

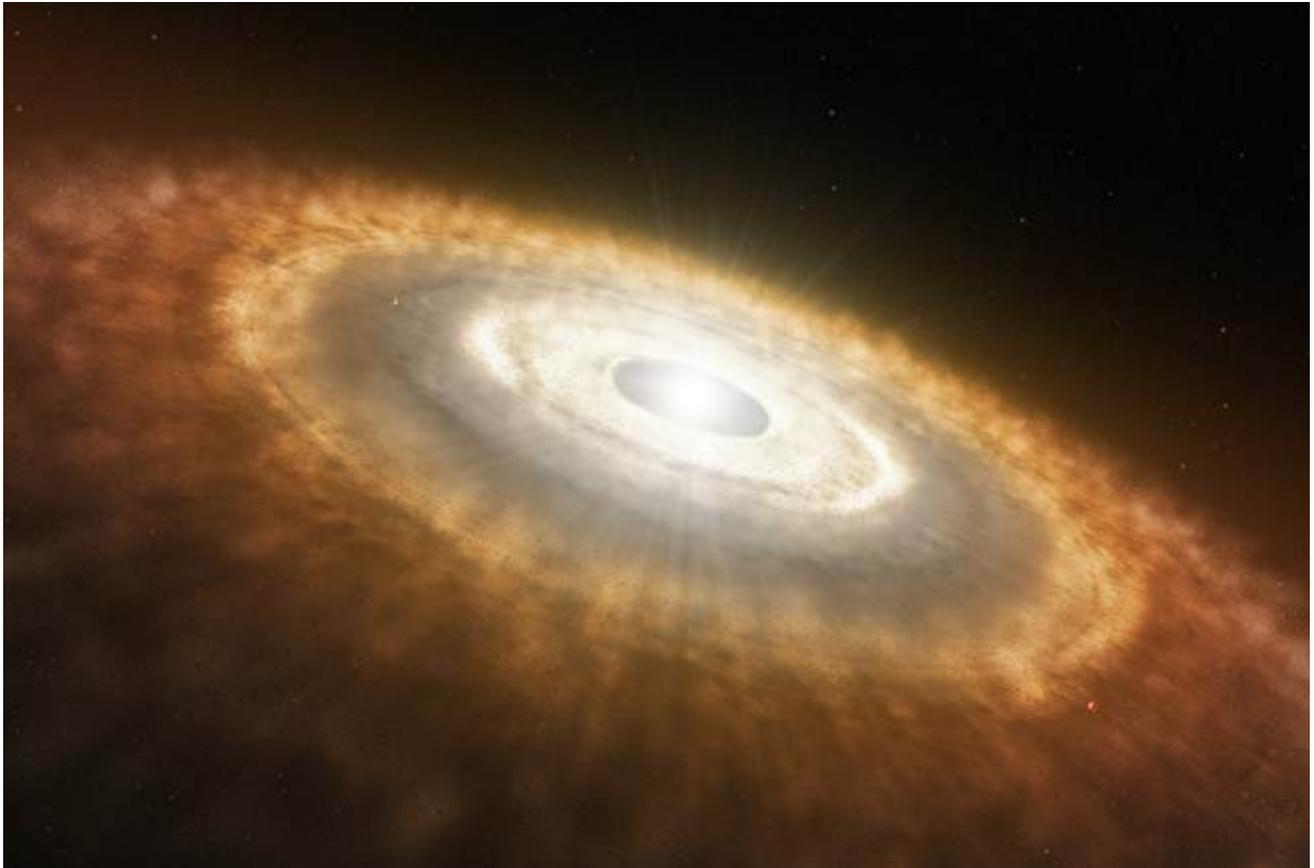


# Desert Skies

Tucson Amateur Astronomy Association

Volume LVII, Number 9

September 2011



Artist's Rendition of a Proto-Planetary Disk

General Meeting September 2nd

Steward Observatory Lecture Hall, Room N210

6:30pm TAAA Status and Project Reports

7:30pm Invited Lecture—Zooming in on Star and Planet Formation , Josh Eisner

Affiliates



## TAAA Meeting Friday, September 2

Steward Observatory Lecture Hall, Room N210



### 6:30pm Astronomy Essentials Lecture

Title: TAAA Status and Project Reports

Speaker: Various

The TAAA is a very active organization so it's easy to lose track of all that's going on. We devote this lecture to bringing the membership up to date on our current projects and plans for the future. Come hear what we're up to and what you can expect over the next year. Perhaps you'll learn about a project in need of your skills and gifts.

### 7:30pm Invited Lecture

Title: Zooming in on Star and Planet Formation

Speaker: Josh Eisner, Ph.D. (Steward Observatory, Assistant Professor)

How did our solar system form? Is the process that gave rise to our system repeated throughout the Galaxy? Astronomical observations are now placing constraints on planet-formation processes, and beginning to provide answers to these fundamental questions.

Josh Eisner, a professor of Astronomy at the University of Arizona, uses the largest telescopes in the world to observe star and planet-forming environments in detail. Spanning a range of telescopes, techniques, and wavelengths, these observations probe various aspects of star and planet formation. In a lecture entitled "Zooming in on Star and Planet Formation", Dr. Eisner will describe state-of-the-art observations of star and planet-forming regions, and how these data have informed evolving theories of planetary system formation.



Dr. Josh Eisner will talk about the formation of stars and planets at our September 2nd meeting.

Cover Photo: Artist's rendering of a proto-planetary disk. Credit: NASA

## Note from the Editor

As we settle into the fall routine, we anticipate fewer thunderstorms and more clear skies. Let's hope the 24th is clear. We will have our fall Star-B-Cue event on Kitt Peak that night. RSVPs are required and space is limited.

The school year is underway and teachers are already requesting star parties. We'll fit in as many as we can. You can help by signing up at a meeting or responding to the email messages that go out for each event. Let's see if we can say "Yes" to all the requests. It can happen if everyone pitches in to cover schools near their home or work place.

Be sure to sign up if you want to attend the Fundamentals of Astronomy class that the Astronomy Fundamentals Special Interest Group is holding in October—space is limited. These popular classes are designed with the beginner in mind, but would also be good if you are returning to the hobby and want a brush up course. There is no charge to TAAA members.

If you've cut back on observing because of health reasons, take a look at Rik Hill's *Trips on the Internet Super-SkyWay* article. He's come across websites that discuss observing for those who have difficulty getting around.

Those who attended the August General Meeting are already aware that we must bid farewell to Claude and Teresa Plymate. Both have been very active members in the TAAA for about 25 years. Claude has accepted a job which will take them to California. He will be working at the Big Bear Solar Observatory beginning this month.

Many who have attended the Riverside Telescope Maker's Conference and Astronomy Expo will already be familiar with this observatory which sits in Big Bear Lake. Teresa will remain in Tucson for a while longer until they sell their house. We wish them the best of luck and look forward to seeing them at RTMC next year.

With the Plymate's departure, there will be two board positions open (Secretary and Member at Large) as well as Librarian.

*Terri Lappin*

<i>Upcoming Lectures</i>		
7-Oct	<i>Astronomy Essentials</i>	Mary Turner Seasonal Objects
	<i>Invited</i>	Dr Marcia Neugebauer, LPL; Solar Wind
4-Nov	<i>Astronomy Essentials</i>	Members Night Astronomy in the Arts
	<i>Invited</i>	
2-Dec	<i>Astronomy Essentials</i>	Terri Lappin The Search for Life Toolkit
	<i>Invited</i>	Bill Gates, TAAA Member

Lectures are arranged by Terri Lappin. She's always open to suggestions (see page 15 for contact information).

<i>This Month in Brief</i>			
<i>Event</i>	<i>Date</i>	<i>Time</i>	<i>See</i>
<i>Contact Person</i>	<i>Location</i>		<i>Page</i>
General Meeting	Sept 2 (Fri)	6:30pm	2
	Steward Observatory Room N210		
	933 North Cherry Ave		
TIMPA/AFSIG Star Party	Sept 3 (Sat)	6:30pm	7
Bob Gilroy	TIMPA Site		
Astro-Imagers SIG Meeting	Sep 12 (Mon)	7 pm	5
Larry Phillips	Coco's Restaurant		
	6095 East Broadway Blvd		
Board Meeting	Sept 14 (Wed)	6:30pm	12
Keith Schlottman	Steward Observatory Room N305		
Astronomy Fundamentals Meeting	Sep 15 (Thurs)	6:30pm	6
Ben Bailey	USGS Building - Room 253		
	520 North Park Avenue		
Solar Observing	Sep 17 (Sat)	9:00am	4
Dennis Dawson	Ft Lowell Park		
Martha Cooper Library SMSIG Presentation	Sept 17 (Sat)	2:00pm	8
Terri Lappin	1377 N Catalina Ave		
UA Students Star Party	Sept 18 (Sun)	6:30pm	4
John Kalas	Saguaro Park West—Red Hills		
	Visitor Center		
Space Exploration SIG Meeting	Sept 22 (Thurs)	6:45pm	5
Al Anzaldua	Woods Memorial Library		
	3455 N First Ave		
Kitt Peak Star-B-Que	Sept 24 (Sat)	4:00pm	4
John Kalas	Kitt Peak National Observatory		
RSVP Required	Picnic Area		
Chiricahua Astronomy Complex Star Party	Sept 24 (Sat)		7
John Kalas	Chiricahua Astronomy Complex		
School Star Party	Sept 27 (Tues)	6:00pm	4
Grant & Silverbell	Brichta Elementary School		
Bill Lofquist	2110 W Brichta Drive		

## 2012 TAAA Calendar

### Calling All Photographers!

Contacts: Twila Peck [octoberprairie\[at\]gmail.com](mailto:octoberprairie[at]gmail.com)  
Liz Kalas [lizkalas\[at\]tucsonastronomy.org](mailto:lizkalas[at]tucsonastronomy.org)

It's time to submit your images for the 2012 TAAA Calendar! We would like to see both astronomical images, and pictures of TAAA members in action. **Images must be the work of current TAAA members.**

For the best quality please send the highest resolutions possible since the images may be enlarged. If you wish, you can bring a disc to the September or October meeting with your images - but send us an email ASAP so that we know to expect them. If you have images posted on a website, send us the address and we can look through them there.

Please include information about your pictures, as well as your name and contact info. If you want to recommend images taken by a TAAA member other than yourself, send us the information (we'll contact the photographer for permission, of course).

IF YOU HAVE ANY SUGGESTIONS for the calendar, please let us know ASAP. Any changes/improvements to the calendar pages? Any useful information to be added? What kind of pictures do you want to see? More astronomical images? More human beings? A 50-50 mix as in the 2011 calendar?

**DEADLINE FOR IMAGES/SUGGESTIONS: October 7, 2011 (that's the October meeting)**

IF YOU WANT TO HELP with the 2012 calendar, let Twila or Liz know. Right now, help is needed finding and selecting images.

<i>Future Dates</i>	
Oct 1, 8, 22	AFSIG Fundamentals of Astronomy Class
Oct 7	TAAA September Meeting
Oct 15	Light Pollution Workshop
Oct 20	Space Exploration SIG Meeting/Lecture
Oct 22	TIMPA Star Party (Orionid Meteor Shower)
Oct 29	Chiricahua Astronomy Complex Star Party
Oct 31	Halloween—Neighborhood star parties

## Support Our Sponsors



## Monthly Solar Observing

**Sept 17 (Sat)****9:00am**

Ft Lowell Park

Contact: Dennis Dawson, [dennisldawson\[at\]gmail.com](mailto:dennisldawson[at]gmail.com), 520-319-7724

Join the Solar Observers on August 20th from 9 am until 11 am at Fort Lowell Park (Craycroft @ Glenn) for solar viewing. The group will meet near the southeast corner of the park. Just look for the telescopes. Bring your kids. Bring water and something to nibble on. You don't need to have a telescope; others will have them if you don't. Everyone is invited to join us.

## Kitt Peak Star-B-Cue

**September 24 (Saturday)****4:00pm****RSVP Required**

Contact John Kalas

The TAAA has scheduled a star party and pot-luck barbecue at the Kitt Peak picnic grounds on Saturday, September 24, starting at 4:00 pm. A maximum of 70 TAAA Members and family members will be allowed to participate. A gas-fired barbecue grill at the ramada will be fired up starting at 5:00 pm and members are invited to cook their dinners between 5:00 and 7:00 pm. Bring a dish to share with other members. The grill will be turned off at 7:00 pm. Telescope observing will commence after sundown. Kitt Peak allows the club to observe as late as we want. Be prepared for cool temperatures and mosquitoes.

John Kalas will begin accepting RSVPs at the September 2nd meeting. A sign-up sheet will be on the table at the back of the lecture hall. If you can't make the meeting, phone and e-mail reservation requests can be taken on a first-come, first-serve basis. See Page 15 for John's contact information.

Due to the popularity of this event, attendance will be initially limited to TAAA Members and their immediate family members only. If, after all TAAA Members have had an opportunity to sign up, there are any openings or cancellations, the attendance of guests will be considered.

It is very important for all attendees to abide by the rules established by Kitt Peak and respect the facility. Adherence to the rules will help to continue TAAA activities on Kitt Peak in the future.

- No vehicles are allowed above the picnic grounds after 4:00 pm.
- Only the ramada gas-fired barbecue grill is permitted for cooking food at the picnic grounds. No open fires or use of personal barbecue grills is permitted.
- All trash must be placed in the garbage receptacles.
- Use of cellular phones and radio walkie-talkies is prohibited. All cell phones must be turned off.
- No alcoholic beverages are permitted.

There are professional telescopes in operation near the picnic area. When leaving the picnic grounds after dark, if possible, use your parking lights until you have reached the main road and are headed downhill after exiting the picnic area.

## Community and Educational Events

All members are asked to support our outreach events listed below. TAAA either sponsors or co-sponsors these events. These are great opportunities for beginners, as you only need to know a few objects in the sky. Even without a telescope, you can be valuable in other capacities. Sign up sheets for most events can be found at the meeting or contact a TAAA officer. Maps are available through the TAAA website calendar.

### Martha Cooper Library Presentation

**Sept 17 (Sat)****Set up: 1:300pm**

General Area: Central

1 presenter &amp; 1 helper

Location: 1377 N Catalina Ave

Presenter/Leader: Terri Lappin (see page 15)

A presentation full of fun and noise as the kids make marshmallow atoms and blow up balloons to simulate supernovas. One assistant is needed to help with pass out materials. One block east of Columbus, 2 blocks north of Speedway. Presentation starts at 2pm and ends at 3pm.

### UofA Astronomy Students Star Party

**Sept 18 (Sun)****Set up: 6:30pm**

General Area: Far West

10 scopes

Location: Red Hills Visitor Center-Saguaro Natl Park West

Star Party Leader: John Kalas (see page 15)

Dr. Tom Fleming, UofA astronomy professor, has again requested us to support a star party for his astronomy students. Approximately 100 students are expected to attend. The event starts at 7:30pm and ends at 9:30pm.

### Brichta Elementary School Star Party

**Sept 27 (Tues)****Set up: 6:00pm**

General Area: West

3 scopes

Location: 2110 W Brichta Drive

Star Party Leader: OPEN

Seventy-five people are expected to attend this star party. Take Speedway west of Silverbell. Go north (right) on Silverbell, west (left) on Brichta Drive (across from Joaquin Murieta Park). Go to the south parking lot and onto gravel parent parking lot. The gate to the sports fields will be open. Viewing area is the asphalt basketball court west of the school. Kids and parents will begin arriving at 6:30pm; event ends at 8:00pm

## 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; see page 15 for her contact information.

## Astro-Imaging Special Interest Group (AISIG)

**Meeting: Sept 12 (Monday) 7pm**  
 Coco's Restaurant on Broadway between Wilmot & Craycroft  
 Contact: Larry Phillips (see page 15)

The TAAA Astro Imaging SIG meeting will be held on the second Monday this month due to the Labor Day holiday. After meeting for years at the China Rose Restaurant which is now closed, we have found a new location to hold our meetings—Coco's Restaurant on east Broadway. It is located between Craycroft and Wilmot. The time continues to be 7 PM for the meeting. Come early, anytime after 6 PM and enjoy dinner before the meeting. We will meet in



**New Location!  
 Special Time!**

the banquet room which is to the far left after you enter the restaurant proper.

Our October, November, and December meetings will return to the 1st Monday of the month.

Our program consists of members sharing their images, setups, problems, or suggestions. Time permitting we will view a processing tutorial presented by one of the more experienced astrophotographers. Meetings will end no later than 9 PM.

## Starry Messengers SIG (SMSIG)

**Next Workshop: October 15 (Sat) 9:00am**  
 Contact: Terri Lappin (see page 15)

The Starry Messengers discussed TAAA outreach activities at our August 15th meeting. Contact Terri Lappin (see page 15) if you want the minutes from that meeting. Our Fall 2011 Workshop will be about Light Pollution. It is set for October 15th, tentatively at Steward Observatory. If you want to learn about light pollution and how we can use our role as astronomy ambassadors to educate the public on the issue, then set aside three hours on the morning of October 15th to attend this workshop. More information will be in the October Desert Skies.

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.



Starry Messengers SIG -  
 Opening Minds to the Universe

## Space Exploration Special Interest Group (SESIG)

**Sept 22, Oct 20, and Nov 17 6:45pm**  
 Woods Memorial Branch Library  
 Contact: Al Anzaldua (see page 15)

SESIG on September 22 has the pleasure of sponsoring Raytheon space engineer Phil Eklund. Mr. Eklund will give a slide presentation titled, "The High Frontier: Utilizing Solar System Resources". Mr. Eklund's presentation will take place promptly at 6:45 pm in the large conference room at the Woods Memorial Branch Library, 3455 N. 1st Ave., just south of Prince Road.

On October 20 at the UA Controlled Environment Agricultural Center (CEAC), Lane Patterson, will give a slide presentation titled "Closed System Life Support on the Moon and Earth's South Pole." Lane is a field engineer for

Raytheon Polar Services and a graduate student researcher for UA's CEAC. Please note that the venue for his talk has been changed to the UA's CEAC, 1951 E. Roger Road, Tucson, AZ. The presentation will still begin at 6:45 pm, however. Other groups will be invited to this presentation.

On November 17 back at the Woods Memorial Branch Library, SESIG coordinator Al Anzaldua will give a slide presentation on the impact of space exploration and development titled, "Space: Boon or Boondoggle?" Although the presentation begins with an explanation of NASA's impact, Al will give special emphasis to private space companies such as Space X and Virgin Galactic.

Sign-up sheets for SESIG talks will be provided at the general membership meetings or RSVP to Al (see page 15).



## The Visible Planets this Month

By Erich Karkoschka

Weekend Sa/Su	Sun		Mercury		Venus		Mars		Jupiter		Saturn		Visibility (Vi)	
	Set	Rise	Rise	Vi	Set	Vi	Set	Vi	Set	Vi	Rise	Vi	Code	
03/04	18:44	5:59	4:34	3	19:02	9	1:56	2	21:26	-3	20:24	3	-3	brilliant
10/11	18:35	6:03	4:53	4	18:58	7	1:50	2	20:58	-3	19:58	4	0	conspicuous
17/18	18:25	6:07	5:25	7	18:53	6	1:43	2	20:29	-3	19:33	5	3	moderate
24/25	18:16	6:12	Set	-	18:48	6	1:35	1	20:00	-3	19:08	7	6	naked eye limit
01/02	18:07	6:16	18:17	-	18:44	5	1:28	1	19:31	-3	18:42	-	9	binoculars limit

## *Astronomy Fundamentals SIG (AFSIG)*



### **AFSIG Monthly Meeting**

**September 15 (Thurs)**

**6:30 pm**

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

Contact: Ben Bailey (see page 15)

On Thursday, September 15, we will hold our regular monthly meeting in Room 253 of the USGS Building. Free parking after 5pm behind the building. Remember, we are successful only if you participate. I am hoping to see you there.

### **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/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@gmail.com](mailto:dennisldawson@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@tucsonastronomy.org](mailto:bobgilroy@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@tucsonastronomy.org](mailto:paulanderson@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@msn.com](mailto:mfinerty1@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@cox.net](mailto:watson1987@cox.net).

## *Young Astronomers Program*

Contact Person: Cathy Anderson, [m44m46@live.com](mailto:m44m46@live.com)

AFSIG is looking for families with children 7 to 17 to participate in our Young Astronomers Program. Because of the different maturity levels, The Young Astronomers Program consists of two different programs or clubs.

**Astronomer Cadet** – for children 7 to 10 years old

There are a lot of other objects in the sky besides stars: galaxies, star clusters, globular and open clusters. There are planets and moons and asteroids and comets – just to mention a few. The Astronomer Cadet program is designed to capture the interest and to motivate the younger child.

**Detective Astronomer** – for older children and young adults  
All is not what it seems out there in the universe. Is the sky really moving? Why are there two north poles? There are planets and even some moons that have an atmosphere.

## **New Program!**

Some planets have rings...some don't. Some stars are large while others are small and then there are stars that change their brightness. The Detective Astronomer program goes into greater depth to encourage and motivate older children and young adults.

This program will use hands-on projects to discover the wonderful world of Observational Astronomy. They will solve puzzles, play games, use binoculars, operate telescopes and, most of all, have fun. No equipment is needed but will probably be desired. Binoculars and telescopes will be available for use. Spread the word to family, friends and associates to come and join us. Parents and all adults will enjoy this as well. Let us enjoy this hobby as a family. We are going to be launching this program this Fall.

## Members' Star Parties



### TAAA Star Party at TIMPA

**Sep 3 (Saturday) Gate opens at 6:30pm**  
 Contact Person: Ben Bailey (see page 15)

Guests are welcome, accompanied by a TAAA member.

Please come out and join the AFSIG for an enjoyable evening of observing. The various Observing Clubs will be active. There will be another chance to complete the AFSIG Summer Messier Marathon. Join one of our activities, or observe on your own – and enjoy the camaraderie. The Gila Monster Observatory on Mons Heloderma will be open for your observing pleasure.

The TIMPA site features a large parking area, and full restroom facilities. 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 (see page 15).

#### 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 north about one mile. The entrance to TIMPA will be on the right.



### Chiricahua Astronomy Complex

**Sep 24 (Saturday)**  
 Contact Person/RSVP to: John Kalas (see page 15)

The Chiricahua Astronomy Complex (CAC) is the club's newest observing site. Located in Cochise County approximately 100 miles from the center of Tucson, the site includes a full bathroom facility. At an elevation of 4800 feet, be prepared for 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 (see page 15). 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 (see page 15).

#### 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. It is marked with a TAAA sign and twin brown gates flanked by white rail fences set back 50 feet from road.

## Night Sky Network Toolkits

Terri Lappin, Starry Messenger SIG

How would you explain

$$N = N^* \cdot f_p \cdot n_e \cdot f_i \cdot f_c \cdot L/T_g$$

to the public? That's the Drake Equation, often used to estimate the number of extraterrestrial civilizations in the Milky Way galaxy. When I learned this equation was part of the "Life in the Universe—Are we Alone?" toolkit, I expected it would be difficult to explain—it doesn't have a known answer. I was pleased to find a simple and educational presentation that makes that clear—it's a thought experiment. This toolkit also points out that the conditions where life can exist are nothing like life as *we live it*. Earthly creatures have been discovered in places that are inhospitable to "life as we know it", though life thrives there. As the Jurassic Park character Dr. Ian Malcolm (portrayed by Jeff Goldblum) says, "...life will find a way". NASA has several missions trying to answer the question whether Earth is the only place life exists either now or in the past. Whether or not you believe the search



for life in the universe is part of astronomy, just ask any amateur doing outreach. They

will tell you that the public has questions about the topic and they look to us for answers. This toolkit uses intuitive methods to explain concepts central to the search for life in the solar system and beyond.

Below is a complete list of Outreach Toolkits available for borrowing. Each themed toolkit contains several projects; you pick and choose what you want to use. Toolkits are self-contained with nearly all the materials needed for presenting these hands-on projects. If your scope is not well-suited for public events, or if you want a change of pace, consider bringing a toolkit to a community event. Toolkits are also great backups for cloudy nights. Individual training in their use is available upon request. To borrow a toolkit, contact Terri Lappin (see page 15).

### Outreach Toolkits and Resources Available for Borrowing

**Just Arrived!** *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 - An Inside look at Telescopes:* how telescopes work

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

*PlanetQuest:* demonstrate planet detection techniques

#### Other 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*

### Planetary Science Institute Docent Program

#### PSI has a new Docent Program!

#### Training takes place on September 16th.

Docent training for PSI Ambassadors and Comet-nucleus Demonstrators will take place on September 16th starting at 8:30am. Training includes lunch. Meteorite and Rock Kit Interpreter training will take place at happen at a later date combined with a teacher workshop

PSI is asking docents to commit to represent the PSI at two or three public events a year. Docents will get plenty of advanced notice as public events are scheduled.

PSI is located at 1700 East Fort Lowell Road, Suite 106. For Information, contact Amy Hartmann-Gordon, PSI Development Officer, at amyhg[at]psi.edu or phone (520) 622-6300.

### Newsletter Deadline

The deadline for the September issue is Wed, Sept 21. Desert Skies is published at least one week before the General Meeting. Publishing guidelines are on page 15.

### Las Cienegas Observing Site

The TAAA no longer schedules star parties at the Las Cienegas Conservation Area. This is BLM land, so it is accessible by the general public. Members can organize a group observing session at this site using the TAAA Forum Yahoo Group. Las Cienegas is at 4000 feet in elevation, so be prepared for cold temperatures. Observers usually set up near the restroom facilities on the abandoned air strip. Directions to this location can be found on the TAAA website.

## *TAAA Board of Directors Meeting*

**10 August 2011**

**Attending:** Board members present (7): Teresa Bippert-Plymate, John Croft (on video), John Kalas, Bill Lofquist, Claude Plymate, Keith Schlottman and Michael Turner. Members present (8): Paul and Cathy Anderson, Ben Bailey, Elaine Croft, Bob Gilroy, Liz Kalas, Terri Lappin and Roger Schuelke.

**Call to Order:** The President called the meeting to order at 6:32 pm.

**Minutes:** Minutes from the July 2011 Board meeting were approved unanimously.

### **Member Feedback**

The Treasurer has received inquiries from a couple of members regarding having the general meeting viewable via webcam on the internet. The Board discussed the issue and will research the technical aspects and communicate on-line. The Club would need someone who is video-savvy and has the equipment to volunteer for this if we think it would work. There also might be issues to research regarding permissions from the University and our guest speakers.

### **Upcoming Meetings**

Speakers are lined up for all of the fall. The next Astronomy Essentials presentation will feature Club updates.

### **Treasurer's Report**

The Treasurer presented a detailed Income and Expenses sheet for July, and a comparison of the 2011 Budget vs what we have spent thus far so that we can see where we need to cut back, or where we haven't spent yet. The Treasurer's Report was approved unanimously.

### **Special Interest Group Status Reports**

**Astronomy Fundamentals SIG (Ben Bailey and Bob Gilroy):** AFSIG would like to start a new Young Astronomers Program, but thus far not many children have signed up. If you have a child that would like to join, contact Ben or Bob.

A barrier of some sort (rail or concrete bench) would be a good safety addition to the steep side of the Gila Monster Observatory at TIMPA. Bob is looking into affordable options.

AFSIG will purchase two red light kits for use at TIMPA.

### **Starry Messenger SIG (Terri Lappin):**

The Starry Messenger group will hold its next meeting on Monday.

The Night Sky Network toolkit Searching for Life has been evaluated and rated as "impressive".

### **Astro Imaging SIG (Michael Turner):**

The meeting at Coco's worked out fine; about 18-20 members attended.

### **New Website**

Roger Schuelke reported that our website contractor has finished converting our web pages. The Board will review the pages in the next few days. Some content will be added or changed before the new pages go "live". There will likely be a 2-3 hour time period when the TAAA website is down when the website is changed to the new format; but an

email will be sent out to notify the members when this occurs.

### **Astronomical League**

Paul Anderson will be giving us a Power Point presentation on the AL Observing Clubs this coming spring during one of the Astronomy Essentials presentations. Members will get to see the fun projects that they can do through the AL, and receive a pin and certificate.

### **Chiricahua Astronomy Complex**

John Kalas will be pursuing county signoff on the Phase 2A improvements, and issuance our occupancy permit.

Recent rains caused some erosion at the E Perseus Way/ Price Ranch Rd. intersection. John will have Peter Ammon, the road construction contractor look at it. There was also some undercutting at a couple of the observing pads- likely we will need to spread some gravel there.

### **Other**

Bill Lofquist presented a draft Comprehensive Plan for Fundraising to the Board. The Plan met with approval, and the first effort of the Fundraising group is to begin soliciting donations to cover the completion of Phase 2A, and then begin to raise money to finish the RV area.

Terri Lappin presented a plan to change the Newsletter. A straw poll was taken and received the Board's favor. The general idea is that the monthly Newsletters will contain only timely information, like meeting and star party information, and a quarterly web "journal" will be produced with in-depth stories and reports (with lots of pretty pictures). Much of the repeated content in the current Newsletter will migrate to the website. Terri will produce a sample for the Board for the next meeting.

Keith Schlottmann will be looking for a volunteer for the School Star Party coordination so that Bill may spend more time on the VP and Fundraising duties.

John Croft proposed that the Board adopt a Consent Agenda, where the previous meeting's minutes, the Financial Statements, Disbursement Report, and New Member Report will be posted to the BOD on-line before the meeting so they can be reviewed and voted on immediately in order to save meeting time. Members can request this information from any Board member if they are interested. (Minutes will still be put into the Newsletter).

John Croft presented a Donation Letter for soliciting donations from local vendors. The Board will review the letter by Sunday and approve via email.

John Croft moved to change the TAAA budget year to coincide with the TAAA's fiscal year. This will make budgeting and budget tracking easier. Approved by all.

The Board approved John Croft as the new TAAA representative to the Eridanus (well-share at CAC) group. The Board also approved spending \$86.80, TAAA's share of the insurance for the well and well house.

Claude Plymate tendered his resignation. He will be leaving for a new job in California in September. Teresa will be in

*(Continued on page 10)*

(TAAA BOD Minutes, continued from page 9)

Tucson longer in order to sell the house, but will at some point soon be resigning also. The Board will be looking for some volunteers – this is a good way to help out, add input, learn about TAAA, and is not very difficult (Really!!).

Meeting adjourned at 9:40 pm.  
Respectfully submitted,  
Teresa Bippert-Plymate/TAAA Secretary



## Next Board of Director's Meeting

**Sept 14 (Wed)**

**6:30pm**

Steward Observatory Conference Room N305

Contact the president (see page 15) to have your topic added to the agenda. The front doors will be locked. Be there by 6:30pm or call the cell phone number of someone you know is at the meeting and they can let you in.

## Member News

We welcome those who recently joined the TAAA: Scott Kardel and Valerie Seabre. Glad to have you join! Hope you'll attend star parties and meetings so we can meet you.

Members packs can be picked up at a meeting or mailed for the cost of postage. Updated membership lists are available at our website after logging in.

## Starry Messengers SIG Fall Workshop Light Pollution

Saturday, October 15th 9am to noon

Amateur astronomers can be effective astronomy ambassadors, conveying the issues surrounding light pollution to the public. Learn how at this workshop.

Sign up at the October meeting or contact Terri Lappin

## 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.

## Fundamentals of Astronomy Class

**October 1, 8, and 22**

**9am to 4pm**

Contact: Ben Bailey (see page 15)

AFSIG is putting on its popular Fundamentals of Astronomy class this October. This class is aimed at giving the beginning amateur astronomer a good start in the hobby including the basics of the night sky, equipment used, and observing techniques.

October 1st

We will cover Astronomy Basics, including celestial motion, the celestial coordinate system, and types of celestial objects.

October 8th

The subject will be Equipment Basics, including telescopes, mounts, eyepieces, filters, and other observing accessories.

October 22nd

We will discuss Observing Basics, including locating objects, seeing conditions, and hints and tips on observing various types of objects.

The sessions will be held at the regular AFSIG meeting location: Room 253 in the USGS building at 6th and Park on the UA campus. There is free parking behind the building on weekends. Each day will consist of several presentations, with frequent breaks and a break for lunch. We expect the class to run from 9:00 AM until mid-afternoon on each day. After the October 22<sup>nd</sup> class, a Potluck Supper and Star Party will be held at TIMPA.

The class is free to TAAA members and there is plenty of room on the roster. If you are interested, send an e-mail to [fundamentals\[at\]tucsonastronomy.org](mailto:fundamentals[at]tucsonastronomy.org) or contact one of the AFSIG Committee members.

## 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 session)

For members only. Contact the Equipment Loan Coordinator (see page 15) or any club officer for details about these telescopes.

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

### Assisted Astronomy

Over the last year my eyes had been opened to new challenges in observing. Last August I tore my left rotator cuff and bicep rendering my left arm useless for some period of time. In March within two weeks' time my hands went from normal to curled up and painful with severe carpal tunnel syndrome and they were useless until I had surgery in May. Then in July I had a knee replacement which I'm almost fully recovered from now. All this has made observing challenging to say the least and I came to have a greater respect for my smaller telescopes (Questar, Celestron 5). Looking on the web I discovered that while there's not a lot concerning this issue, there nevertheless is a community of amateur astronomers who are struggling with either permanent or temporary physical problems in order to carry on their observing.

One good synopsis of how one amateur astronomer with severe back problems dealt with this situation is laid out in an article on the Cloudy Nights Forum:

[http://www.cloudynights.com/item.php?item\\_id=1907](http://www.cloudynights.com/item.php?item_id=1907)

This kind of disability is one of the more common ones caused by industrial accidents, automobile accidents and or things like arthritis. I particularly liked how the author discusses the merits and problems of different telescope types and mountings.

The same author elaborates it in a slightly different way with an article on the Stargazer's Lounge:

<http://stargazerslounge.com/primers-tutorials/57066-practical-astronomy-disabled.html>

An introductory article for the beginning amateur astronomer fighting a physical disability can be found at:

<http://www.disabled-world.com/entertainment/hobby/astronomy/>

This article does not have much detail but gives quick ideas on the things that can be accomplished as an amateur astronomer with a disability.

Going a little further on that theme is a two-part article on the beginning amateur astronomer under the subtitle "Handicapped Astronomy"

<http://www.hpcisp.com/~kls/astroh1.html>

The author goes into some detail on the advantages and disadvantages of different telescope types for the handicapped observer. It contains a lot of good solid information and is a must read before buying a telescope.

For the more advanced amateur astronomer in this situation here is an article on an excellent wheelchair accessible mounting:

<http://www.aoc.nrao.edu/~kdyer/accessiblemount/>

Once built, this could easily serve for decades as an observing site! It's certainly the kind of thing I would do if my problems were of a more permanent nature.

Here's one observatory that has made excellent provision for those with disabilities. They have a large Schmidt Cassegrain on a parallelogram mount like that often used for large binoculars:

[http://www.perthobservatory.wa.gov.au/community\\_involvement/disabled\\_access.html](http://www.perthobservatory.wa.gov.au/community_involvement/disabled_access.html)

These were a few of the things I found on the web, but all too few. If you know of people that are working with disabilities and still observing, I would urge you to have them put their experiences, tips and ideas on the web. There are a lot of people out there who could benefit from such knowledge and experience.

(This article was prepared using Dragon NaturallySpeaking voice-actuated software as I'm not yet typing.)

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](mailto:rhill[at]lpl.arizona.edu)



### 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	①Original classic orange C11 OTA. Some minor scuffs and scratches \$1000 ②Star Liner Mount that held item #1 \$800 ③Celestron 11 mount (fork & base) for a short tube C11 \$300 Contact Rik Hill at <a href="mailto:rhill[at]lpl.arizona.edu">rhill[at]lpl.arizona.edu</a> Expires Dec 2011

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.

## Chiricahua Astronomy Complex Site News



### Phase 2 Construction Update

John Kalas, Construction Coordinator/CAC Site Director

On Saturday, 8/13, twenty-four TAAA Members enjoyed an informative tour of the CAC Site to review the status of the Phase 2 construction project. Everyone seemed to be favorably impressed with the facilities. After the ~2 hour activity, about twenty of the members stopped at Sandy's Restaurant at the corner of Routes 181 and 191 for a relaxing lunch before heading home.

Some minor adjustments were made to the roll-off roof observatory to allow the roof to move more freely and to correct a minor issue with the observatory door's deadbolt lock. On Sunday, 8/14, President Keith Schlottman and his son, Brad, visited the site for a tour and brought down all of the telescope equipment that Keith had been storing in a spare office at his business. The telescope equipment was donated some time ago by TAAA Member Wally Rogers, and included four Celestron telescopes with complete accessory kits for each. All of the equipment was placed in one of the steel storage containers. For safety reasons, we will probably add some fill dirt around all ten of the telescope pads and the amphitheater pad to reduce the "step-off" height.

I spoke to the Cochise County Permit Dept. and requested them to approve the public area (Phase 2a - telescope pads, observatory, amphitheater and storage containers) while we try to raise the funds to complete the RV area (Phase 2b). The supervisor of inspectors who I spoke with felt that they could accommodate our request. He will review the inspection results with the inspectors who serviced the site during construction. If he is satisfied that we have met all of the requirements of the Phase 2 building permit, he will issue a certificate of occupancy for the Phase 2a public area allowing the club to start using these great improvements.

### CAC Star Party

The September CAC Star Party is scheduled for 9/24. Hopefully, the monsoons, which have been very active in Cochise County this year, will subside and allow us to enjoy the fantastic skies at the site once again. We hope to have the Phase 2a area available for member use at this event. Won't you join us?

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

### Coming Soon

#### 2012 TAAA Calendar

Do you have a photo for the 2012 TAAA Calendar? Send it to Twila Peck or Liz Kalas. See the article on page 3.

## Dark Skies for Sept 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
We/Th	31/01	20:22 - 4:34
Th/Fr	01/02	21:04 - 4:35
Fr/Sa	02/03	21:51 - 4:36
Sa/Su	03/04	22:42 - 4:37
Su/Mo	04/05	23:38 - 4:37
Mo/Tu	05/06	0:37 - 4:38
Tu/We	06/07	1:37 - 4:39
We/Th	07/08	2:36 - 4:40
Th/Fr	08/09	3:35 - 4:41
Fr/Sa	09/10	4:32 - 4:41
Sa/Su	10/11	
Su/Mo	11/12	FULL MOON
Mo/Tu	12/13	
Tu/We	13/14	
We/Th	14/15	
Th/Fr	15/16	19:52 - 20:05
Fr/Sa	16/17	19:51 - 20:41
Sa/Su	17/18	19:49 - 21:22
Su/Mo	18/19	19:48 - 22:08
Mo/Tu	19/20	19:47 - 22:59
Tu/We	20/21	19:45 - 23:55
We/Th	21/22	19:44 - 0:55
Th/Fr	22/23	19:42 - 1:58
Fr/Sa	23/24	19:41 - 3:04
Sa/Su	24/25	19:40 - 4:11
Su/Mo	25/26	19:38 - 4:53
Mo/Tu	26/27	19:37 - 4:54
Tu/We	27/28	19:35 - 4:54
We/Th	28/29	19:34 - 4:55
Th/Fr	29/30	19:43 - 4:56
Fr/Sa	30/01	20:35 - 4:56
Sa/Su	01/02	21:31 - 4:57

### UA Lunar and Planetary Lab

#### 2011 Fall Evening Lecture Series

Exploring Mercury: The Iron Planet

Robert Strom, Ph.D.

Wednesday, September 21, 2011

7:00 pm — 8:00 pm

Kuiper Space Sciences, Room 308

The MESSENGER mission now orbiting Mercury is sending back data that shows Mercury is far different than anything else in the Solar System. The composition is very different from the Moon and other terrestrial planets indicating it did not form at its present distance from the Sun. There are new bizarre surface features, some of which are much younger than previously believed possible.

## Chris Lancaster's Constellation of the Month

### Scutum

#### The Shield

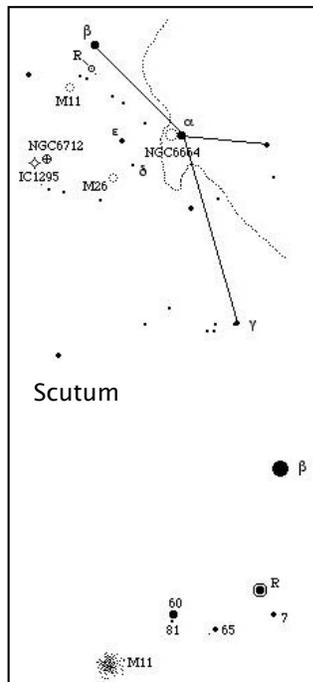
Johannes Hevelius takes credit for naming this constellation. The year was 1690, and the Polish astronomer selected a group of stars lying north of Sagittarius and southwest of Aquila and named it "Scutum Sobiescianum," or Sobieski's shield. It was in honor of King John III Sobieski, who had recently won an important battle in the defense of Poland against the Turks, and Hevelius decided that the constellation should represent the king's coat of arms. Currently, it is simply known as Scutum. Look for Scutum to cross the meridian at 11 pm July 15th about 50 degrees above the horizon looking south.

The area of the sky in which Scutum resides is one of the more richly packed areas of the Milky Way. The Scutum star cloud, a particularly dense region, occupies the northern half of the constellation. The area benefits from a lack of obscuring dust as you look through the inner arms of the Milky Way Galaxy, allowing the light of the star cloud to come through relatively unimpeded. Here's where we find Scutum's best star cluster, M11, 2 degrees southeast of Beta Scuti. This cluster lies in the foreground of the star cloud, and is one of the most densely populated clusters that you can hope to observe. Also known as the "Wild Duck" cluster after English observer William Smyth described it as "a flight of wild ducks," M11 shines at magnitude 5.8. The individual stars, numbering in the many hundreds, range in brightness from a single 8th magnitude star slightly offset from the center, to approximately 16th magnitude, all packed into an area measuring 15'. M11 is approximately 3,000 light years away and has been around for 150 million years. The total intrinsic brightness of this magnificent cluster is equivalent to about 10,000 suns.

Looking south, this time 1-degree southeast of Epsilon Scuti (or RA 18h 45.2m Dec -9d 24'), we find M26, another galactic cluster containing about 30 stars also occupying an area of 15'. Its total magnitude is 8.0, and its brightest stars shine at magnitude 10.

A very easy star cluster to find is NGC6664. It's a mere one-half degree directly east of Alpha Scuti, putting the two in the same field of view with low to moderate power. This one is a bit more scattered than M26, having about 40 stars filling an area of 17' and assuming a paisley shape. Even though this cluster is quite a bit sparser than the others, it is away from the edge of the Scutum star cloud where the stars thin out, so the cluster's contrast with surrounding space enhances it some.

A star cluster of a different type is in the form of NGC6712. This globular cluster is 10 minutes in RA east and one-half degree south of fifth magnitude Epsilon Scuti (RA 18h 53.1m Dec -8d 42.0'). It's as bright as many of the globulars in Messier's catalog, so it's easy to pick out with a small telescope, and you may even see it in your finder scope. It glows at magnitude 8.2. Even very small instruments can partially resolve this cluster, and large telescopes will present detail in the core.



Those of you with dark skies and large apertures may want to hunt for a faint planetary nebula, IC1295. It's a slightly elongated circle 1.5' across glowing feebly at magnitude 15. If you go back to our globular cluster, NGC6712, slide your telescope 23' to the east-southeast to RA 18h 54.6m Dec -8d 50'. At the center is a dim 17th magnitude stellar core, which gave birth to the nebula.

R Scuti provides an interesting study of variable stars. Officially, it is classified as an RV Tauri type, characterized by more than one period overlapping another. An approximate estimation of its period is 140 days, and most often its

variations cover about a magnitude, from 5.0 to about 6.1. Every 4 to 6 oscillations, however, the minimum dips to magnitude 8. There are several adjacent stars, which provide good magnitude estimations. Regular observations of this star are necessary if you want to catch it in one of these deep minima, since it begins to rise in brightness after only a few days. The finder chart includes comparison magnitudes of R Scuti and surrounding stars.

Get all the Constellation of the Month  
articles in one book!

**Under Dark Skies**

**A Guide to the Constellations**

By Chris Lancaster

[http://www.trafford.com/Bookstore/BookDetail.aspx?  
BookId=SKU-000158114](http://www.trafford.com/Bookstore/BookDetail.aspx?BookId=SKU-000158114) for \$14.99

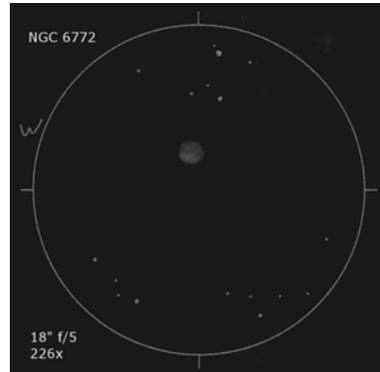
or get it directly from Chris at  
ctlancaster[at]msn.com at the discounted price of \$10  
(while supplies last)

## Chris Weis' Planetary Nebulae of the Month

### NGC 6772 and PK 55+16.1 (Abell 46)

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.

NGC 6772 is a fairly bright PN in Aquila that was discovered in 1784 by William Herschel. With a magnitude of 12m7 and a size of roughly one arcsecond, this object should be observable with a 6" telescope. It reacts to filters, so you might want to try an OIII or a UHC for better contrast. I was able to observe NGC 6772 on June 27th, 2011, with my 18" Newtonian and noted: Bright, easily visible without filter, central star flashed 2 or 3 times (which might be a misinterpretation considering its brightness), reacts to OIII and UHC, assumes ring structure, northern part is a little brighter than the rest, nice object; 226x, fst 6m5 (Lyr)



#### NGC 6772

RA: 19h 14.6 min

Dec:  $-2^{\circ} 42'$

Constellation: Aquila

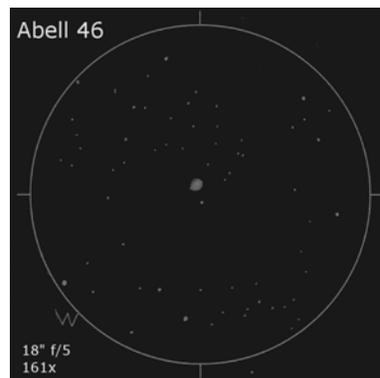
Brightness: 12m7

Central star: 18m7(p)

Size: 70x56 arcsec

Distance: 4200ly

PK 55+16.1 (Abell 46) is a faint PN which was listed by George Abell in his famous list from 1966. It is almost equal in size compared to NGC 6772 but a little fainter. Probably the most interesting feature is the variability of its central star. The catalogue data states 15m7 while the German observer Stathis Kafalis estimated some 15m. However, when I observed Abell 46, the central star was easily visible, so it might even be brighter than that. The amplitude was determined to 1m2 by Bernd Gaehrken. Abell 46 is not an easy object, but with a bigger scope you can give it a try. Can you see the central star? My observation notes from May 26th, 2011 with an 18" Dobsonian read as follows: Medium in size, weak but still visible with direct vision using OIII or UHC, CS prominent without filter, no structures, occasionally triangular in shape, bigger with averted vision.



#### PK 55+16.1 (Abell 46)

RA: 18 h 31.3 min

Dec:  $26^{\circ} 56'$

Constellation: Lyra

Brightness: 13m6

Central star: 15m7

Size: 63x60 arcsec

Distance: 7900 ly



## Calling all TAAA members

### National Geographic's BioBlitz Event

**October 21 and 22 Saguro National Park**

Contact: Connie Walker (see article)

TAAA members have a unique opportunity to participate in the National Geographic's BioBlitz event which will take place at the Saguro National Park East and West on Oct. 21 and 22. Connie Walker from NOAO and the staff from the National Park Service are organizing a citizen-science campaign to make light pollution readings using digital Sky Quality Meters along transects in the parks and across Tucson. At present, NOAO and the Arizona Game and Fish are studying the Lesser Long Nose Bat in Tucson and comparing that telemetry with light pollution data from the GLOBE at Night program. The data from the BioBlitz event will be used in a similar way with other animals such as the elf owl. The contrast between the levels of light pollution in the cities and in the parks will be interesting in its own right. Using it as a basis for future campaigns would be a great start.

We would like to enlist the help of the TAAA members to participate in taking SQM (Sky Quality Meter) data on Friday, October 21st. Would you be interested? Participants will take SQM data at specific locations in both Saguro National Parks as well as along the length of Speedway and Broadway in the city on that night.

For more information or if you would like to participate in the program, contact Connie Walker at [cwalker\[at\]noao.edu](mailto:cwalker[at]noao.edu). Please put "Interested in the SQM campaign at the BioBlitz event" in the "Subject" area in your email.

Related Websites:

<http://www.nationalgeographic.com/field/projects/bioblitz/bioblitz-az-2011/>

<http://www.globeatnight.org>

<http://www.nps.gov>

<http://www.noao.edu>

<http://www.unihedron.com>

# An Interview with Carter Smith

By Bill Lofquist

Bill Lofquist spoke with Carter Smith during his first year at the University of Arizona, several months ago.

*BL: Carter, what first got you interested in astronomy?*

C: When I was three my mom took me to the Steward Observatory on one of their public nights, and I got to see Saturn. She likes to remind me that when I was there I refused to leave. I loved looking at Saturn and wouldn't stop. So from then on she decided that this kid was really interested in astronomy, and she decided to foster that. From there she took me to some of the classes that the Science Center in town had for young people about astronomy and the solar system. I went there and went through several courses, and that was my first introduction to astronomy.

It took me about a year to exhaust the resources they had for six year olds, so I was somewhat left in the dark for a while, and did not have an outlet for my craving for astronomy.

I had been working on a science project and a friend was helping me with it. He was a member of the Tucson Amateur Astronomy Association and he suggested that my

mom take me to one of the meetings. My mom had heard that TAAA was an advanced group and the information would not be accessible to a ten year old. But she tried it.



Carter at his first Messier Marathon, age 10.

*(Continued on page 16)*

## TAAA Contacts

TAAA Web Page: <a href="http://www.tucsonastronomy.org">www.tucsonastronomy.org</a>		TAAA Phone Number: 520-792-6414	
Office/Position	Name	Phone	E-mail Address
President (elected board member)	Keith Schlottman	520-250-1560	president[at]tucsonastronomy.org
Vice President( elected board member)	Bill Lofquist	520-297-6653	vice-president[at]tucsonastronomy.org
Secretary (elected board member)	Teresa Plymate	520-883-9113	secretary[at]tucsonastronomy.org
Treasurer (elected board member)	John Croft	520-260-4687	treasurer[at]tucsonastronomy.org
Member-at-Large (elected board member)	Claude Plymate	520-883-9113	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
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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
Chiricahua Astronomy Complex Director	John Kalas	520-620-6502	cac-director[at]tucsonastronomy.org
Newsletter Editor	Terri Lappin	520-977-1290	taaa-newsletter[at]tucsonastronomy.org
Web Director	Terri Lappin	520-977-1290	webmaster[at]tucsonastronomy.org
Publicist	Liz Kalas	520-620-6502	publicist[at]tucsonastronomy.org
Astro-Imaging Special Interest Group (SIG)	Larry Phillips	520-777-8027	astro-photo[at]tucsonastronomy.org
Astronomy Fundamentals SIG	Ben Bailey	520-903-7925	fundamentals[at]tucsonastronomy.org
Starry Messenger SIG	Terri Lappin	520-977-1290	smsig[at]tucsonastronomy.org
Space Exploration SIG	Al Anzaldúa	520-409-5797	sesig[at]tucsonastronomy.org.
Club Apparel Sales	Mae Smith	520-850-7137	taaa-sales[at]tucsonastronomy.org
Equipment Loan Coordinator	Al Dohner	520-297-7118	elc[at]tucsonastronomy.org
Librarians	Claude & Teresa Plymate	520-883-9113	librarian[at]tucsonastronomy.org
Grand Canyon Star Party Coordinator	Jim O'Connor	520-546-2961	gcsp[at]tucsonastronomy.org
General Information	Teresa Plymate	520-883-9113	taaa-info[at]tucsonastronomy.org

*(An Interview with Carter Smith, continued from page 15)*

At that first meeting I remember getting such a kick out of the lecture. I don't remember what it was about, but I was so excited that I had found a place where I could learn and be exposed to a mature level of astronomy.

It was at that meeting that a club member said he was starting up a group for young members to introduce them to astronomy and to the basics of observing.

*BL: Did you have a telescope at that time?*

C: I did. I had a small four and a half inch Newtonian on a go-to mount. The mount drove me crazy. I had wanted to find things on my own, so I had actually stopped using the telescope for a while because it was frustrating and it was hard to see anything much with it.

At the first meeting of this new group for young people I got to look through an 8" Dobsonian and I was absolutely hooked on observing. I was only ten years old at the time, but I realized that I was developing a passion for astronomy. I could actually see the things I was learning about.

At that first meeting I learned about the Messier Marathon that was to be held later that month. So my mom and I went with the leader of the group and I got to use the 8" DOB to look for the Messiers.

When we started I was not sure that I had actually found the objects, but a member of TAAA who was set up next to me checked each object as I found it. The experience was like nothing I had ever experienced before. I searched all night long for the objects, and I got 106 of the 110 objects. My goal was to get 50 of them, and I remember getting such a feeling of excitement and satisfaction from the experience.

Then about three months later there was the Grand Canyon Star Party sponsored by the TAAA. This is an annual event that lasts a week on the south rim of the Canyon. There are about 60 or 70 people with telescopes who show the skies to the tourists. They are set up on a parking lot, and I was in the middle of many wonderful people who were eager to help this little ten-year old. They knew a lot about astronomy and I had a chance to share my passion with them. I could show distant objects to the tourists. It was great fun.



Carter at June 2011 Grand Canyon Star Party



The Messier Marathon was really fun, but the Grand Canyon Star Party was really something special. It was at the Canyon that I started doing the Astronomical League observing of the Messiers, and by the end of the next year I got my certificate for the Messiers.

Those experiences were the first for me, and I have continued to go the Messier Marathon and the Grand Canyon almost every year since then. So even as a very young boy I found a special place for myself in the TAAA. Going places with dark skies and being with so many amateur astronomers has been great.

I also participated in many of the TAAA School Star Parties. Frequently I was younger than the other students I was showing deep sky objects to.

*BL: So those opportunities gave you a chance to share your enthusiasm with others and to teach them about astronomy.*

C: Through school I did a variety of science projects and participated in science fairs. One of my interests was in light pollution. I learned about this through some of the club meetings, so I decided to do a project focused on measuring light pollution. I met members of the International Dark Sky Association who helped me work hands-on with light pollution issues. I got to present my project at the IDA national conference. I met a man who was with the National Park Service, and I got to work on a project with the Park Service when I was about 14 years old. The TAAA opened these opportunities for me.

Another project I did was while working on my Eagle Scout Project. I decided to design an experience for students at the Arizona School for the Deaf and Blind. This was my first time trying to organize a star party. The project called for astronomers to help introduce astronomy to the students, and TAAA provided ten volunteers to help me. Introducing deaf and blind students to astronomy is a challenging thing, and it is different from most star parties. I trained the TAAA members to work with tactile approaches to experiencing objects and ways you can help people to see objects by looking through different angles. The TAAA members did an excellent job in working with these disabled students. That was a really fantastic event.

*BL: So you pursued your interest in astronomy through Junior and Senior High School. Where do you think this interest is taking you?*

*(Continued on page 17)*

(An Interview with Carter Smith, continued from page 16)

C: Right now I am a freshman at the University of Arizona, and I am majoring in physics and astronomy. Right now my plan is to become a theoretical astrophysicist working with some of the same concepts that I was introduced to at TAAA. My passion now seems to go toward dark energy and dark matter, which are two concepts that scientists know very little about. I plan to get a Ph.D. and move on to a place where I can study.

*BL: I know that you had a very strong experience in high school and took advanced placement courses along the way. Do you think that gave you good preparation for where you are going?*

C: The courses I took gave me a good background, but they gave me very little in the specific subjects I am interested in. There was almost no focus on astronomy. What I have learned about astronomy has come mostly through TAAA. At times I found myself helping the teachers understand some things about astronomy.

Just today I went to the first class in my first introductory astronomy course. I am wondering if I will be able to learn much beyond what I have learned from TAAA over the past several years. I can't wait to get beyond that as I pursue my degree.

TAAA has been a family and a community for me for the past eight years. It has helped me grow, not only as an amateur astronomer, but as a person, and it has been the best community that I have ever encountered.

*BL: And we can also say that you have made a major contribution to TAAA. You have impressed and inspired TAAA members with your observing abilities and your dedication to learning so much about astronomy. It has been very much a mutually enjoyable and beneficial relationship.*

*Thank you, Carter, for sharing your story with us. We wish you the best.*

## Grand Canyon Annular Lunar Eclipse

**May 20, 2012**

Contact Jim O'Connor, GCSP Coordinator (see page 15)

On Sunday, May 20, 2012, there will be an annular eclipse passing from California through Arizona and New Mexico, ending in Texas. For us here in Arizona, it will be in the late afternoon through sunset. The center of the best visibility path passes through Grand Canyon National Park, and Marker Marshall, our Interpretive Ranger coordinator for the Grand Canyon Star Party, is trying to get a feeling for interest in the astronomy community in performing some daytime public outreach followed by some evening observing. The venue would be the same as the Grand Canyon Star Party, with daytime solar in the front area of the Visitor Center, and, perhaps, nighttime observing out back in the reserved parking area.

If there is interest among astronomers, some free campsites could be arranged just as we are provided for GCSP. There are many variables at work here, with this

### Introduction to the Fundamentals of Astronomy Class

October 1, 8, and 22  
9:00 am to 4:00 pm

Attend the ever-popular introductory classes offered by the leaders of our AFSIG. Designed to get beginners off to a good start or to provide a refresher for the more experienced.

Free to TAAA members!  
Email [fundamentals\[at\]tucsonastronomy.org](mailto:fundamentals[at]tucsonastronomy.org) for more information.  
Details on page 10

### Join the TAAA Forum on Yahoo Groups

General astronomy discussion for TAAA members only

Members can post email messages

~75messages/month

Go to <http://tinyurl.com/hwoau>

Click on "Join this Group"

**We're on Facebook!**



**Search for  
"Tucson Amateur  
Astronomy Association"**

being a Sunday late afternoon event, a single day/night opportunity, and often quite chilly at that time for the Grand Canyon. There are four or five of us who have tentatively committed to setting up for the solar part of the show (I would go up for the whole weekend, due to the driving distance), but it is difficult to gauge how best to approach this for announcement to the visitors without a feeling for how many astronomers would be interested. Several hundred visitors and five telescopes would be a sporty event. So, for now, this is just an attempt to test the water and see what we might do. I would guess that for that new moon Sunday we might have some CAC responsibilities as a club as well.

Let me know by email (see page 15) if you have any thoughts; as I said, just checking, and there are quite a few clubs a lot closer to GCNP who could also support.

**Membership in the TAAA**

**Annual Fees**

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

**Discounts (one discount allowed, subtract from above rates)**

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

**Options (add to above membership rates)**

Astronomical League (AL) fees ..... \$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 anytime. 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 Astronomy Association or specific author. No reproduction without permission, all rights reserved. We will not publish slanderous or libelous material!

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