jan 12 (Thurs) USGS Building - Room 253 520 N Park Avenue	6:30pm	5
School Star Party Sahuarita, AZ Bill Lofquist	Jan 13 (Fri) Great Expectations Academy 1466 W Camino Antigua	5:30pm	7
Friday Nite @ TIMPA Star Party Ben Bailey	Jan 13 (Fri) TIMPA Site	5:15pm	6
School Star Party Southwest Tucson Bill Lofquist	Jan 17 (Tues) Vesey Elementary 5005 S Butts Rd	5:30pm	7
Family Astronomy Night Jim & Elaine Miller	Jan 17 (Tues) Wilmot Library 530 N Wilmot Rd	6:00pm	5

<i>Event</i> <i>Contact Person*</i>	<i>Date</i> <i>Location</i>	<i>Time</i>	<i>See</i> <i>Page</i>
Space Exploration SIG Lecture Al Anzaldua	Jan 19 (Thurs) Kuiper Science Center Room 308 1629 E University Blvd	7:00pm	4
School Star Party Far SE Tucson Bill Lofquist	Jan 19 (Thurs) Senita Valley Elementary 10750 E Bilby Road	5:30pm	7
TIMPA/AFSIG Star Party Ben Bailey	Jan 21 (Sat) TIMPA Site	5:15pm	6
Chiricahua Astro. Complex Star Party John Kalas	Jan 21 (Sat) Chiricahua Astronomy Complex		6
Starry Messenger SIG Meeting Terri Lappin	Jan 23 (Mon) Beyond Bread 3026 N Campbell Ave	6:30pm	4
School Star Party Northwest Tucson Bill Lofquist	Jan 26 (Thurs) Harelson Elementary 826 W Chapala Drive	5:30pm	7
School Star Party Far NE Tucson Bill Lofquist	Jan 27 (Fri) Fruchthendler Elementary 7470 E Cloud Road	5:30pm	7
School Star Party Far West Tucson Bill Lofquist	Jan 31 (Tues) Banks Elementary 3200 S Lead Flower	5:30pm	7

## Newsletter Deadline

The deadline for the February issue is Wed, Jan 15. Desert Skies is published at least one week before the General Meeting. See the publishing guidelines for details.

**\* 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

Feb 3	TAAA General Meeting
Feb 6	Astro-Imaging SIG Mtg
Feb 8	Board of Directors Meeting
Feb 9	Astronomy Fundamentals SIG Meeting
Feb 11	TIMPA Star Party
Feb 16	Castlehill Country Day School Star Party
Feb 16	Booth-Fickett School Star Party
Feb 18	Chiricahua Astronomy Complex Star Party
Feb 24	TIMPA Star Party

## Upcoming Lectures

3 Feb	<i>Astronomy Essentials</i>	Paul Anderson Astronomical League Observing Clubs
	<i>Invited</i>	Steve Coe Wide Field Astrophotography
2 Mar	<i>Meeting begins at 6:30pm</i>	Astrophoto Night Astro-Imaging SIG
6 Apr	<i>Astronomy Essentials</i>	Mary Turner Seasonal Objects
	<i>Invited</i>	OPEN

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

## Astro-Imaging Special Interest Group (AISIG)

**Meeting: January 9 (Mon) 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

**Special night this month!**



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)

**Meeting: January 23 (Mon)**

Beyond Bread (3026 N Campbell Ave)  
Contact: Terri Lappin

**6:30pm**



Starry Messengers SIG -  
Opening Minds to the Universe

The Starry Messengers Special Interest Group will be meeting on Monday, January 23rd to plan our March 31st Outreach Workshop. We'll meet at the Beyond Bread restaurant at 3026 N Campbell Ave. This is on the east side of Campbell between Glenn and Ft Lowell. We'll meet at 6:30pm - arrive a bit early and order a sandwich or salad. As usual, I promise the meeting will end by 8pm. Anyone is welcome to attend this meeting. Attendance won't obligate you to participate in the workshop or any other outreach events.

The workshop topic has not determined but options will be narrowed down before the Jan 23rd meeting. Send any workshop topic suggestions you have to Terri Lappin.

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)

**Lecture: January 19 (Thurs) 7pm**

Kuiper Space Sciences Lecture Hall at U of A, Room 308  
Contact: Al Anzaldua



Is anthropogenic global warming a hoax perpetrated by self-serving climatologists? 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. This is just east of Flandrau Planetarium. Most parking on campus after 5pm is free. Watch for special signage indicating 24 hour parking restrictions.

Can we beat light pollution and bad seeing without going into orbit? Software & Micro-ElectroMechanical Systems Engineer Conrad Schneiker, co-founder of Arizona Technology Cluster and board member of Arizona Optics Industries Association (AOIA), will offer a solution to these and other earthly problems in a lecture on March 15 titled, *Stratospheric Platforms for Astronomy, Solar Power, and Space Launch*. Mr. Schneiker's presentation will take place at 6:45 pm at the Woods Memorial Branch Library, 3455 N 1st Ave, just south of Prince Road on the west side of the street.



Photo Credit: NASA

**Global Warming: How Serious is It?**

Dr Robert Strom, UA LPL

Thursday, January 19 7pm

Kuiper Space Sciences, Rm 308

UA campus—1629 E University Blvd

Sign-up sheets for SESIG talks will be provided at the general membership meetings, or RSVP to Al Anzaldua.

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

## *Astronomy Fundamentals SIG (AFSIG)*

### **AFSIG Monthly Meeting**

**January 12 (Thurs)**

**6:30 pm**

U.S.G.S. Building, Room 253 (520 North Park Avenue)

Contact: Ben Bailey

On Thursday, January 12 we will hold our regular monthly meeting. Our own Mike Finerty will present "Topics on Relativity". 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 after 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** helps those interested in observing solar activity — like sunspots, solar flares and other interesting features — and recording those observations. 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. The Solar Observing Club is taking a temporary hiatus from their regular observing schedule. Watch the newsletter for future observing dates. If you are interested in solar observing, please email Ben Bailey to be added to the solar observing email list.

**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.

## *Family Astronomy Class*

**January 17 (Tues)**

**6:00 pm**

Wilmot Library Meeting Room (530 N Wilmot Road)

Contact Person: Jim & Elaine Miller

Last month's Family Astronomy program was held at the Wilmot Library and it was a big hit. We had four telescopes in the courtyard behind the Library and the Conference Room stayed busy the whole time with activities from the Night Sky Network Exploring the Solar System Toolkit. The Librarian counted 21 people and a few of them were very interested in joining TAAA. Bob Gilroy stayed busy teaching the toolkit materials. Jim Miller, Byron Skinner, Chuck Hendricks, & Paul Ross brought telescopes. Elaine Miller and Brian O'Connell were in the conference room helping Bob Gilroy with the presentations.

Freelance reporter Zachary Vito shot a lot of pictures and asked about the TAAA and the Family Astronomy Program. Hopefully an article will appear in the Arizona Daily Star. (Ed. Note: article appeared Dec 29 in the Foothills edition.)

*See the Kid's Page, page 13.*



At the telescopes the first hour we would only get brief glimpses of Jupiter and her moons and Venus when the clouds would thin out. The second hour the clouds thinned out and some of the people with very good eyes were able to see Jupiter's Great Red Spot.

In the Conference Room the kids had fun holding models of the planets in their positions (but not at scale distances). It gave them a little insight into the size of the Solar System.

The next Family Astronomy evening is scheduled for the 17th of January at the Wilmot Branch Library, starting at 6:00 pm until the library closes at 8:00 pm. Contact Jim Miller if you want more information or want to assist him with this community program.

## Members' Star Parties



### TAAA Star Party at TIMPA

Jan 13 (Fri) Gate opens at 5:15pm  
 Jan 21 (Sat) Gate opens at 5:15pm

Contact Person: Ben Bailey

In 2012, AFSIG will be hosting two star parties each month at TIMPA. January 13th will be the initial Friday Nite @ TIMPA Star Party. Please come out and join the AFSIG either on Fri, Jan 13 or Sat, Jan 21 for an enjoyable evening of observing. The TIMPA site features a large parking area, and full restroom facilities. The Gila Monster Observatory will be open for your viewing pleasure. Be prepared for cool temperatures after sunset. Guests are welcome, accompanied by a TAAA member. We hope to see you there!

The Gila Monster Observatory houses a Meade 14" telescope donated to the TAAA by David Levy's Sharing the Sky Foundation.

#### 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

Jan 21 (Sat)

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, members are required to make reservations for both monthly club star parties and private member use. We are restricted to 60 persons and 30 vehicles maximum at any time. 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 181 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.

## *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.

### **Great Expectations Academy Star Party**

**Jan 13 (Fri) Set Up: 5:30pm**  
 General Area: Far South (Sahuarita) Number of Scopes: 2  
 Address: 1466 W. Camino Antigua  
 Leader: Bill Lofquist Number of Guests: 40

Go south on I-19 to Sahuarita Road Exit (exit 75), take a right (west) on Sahuarita Road going towards the mine. Make a left going south on La Canada Road. The school will be on left. The event is from 6 to 8pm.

### **Vesey Elementary School Star Party**

**Jan 17 (Tues) Set Up: 5:30pm**  
 Southwest Tucson Number of Scopes: 4  
 Address: 5005 S Butts Rd  
 Leader: Bill Lofquist Number of Guests: 200

Take Irvington West from I-19. Go about 5.5 miles to Butts Road (south side of the street). Turn south onto Butts Road. The school will be located at the second street on the east (left) side of the street. The event is from 6 to 8pm.

### **Senita Valley Elementary Star Party**

**Jan 19 (Thurs) Set Up: 5:30pm**  
 Far Southeast Tucson Number of Scopes: 3  
 Address: 10750 East Bilby Road  
 Leader: Bill Lofquist Number of Guests: ?

Take Golf Links or Irvington east to Houghton. Go south on Houghton to Bilby. Take Bilby east to the school (south side of street). The event is from 6 to 8pm. Pizza will be served to astronomers.

### **Harelson Elementary School Star Party**

**Jan 26 (Thurs) Set Up: 5:30pm**  
 Northwest Tucson Number of Scopes: 3  
 Address: 826 West Chapala Drive  
 Leader: Bill Lofquist Number of Guests: 40

From Oracle and Ina, take Ina west to Paseo Del Norte (traffic light at Tohono Chul Park). Turn north onto Paseo Del Norte, continue beyond Tohono Chul Park to Chapala Drive. The school is on the NW corner. The entrance to the field is off of Paseo Del Norte, just north of Chapala Drive. The event is from 6 to 8:30pm.

### **Fruchthendler Elementary Star Party**

**Jan 27 (Fri) Set Up: 5:30pm**  
 Far Northeast Tucson Number of Scopes: 3  
 Address: 7470 East Cloud Road  
 Leader: Bill Lofquist Number of Guests: ?

Go east on Speedway to Wilmot, north on Wilmot to Tanque Verde, east on Tanque Verde to Sabino Canyon Rd. Go north on Sabino Canyon Rd to Cloud Rd, and east on Cloud Rd to the school. The event is from 6 to 8pm.

### **Banks Elementary School Star Party**

**Jan 31 (Tues) Set Up: 5:30pm**  
 Far West Tucson Number of Scopes: 3  
 Address: 3200 S Lead Flower  
 Leader: Bill Lofquist Number of Guests: 45

From Ajo Way and Kinney Road, take Kinney Road north to Bopp Road. Take Bopp west to Lead Flower. Turn north on Lead Flower and follow the signs to the school. The event is from 6 to 8pm.

## *TAAA Community Events Program is Alive and Well!*

By Bill Lofquist—Community/School Star Party Coordinator and Terri Lappin—Night Sky Network Toolkit Coordinator

During 2011, TAAA volunteers helping with our outreach events for schools and other organizations have been extremely busy. We have received many glowing reports back from the teachers and other leaders who requested events.

There are several ways to look at the influence we have had this year in our community.

- ◆ We provided telescopes for a total of 43 events.
- ◆ We provided Night Sky Network Toolkit activities at 24 events (some duplicates from above).
- ◆ While our schedule is light over the summer months, we did an average of 5 events each month when school was in session.
- ◆ Well over 50 TAAA members volunteered their time for these events.
- ◆ We deployed a total of 175 telescopes to the star party events, averaging 4 scopes per event.

- ◆ Seven TAAA members participated in ten or more events. Jim O'Connor did 23 star party events; Bill Lofquist did 13; Doug Nelson did 12; and Don Cain, Jim Knoll and Byron Skinner did 10 each. Six others did five events; two did four events; six did three events; and 33 others did one or two events.
- ◆ Terri Lappin lead 13 Night Sky Network activities, followed by Bob Gilroy (4 activities), Al Anzaldúa (3 activities), and Brian O'Connell, Jim/Elaine Miller, Loretta McKibben, and Roger Schuelke each led an activity.
- ◆ The four most popular toolkits were "Space Rocks", "Supernova", "Exploring the Solar System", and "Black Hole Survival".

It's impossible to know accurately how many young people and adults look through our telescopes. We can

*(Continued on page 8)*

(TAAA Community Events Program ..., Continued from page 7)

conservatively estimate 60 people attended each event in 2011, so we can estimate that we reached 2,580 people at star parties, and probably many more.

Events featuring Night Sky Network toolkits are documented as part of the NSN program. While the numbers are still estimates, some general comments can be made. We reached about 9375 people at events that featured toolkits. This includes about 7500 visitors to our 2011 Festival of Books booth. Certainly not all 7500 Festival visitors interacted with the toolkit activities (most looked through telescopes). Ignoring the Festival attendance, about 1875 people interacted at some level with the toolkit activities. The distribution was: 45% adults, 21% teens, and 33% children.

Here is one report from a St Michael's Parish Day School teacher who requested an event back in April:

"Please accept my deepest gratitude for TAAA's help with the St. Michael's Star Party last Thursday evening. It was a perfect evening, and we truly appreciate all of your dedication and support! We had over 10

telescopes set up in the park for viewing, and each of the visiting astronomers provided the students with detailed information about the night sky and answered all questions enthusiastically! Many told the students stories about what they were viewing, and all provided new information to the students. It was such a joy to be a part of an event that enhanced our student's love for and interest in Science. The students were so enthusiastic about Astronomy – they couldn't wait to tell me all about what they saw through the lens! I had many parents tell me following the event how excited their children were about this neat opportunity. We even had parents who joined in on the fun! Saturn, as always, was a big hit, but I also heard much enthusiasm about the viewing of the Moon, the double star system, Orion's nebula, Sirius, and much more. We truly appreciate each and every person who came out and encouraged our students, and we can't wait for the next party!"

A big THANK YOU to all of our volunteers who participate in the TAAA Star Party Program and the Night Sky Network Toolkit events. This is an important part of our outreach to the community and the pursuit of our educational mission.

## 2011 Astronomy Services Program Review

By John Kalas, Astronomy Services Coordinator

The Astronomy Services Program (fundraising/paid star parties) provides the TAAA with a revenue source to offset the operating and some construction costs for our new Chiricahua Astronomy Complex in Cochise County. The program has been in existence since 1999 and has contributed over \$80,000 to the club treasury through 2010.

The contribution for 2011 (assuming the last three scheduled events take place) will be \$10,220 not including a pending donation of unknown amount. This total is amazingly high considering the depressed condition of the local resort business in southern Arizona. We have been very fortunate to receive steady business from the Ritz-Carlton Dove Mountain Resort in Marana. Of the 37 paid or donation star parties the TAAA serviced this year, 26 of them were at the Ritz-Carlton Resort.

The successful performance of this program could not have occurred without the dedication of the volunteers who supported it. I would like to especially thank Michael Turner for his significant support of this program. Other

members who dedicated their time, equipment and gas to support the program this year were:

Alvin Schultheis	Robert Wilson
Bill Lofquist	Bob Gilroy
Tom Rolfsmeyer	Claude Plymate
J.D. Metzger	Teresa Plymate
Thom Peck	Dean Ketelsen
Nick Applegate	Melinda Ketelsen

I am very grateful for the support of these members who helped make 2011 a very productive year. We are hoping that the convention business picks up next year, so we can continue the success of the program. Have a safe, healthy and happy New Year.

### TAAA Nametags

We will begin charging for nametags effective January 1st. The cost will be \$6 each for nametags with pin backs and \$9 each for nametags with magnet backs.

## The Visible Planets this Month

Data provided by Erich Karkoschka

Weekend Sa/Su	Sun		Mercury		Venus		Mars		Jupiter		Saturn		Visibility (Vi)	
	Set	Rise	Rise	Vi	Set	Vi	Rise	Vi	Set	Vi	Rise	Vi	Code	
31/1	17:27	7:23	5:55	3	20:04	-3	22:50	0	2:05	-3	1:48	1	-3	brilliant
7/8	17:32	7:24	6:14	5	20:18	-3	22:29	0	1:39	-2	1:23	1	0	conspicuous
14/15	17:38	7:23	6:33	7	20:31	-3	22:06	0	1:13	-2	0:57	1	3	moderate
21/22	17:45	7:21	6:51	-	20:44	-3	21:41	0	0:48	-2	0:30	1	6	naked eye limit
28/29	17:51	7:18	7:06	-	20:57	-4	21:12	0	0:24	-2	0:03	1	9	binoculars limit

## 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, the NSN has grown to over 500 clubs and offers clubs much more than just 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 continued use of existing toolkits, we qualify for new toolkits as they are developed. We recently received the newest toolkit, Life in the Universe.

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 present. 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.

A complete list of our Outreach Toolkits is shown below. They can be borrowed for up to a month at a time. You can keep the Resource CD and Training DVD, but all other materials 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*

### Next Board of Director's Meeting

**Jan 11 (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 is attending the meeting and they can let you in.

### 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.

## Chiricahua Astronomy Complex (CAC)

By John Kalas (Director, CAC)

This new dark site was opened almost two years ago in February 2010 with just a gravel parking lot, a bathroom facility and a well house. Even with those sparse features, the site proved to be a fabulous observing location.

At this year's September CAC Star Party, the exciting features of the Phase 2a expansion project were opened for member use. These latest features give the site a new level of utility and include ten concrete telescope pads with electricity, a roll-off roof observatory with a C-14 telescope and an 18" Obsession telescope at the Amphitheater. These improvements would not have been possible without a tremendous donation effort by club members. The Phase 2b area which includes four RV Spaces has been started, but needs further donations to be completed. Those TAAA Members who own RV's and who would be interested in using the RV Spaces are asked to consider donating for their completion.

With the completion of the Phase 2a expansion, the club can now consider further development of the site per the Master Plan. This could include the member pad area and perhaps sleeping quarters. We invite all TAAA Members to visit the site and review your club's impressive observing facility. Thanks again to all members who have helped make it a reality.

## AFSIG trip to CAC

By Ben Bailey

On Saturday, November 26 some 15 members of the AFSIG attended the monthly TAAA Star Party at the Chiricahua Astronomy Complex (CAC). A trip to CAC had been in the AFSIG to do list for 2011 in order to let members see the truly dark sky observing available to TAAA members. Car pooling and travelling separately, rather than en masse, we all arrived before dark.

It was very nice to see the progress that has been made at CAC. The 10 observing pads quickly filled up, with some doing double duty. There was a lot of rubber necking and looking around as night fell. Once fully dark, the AFSIG folks began observing and visiting the existing CAC scopes. The 18" Obsession Dobsonian on the 27 foot amphitheatre pad and the 14" Celestron SCT in the roll off observatory drew rave reviews.

As the night progressed there were many exclamations of delight at the excellent views available. CAC Director, John Kalas, very kindly provided refreshments, especially HOT beverages. The room holding the water heater proved especially popular as a retreat from the cold temperatures that go along with CAC's 4800 foot elevation. When John warns you to bring warm clothes, you want to pay attention.

By about 10:00 PM the bulk of the AFSIG folks were on our way back to Tucson, having had a wonderful viewing experience. Many thanks to John Kalas and all TAAA members for the continuing support of CAC. If you have never been, it is an experience well worth having.

## AFSIG Library

Due to a very generous donation from Wally Rogers, AFSIG now has a nice library of books and DVDs. DVD titles such as "Understanding the Universe" by Alex Filippenko and books such as "Observing Handbook and Catalog of Deep-Sky Objects" by Luginbuhl and Skiff are available for a one month check out (only one DVD of a set at a time) to all TAAA members. Pick up at the AFSIG meetings or contact Ben Bailey to get a complete list and make check out arrangements.

## Dark Skies for January 2012

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		
Sa/Su	31/1	0:37	-	5:58
Su/Mo	1/2	1:31	-	5:58
Mo/Tu	2/3	2:25	-	5:58
Tu/We	3/4	3:20	-	5:58
We/Th	4/5	4:14	-	5:59
Th/Fr	5/6	5:08	-	5:59
Fr/Sa	6/7	5:59	-	5:59
Sa/Su	7/8			
Su/Mo	8/9	FULL MOON		
Mo/Tu	9/10			
Tu/We	10/11	19:04	-	19:25
We/Th	11/12	19:05	-	20:28
Th/Fr	12/13	19:06	-	21:31
Fr/Sa	13/14	19:06	-	22:34
Sa/Su	14/15	19:07	-	23:39
Su/Mo	15/16	19:08	-	0:44
Mo/Tu	16/17	19:09	-	1:50
Tu/We	17/18	19:09	-	2:57
We/Th	18/19	19:10	-	4:01
Th/Fr	19/20	19:11	-	5:01
Fr/Sa	20/21	19:12	-	5:55
Sa/Su	21/22	19:13	-	5:58
Su/Mo	22/23	19:13	-	5:58
Mo/Tu	23/24	19:14	-	5:58
Tu/We	24/25	19:36	-	5:57
We/Th	25/26	20:34	-	5:57
Th/Fr	26/27	21:30	-	5:57
Fr/Sa	27/28	22:25	-	5:56
Sa/Su	28/29	23:20	-	5:56
Su/Mo	29/30	0:14	-	5:55
Mo/Tu	30/31	1:09	-	5:55

## Editor's Note

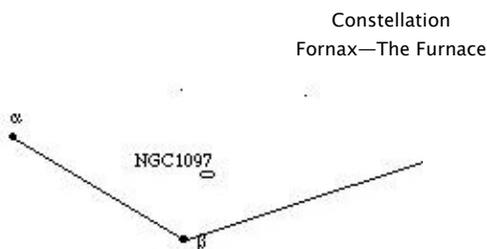
Minutes of the Dec 14th Board of Director's meeting and the list of new members were not received in time to be included in this issue. Please look for this information in the February 2012 issue.

## Chris Lancaster's Constellation of the Month

### Fornax

#### The Furnace

Many of the faint constellations were created by the German astronomer Johannes Hevelius, but the credit for this particular group of stars goes to the Frenchman Nicolas-Louis de Lacaille, who studied astronomy in the 18th century. Originally he named it Fornax Chemica, or the chemical furnace. The neighboring constellation Eridanus winds its way around Fornax, which is composed of 4th and 5th magnitude stars which find themselves between 2 hours and 4 hours of RA and -40 and -25 degrees declination. Maybe the best way to find Fornax is to orient your view with respect to the constellations Orion and Cetus. Make a line from Alnitak, or the easternmost star of Orion's belt, follow it through Rigel, Orion's western foot, and continue to a point directly below the head of Cetus. The scattered stars of Fornax trace out no particular shape.



Near Fornax's border with Eridanus is this constellation's main draw. Here is a cluster of 23 galaxies, ten of which are visible in the same eyepiece if your scope is capable of a very wide field of view (1.5 degrees). The ones which stand out in this compact group are as follows:

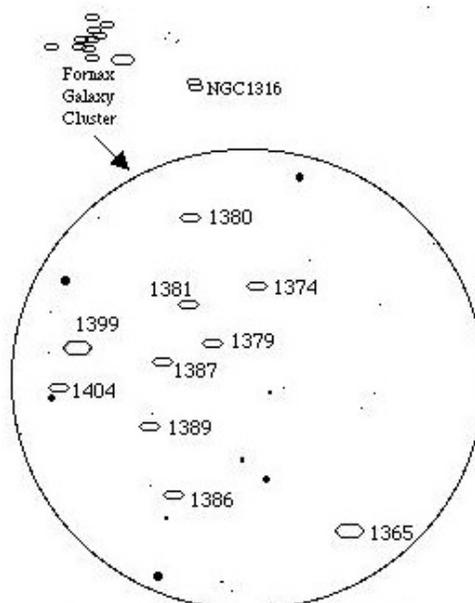
NGC1399--Magnitude: 9.8. Size: 6.9'x 6.4'. Position: RA 3h 38m 28s Dec -35d 26' 58". Here is a bright elliptical galaxy with a bright core and diminishing haze surrounding it.

NGC1365--Magnitude: 10.1. Size: 11.2'x 6.2'. Position: RA 3h 33m 36s Dec -36d 08' 17". A remarkable double armed barred spiral.

NGC1380--Magnitude: 11.0. Size: 4.7'x 2.3'. Position: RA 3h 36m 27s Dec -34d 58' 33". A lenticular galaxy with a bright center.

Outside of this group are two other bright galaxies of note. Two and a third degrees southwest of NGC1365 is NGC1316 (magnitude 9.2, 11.9'x 8.5', RA 3h 22m 42s Dec -37d 12' 28"). This is another lenticular galaxy with a bright core surrounded by a haze of innumerable stars.

Farther north in the center of the constellation is NGC1097. Shining comparatively brightly at magnitude 9.9, this galaxy is found 2.2 degrees north-northwest of Beta Fornacis (RA 2h 46m 19s Dec -30d 16' 21"). If the sky is dark and your aperture generous, look for the bar spanning the galaxy's center.



Tucked away in the northeast corner of Fornax is a planetary nebula, offering us a welcome change of pace from the wealth of galaxies. This oval shaped nebula measures 6.5' in its long axis with an easy to spot 8th magnitude central star. Find it at RA 3h 33m 18s Dec -25d 51' 00", or center your scope on a spot which makes a straight line and equal distance with Alpha and Beta Fornacis.

*Visit the TAA Website*

*www.tucsonastronomy.org*

*View all events on our online calendar*

*RSVP to those you will attend*

*Get directions from any starting point*

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

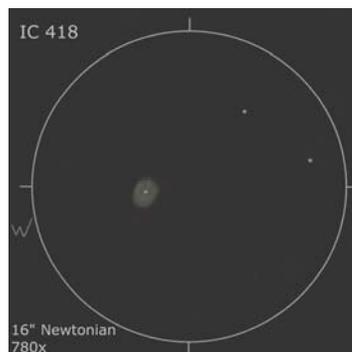
(while supplies last)

## Christian Weis' Planetary Nebulae of the Month

### IC418 and PK 214+7.1 (Abell 20)

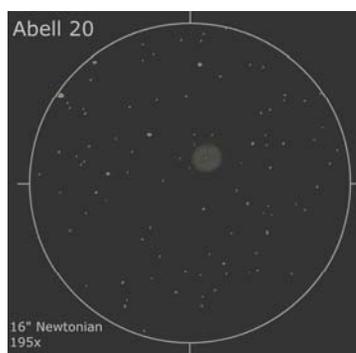
Planetary nebulae (PN) are fascinating objects that come in numerous forms of appearances. Besides the well known grand four Messiers (M27, M57, M76 and M97), there are hundreds more to explore. This article suggests two PNs, a pretty bright and easy-to-observe one and a harder one for the more ambitious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

IC 418, the spirograph nebula, has become famous after it was photographed by the HST. It was discovered by Williamina Fleming in 1891 and has a brightness of 10m7. Since this PN is rather small, one will definitely need higher magnification to see the elongated disk. The central star should be seen with a telescope as small as 2" using low power, though. In early November 2010, I observed the spirograph nebula with a 16" Newtonian from Geology Vista halfway up Mt Lemmon. My notes read: Pretty bright, sharply defined, central star easily seen, some structures in the southern area using UHC filter; 780x, fst 6m2 (Gem)



**IC 418**  
RA: 05h 27.5min  
Dec: -12° 42'  
Constellation: Lepus  
Brightness: 9m3  
Central star: 10m7  
Size: 12 arcsec  
Distance: 1300 ly

PK 214+7.1 or Abell 20 is a nice planetary nebula located in the constellation Canis Minor. While it will be hard to see structures in the nebula itself, the surrounding starfield is pretty appealing. Abell 20 is roughly 1 arcminute in diameter, so lower power will suffice. Of course, a black cloth shielding surrounding light and an Oxygen III or UHC-filter will improve the visibility of this object. When observing this PN from a turnout shortly after Geology Vista on the way up Mt Lemmon in November 2010, I noted: Very faint but suspected with 195x without filter using averted vision, no structures, central star suspected, [OIII] and black cloth are very helpful; great starfield; 195x, fst 6m4 (Gem)



**PK 214+7.1 (Abell 20)**  
RA: 07h 23.0min  
Dec: 1° 28'  
Constellation: Canis Minor  
Brightness: 14m0  
Central star: 16m6  
Size: 65 arcsec  
Distance: 7800 ly

## Comets in the News

Southern hemisphere observers have been enjoying good views of Comet Lovejoy. This comet put on a showing as it passed close to the sun. See the SOHO video at the NASA Science News website [http://science.nasa.gov/science-news/science-at-nasa/2011/16dec\\_cometlovejoy/](http://science.nasa.gov/science-news/science-at-nasa/2011/16dec_cometlovejoy/) which shows the comet plunging towards the sun, and again as it retreats away from the sun.

Comet, P/2006 T1 (Levy), has recently been recovered at magnitude 19.8. This comet was originally discovered by our own famous comet discoverer, David Levy, back in October of 2006. This is a periodic comet with an orbit of 5.25 years. With this recent recovery, it has been renamed P/2011 Y1 (Levy). Comet magnitudes are difficult to predict. During this apparition, the comet was expected to be visible in binoculars at magnitude 7.5. However, recent observations indicate that it will likely remain faint reaching a maximum of magnitude 15. We'll wait and see. A current ephemeris can be found at <http://www.minorplanetcenter.net/iau/MPEph/MPEph.html> and then typing in "P/2011 Y1" into the search box (without the quotes).

## Solar Observing Group

The Solar Observing group will not be meeting for group solar observing until further notice. Please ignore the January 21st Solar Observing date that appears on the 2012 TAAA wall calendar. Solar observers are encouraged to use the TAAA Forum to post their solar observations.

## TAAA Loaner Telescope Program

*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 Odyssey 8" f/4.5 Dobson
- Meade 10" f/4.5 on equatorial mount
- Meade 10" LX200 GPS (requires training)

For members only. Contact the Equipment Loan Coordinator or ask 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

December 2011

## Dawn Takes a Closer Look

By Dr. Marc Rayman

Dawn is the first space mission with an itinerary that includes orbiting two separate solar system destinations. It is also the only spacecraft ever to orbit an object in the main asteroid belt between Mars and Jupiter. The spacecraft accomplishes this feat using ion propulsion, a technology first proven in space on the highly successful Deep Space 1 mission, part of NASA's New Millennium program.

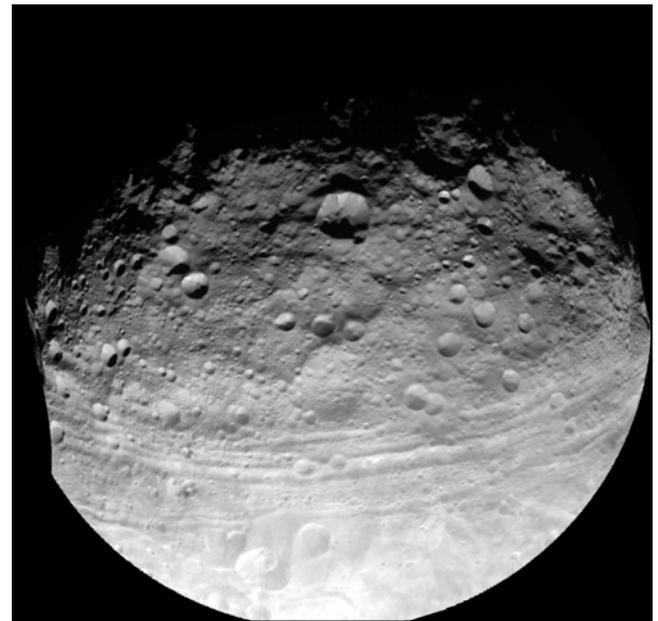
Launched in September 2007, Dawn arrived at protoplanet Vesta in July 2011. It will orbit and study Vesta until July 2012, when it will leave orbit for dwarf planet Ceres, also in the asteroid belt.

Dawn can maneuver to the orbit best suited for conducting each of its scientific observations. After months mapping this alien world from higher altitudes, Dawn spiraled closer to Vesta to attain a low altitude orbit, the better to study Vesta's composition and map its complicated gravity field.

Changing and refining Dawn's orbit of this massive, irregular, heterogeneous body is one of the most complicated parts of the mission. In addition, to meet all the scientific objectives, the orientation of this orbit needs to change.

These differing orientations are a crucial element of the strategy for gathering the most scientifically valuable data on Vesta. It generally requires a great deal of maneuvering to change the plane of a spacecraft's orbit. The ion propulsion system allows the probe to fly from one orbit to another without the penalty of carrying a massive supply of propellant. Indeed, one of the reasons that traveling from Earth to Vesta (and later Ceres) requires ion propulsion is the challenge of tilting the orbit around the sun.

Although the ion propulsion system accomplishes the majority of the orbit change, Dawn's navigators are enlisting Vesta itself. Some of the ion thrusting was designed in part to put the spacecraft in certain locations from which Vesta would twist its orbit toward the target angle for the low-altitude orbit. As Dawn rotates and the world underneath it revolves, the spacecraft feels a changing pull. There is always a tug downward, but



*This full view of the giant asteroid Vesta was taken by NASA's Dawn spacecraft, as part of a rotation characterization sequence on July 24, 2011, at a distance of 5,200 kilometers (3,200 miles). Credit: NASA/JPL-Caltech/UCLA/MPS/DLR/IDA*

because of Vesta's heterogeneous interior structure, sometimes there is also a slight force to one side or another. With their knowledge of the gravity field, the mission team plotted a course that took advantage of these variations to get a free ride.

The flight plan is a complex affair of carefully timed thrusting and coasting. Very far from home, the spacecraft is making excellent progress in its expedition at a fascinating world that, until a few months ago, had never seen a probe from Earth.

Keep up with Dawn's progress by following the Chief Engineer's (yours truly's) journal at <http://dawn.jpl.nasa.gov/mission/journal.asp>. And check out the illustrated story in verse of "Professor Starr's Dream Trip: Or, how a little technology goes a long way," at <http://spaceplace.nasa.gov/story-prof-starr>.

## Rik Hill's Website Trips on the Internet Super-Skyway

Into the furnace.

Rising in the east just after evening twilight you can see the winter hunter, Orion. My first thought when I see this is "Oh my God, another year has gone by!" By New Year's Eve Orion will be on the meridian at midnight and will be dominating the sky for most of the night. It's one of the first constellations we learn when we start in astronomy and indeed, many non-astronomers can recognize it. But as Orion is creeping up to the meridian can you spot some other constellations at those declinations? Do you know Eridanus or Fornax? There are some pretty nice objects there.

Fornax is a small constellation south and west of Orion and south of Eridanus. It's supposed to be a furnace but I sure don't see it! I enjoy Fornax and Eridanus just north of it, for all the galaxies they contain. It's like a mini-Virgo. A fantastic ESO image of a small part of this cluster of galaxies can be seen at:

<http://www.eso.org/public/images/eso0949c/>

It's fun to scan down through Eridanus into Fornax with a large pair of binoculars. Many of these galaxies pass through the field as you go, displaying many different morphologies. With a large telescope it just gets better.

The Hawaiian Astronomical Society has a good set of maps for this region at:

<http://www.hawastsoc.org/deepsky/for/index.html>

which should keep you busy for a few nights identifying these faint fuzzies or imaging them. This page also has detailed images and drawings of some of the brighter members. I particularly like all the barred spirals in this region.

Die-hard deep sky observers will be quick to mention the Fornax Dwarf (spheroidal) Galaxy. It was discovered with a 24" telescope but is certainly observable with smaller telescopes today and our much more efficient CCDs. A beautiful image of this galaxy is at:

[http://astrosurf.com/antihue/fornax\\_dwarf.htm](http://astrosurf.com/antihue/fornax_dwarf.htm)

It shows several of the half dozen globulars that are bright enough to see in an amateur telescope. A list of most of these globulars is at:

<http://www.astro.uu.se/~ns/fornaximage.html>

You will see right off that they are bright enough for even a moderate aperture telescope. I'm surprised there are not more amateur images of them! One even has it's own NGC designation, NGC 1049. At a visual magnitude of 12.6, it's very much within the ability of today's amateur astrophotographers. It is highlighted here:

<http://www.astronomy-mall.com/Adventures.In.Deep.Space/gcextra.htm>

These are just a small selection of the interesting things in Fornax and Eridanus. Spend a night or two exploring them and you will be well rewarded.

As always, if you know of a particularly good website you would like mentioned here, drop me a line at: rhill[at]lpl.arizona.edu



### TAAA Classifieds

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: <a href="http://www.lpl.arizona.edu/~rhill/instr.html">http://www.lpl.arizona.edu/~rhill/instr.html</a> Email Rik Hill at <a href="mailto:rhill[at]lpl.arizona.edu">rhill[at]lpl.arizona.edu</a> Expires Feb 2012
For Sale <b>LAST MONTH!</b>	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. Contact Paul at <a href="mailto:phxbird[at]hotmail">phxbird[at]hotmail</a> or 575-590-8303 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 <a href="http://5150sBryce.com">5150sBryce.com</a> for details. \$210K. Thanks for looking! Claude & Teresa Plymate. 520-444-5979 Expires Feb 2012
For Sale	Celestron CG-5 Computerized Mount GoTo, with tripod (no telescope), database containing 40,000 objects, polar alignment scope, 2 counterweights. Excellent condition. \$400 Contact Gary Rosenbaum, <a href="mailto:garyr90[at]comcast.net">garyr90[at]comcast.net</a> , or Terri Lappin, <a href="mailto:tk-lappin[at]comcast.net">tk-lappin[at]comcast.net</a> , or call our home phone: 520-579-0185. Expires Mar 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.

**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@tucsonastronomy.org](mailto:taaa-newsletter@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  
 Astronomy Association or specific author. No reproduction without  
 permission, all rights reserved. We will not publish slanderous or libelous  
 material!

*How to Contact Us*

TAAA Web Page: [www.tucsonastronomy.org](http://www.tucsonastronomy.org)

TAAA Phone Number: 520-792-6414

<b>Office/Position</b>	<b>Name</b>	<b>Phone</b>	<b>E-mail Address</b>
President (elected board member)	Keith Schlottman	520-250-1560	<a href="mailto:president@tucsonastronomy.org">president@tucsonastronomy.org</a>
Vice President( elected board member)	Bill Lofquist	520-297-6653	<a href="mailto:vice-president@tucsonastronomy.org">vice-president@tucsonastronomy.org</a>
Secretary (elected board member)	Al Anzaldua	520-409-5797	<a href="mailto:secretary@tucsonastronomy.org">secretary@tucsonastronomy.org</a>
Treasurer (elected board member)	John Croft	520-260-4687	<a href="mailto:treasurer@tucsonastronomy.org">treasurer@tucsonastronomy.org</a>
Member-at-Large (elected board member)	Vern Dunlap	520-326-1964	<a href="mailto:mal1@tucsonastronomy.org">mal1@tucsonastronomy.org</a>
Member-at-Large (elected board member)	John Kalas	520-620-6502	<a href="mailto:mal2@tucsonastronomy.org">mal2@tucsonastronomy.org</a>
Member-at-Large (elected board member)	Michael Turner	520-743-3437	<a href="mailto:mal3@tucsonastronomy.org">mal3@tucsonastronomy.org</a>
Chief Observer	Dr. Mary Turner	520-743-3437	<a href="mailto:chief-observer@tucsonastronomy.org">chief-observer@tucsonastronomy.org</a>
AL Correspondent (ALCOR)	Paul Anderson	520-625-5035	<a href="mailto:alcor@tucsonastronomy.org">alcor@tucsonastronomy.org</a>
Community Event Scheduler	Bill Lofquist	520-297-6653	<a href="mailto:school-star-party@tucsonastronomy.org">school-star-party@tucsonastronomy.org</a>
Volunteer Coordinator	Bill Lofquist	520-297-6653	<a href="mailto:school-sp-volunteers@tucsonastronomy.org">school-sp-volunteers@tucsonastronomy.org</a>
TIMPA Gate Card Controller	John Kalas	520-620-6502	<a href="mailto:timpa@tucsonastronomy.org">timpa@tucsonastronomy.org</a>
Chiricahua Astronomy Complex Director	John Kalas	520-620-6502	<a href="mailto:cac-director@tucsonastronomy.org">cac-director@tucsonastronomy.org</a>
Newsletter Editor	Terri Lappin	520-977-1290	<a href="mailto:taaa-newsletter@tucsonastronomy.org">taaa-newsletter@tucsonastronomy.org</a>
Web Director	Terri Lappin	520-977-1290	<a href="mailto:webmaster@tucsonastronomy.org">webmaster@tucsonastronomy.org</a>
Publicist	Liz Kalas	520-620-6502	<a href="mailto:publicist@tucsonastronomy.org">publicist@tucsonastronomy.org</a>
Astro-Imaging Special Interest Group (SIG)	Larry Phillips	520-777-8027	<a href="mailto:astro-photo@tucsonastronomy.org">astro-photo@tucsonastronomy.org</a>
Astronomy Fundamentals SIG	Ben Bailey	520-903-7925	<a href="mailto:fundamentals@tucsonastronomy.org">fundamentals@tucsonastronomy.org</a>
Family Astronomy Program	Jim Miller		<a href="mailto:family@tucsonastronomy.org">family@tucsonastronomy.org</a>
Starry Messenger SIG	Terri Lappin	520-977-1290	<a href="mailto:smsig@tucsonastronomy.org">smsig@tucsonastronomy.org</a>
Space Exploration SIG	Al Anzaldua	520-409-5797	<a href="mailto:sesig@tucsonastronomy.org">sesig@tucsonastronomy.org</a>
Club Apparel Sales	Mae Smith	520-850-7137	<a href="mailto:taaa-sales@tucsonastronomy.org">taaa-sales@tucsonastronomy.org</a>
Equipment Loan Coordinator	Al Dohner	520-297-7118	<a href="mailto:elc@tucsonastronomy.org">elc@tucsonastronomy.org</a>
Librarians	Hunter Bailey		<a href="mailto:librarian@tucsonastronomy.org">librarian@tucsonastronomy.org</a>
	Irene Kitzman		
Grand Canyon Star Party Coordinator	Jim O'Connor	520-546-2961	<a href="mailto:gensp@tucsonastronomy.org">gensp@tucsonastronomy.org</a>
General Information	Keith Schlottman	520-250-1560	<a href="mailto:taaa-info@tucsonastronomy.org">taaa-info@tucsonastronomy.org</a>

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  
**Monthly meetings**  
 2nd Wednesday, 5:30 – 7 pm.  
 3225 N. First Ave  
 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 Southern Arizona

Contact: Joe Frannea: sky[at]sa-ida.org  
 www.sa-ida.org

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

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



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

*Support Our  
 Sponsors*

**STARIZONA**  
 ADVENTURES IN ASTRONOMY AND NATURE  
 5757 N. Oracle Rd. www.starizona.com  
 Tucson, AZ 85704 292-5010

**OPTICS**  
 PLANET.COM

Since 1986  
**Stellar-Vision Astronomy Shop**  
 3721 E. 37th Street  
 Tucson, AZ 85713  
 (520) 571-0877  
 Credit Cards Accepted  
 www.stellarvisiontucson.com

*Table of Contents*

<u>Events &amp; Programs</u>	<u>Miscellaneous</u>
2012 TAAA Wall Calendar..... 2	Address Changes..... 15
Apparel ..... 9	AFSIG Library Materials..... 10
Board of Directors Meeting (Date)..... 9	Chiricahua Astronomy Complex ..... 10
Community & Education Events ..... 7	Classifieds..... 14
Family Astronomy Program ..... 5	Contact Us..... 15
Future Dates..... 3	Cover Photo Caption..... 2
Meeting Information..... 2	<i>Desert Skies</i> Deadline ..... 3
Month in Brief..... 3	Membership Information ..... 15
Night Sky Network Toolkits ..... 9	Mission Statement ..... 15
Special Interest Group Reports/Events..... 4, 5	Nametags ..... 8
Star Parties for Members ..... 6	President's Message ..... 2
Telescope Loaner Program ..... 12	Publishing Guidelines ..... 15
Upcoming Lectures..... 3	Sponsors ..... 16
<u>Observing</u>	TAAA Facebook ..... 16
Comets in the News ..... 12	TAAA Forum Email List ..... 16
Constellation of the Month ..... 11	Year End Reports ..... 7, 8
Dark Skies ..... 10	<u>Affiliated Programs</u>
Planetary Nebulae of the Month..... 12	NASA Space Place/Kid's Page..... 13
Planets this Month..... 14	Southern AZ—Int'l Dark Sky Association..... 16
Solar Observing ..... 12	
Website Trips on the Internet Super Skyway ..... 11	