



# Desert Skies

Tucson Amateur Astronomy Association

Volume LVII, Number 12

December 2011



Image of the Rho Ophiuchi Region by Rogelio B. Andreo

General Meeting December 2nd

Steward Observatory Lecture Hall, Room N210

Astronomy Fundamentals Lecture

6:30pm—Searching for Life presented by Starry Messenger SIG Leader Terri Lappin

7:30pm—High Latitude Galactic Cirrus presented by TAAA member Bill Gates

Affiliates



## TAAA Meeting Friday, December 2

Steward Observatory Lecture Hall, Room N210



### 6:30pm Astronomy Essentials Lecture

Title: Searching for Life

Speaker: Terri Lappin

The newest Night Sky Network Outreach Toolkit highlights the search for life in the universe, and the amazing possibilities that exist on our own blue marble. Take part in a thought experiment as we consider the possibility of finding life beyond our planet. We'll also talk about the development of life as it occurred on our planet and how that might influence where we look for life in our little section of the universe. Terri Lappin, leader of the Starry Messenger Special Interest Group will lead the discussion and will have the outreach toolkit available after the lecture for members to look over.

### 7:30pm Invited Lecture

Title: Clouds of Creation—High Latitude Galactic Cirrus - And Other Wonders

Speaker: Bill Gates, M.S.

High latitude Galactic Cirrus Clouds are poorly understood regions of nebulosity that extend far above the plane of the Milky Way. Astronomers have only recently begun to appreciate the extent of these ethereal wisps of gas and dust that permeate constellations not normally thought to contain nebulae. Many of these objects transcend the bounds of traditional classification as they may both reflect and fluoresce (emit) light from the combined output of tens of thousands of distant stars in our galaxy. Tonight's lecture will showcase many striking images of these objects from both amateur and professional astronomers.

As a dedicated observer of the heavens for more than 40 years, Bill Gates still enjoys pushing the envelope of what can be seen with amateur telescopes. After winning a regional NASA research competition as a high school student, Bill was hired by Goddard Space Flight Center to observe Comet Kohoutek (1973f) from what is now the Magdalena Ridge Observatory in New Mexico. He was privileged to co-publish his findings in the professional journal *Icarus* with the late Skylab astronaut and astronomer Karl Henize. Over the decades, Bill's observations have been featured in *Sky and Telescope*, and *Meteor News*, and he is currently completing a 10-part series about supernova remnants for *Amateur Astronomy* magazine. Searching for the world's darkest spots, he has ventured to remote locations on six continents, and currently lives in Tucson with his wife Harriet and a collection of telescopes.

### President's Message

In recent months, several of our friends in TAAA have passed away. Losing friends is painful, but we were fortunate to have counted these folks as fellow TAAA members. Their contributions to TAAA were far too many to list here. I'm always amazed at how much a single person can contribute to the club. I'm not talking about financial donations or volunteer work (although those are also areas that amaze me) - instead, I'm talking about the fellowship, caring, and sharing that occurs between TAAA members. As I considered this in preparing for this month's President's Message, I realized that the very fabric of TAAA consists not of our wealth of astronomical knowledge, not in our vast equipment resources, and not in our skills in using that equipment; instead, TAAA's existence is based on the human interactions that define a family of like-minded people.

What we have in TAAA is hundreds of some of the best human beings I could ever hope to know. It's more than showing up at a monthly meeting, or attending a SIG function. It's more than bringing your latest fancy camera to show off at CAC, or polar-aligning your telescope with the most precise method. It's more than reading your newsletter or browsing the TAAA website.

TAAA is about loaning an eyepiece or filter to a neighboring astronomer at an all-night star party - and

then comparing views. It's about discussions over dessert with other TAAA members after the meeting. It's about showing some kid, who doesn't want to admit an interest, their first look at Saturn or Jupiter through your expensive telescope. It's about calling your friend to see if they want to carpool to the meeting. It's about staying up past bedtime with a group of fellow members and laughing about silly things that probably would not sound so funny in the daytime. It's about people! And I would like to encourage everyone in our great association to step just a little outside your comfort zone, and share something with a fellow member - even if it's just a smile.

**On Sale NOW!**  
**TAAA 2012**  
**and Astronomy**  
**Wall Calendars**

*Keith Schlottman*

### Cover Photo

An image of the region surrounding Rho Ophiuchi, one of the closest star forming areas in the Milky Way. This image was taken by amateur astronomy and astrophotographer Rogelio B. Andreo (see [DeepSkyColors.com](http://DeepSkyColors.com)). The image is a 3x4 mosaic with a FSQ+reducer+STL11k captured over 4 nights.

### 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	Dec 2 (Fri) Steward Observatory Room N210 933 N Cherry Ave	6:30pm	2
Library Presentation Terri Lappin	Dec 3 (Sat) Wheeler Abbett Library 7800 N Schisler Dr	2:00pm	6
Peace Garden Star Party Bill Lofquist	Dec 3 (Sat) Manuel Herrera Jr. Park 5801 S Liberty	6:00pm	6
Astro-Imaging SIG Larry Phillips	Dec 5 (Mon) Coco's Restaurant 6095 E Broadway	6:00pm	4
Astronomy Fundamentals Meeting Ben Bailey	Dec 8 (Thurs) USGS Building - Room 253 520 N Park Avenue	6:30pm	5
School Star Party Bill Lofquist	Dec 8 (Thurs) Prince Elementary 125 E Prince Rd	6:30pm	6
Holiday Party Bill Lofquist	Dec 10 (Sat) Bill & Mary Lofquist's home 1935 West Harran Circle	5:30pm	6

<i>Event</i> <i>Contact Person*</i>	<i>Date</i> <i>Location</i>	<i>Time</i>	<i>See</i> <i>Page</i>
Board Meeting Keith Schlottman	Dec 14 (Wed) Steward Observatory Room N305 (Special night this month)	6:30pm	16
Space Exploration SIG Meeting Al Anzaldua	Dec 15 (Thurs) Woods Memorial Library 3455 N First Ave.	6:45pm	4
Public Star Party Bill Lofquist	Dec 16 (Fri) Ironwood Picnic Area Tucson Mountain Park)	6:00pm	6
TIMPA/AFSIG Star Party Ben Bailey	Dec 17 (Sat) TIMPA Site	5:15pm	7
Chiricahua Astro. Complex Star Party John Kalas	Dec 17 (Sat) Chiricahua Astronomy Complex		7
Family Astronomy Night Jim & Elaine Miller	Dec 20 (Tues) Wilmot Library 530 N Wilmot Rd	6:00pm	6

**\* 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*.**

## TAAA Holiday Party



**Saturday, Dec 10th at 5:30pm**  
Potluck at Bill & Mary Lofquist's  
All are invited to this family event.  
See page 6 for details.

### Newsletter Deadline—Early due to Holiday

The deadline for the December issue is Mon, Dec 19 (TWO DAYS EARLY DUE TO CHRISTMAS). *Desert Skies* is published at least one week before the General Meeting. See the publishing guidelines for details.

### Future Dates

Jan 6	TAAA General Meeting
Jan 9	Astro-Imaging SIG Mtg
Jan 11	Board of Directors Meeting
Jan 12	Astronomy Fundamentals SIG Meeting
Jan 13	Great Expectations Academy Star Party
Jan 13	TIMPA Star Party
Jan 19	Space Exploration SIG Meeting/Lecture
Jan 21	Chiricahua Astronomy Complex Star Party
Jan 21	TIMPA Star Party
Jan 23	Starry Messenger Meeting

### Upcoming Lectures

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

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

## *Astro-Imaging Special Interest Group (AISIG)*

**Meeting: Dec 5 (Monday)**

**7pm**

Coco's Restaurant (Broadway between Wilmot & Craycroft)  
Contact: Larry Phillips

The Astro-Imaging SIG meets at 7pm usually on the first Monday of the month. Come early, anytime after 6 PM and

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



## *Starry Messengers SIG (SMSIG)*

Contact: Terri Lappin



Starry Messengers SIG -  
Opening Minds to the Universe

This month I want to talk about our community star party program. Do you know how many community events we've held over the past 12 months? It's not easy to tell for sure, but a quick review the past 12 issues of Desert Skies indicate that 54 events were schedule (some weren't held due to weather). Each event was attended by as few as a dozen to a few hundred people. We also hold star party events at area resorts as part of our fund raising efforts—these are also valid outreach opportunities—but were not included in my quick survey. Also not tallied were our two largest events – the Grand Canyon Star Party and the Tucson Festival of Books. It was estimated that 7500 interactions took place between members and the public during the 2011 Festival of Books. That's nothing compared to the approximately 50,000 contacts made during the 8-day long 2011 Grand Canyon Star Party which is attended by not only TAAA members but also amateurs from across the nation and around the world.

the 2012 Tucson Festival of Books, so we won't be participating next March. The Festival of Books was the most visible outreach activity we did here in Tucson. If you've enjoyed this event in the past, or if you see the value in reaching out to so many people who live in Tucson, I encourage you to discuss this with our board members.

We are making a difference in people's lives by showing them something greater than themselves! We should feel good about that.

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.

Unfortunately, our board of directors did not authorize spending \$495 for the booth rental and registration fee for

## *Space Exploration Special Interest Group (SESIG)*

**Meeting & Lecture**

**Dec 15**

**6:45pm**



Woods Memorial Branch Library  
Contact: Al Anzaldua

Can you tell a meteorite from an ordinary rock? And what is the difference between meteoroids and asteroids? UA LPL's Dolores Hill will give you answers to these questions and also the opportunity to handle both meteorites and their rocky look-alikes. Dolores Hill and her collection of meteorites will be available at the Woods Memorial Branch Library on December 15 at 6:45. Woods Memorial Branch Library is located at 3455 N. 1st Ave., just south of Prince Rd. in Tucson.

Professor Strom's presentation will begin at 7:00 pm in room 308 in the Kuiper Space Sciences Building, 1629 E. University Blvd. Tucson AZ 85721-0092

SESIG's February 16 presentation to be announced later this month.

Tired of light pollution and bad seeing? 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, *Industrial-Scale Stratospheric Platforms for Astronomy, Solar Power, and Space Launch Systems*. Venue and time TBD.

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?*

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

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## *Astronomy Fundamentals SIG (AFSIG)*

### **AFSIG Monthly Meeting**

**Dec 8 (Thurs)**

**6:30 pm**

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

On Thursday, December 8, we will hold our regular monthly meeting. AFSIG is dedicated to building astronomy knowledge and practical skills among our members. The USGS Building is on the northeast corner of Park and 6th Street. Free parking 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** meets on the 3rd Saturday of every month from 9 am until noon at Fort Lowell Park (Craycroft at Glenn) near the southeast corner. The purpose of this club is to observe the activity that is occurring on the Sun and record those observations – like sunspots, solar flares and other interesting features. The beauty of this observing program is that our Sun offers great flexibility in observing and recording the different features – you don't have to be concerned about light pollution, night vision, or traveling great distances to find dark skies. If you are interested in participating in the Solar Observing Program or if you just want to be added to our email list to keep posted about our activities and solar news, email Dennis Dawson at dennisldawson[at]gmail.com.

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



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

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

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

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

## *Family Astronomy Class*

**Dec 20 (Tues)**

**6:00 pm**

530 N Wilmot Road (Wilmot Library Meeting Room)  
Contact Person: Jim & Elaine Miller

On November 15th a Beginning Family Astronomy Class was held at the Wilmot Library. Bob Gilroy assisted Jim and Elaine Miller in sharing the program with about 12– 15 people from age 5 to adults.

Jim talked about the Constellations Andromeda, Perseus, and Cassiopeia. The Library arranged to have the sprinklers off so we were able to set the telescopes up on the grass that evening. We used an 8 inch Dobsonian and an 8 inch Celestron. Jupiter and all four Galilean Moons were very visible. Everyone enjoyed looking at it as well as a few clusters and stars. Some of the youth asked questions about the Milky Way and how they might see it.

*See the Kid's Page, page 14.*



More interest was shown for the Astronomical League's Sky Puppies and Universe Sampler programs this past month.

Our next Family Astronomy Class is scheduled for December 20th at the Wilmot Library from 6 to 8 pm. One of the Tutors that was at the November class might bring some of his students to the December class. A couple of the adults are planning on bringing their children and other family members next month so we hope we'll have a good turnout. December 20th will be the last class for a couple of months as we can only reserve the facilities 3 months at a time, this being the 3rd month that we've been holding these classes. We could always use more help at the Library if anyone is interested in joining us.



## Members' Star Parties



### TAAA Star Party at TIMPA

**Dec 17 (Saturday) Gate opens at 5:00pm**

Contact Person: Ben Bailey

Guests are welcome, accompanied by a TAAA member.

Please come out and join the AFSIG for an enjoyable evenings observing. The AFSIG Observing Clubs will be active and the Gila Monster Observatory will be open for your viewing pleasure. We hope to see you there!

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

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

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

#### TIMPA Site Notice

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

#### Directions to TIMPA Site

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

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

From the North:

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

From the East:

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



### Star Party at Chiricahua Astronomy Complex

**Dec 17 (Saturday)**

Contact Person/RSVP to: John Kalas

The Chiricahua Astronomy Complex (CAC) is the club's dark observing site. Located in Cochise County approximately 100 miles from the center of Tucson, the site includes a full bathroom facility. At an elevation of 4800 feet, be prepared for cooler temperatures. Try to arrive before sunset. Unlike the TIMPA site, the CAC site requires our members to make reservations for both monthly club star parties and private member use. We are restricted by a 60 person/30 vehicle maximum limitation. If you would like to attend, you must contact CAC Director John Kalas. Reservations will be on a first come - first serve basis. Depending on the number of members interested in attending, guests may not be allowed.

#### CAC Site Notice

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

#### Directions to Chiricahua Astronomy Complex Site

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

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

1. Take I-10 east from Tucson past Benson.
2. Exit I-10 at Dragoon Road (Exit #318) . Turn right onto Dragoon Road at bottom of exit ramp.
3. Travel 13.5 miles southeast to the intersection with Route 191. Turn south (right) onto Route 191.
4. Travel 17.9 miles south (past Sunsites and Margie's Corner Café at High St on the right, and the Border Patrol checkpoint) to the intersection with Route 181 at Sunizona.
5. Turn east (left) onto Route 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.

## 2012 Calendars on Sale!

Take a look at the TAAA 2012 calendar picture for the month of March. This spread of images, taken by TAAA members, recognizes that March is when astronomers around the world participate in Messier Marathons. Each month features one or more astrophoto or pictures of club events.

Twila Peck and Liz Kalas did a fantastic job assembling images submitted by our members for this calendar. The calendars will be sold at meetings until our supply is exhausted. TAAA Calendar price is \$11. We'll also be selling a limited supply of the Deep Space Mysteries calendar from Astronomy magazine. Astronomy magazine price is \$10 each. Exact cash or checks will be appreciated.



### 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.

## Night Sky Network Outreach Toolkits

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

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

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

Each NSN toolkit has a theme and is related to a NASA space mission. For example, the Space Rocks Toolkit is related to the DAWN mission currently at the asteroid Vesta snapping photos.



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

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*



## Grand Canyon Star Party June 16-23, 2012 - Time For Reservations!

Contact Person: Jim O'Connor  
Grand Canyon Star Party Coordinator

It's about time to firm up plans to attend the 2012 edition of the Grand Canyon Star Party. GCSP '12 is the 22nd annual collaboration between the National Park Service and astronomers from around North America to bring astronomy outreach to Park visitors. The event is held concurrently on both the North Rim, coordinated by the Saguaro Astronomy Club, and the South Rim, coordinated by TAAA.

At GCSP, we astronomers act as interpretive rangers, unveiling the day and night cosmos around the Grand Canyon to the visitors just as the Park Rangers and guides explain the geology of the park. The level of public interest and involvement, and the opportunity for TAAA to make major contributions to public education and awareness, is profound. For 2011, we had 109 astronomers registered on site with the National Park Service for part or all of the week (nearly two dozen from TAAA), logging over 50,000 individual visitor contacts. About 20 percent of the astronomers set up at random places during the day, showing solar, lunar, and planetary views in daylight for the visitors. The visitor flow tends to end around 10 PM, so the rest of the night is free for your own pursuits. Think 7000 feet with dark skies.

General information regarding GCSP is found at <http://www.tucsonastronomy.org/gcsp.html>

Astronomers are responsible for their own lodging arrangements, and indoor lodging at the Grand Canyon fills fast, so make your plans and reservations as soon as possible. For those astronomers intending to stay 6 or more nights, there are a limited number of no-cost campsites available. Requests for a free campsite will be accepted beginning March 1. Campsites will be assigned in order of request received beginning March 1. If you intend to participate for six or more nights and wish consideration for a free site, please send an email March 1 to the GCSP Coordinator email address (page 15) to get on the list.

At the North Rim, by mid-January the veranda is usually booked solid with telescopes scheduled to fill the entire week. For further information and current status on the North Rim, please check at <http://www.saguaroastro.org/content/2012GrandCanyonStarPartyNorthRim.htm>

Please let me know if you're interested in supporting TAAA in this exciting and extremely rewarding event for one night, eight nights, or anything in between!

<i>Steward Observatory Public Evening Lectures</i>		
Lectures are held in the main lecture hall, N210 at Steward Observatory at 7:30pm. Observing with 21" telescope follows, weather permitting.		
Dec 5	Dr Marie Rex	<i>Looking Beyond the Visible: A Submillimeter View of Star Formation</i>

## 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	17:17	7:07	17:23	-	19:09	-2	23:56	1	3:58	-3	3:28	4	-3	brilliant
10/11	17:17	7:12	6:00	6	19:22	-2	23:42	1	3:29	-3	3:03	2	0	conspicuous
17/18	17:19	7:17	5:36	3	19:35	-2	23:26	1	3:00	-3	2:39	2	3	moderate
24/25	17:23	7:21	5:40	3	19:50	-3	23:09	0	2:32	-3	2:14	1	6	naked eye limit
31/01	17:27	7:23	5:55	3	20:04	-3	22:50	0	2:05	-3	1:48	1	9	binoculars limit

## Dark Skies for December 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	30/01	23:08	-	5:40	
Th/Fr	01/02	0:04	-	5:41	
Fr/Sa	02/03	0:58	-	5:42	
Sa/Su	03/04	1:52	-	5:42	
Su/Mo	04/05	2:46	-	5:43	
Mo/Tu	05/06	3:40	-	5:44	
Tu/We	06/07	4:34	-	5:45	
We/Th	07/08	5:29	-	5:45	
Th/Fr	08/09				
Fr/Sa	09/10	FULL MOON			
Sa/Su	10/11				
Su/Mo	11/12				
Mo/Tu	12/13	18:47	-	19:32	
Tu/We	13/14	18:48	-	20:32	
We/Th	14/15	18:48	-	21:33	
Th/Fr	15/16	18:48	-	22:35	
Fr/Sa	16/17	18:49	-	23:37	
Sa/Su	17/18	18:49	-	0:41	
Su/Mo	18/19	18:50	-	1:46	
Mo/Tu	19/20	18:50	-	2:53	
Tu/We	20/21	18:51	-	4:02	
We/Th	21/22	18:51	-	5:10	
Th/Fr	22/23	18:52	-	5:54	
Fr/Sa	23/24	18:52	-	5:55	
Sa/Su	24/25	18:53	-	5:55	
Su/Mo	25/26	18:53	-	5:55	
Mo/Tu	26/27	19:51	-	5:56	
Tu/We	27/28	20:52	-	5:56	
We/Th	28/29	21:51	-	5:57	
Th/Fr	29/30	22:48	-	5:57	
Fr/Sa	30/31	23:42	-	5:57	
Sa/Su	31/01	0:37	-	5:58	

## Member News

We welcome those who recently joined the TAAA: Steve Barnes, Alex Federici, Marlene Hilligoss, Gina Inman, Randy Koehm, Mark Rhoads, and David Williamson. Glad to have you join! Hope you'll attend star parties and meetings so we can meet you.

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

## Loss of Friends

### *Roger Schuelke and Michael Lortie*

It is with great sadness that we announce the passing of two of our members.

Roger Schuelke, who many know as a past Star Party Volunteer Coordinator, passed away while on out of state travels. Roger was also instrumental in the recent changes made to our website. Roger grew up in the San Francisco area. He became interested in astronomy after his Dad bought him a four-inch



Roger Schuelke

Newtonian telescope. He joined the TAAA in November 2002 after retiring from a career as a computer programmer and moving to Tucson. Roger was involved with Project ASTRO working with the same teacher for a number of years. In the "Starry Messenger in our Midst" article in the July 2009 Desert Skies Roger said it was the "wow" factor when a student "gets" a new concept that gave him great satisfaction. Every young person's "unbridled enthusiasm" when they first viewed through Roger's telescope reminded him of his own excitement when he first looked through that 4-inch Newtonian from those San Francisco skies. The students will greatly miss Roger's astronomy lessons.

Michael Lortie passed away after losing a 10 month battle with brain cancer. Michael was born and raised in New York and served in the US Army and several branches of the Reserves. He moved his family to Tucson in 1989. He had recently been to Qatar where he helped build a hospital for women and children. He also volunteered at Primavera in Tucson. Michael and his wife Kathy



Michael Lortie

joined the TAAA in October 2008. Kathy says, "What Michael enjoyed most about TAAA was talking to members and buying stuff with the logo (hats, jackets, anything)." He enjoyed accompanying Kathy in her passion for looking at the stars. After driving to the observing site and setting up equipment, he would sit in his chair in the dark and look for satellites until it was time to pack up and go home. His loving presence and occasional snores on these excursions will be greatly missed.

Our thoughts are with Neva (Roger's wife) and Kathy Lortie, and the extended families of both these members.

## Tributes to Drake, Greeley, and Meinel

The field of professional astronomy recently lost several prominent people, all with connections to Arizona. Michael Drake, Regents Professor and director of the UA Lunar and Planetary Lab passed away at the end of September. Ron Greeley, professor of planetary sciences at ASU passed away in October. Aden Meinel, founder of the Optical Sciences Center, also passed away in October.

Following here and on the next page are tributes to these men written by two TAAA members.

### *Aden Meinel*

*By Dean Ketelsen (taken from "The Ketelsen's Blog")*

October 5, 2011

The hits started coming in a couple days ago and still continue today at about one per hour - Google directing folks looking for "Aden Meinel" to our little blog. If you do the same search, we're the third Google entry after the National Optical Astronomy Observatories and the Wikipedia entry. Turns out that I posted about Aden Meinel's visit to Tucson about 18 months ago, as part of Kitt Peak National Observatory's 50th anniversary. Lots of hits can only mean one or two things, but in this case, we learned yesterday he died on Sunday at his home in Henderson, Nevada.

His meager entry in Wikipedia reveals little of his giant stature in Tucson. He was director of Yerkes and McDonald Observatory when he was put in charge of the search for, and served as founding director of the national observatory which was chosen to be atop Kitt Peak, about 50 miles SW of Tucson. After the dedication of that institution, he went on to be the third director of Steward Observatory, and from there went on to establish and serve as director of the Optical Sciences Center (now bearing his name) at the University of Arizona. And that is to say nothing of the plethora of research papers he and wife Marjorie published in optics, telescope design, space, spectroscopy and solar power.

Arguably, he is the reason that for many decades, Tucson was considered to be the center of astronomical research, and the reason it is still called "Optics Valley", from the effects still felt by locating of Kitt Peak National Observatory and OSC within a city block of Steward Observatory.. Having worked at all 3 institutions he served, I can honestly say that without his leadership, would I even be located in Tucson? A valid question, for which an answer is not forthcoming.

I met Aden only briefly on 2 occasions, but am overjoyed I was able to hear his presentation last year on why Kitt Peak was chosen. It was magical to be transported back those 50 years and look over his shoulder to the home movies and photos he took on that first horseback ride up the mountain. He told the story of that frigid November night and the return trip fall off his horse, breaking his arm, doing little to blunt his enthusiasm for the place, which still excites me as well. We've lost a true visionary, and the great institutions that line the intersection of Cherry and University on the UA campus are perhaps a lasting tribute.

*Mike and Ron: A Tribute**By Loretta McKibben*

The world has lost two giants in the planetary science community: Professor Michael Drake, director of the University of Arizona's Lunar and Planetary Laboratory, and Professor Ronald Greeley of Arizona State University. I was lucky and privileged to work for both of them at different times in my life, men who shared my interest in and passion for public outreach and education.

In 2003, I came to work at the Lunar and Planetary Laboratory as a systems programmer on the Mars Odyssey Gamma-Ray Spectrometer team. When the Galileo mission to Jupiter was about to end that September I asked Mike to sponsor an after-hours public celebration to honor it, which turned out to be the first of many successful events through 2007; his zest for sharing the wonder of scientific discovery with the public was a great joy. Microphone in hand, he held audiences spellbound: during the tense wait in 2004 for the rovers to communicate for the first time from the surface of Mars, or when he announced that Cassini was successfully orbiting Saturn, and many others. Mike had a rare ability to translate technical scientific ideas with great style and panache so that the public could understand. The OSIRIS-REx project that he captained and steered to success over the final years of his life, an \$800-million asteroid sample return mission, is a very fitting tribute.

In 1983, I was privileged to go on Ron Greeley's field trip to study the shield volcanoes on Hawaii's Big Island that are very much like those on Mars. That trip of 14 people was the biggest travel adventure of my life. Not your typical vacation trip to Hawaii, most of the time we stayed in rustic cabins with no running water and hiked all day, which was wonderful. Ron explained every geological feature in such eloquent terms which fired the

imagination. Looking into the maw of Halemaumau, the main vent of Kilauea's caldera, I was awestruck, standing on the spot where ancient Hawaiians were said to have thrown in human sacrifices. In Mark Twain's time it had been a bubbling cauldron of lava, but on our visit it was a giant round pit with steam hissing from the scabbed-over top layer. We flew over the newly erupting Pu'u U 'O'o vent in a small helicopter, and were so close to the lava flung up into the air I felt I could touch it. Bouncing over rough terrain in Jeeps, Ron took us to the rarely viewed Great Crack, a deep fissure in the island. Climbing down into this massive feature, Ron told us that lava escaping from it in the early 1800's was so liquid that it overwhelmed a village of natives so fast they could not outrun it. Indiana Jones never had it so good as I did for those two weeks!

I asked so many questions on the Hawaii field trip that back at ASU Ron hired me to write promotional materials, write grant proposals, and edit a textbook that he wrote in the Planetary Geology Group. For several years I also worked as his research assistant, devising computer models to help explain the sublimation patterns of CO<sub>2</sub> in the polar regions of Mars.

The opportunities that Mike Drake and Ron Greeley gave me changed my life and enlarged my view of the universe, which I will always be grateful for. In that, I am certainly not alone, as legions of their students, colleagues, and friends will attest. Multifaceted and driven, Mike and Ron lived their lives in pursuit of understanding the planets and other bodies in our solar system. They were alike in many ways: they both liked to make things happen and knew how to get things done, they were skilled administrators, politicians and mentors, and they inspired so many in the planetary science field as well as the public. Their passing is a great loss for all of us.

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

With the push on about the deleterious effects of light pollution for amateur observing, there is another parameter of the night sky often missed unless you do high resolution imaging of the moon, planets and things like double stars; the steadiness of your night sky is important too.

A nice description of the problem and a few practical solutions can be found in the S&T Alan MacRobert article : <http://www.wwnorton.com/college/astronomy/astro21/sandt/seeing.html>

This includes a good summary of the Pickering seeing scale, originally developed with a 5" refractor.

The steadiness will vary as a function of time and altitude of the object being studied. This is investigated by Bruce Gary of Hereford, Arizona in an excellent article: <http://brucegary.net/ASD/x.htm>

I also recommend his whole website (linked at the bottom of the article) as an enjoyable evening of exploration.

I really enjoyed the Australia Telescope page at: <http://outreach.atnf.csiro.au/education/senior/astrophysics/atmosphere.html>

not so much for their explanations and information but more for the great video clips on that page. It's worth a quick look for these clips at least.

Another interesting analysis of seeing can be found at Bryan Greer's page at: <http://www.fpi-protostar.com/bgrees/seeing.htm>

Greer analyses how seeing affects different focal ratios. I think you'll find some surprises in the results.

Greer has another page with a lot of interesting telescope analysis and tips at: <http://www.fpi-protostar.com/bgrees/index.htm>

So when you assess your sky and telescope combination, consider steadiness, especially if you are purchasing a home or property. Transparency and darkness are only 2 of three parameters!

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

## Chris Lancaster's Constellation of the Month

### Aquarius

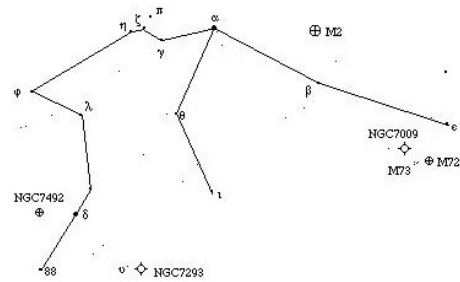
#### The Water bearer

This constellation shares a part of the heavens that was seen as a celestial sea in ancient times. Nearby we see other constellations that have ties with water such as Cetus, Pisces, Capricornus, and Delphinus. Aquarius depicts a human figure pouring water from a jar, an act which some cultures considered to be the source of the river Eridanus, or responsible for the global flood of Biblical times. Conversely, Aquarius has also been seen as Zeus pouring life-giving waters from the sky.

To spy the rather dim stars of Aquarius, look south near sunset at the beginning of December, or southwest near the end of the month. Aquarius is between the head of Pegasus to the north and the solitary 1st magnitude star Fomalhaut to the south. The most conspicuous feature of Aquarius is the "Y" shaped asterism of the water jar marked by Eta, Zeta, Pi, and Gamma Aquarii.

Aquarius abounds in diverse deep sky objects. The largest, but often the most difficult to see, is NGC7293, called the Helical, or Helix, nebula. The proximity of this planetary nebula (only about 450 light years) curiously adds to its elusiveness. It glows at magnitude 6.5, but that light is spread out into a circle that is 13' across, which is almost half the diameter of the moon. To find it, start at magnitude 3.7 88 Aquarii, then move 35 minutes in RA west to Upsilon, then another 5 minutes of RA, or 1.2 degrees, west to the Helix. You will want to try to observe this nebula in transparent, dark skies in a low power eyepiece capable of at least 0.5 degrees, but preferably more, field of view. This will give you some contrast between the edges of the nebula and the darker background. You will see a large, ghostly circle of light. In large scopes, you may notice that the Helix is slightly ovoid, shows a pronounced darkening near the center and you will have a chance to see the magnitude 13 central star.

Moving over to the western half of the constellation, we will find three targets within 3 degrees of each other. NGC7009, on the northeast corner of this triangle of objects, is another planetary nebula nicknamed the Saturn Nebula. It earned this name from the spikes which jut from the ends of its oval shape, thus resembling the rings of the planet Saturn. At magnitude 8.3, it is almost two magnitudes dimmer than the Helical Nebula, but it measures a compact 25" across. This means that its higher surface brightness stands out against the background sky.



NGC7009 is located at RA 21h 41.2m, Dec -11d 22', or 1.3 degrees west of 4.5 magnitude Nu Aquarii.

Three degrees WSW of NGC7009, or RA 20h 53.5' Dec -12o 32', is globular cluster M72. It measures 6' across and shines at magnitude 9.4. In most telescopes, M72 shows little texture. Its 15th magnitude stars are difficult to resolve except in the largest aperture instruments, so most views will simply show a soft, round glow.

An interesting object 1.3 degrees east of M72 represents the third item in our trio. When Messier studied it in October of 1780, he described it as a cluster of three or four stars in a surrounding faint nebula, therefore he added it as the 73rd object in his catalog. Indeed it may look like a fuzzy spot if seen at low power with averted vision, but closer examination clearly reveals only a tight group of four 10th, 11th, and 12th magnitude stars in a general "Y" shape with no nebulosity. This little "cluster" can be hard to identify unless you know exactly what you are looking for. M73 is located at Ra 20h 59m Dec +12d 38'.

For a genuine challenge, you may want to search for globular cluster NGC7492. This is a small, magnitude 11.5 cluster at RA 23h 8.4' Dec -15d 37'. Its stars are extremely faint and sparsely scattered across a small area of 5'. If you start at Delta Aquarii, drop south one degree, then move east 15' in RA. NGC7492 will then sweep into view.

Very close to the celestial equator is the best globular in Aquarius, M2. It's 12' in diameter and a bright magnitude 6.5. It sits in a rather blank part of the constellation 4.8 degrees north of Beta Aquarii (RA 21h 33.5' Dec -00d 49'), so distinguishing it in your finder scope as a hazy spot is easy. Small telescopes will see a round, fuzzy glow. Medium to large scopes will begin to resolve stars deep within the core of the globular.

If the skies clear long enough to make setting up your telescope worthwhile, Aquarius makes a fine area to tour.

*Visit the TAAAS Website*

*[www.tucsonastronomy.org](http://www.tucsonastronomy.org)*

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*RSVP to those you will attend*

*Get directions from any starting point*

All the Constellation of the Month articles in one book!

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**A Guide to the Constellations**

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(while supplies last)

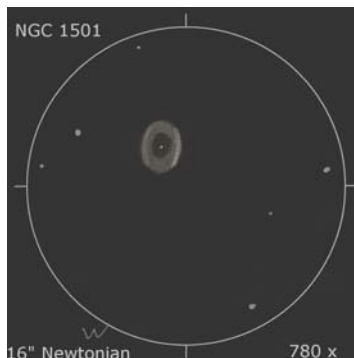


## Christian Weis' Planetary Nebulae of the Month

### NGC 1501 and PK 197-14.1 (Abell 10)

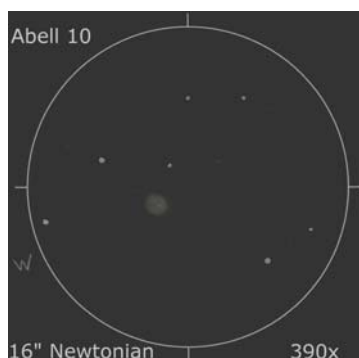
Planetary nebulae (PN) are fascinating objects that come in numerous forms of appearances. Besides the well known grand four Messiers (M27, M57, M76 and M97), there are hundreds more to explore. This article suggests two PNs, a pretty bright and easy-to-observe one and a harder one for the more ambitious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

Even though 11m5 might not sound very spectacular, NGC 1501 reveals some structures to the patient observer. This PN was discovered by William Herschel in 1787 and is also known as the Camel's Eye. When I observed this object in October 2010 from Kitt Peak having reasonable sky conditions, I was amazed of the structures I could see with my 16" Dob. I would bet, that also smaller telescopes will show some features of this nebula. My notes read: Elongated, reminds me of M57, central star bright and easily visible, center brighter than background, NW and SE a little brighter, structured



**NGC 1501**  
RA: 04h 7.0min  
Dec: 60° 55'  
Constellation:  
Camelopardalis  
Brightness: 11m5  
Central star: 14m3  
Size: 55 arcsec  
Distance: 3900 ly

PK 197-14.1 or Abell 10 is a fainter PN which is located in Orion. As very often is the case, the brightness given in the literature varies noticeably. But do not get deterred from the catalog data. With a suitable technique (i.e. black cloth, filter) and under a dark sky, one should be able to detect Abell 10 in a 10" telescope. I by myself observed this PN in September 2010 from Geology Vista with a 16" Dob. Abell 10 is not really a showpiece but it's still a nice object aside all the fancy M's to observe. My notes read: Circular, no central star visible, mediocre in brightness, homogeneous, [OIII] helps a little



**PK 197-14.1 (Abell 10)**  
RA: 05h 31.8min  
Dec: 6° 56'  
Constellation: Orion  
Brightness: 12m7 (14m)  
Central star: 19m5  
Size: 30 arcsec  
Distance: no data

I wish all of you a Merry Christmas and a Happy New Year!

### 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 Odyssey8 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.

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

## 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

November 2011

### Re-thinking an Alien World: The Strange Case of 55 Cancri e

Forty light years from Earth, a rocky world named "55 Cancri e" circles perilously close to a stellar inferno. Completing one orbit in only 18 hours, the alien planet is 26 times closer to its parent star than Mercury is to the Sun. If Earth were in the same position, the soil beneath our feet would heat up to about 3200 F. Researchers have long thought that 55 Cancri e must be a wasteland of parched rock.

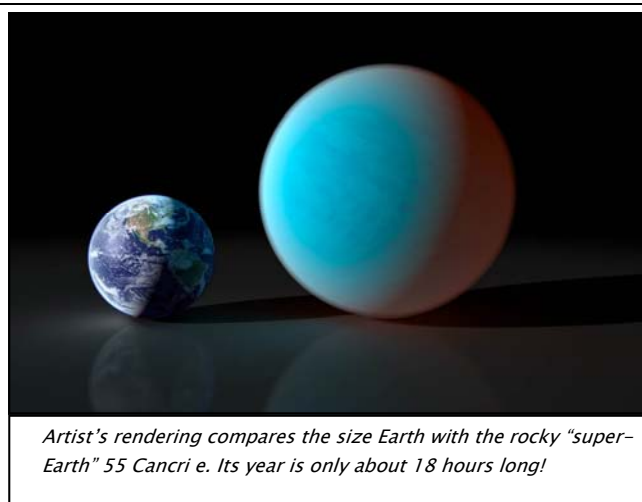
Now they're thinking again. New observations by NASA's Spitzer Space Telescope suggest that 55 Cancri e may be wetter and weirder than anyone imagined.

Spitzer recently measured the extraordinarily small amount of light 55 Cancri e blocks when it crosses in front of its star. These transits occur every 18 hours, giving researchers repeated opportunities to gather the data they need to estimate the width, volume and density of the planet.

According to the new observations, 55 Cancri e has a mass 7.8 times and a radius just over twice that of Earth. Those properties place 55 Cancri e in the "super-Earth" class of exoplanets, a few dozen of which have been found. Only a handful of known super-Earths, however, cross the face of their stars as viewed from our vantage point in the cosmos, so 55 Cancri e is better understood than most.

When 55 Cancri e was discovered in 2004, initial estimates of its size and mass were consistent with a dense planet of solid rock. Spitzer data suggest otherwise: About a fifth of the planet's mass must be made of light elements and compounds—including water. Given the intense heat and high pressure these materials likely experience, researchers think the compounds likely exist in a "supercritical" fluid state.

A supercritical fluid is a high-pressure, high-temperature state of matter best described as a liquid-like gas, and a marvelous solvent. Water becomes supercritical in some steam turbines—and it tends to dissolve the tips of the



Artist's rendering compares the size Earth with the rocky "super-Earth" 55 Cancri e. Its year is only about 18 hours long!

turbine blades. Supercritical carbon dioxide is used to remove caffeine from coffee beans, and sometimes to dry-clean clothes. Liquid-fueled rocket propellant is also supercritical when it emerges from the tail of a spaceship.

On 55 Cancri e, this stuff may be literally oozing—or is it steaming? —out of the rocks.

With supercritical solvents rising from the planet's surface, a star of terrifying proportions filling much of the daytime sky, and whole years rushing past in a matter of hours, 55 Cancri e teaches a valuable lesson: Just because a planet is similar in size to Earth does not mean the planet is like Earth.

It's something to re-think about.

Get a kid thinking about extrasolar planets by pointing him or her to "Lucy's Planet Hunt," a story in rhyme about a girl who wanted nothing more than to look for Earth-like planets when she grew up. Go to <http://spaceplace.nasa.gov/story-lucy>.

The original research reported in this story has been accepted for publication in *Astronomy and Astrophysics*. The lead author is Brice-Olivier Demory, a post-doctoral associate in Professor Sara Seager's group at MIT.

**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  
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TAAA Phone Number: 520-792-6414

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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 Irene Kitzman		<a href="mailto:librarian@tucsonastronomy.org">librarian@tucsonastronomy.org</a>
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>

## *TAAA Board of Directors Meeting*

### **16 November 2011**

**Attending:** Board members present (6): Keith Schlottman, President; William Lofquist, Vice President; Al Anzaldua, Secretary; John Croft, Treasurer; John Kalas, Member at Large; Michael Turner, Member at Large; . Members present (5): Paul Anderson, Ben Bailey, Bob Gilroy, Liz Kalas, Terri Lappin

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

**First Order of Business:** Board officially appointed Al Anzaldua as Secretary, and he received secretarial documents and materials from the President.

**Approval of Minutes:** Board unanimously approved the minutes from the October 2011 Board meeting.

**Consent Agenda:** Board approved the Consent Agenda. The Consent Agenda may be viewed by any TAAA member by a request to any Board member. Consent Agenda Items included the following:

- Balance Sheet October 31, 2011
- Income State for the Four Months Ended 10/31/2011
- Bank Account Reconciliation as of 10/31/2011
- Receipts and Disbursements for October 2011
- New Member Report for October 2011

**Treasurer's Report:** Treasurer has updated the summary deposit record on Yahoo Board Group and paid the telescope and roll-off roof insurance fees. (\$15,000 for telescope equipment and \$10,000 for building).

There was general discussion about privacy on the Night Sky Network and availability of the membership list. Sulfur Springs is changing its billing cycle.

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

#### **Astronomy Fundamentals SIG (Ben Bailey):**

- AFSIG put together a flyer for new Family Observing Program and had a second meeting at library on subject. TIMPA is redoing its field. AFSIG has requested two scheduled observing outings there per month. Ad hoc TIMPA outings are still possible, but Bob Gilroy wants to be advised when such outings are planned, so he can advise the caretaker.
- AFSIG has finished its fundamentals classes. Dennis McMacken will train Hunter and Ben Bailey on the 14-inch Meade and on the Gila Monster observatory.

#### **Space Exploration SIG (Al Anzaldua):**

- Five people turned out at last SESIG meeting/presentation, which occurred at the UA's Controlled Environment Agricultural Center (CEAC).

#### **Starry Messenger SIG (no report)**

#### **Astro Imaging SIG (no report)**

**Astronomical League:** Paul Anderson is planning to give a presentation on Astronomical League, but date has not yet been determined. There was general discussion of AL clubs and how to give recognition to TAAA folks who have completed the clubs.

### **Website**

- All agreed that the time had arrived to make basic decisions about the TAAA website, especially with

regards to its further refinement and ease of access by TAAA members. Board decided to meet with web consultant Lou Lepley soon to gather facts for such decisions. There was discussion about how to possibly pay for further development of the website, including possibly from the sale of telescopes.

- The website has already been converted to the WordPress format.
- The Board agreed to search for a new webmaster with WordPress experience.

### **Potential School Star Parties at TIMPA**

John Croft produced a resolution to authorize school star parties at TIMPA as a way to help us define what can be done there. This was followed by a general discussion of possible liability issues involved with children at TIMPA. John eventually withdrew the resolution for consideration at the February Board meeting because of the unresolved issues. Board established a committee to explore and recommend TAAA policies at star parties in the meantime.

### **2012 Calendar**

Twila Peck recently sent a mockup of the calendar to the printer. She's expecting the proof in a couple of days. Twila has done a lot of work on it. Twila will ask John to cut a check.

### **TAAA Holiday Party (December 10)**

The Holiday Party will be held on Saturday, December 10 at the home of Bill and Mary Lofquist. Details will be in the December newsletter.

### **Chiricahua Astronomy Complex**

The specific use of the \$2,000 generated by the sale of the C-14 for further CAC development will be determined.

### **Other Business**

- Possible Bank Account for Member Donations
- To be discussed during the December Board meeting.
- Tucson Festival of Books
- A motion to approve disbursing \$700 to buy a corner table at the TFOB was not seconded.

Meeting adjourned.  
Respectfully submitted,  
Al Anzaldua, Secretary



## *Next Board of Director's Meeting*

**Dec 14 (Wed)**

**6:30pm**

Steward Observatory Conference Room N305

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



## 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@lpl.arizona.edu">rhill@lpl.arizona.edu</a> Expires Feb 2012
For Sale	SAC-7b TEC Cooled CCD Camera. The SAC7 cameras use a Sony 1/4" ICX098AK CCD which is a Progressive Scan® Hole Accumulation Diode (HAD). The CCD array of 5.6 micron square pixels is 640 x 480 pixels. It has a low dark current and a TEC cooling system. It does AVI format for planetary and FITS with the parallel cable connected to the computer for long exposures. Comes with Astrovideo, all cables and a nice metal case. Just too many cameras and this little jewel deserves to be used more! \$100 Will deliver to the Tucson area. Contact Paul at <a href="mailto:phxbird@hotmail.com">phxbird@hotmail.com</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@comcast.net">garyr90@comcast.net</a> , or Terri Lappin, <a href="mailto:tk-lappin@comcast.net">tk-lappin@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.

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