

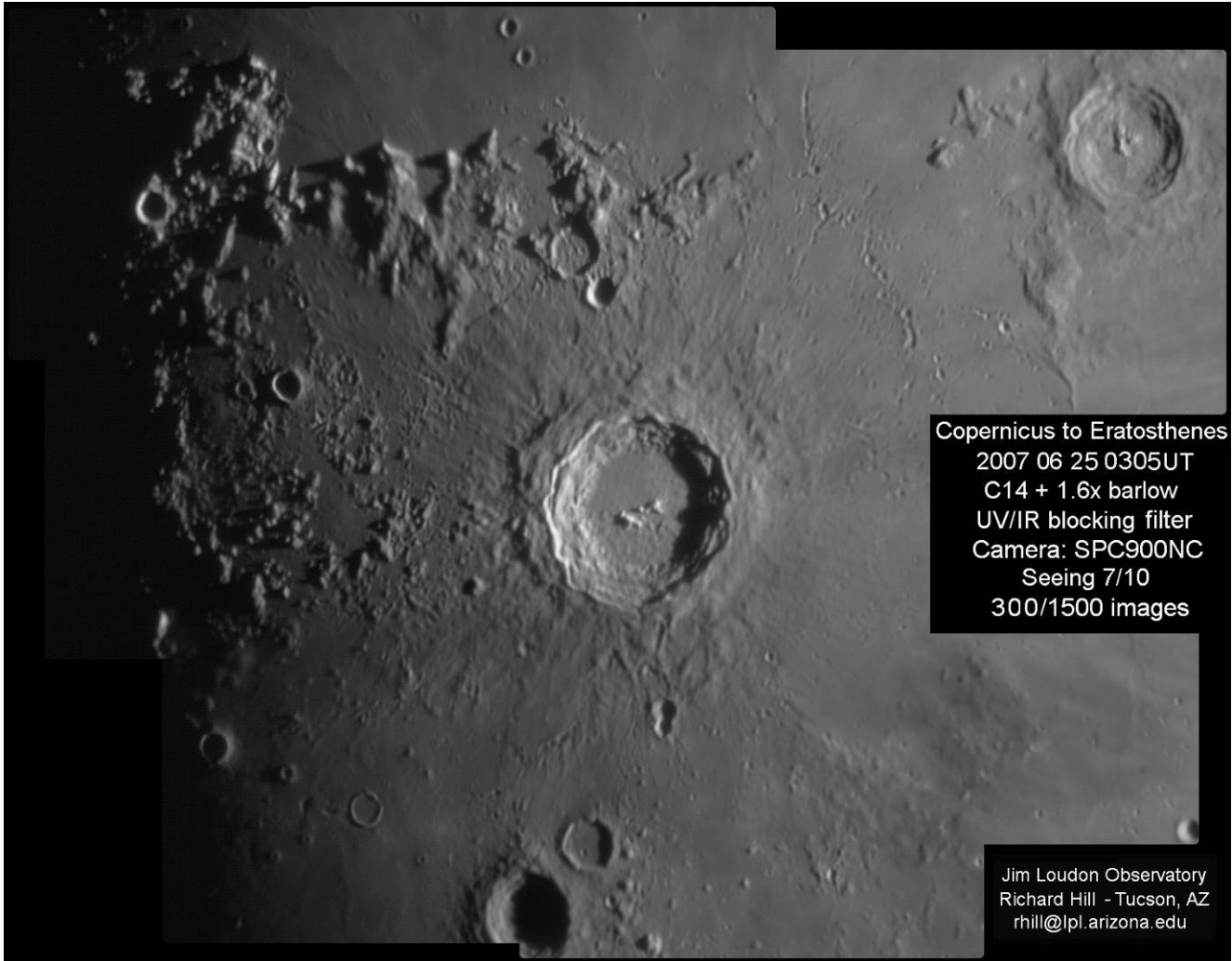


# Desert Skies

Tucson Amateur Astronomy Association

Volume LIII, Number 8

August, 2007



Copernicus to Eratosthenes  
2007 06 25 0305UT  
C14 + 1.6x barlow  
UV/IR blocking filter  
Camera: SPC900NC  
Seeing 7/10  
300/1500 images

Jim Loudon Observatory  
Richard Hill - Tucson, AZ  
rhill@jpl.arizona.edu

## Lunar Crater *Copernicus*

### Inside this issue

#### Membership Vote at September 7 Meeting

PURCHASE OF LAND FOR A PERMANENT OBSERVING SITE

- ◆ Permanent Dark Site Search
- ◆ Public star parties

- ◆ Construction of TIMPA Observatory
- ◆ Constellation of the month

**Cover Photo:** This image is a montage of 8 individual images taken with the Phillips SPC900NC webcam. Each image is a stack of 300 out of 1500. The images were taken in 24 minutes, but required about 18 hours of processing, with the final product taking over 24 hours of work. The resolution is about 1.5-2.0 km across the original BMP image. Imaged by Rik Hill.

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

TAAA Phone Number: (520) 792-6414

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President	Bill Lofquist	297-6653	president@tucsonastronomy.org
Vice President	Ken Shaver	762-5094	vice-president@tucsonastronomy.org
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TAAA Board Of Directors	All Board Members		taaabod@tucsonastronomy.org

### Membership in the TAAA

#### Annual Fees

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

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

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

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

Tucson society of the Astronomical League (TAL) fees\$ 5.00  
 Sky & Telescope Magazine 1 year (12 issues)..... \$32.95  
 Astronomy Magazine 1 year (12 issues)..... \$34.00  
 2 years (24 issues)..... \$60.00  
 Postage for New Member Pack ..... \$ 4.60

**Donations** are accepted for the following funds: SA-IDA/Light Pollution, TIMPA, Education, 30" Telescope & Land, and General/Undesignated.

#### Renewal Information

- Your membership expires as indicated on your mailing label.
- TAAA members may join the Tucson society of the Astronomical League (TAL) at the time they join or renew.
- Discounted Sky & Telescope or Astronomy magazine subscriptions are available to members and can be started or renewed at anytime. Rates are given above. Allow 3 months for processing. Subscriptions must be sent through the TAAA. *Do not send money directly to the magazines.* To change an individual subscription to the group rate, pay the

subscription amount to the TAAA treasurer. Include your magazine renewal notice.

- Please include a note explaining what you are paying for. Credit cards are not accepted. Write one check or money order for fees plus any options or donations. Make it payable to TAAA and send to:

Tucson Amateur Astronomy Association  
 PO BOX 41254 Tucson, AZ 85717

**Mailing Address or Email Changes** - Send to address above or email the treasurer.

**TAAA Mission Statement** - The mission of the Tucson Amateur Astronomy Association is to provide opportunities for members and the public to share the joy and excitement of astronomy through observing, education and fun.

**Desert Skies Publishing Guidelines** - All articles, announcements, news, etc. must be submitted by the newsletter deadline. Materials received after that date will appear in the next issue. The editor retains all submissions unless prior arrangements are made. Submissions should be submitted in Word compatible files via e-mail or on a recordable media.. All material copyright Tucson Amateur Astronomy Association or specific author. No reproduction without permission, all rights reserved. We will not publish slanderous or libelous material! Send submissions to:

George Barber  
 TAAA/Desert Skies Editor  
 15940 W Ridgemoor Ave  
 Tucson AZ 85736

### President's Message

This may be the monsoon season, but a lot is going on with the TAAA while the rains come. A number of people in the club are working hard to move things along on a number of fronts.

The two days after the July TAAA General Meeting were work days for an ambitious crew that met at Teresa and Claude Plymate's garage to assemble the observatory that will be constructed soon at TIMPA. This will house the 14" telescope. After some road building and some additional work on the pad with the pier that was built several years ago, the new building will be added and the scope will be mounted. Thanks to George Barber for providing the leadership that has finally made this possible. We hope to have that in use after the summer rains end. Look for the announcement for when we will dedicate the new structure with a star party at TIMPA.

Another significant happening is the movement toward getting a dark permanent observing site. We hope that by the time you receive this issue of Desert Skies we will have a contract for the Bumble Bee site in the Sulphur Springs Valley south of Wilcox. Look elsewhere in this issue for a detailed update on what is happening on this important front.

We hope as many members as possible can go and visit the site. On August 18 there will be a special meeting to discuss the land search and engage TAAA members in the planning. Then at the September 7 General Meeting during the Astronomy Essentials segment we will have a TAAA Update. At that time we will give a detailed report on the progress of the land search and ask the membership to vote on the decision to purchase or not purchase the land. This is an important meeting and we hope many members will be present.

In the meantime we are continuing to search out other possibilities. We invite members to submit any proposals you might have for potential sites. If you did not get the outline for proposals at the July meeting, give me a call and I will get one to you.

As you can see, important things are happening in the TAAA. We hope you consider this to be an exciting time to be a member. You will have many opportunities to participate in the planning as we move ahead. Stay tuned for more news!

Bill Lofquist  
President

### Meeting Information and Calendar of Events

**TAAA MEETING DATE:** Friday, August 3, at the Steward Observatory Auditorium - Room N210

**ASTRONOMY ESSENTIALS:** 6:30 pm

Title: Observing the Moon  
Speaker: Luke Scott

The moon is our nearest neighbor in space and is a favorite object at school and public star parties. Big, bright, and easy to see, the moon has much more to offer than just craters. This talk will cover basic lunar facts, observing tips and tools, and describe common lunar features.

**GENERAL MEETING:** 7:30 pm

Title: Super-massive Black Holes  
Speaker: Fulvio Melia, UA Dept of Physics

In the past, they were recognized as the most destructive force in nature. Now, following a cascade of astonishing discoveries, super-massive black holes have undergone a dramatic shift in paradigm--these objects may have been critical to the formation of structure in the early universe, spawning bursts of star formation and planets. Over 300 million of them are lurking through the vast expanses of the observable cosmos. The closest, with a mass of about three million suns, resides at the center of our own Galaxy. And now, almost a century after the emergence of general relativity, we are on the verge of actually seeing this exotic object within the next few years, directly testing Einstein's theories. We will examine the exciting ob-

servations that have brought us to this point, and discuss the impact these are having on our understanding of structure in the universe.

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

**STAR PARTIES AND EVENTS:**

01 Aug - Beginner's SIG at China Rose  
04 Aug - TAAA Star Party and Beginner's SIG at TIMPA  
07 Aug - Mansfield Park Neighborhood Coalition SP  
11 Aug - TAAA Star Party at Bumble Bee  
11 Aug - TAAA Star Party at Las Cienegas  
18 Aug - TAAA Dark Site meeting  
18 Aug - UofA College of Optical Sciences Star Party  
18 Aug - Arizona Sonoran Desert Museum Star Party

**NEWSLETTER SCHEDULE:** Deadline for articles: Sat, 25 Aug. Printing: Mon, 27 Aug. Folding Party: Tues, 28 Aug. Mailing: Wed, 29 Aug. The newsletter is mailed at least one week prior to the following month's General Meeting.

## Club News

### Member News

We welcome these members who have recently joined the TAAA: Carol and Robert Ferber, Russ Ravella and Sharon Woodward, and Alvin and Joline Schultheis. Glad to have all of you join! New members can pick up a members pack at a meeting if they didn't request it by mail. Hope you'll make it to our star parties or meetings so we can all get to know you. (Updated membership lists are available online at either Yahoo Groups email list website under Files, or at most meetings.)

### TIMPA Access Card Agreement Changed

The TAAA Board of Directors has revised the TIMPA Access Card Policy and updated the Agreement to agree with the new policy. The new policy is now in effect. The most important change is to limit long term agreements to one year. Access card agreements will be reviewed annually and new agreements will need to be signed each year. Deposits and late fees have been changed and the process for borrowing a card has been streamlined. All members currently holding access cards will be contacted individually so new agreements can be signed.

Temporary TIMPA Access Cards are available for TAAA members and non-members for use on specific dates. Temporary cards are available by contacting any of the following people: Terri Lappin, Bill Lofquist, Ray Toscano, Michael Turner, and John Kalas.

### Astro-Imaging SIG Meeting

Please note that there will not be an Astro-imaging SIG meeting this month. Join us on September 10 for our next planned meeting.

### 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 got hats, T-shirts, denim shirts, and patches. We take cash and checks. If you special ordered an apparel item, please pick it up at the meeting.

### Beginners' Special Interest Group BSIG for August

The Beginners Special Interest Group will gather for the monthly dinner meeting/TIMPA warm-up at the China Rose restaurant (NE corner of Speedway and Rosemont) on Wednesday, August 1, at 6:00 pm.

Lou Faix will present the second part of a program entitled "But Where Is it?" We will start with a brief review of July's session that covered the usage of planispheres, sky charts and planet almanacs. This month we'll go a bit deeper into using sky atlases, and demystifying the

meaning of Right Ascension and Declination terms. The search techniques of "Star Hopping" and "Coordinate Locations" will be covered.

There will also be material about how to align your Equatorial Mount telescope with the sky. An observing list for the TIMPA star party the following Saturday, August 4, will be presented.

Join us at the China Rose for information and good company, and at TIMPA for (we hope!) clear skies!

### BSIG Committee Volunteers Needed

The Beginner's Special Interest Group is looking for enthusiastic, energetic, experienced TAAA members to join the BSIG Committee. If you enjoy helping others learn about observing skills, basic astronomy, telescopes and accessories, and other topics of interest to new amateur astronomers, the BSIG Committee is the place to be! Call or email J.D. Metzger or Dr. Mary Turner, or join us at the monthly BSIG dinner meeting at the China Rose restaurant. This month's meeting is Wednesday, August 1, at 6:00 pm.

### Upcoming Lectures

Below is our upcoming lecture schedule. You'll see that we've scheduled a Backyard Observatories lecture for September's meeting. Members with backyard observatories might want to consider showing off their observatory at the September meeting. We'll also be scheduling a tour, possibly the following day, of the observatories that are presented. Details will be provided closer to the date

Sept 7	<i>Astronomy Essentials</i>	TAAA Project Status Report
	<i>Invited Lecture</i>	Backyard Observatories
Oct 5	<i>Astronomy Essentials</i>	Mary Turner, Seasonal Objects
	<i>Invited Lecture</i>	Steve Howell, Kitt Peak, TBA
Nov 2	Member's Night	
Dec 7	<i>Astronomy Essentials</i>	OPEN
	<i>Invited Lecture</i>	Doug Isbell, NOAO IYA 2009



TAAA members can borrow any of the five Night Sky Network toolkits for use at outreach activities like star parties, classroom presentations, or other events where you are talking about astronomy. The five toolkits are listed below. Each contains a training tape or DVD, a Resource CD which contains PowerPoint presentations and

### Club News (cont.)

NASA animations, plus the materials for doing the projects. Contact Terri Lappin (see page 2) for more information about these kits and their use.

**PlanetQuest:** materials to explain how planets are detected, why we put telescopes in space, treasure hunt for objects related to stellar evolution, star chart of naked eye stars known to have planets in orbit

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

**Black Hole Survival Kit:** what is a black hole and how does it affect objects nearby, includes a game that a group or family can play

**Telescopes – Eyes on the Universe:** explains the basic principles of optics, the human eye, and observing  
**Shadows and Silhouettes:** covers lunar phases, eclipses, and transits

The Night Sky Network has also given us a SolarScope to use in our outreach efforts. It will provide a white light image of the sun suitable for a small group to view together. .

### Member's Events

#### TAAA and BSIG Star Party at TIMPA

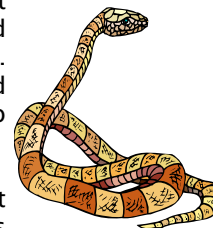
Saturday, August 4

Come on out and enjoy the summer skies (monsoon willing)! TIMPA star parties are great for both beginners and experienced observers. Our novice members can get help with observing issues or equipment problems, as there are many experienced members there who would be happy to help. If you don't own a telescope, come anyway, because there are lots of telescopes set up and everyone is invited to look through them. This is a great way to check out different telescope designs before you make that all important decision to buy. We'll do our best to get you the answers you need. If you have friends or relatives who are curious about amateur astronomy, feel free to bring them along. The TIMPA site features a large parking area, and full restroom facilities. It's also a good idea to bring insect repellent. Directions to the TIMPA site are located on the outside flap of this newsletter.

#### Rattlesnake Alert!

Be alert for rattlesnakes! 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 at TIMPA. These residents can leave holes and other potential tripping hazards, so be careful when walking.



Finally, the Tucson water department has declared the water at TIMPA is NO LONGER POTABLE. It is strongly advised that you bring your own water.

#### TAAA Star Party at Las Cienegas (Empire Ranch)

Saturday, August 11

Las Cienegas (formerly Empire Ranch) has been our normal dark-sky observing site for quite a number of years. Please try to arrive before sunset. Stay as long as you like, but let everyone know when you are ready to leave; someone may be taking astro-images. Bring a telescope if you have one, but you don't need one to attend. Any member would be glad to let you look through their telescope. And, there are now restroom facilities at the site. Las Cienegas is at 4000 feet so be prepared for cool temperatures after sunset. It's also a good idea to bring insect repellent. Attendees should park their vehicles either perpendicular to the airstrip facing toward the center of the strip, or parallel to the airstrip along either side facing west. That way, when you are ready to leave, you will not have to back up and turn



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**Member's Events (cont.)**

on your bright white backup lights. See the directions to Las Cienegas on the outside flap of this newsletter.

**TAAA Star Party at Bumble Bee**

Saturday, August 11

We would like for TAAA members to go and visit the property at Bumble Bee. Here are the directions.

Go east on I-10 beyond Benson and take Exit 318, Dragoon Road, as you enter Texas Canyon. Follow this road for about 14 miles until it dead ends at US highway 191. Go south (right) on 191 through Sunsites.

There is a nice place to get a bite to eat in Sunsites called Margies' Café.

Continue south on Highway 191 for ten miles until you get to State Road 181. Turn left (east) on 181 and go to mile marker 48. Begin looking on the right for some mail

boxes and a one lane gravel road called Price Ranch Road. Go south (right) on that road until you get to Bumble Bee Lane. It is about a half mile or a little more from 181.

Turn left on Bumble Bee Lane. It is a very narrow road. In a hundred yards or so you will come to a gate. Go through the gate, and the property we are looking at is on the left. Be sure to close the gate behind you. The fence there is the southwest corner of the parcel. If you get to the opening in the fence with the cattle guard you are at the southeast corner of the parcel. This is the southern boundary of the parcel we are considering. There is an additional 20 acre parcel that extends from the north boundary of this 40 acre parcel to the west at Price Ranch Road.

If the ground is wet we recommend that you not go onto the property because the roads are soft. A four-wheel drive vehicle that has some height is recommended.

**Membership Vote at  
September 7 Meeting**

PURCHASE OF LAND FOR A  
PERMANENT OBSERVING  
SITE

SAIDA NEEDS MORE HELP FROM MORE TAAA MEMBERS. AFTER ALL, WE WILL ALL BENEFIT FROM DARK SKIES IN OUR AREA !!!

For more information, go to: [www.sa-ida.org](http://www.sa-ida.org)—Or feel free to contact:  
John Polacheck, President of SAIDA  
E-mail: [jpolach@dakotacom.net](mailto:jpolach@dakotacom.net)  
Telephone: 743-1362

SAIDA meets on the 2nd Wednesday of each month from 5:30 to 7:30 PM in the IDA office located at 3225 N. First Ave, just North of Ft. Lowell. And.....  
WE USUALLY HAVE PIZZA !!!

**Dark Skies for August 2007**

DARK SKIES (no twilight, no moonlight) for Tucson in 24-hour MST: 18=6pm, 20=8pm, 22=10pm, 0=12am  
RISE, SET, VISIBILITY for sun and bright planets: rise for morning object, set for evening object

Tu/We 31/ 1	- - -	Sa/Su 11/12	20:42 - 4:16	Tu/We 21/22	23:50 - 4:26
We/Th 1/ 2	20:54 - 21:12	Su/Mo 12/13	20:41 - 4:17	We/Th 22/23	0:41 - 4:26
Th/Fr 2/ 3	20:53 - 21:42	Mo/Tu 13/14	20:39 - 4:18	Th/Fr 23/24	1:39 - 4:27
Fr/Sa 3/ 4	20:52 - 22:13	Tu/We 14/15	20:38 - 4:19	Fr/Sa 24/25	2:43 - 4:28
Sa/Su 4/ 5	20:50 - 22:47	We/Th 15/16	20:38 - 4:20	Sa/Su 25/26	3:50 - 4:29
Su/Mo 5/ 6	20:49 - 23:26	Th/Fr 16/17	21:03 - 4:21	Su/Mo 26/27	- - -
Mo/Tu 6/ 7	20:48 - 0:11	Fr/Sa 17/18	21:29 - 4:22	Mo/Tu 27/28	Full Moon
Tu/We 7/ 8	20:47 - 1:04	Sa/Su 18/19	21:57 - 4:23	Tu/We 28/29	- - -
We/Th 8/ 9	20:46 - 2:05	Su/Mo 19/20	22:29 - 4:24	We/Th 29/30	- - -
Th/Fr 9/10	20:44 - 3:10	Mo/Tu 20/21	23:06 - 4:25	Th/Fr 30/31	- - -
Fr/Sa 10/11	20:43 - 4:15			Fr/Sa 31/01	20:14 - 20:48

Weekend	Sun	Sun	Mercury	Venus	Mars	Jupiter	Saturn	
Sa/Su	Set	Rise	Rise Vi	Set Vi	Rise Vi	Set Vi	Set Vi	Vi=Visibility
04/ 5	19:17	5:39	4:45 6	19:51 5	0:23 1	1:07 -2	20:04 8	-3 brilliant
11/12	19:10	5:44	Set -	19:09 9	0:11 1	0:40 -2	19:39 -	0 conspicuous
18/19	19:03	5:49	19:19 -	Rise 9	23:59 0	0:13 -2	19:14 -	3 moderate
25/26	18:55	5:53	19:27 9	5:03 3	23:48 0	23:47 -2	Rise -	6 naked eye limit
01/ 2	18:46	5:58	19:29 7	4:22 -2	23:36 0	23:21 -2	5:12 8	9 binoculars limit

By Erich Karkoschka

**Public Star Parties and Community Events**

All members of are asked to support the TAAA School Star Party program and other community events listed below. TAAA either sponsors or co-sponsors these events. These are great opportunities for beginners as you may only need to know a few objects in the sky. Even without a telescope, you can be valueable in other capacities. Sign up sheets for many events can be found at the meeting or contact a TAAA officer.

**Mansfield Park Neighborhood Coalition Central**  
 Tuesday, 8/7/2007 No. of Scopes: 2

Mansfield Park Neighborhood Coalition will be hosting National Night Out at 2160 N 6th Avenue. Speedway Blvd to 6th Avenue, go North on 6th Avenue to Mansfield Park, which will be on the east side of 6th Avenue, just South of Grant. Viewing will be on the Soccer Field. Contact person Armando Vargas can be reached at 621-6282 or email [avargas@email.arizona.edu](mailto:avargas@email.arizona.edu). Or Mike Katherina can be reached 791-3247 or email [Mike.Katherina@tucsonaz.gov](mailto:Mike.Katherina@tucsonaz.gov). Ice cream and snow cone social will be available for TAAA volunteers! Set-Up Time: 7:45pm. Observing will be from 8:15pm to 9:00 pm. Sunset: 7:23pm, Dark Sky: 8:22pm Moon Phase: Waning Gibbous.

**UofA College of Optical Sciences Southwest**  
 Saturday, 8/18/2007 No. of Scopes: 10

University of Arizona College of Optical Sciences will be hosting New Graduate Student Picnic & Star Party at Kitt Peak National Observatory Picnic Area. Take I-10 to I-19

South. Less than 1 mile is Ajo Way/Hwy 86 (Exit 99). Take this exit West (right). Proceed past Ryan Airfield and Three Points. Continue until Junction 386 (Kitt Peak turnoff). Turn left onto 386. Viewing will be Kitt Peak Picnic Grounds. Contact person Barbara Myers can be reached at 520-621-8418 or email [bmyers@u.arizona.edu](mailto:bmyers@u.arizona.edu). We would like each of the ten members of the TAAA to bring a guest and a telescope, join us for the picnic and host the star party afterwards! Set-Up Time: 6:00pm. Observing will be from 8:00 pm to 9:00 pm. Sunset: 7:11pm, Dark Sky: 8:08pm Moon Phase: Waxing Gibbous.

**Arizona Sonoran Desert Museum Star Party West**  
 Saturday, 8/18/2007 No. of Scopes: 2

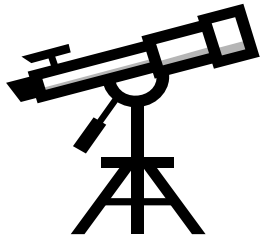
Arizona Sonoran Desert Museum will be planning Family Astro at 2021 N. Kinney Rd. Viewing areas are to be arranged. Contact person Amy Orchard can be reached at (520) 883-3083 or email [aorchard@desertmuseum.org](mailto:aorchard@desertmuseum.org). Set-Up Time: 5:00pm. Observing will be from 7:30 pm to 9:30 pm. Sunset: 7:11pm, Dark Sky: 8:08pm Moon Phase: (no moon during viewing).

**Desert Skies Classified**

For Sale	4.5-inch elliptical secondary mirror and holder. 1/8 wave. Excellent condition \$300. Meade 2-inch, 26mm QX wide angle eyepiece. \$70 or best offer, brand new in box. Gary Vecere, 207-2898 [12/07]
For Sale	Celestron C-14 optical tube assembly with dovetail mounting plate, 50mm finder scope, dust caps and trunk; \$2500.00. SBIG ST-9E parallel port CCD camera with TC-211 guider, CFW-8 filter wheel (no filters), carrying case with cables; \$1800.00. Meade LXD75 10" Schmidt-Newtonian optical tube assembly with mounting rings; \$600.00. Losmandy G-11 german equatorial mount; complete, with adjustable tripod 2-21# and 1-11# counterweights, Losmandy digital setting circles, polar axis alignment scope; \$2000.00 Contact Steve Peterson at 762-8211 or email at <a href="mailto:ccdcat@msn.com">ccdcat@msn.com</a>
For Sale	8 inch Celestron Nexstar 8 GPS carbon fiber tube in a fork mount. Excellent optics and latest firmware update. Celestron Heavy Duty wedge with alignment accessory kit, Electric focuser, Telrad finder, Counterweight bar and weight. Viewing before purchase can be arranged. \$1500 takes it all; hoping for a local buyer. Steve Coe, 602-789-7786. [10/07]
For Sale	Parts for Newtonian telescope: pressure molded fiberglass tube about 12" diameter with mount holes for spider and Novak primary mount and mount flat for focuser. Protostar 3 vane spider and diagonal mount. Kenneth Novak 9 point mirror mount. 2" diagonal mirror. 10" f/6 parabolic primary by Galaxy Optic of Buena Vista, Colo. Full thickness very fine optic. Over coated silver. All parts for \$700. Also: Nagler 7mm eyepiece--\$125.00, Leitz Trinovid 8x32 Binoculars--\$300. Call John McAfee at 520-762-0064. [08/07]
For Sale	Celestron Ultima 11 Schmidt-Cassegrain Telescope, fork mounted. Excellent condition, well cared for, fantastic optics, many extras. Heavy-duty wedge, 2" diagonal, 10X50 finder scope with illuminated reticule eyepiece. Equipped with JMI Motofocus, Telrad mount and piggyback camera mount. This scope is ideal for deep sky and solar system visual observing and photography. The f10 11 inch mirror has given me outstanding sharp views rivaling larger scopes. Comes with custom made padded case w/built-in wheels. Also, Thousand Oaks solar filter (11-inch), mylar cover, visual back and Kendrick dew remover system for corrector plate and finder scope. \$2,000. Optional eyepieces available, Celestron 30mm - \$25, Orion 9mm illuminated reticule - \$35, old-style Televue 55mm plossel (incredible FOV) - \$50 or \$90 for all three. Call Gary Freiburger in Tucson, 626-6121 (W), 742-9494 (H), <a href="mailto:garyf@ahsl.arizona.edu">garyf@ahsl.arizona.edu</a> [08/07]

Your ad will run for 4 months unless specified. Month and year of last appearance is last item of ad. For additions or changes to this list, call or e-mail the newsletter editor.

## Telescopes for Borrowing



Free service



Only for Members

Don't own a telescope?  
Our Loaner Program is your answer!

These telescopes are in the program

Sears 60mmf/15 on equatorial mount  
Unitron 62mmf/14.5 on equatorial mount

Meade 90mm ETX

Coulter Odyssey8 8-inch f/4.5 Dobson

Meade 8-inch f/4 Schmidt-Newtonian LXD-55

Meade 10-inch f/4.5 on equatorial mount

Meade 10" LX200 GPS (requires training session)

Beginners, here's your chance to learn and observe the sky before buying any equipment. The Loaner Program is available to any current member after meeting requirements detailed in the TAAA Loan Policy. Contact the Equipment Loan Coordinator (see page 2) for details about these telescopes.

## TIMPA Site News

### Observatory Construction

By George Barber

On July 7 and 8, TAAA members gathered at Claude and Teresa Plymate's garage to construct the TIMPA roll off observatory. Bill Lofquist and I met at Home Depot at 7 am to load all the required construction materials. We arrived at the Plymate's to meet with our group. Their garage worked very well for our needs, with plenty of



room and good shade. Work areas were set up, and soon we were sawing wood. Assembling the bottom of the building was the first major step, and by the end of the work day we had it constructed.

We also put the doors together, cut the members for the building top, and had a good vision of how the building assembly would be completed. The next day, we finished the building framing. We were pleased with how the assembly worked together, and that the building framing was square and true. We applied the exterior siding, and gave the entire structure a coat of primer. Finally, we loaded the building onto my trailer, gathered all remaining materials, and cleaned up the Plymate's garage.

I'd like to thank Claude and Teresa for their help, and for loaning their garage for the weekend. I'd also like to thank all of the volunteers who came out and helped with the construction. With your help, we were able to complete all of these tasks.



The building is currently under my carport. Only a few tasks remain to be completed, mainly caulking, painting, attaching the roof and wheels, and fitting the doors. We will complete these items next month.

Our construction contractor will be starting work at TIMPA in August. Their tasks will include leveling and preparing the area, pouring the slab for our observatory, and installing the rails for the building to roll on. Once this is completed, we will move the observatory to its pad and finalize the project.

It is likely that I will need to arrange a few small work parties to accomplish these tasks. I plan to use the Yahoo forum to recruit volunteers. So, be ready to come and help complete this project!





## Project ASTRO

# PROJECT AND FAMILY ASTRO

## TRAINING WORKSHOPS 2007



Hosted by the  
National Optical Astronomy Observatory

[www.noao.edu/education/astro](http://www.noao.edu/education/astro)



**Project ASTRO:** Developed by the Astronomical Society of The Pacific and coordinated in Tucson by NOAO, this unique educational program offers teachers instruction in conducting hands-on inquiry-based science activities in their classrooms plus an astronomer partner with whom to present the activities. During the two-day ASTRO workshop, a partnership is forged that blends the teacher's knowledge of methods and classroom discipline with the astronomer's knowledge of and passion for astronomy. Together the team brings the science of astronomy alive in the classroom when the astronomer makes four school visits during the academic year. Those activities in turn may serve as springboards into other lessons in math, physics, chemistry, and even writing that may be used to meet various standards. In the workshops both partners receive *Universe At Your Fingertips*, a resource book containing seventy-seven lesson plans organized progressively from the solar system to galaxies. The workshop also includes a trip to Kitt Peak National Observatory for the Nightly Observing Program.

**Date:** September 14 and 15, 2007  
**Place:** U of A Student Union  
**Time:** Friday, 8:30 AM to 10:30 PM  
 Saturday, 8:30 AM to 5:00 PM  
**Cost:** Free

Applications to join the Project ASTRO program are available for teachers at <http://www.noao.edu/education/astro/pdf/teacher-app.pdf> and for astronomers at <http://www.noao.edu/education/astro/pdf/astronomer-app.pdf>. The application deadline is September 1, 2007. Completed applications may be faxed to Connie Walker at 520-318-8451 or mailed to her at 950 N. Cherry Ave. For any further questions, feel free to contact Connie at [cwalker@noao.edu](mailto:cwalker@noao.edu) or 520-318-8535.

**Family ASTRO:** Project ASTRO became so popular with students that their families asked how they might enjoy similar activities. Family ASTRO meets that demand by offering to train "event leaders" to hold one to four thematic events. These thematic events take hands-on inquiry-based activities similar to those in Project ASTRO and move them to the extracurricular arena where parents and siblings can join the fun. Less formal than classroom instruction, these events focus on the moon, the planets, the night sky, and light in ways that get families together and thinking creatively while having a lot of fun. The typical event lasts about two hours. Each training workshop teaches event leaders how to conduct one of the four events mentioned above and lasts about five hours. During the workshop the activities are modeled and additional facets of hosting the event are addressed. Each event leader receives a leader kit containing all the basic materials necessary for organizing the event. Available for purchase are additional games that may be used in the events or given to families to take home.

**Dates:** September 28 Cosmic Decoders  
 October 5 Race to The Planets  
 October 12 Night Sky Adventure  
 October 19 Moon Mission  
**Place:** National Optical Astronomy Observatory headquarters,  
 950 N. Cherry Avenue, Tucson  
**Time:** 4:30 to 9:30 PM  
**Cost:** \$25.00 per workshop, including dinner

Applications to join the Family ASTRO program are available for teachers at [http://www.noao.edu/education/family\\_astro/fo-teacher-application.pdf](http://www.noao.edu/education/family_astro/fo-teacher-application.pdf) and for others at [http://www.noao.edu/education/family\\_astro/fo-general-application.pdf](http://www.noao.edu/education/family_astro/fo-general-application.pdf). The application deadline is 3 weeks before a session. Completed applications may be faxed to Robert Wilson at 520-318-8451 or mailed to him at 950 N. Cherry Ave. For any further questions, feel free to contact Robert at [rwilson@noao.edu](mailto:rwilson@noao.edu) or 520-318-8440.

## TAAA Board of Directors Meeting - July 11, 2007

Attending: TAAA Board Members present: Bill Lofquist, presiding, Ken Shaver, Terri Lappin, George Barber, and Teresa Plymate. George Barber acted as Secretary for Steve Marten. Members present: Robert Crawford, Ellen Finney, Loretta McKibben, Claude Plymate. President's Call to Order: 6:30PM

**June Minutes.** Accepted unanimously.

### **Announcements**

TAAA received a thank you from Buell Januze, Kitt Peak Director, and Douglas Isbell, NOAO associate director for public affairs and educational outreach for TAAA telescope services provided at the horse camp.

September meeting is dedicated to Member Observatory presentations and tours; November is member's night.

### **Board Review**

The holiday party will take place at Bill Lofquist's home on Saturday, December 15.

Our Last Member Observatory Presentation and Tour event was organized by Michael Turner. Ken Shaver volunteered to lead this activity for the September meeting; with 4 or 5 presenters. Article on backyard observatories will be included in the next newsletter.

Board recommended member badges be made available through the TAAA Apparel Program.

### **TAAA Website Update – Loretta McKibben**

Coding is in progress for star party signup and calendar features with member inputs. Loretta plans to attend SIG meetings and discuss what features they would like on their pages of the web site. Loretta is also evaluating potential web hosts. Activation of some website features will occur on 7.20.07 for beta testing and an announcement will be posted when beta testing will begin. August newsletter article will provide member information for beta testing.

### **TIMPA Observatory – George Barber**

George reported observatory building has been constructed and primer applied. Documentation and planning for site modification SMC Corp was discussed.

### **Dark Site Search – Bill Lofquist**

Bill suggested the Board meet on July 21 to further discuss the dark site search to date. The meeting will start at 10 am and end at 2 pm.

A Strategic Planning Working Group was formally established by unanimous vote to prepare and negotiate contracts under board direction. The following members were appointed: Bill Lofquist, Teresa Plymate, Keith Schlottman and Robert Crawford.

At this time approximately \$85,000 is in our equity mutual fund portfolio. A motion was offered to reassign equity mutual funds to money market mutual funds to reduce risk. This move was taken because resources including investments could be needed within one year's time. The motion was passed unanimously.

The option to consider a public land lease option (patent lease), and to evaluate at least two private land parcels was discussed. Robert Crawford has volunteered to investigate details of obtaining BLM and Forest Service land. He has found non-profit organizations can lease or lease and purchase with submission and approval of Site and Management Plan. Conservation areas such as Buenos Aries and Las Cienegas, it was noted, cannot be developed. The purchase price for public use is 50% of "full market value"; for private access it is 90% of same. Forest service lands require environmental review and statement. County land can be leased but is subject to reclaim by the county.

Teresa has evaluated some parcels and land listings in Cochise and Pima County. So far, none are viable matches with the Bumble Bee site.

Adjourned at 9:33p.m.

Respectfully Submitted,  
Steve Marten, Secretary

## TAAA Permanent Dark Site

### **TAAA LAND SEARCH UPDATE**

By Bill Lofquist

Events have been moving quickly in our search for a dark observing site. The Board of Directors at its June meeting decided to undertake an initiative to secure a site. We announced in the July issue of Desert Skies that the initiative was under way and that we had a proposal for a site in the Sulphur Springs Valley south of Wilcox. We are calling this the Bumble Bee site because it is located on Bumble Bee Lane.

We began to evaluate the Bumble Bee area with an observing session in late June. The location is very dark and a lot of interest in it has developed. More about that later in the article.

The board is continuing to consider other sites and invites more proposals. While the search for a viable site on public land is ongoing, it appears that there are some restraints there. Other sites on public or private land may yet be found.

Most of the attention thus far has been on the Bumble Bee site. We urge members to go out for a visit. While the possibility of observing during the monsoons is not encouraging, even a visit in the day time is worth the trip. Directions to the site can be found elsewhere in this issue.

As things now stand at the time of writing this article on Sunday, July 22, we are planning to secure a contract on 60 acres at the Bumble Bee site tomorrow to protect our

## TAAA Permanent Dark Site (cont.)

interest. The plan is for the TAAA to purchase 16 acres, and TAAA members and other friends of astronomy to purchase the remaining eleven 4-acre parcels of land. A number of interested individuals came into the picture early in the process. At the present time a total of ten people have made a commitment to purchasing a 4-acre parcel, leaving one more parcel that is available.

The asking price for the land is \$4,000 per acre. The studies we have made of land values in the area suggest that this is a reasonable price. The week before last it came to our attention that there is another potential buyer interested in this land, so we began to organize for making a contract to protect our interests. Over the past week we have talked with the Cochise County Planning and Zoning Department, our realtor, and a real estate attorney to shape our proposal. A strategy has been devised, and we hope to know in several days if our proposal has been accepted.

A first order of business if we have a contract is to prepare an application for a Special Use Permit for the TAAA acres with the Planning and Zoning Division of Cochise County. The due date for their October hearing is August 24. Mark and Lester Mismash, members of TAAA and architects on the faculty of the U. of A., have volunteered to help us prepare our proposal. This will be getting under way as soon as the sellers accept the contract.

We will be turning to TAAA members to help create the vision for our permanent observing site. After we obtain the permit for Special Use and close on a property, there will be many opportunities for members to help shape the strategic plan and begin to implement it.

A special meeting has been planned on August 18 for members to discuss these plans, make recommendations and learn how things are progressing. Then at the September 7 general meeting of the TAAA we will use the Astronomy Essentials portion of the meeting for additional information. At that time we will have a vote by the members present to determine whether or not we should go ahead with the purchase.

These are important decisions for our club. We look forward to hearing from members as we move ahead. If you would like to participate in one of the many aspects of this unfolding initiative, please let me know. You can contact me by calling 297-6653 or sending an email to [wlofquist@comcast.net](mailto:wlofquist@comcast.net). I hope to hear from you.

### Investigation Into TAAA Use Of Public Land

By Robert Crawford

Contact has been made with the Federal Bureau of Land Management (BLM) regarding the program under which non-profits can, in some circumstances, lease or purchase federal land, and a meeting is scheduled for July 26th at the BLM Tucson Field Office to learn more about this. We have been told that BLM has no land presently available for sale in the Tucson sector and

that leasing land would involve a lengthy and expensive approval process. We will find out more about this at the July 26th meeting, which should help us determine whether the BLM program is a viable option in our search for a dark site. We have not as yet identified an attractive parcel of BLM land in southern Arizona. Most of the land managed by the BLM Tucson office is concentrated in the Las Cienegas and San Pedro conservation areas, and construction of an observatory is unlikely to be permitted in those areas.

Initial contact has also been made with the US Forest Service. Forest Service land is leased for grazing, timbering, and other uses, and there is a program by which organizations can, in some circumstances, obtain a special use permit for other types of uses. One possible advantage of Forest Service land is the potential to locate inside a larger tract of federal land that would have protection from local light pollution. After reviewing the current management plan for the Coronado National Forest in southeastern Arizona, we may schedule an appointment with Forest Service personnel to learn more about this possibility.

A clear disadvantage of both BLM and Forest Service land is that leases and special use permits are limited to no more than 20 years, and the club would face the loss of its developments if the leases were withdrawn or not renewed. Also, federal land is not necessarily a low-cost option, because lease terms are tied to fair market value for the land in questions with discounts of 10 to 50 percent.

### TAAA Dark Site August 18 Meeting

A Special Meeting on the TAAA Land Search to be held Saturday, August 18 at 2:00 PM. It will be held in the Steward Observatory in the conference room N305 on the third floor. We hope that all interested members of TAAA will come to that meeting.

### September 7 Membership Vote

The September 7 meeting will not have an astronomy essentials lecture. Starting at 6:30 pm, The TAAA status report will be given. Following the status report, the Board will ask the membership to vote on the decision to purchase or not purchase land. This is an important meeting and we hope many members will be present.

## TAAA Email Lists

### The TAAA Email Lists

Announcements, TAAA Forum, and Dark Site (NEW!)

Do you have email? Are you a member of the TAAA Announcements List or the TAAA Forum? These are TAAA email distribution lists run on Yahoo!Groups. Members of the Announcements List receive reminders and information about TAAA events. The TAAA Forum List allows members to send emails to everyone on the forum. There are 137 members in the Forum. TAAA members can join either or both of these lists. There are about 15 announcements and about 75 forum messages per month.

We have recently added a new temporary group for those interested in our investigation for a dark site. It's called TAAADarkSite. Keep up to date on our progress towards obtaining a dark observing site and use it to discuss your opinions on the project.

Since Yahoo!Groups hosts these lists, you may see ads inserted into the email messages. The TAAA has no control over the content of these ads; however, your email program or internet security software may be configurable to block the ads so you won't see them.

Membership in these groups is restricted to TAAA members. Please follow the directions below to join. Please also send an email to Terri Lappin at [treasurer@tucsonastronomy.org](mailto:treasurer@tucsonastronomy.org) letting her know you have requested membership in the list(s). Be sure to include your name so she can verify your membership and approve your request.

*If you are a member of Yahoo:*

Go to the following websites and click on "Join this Group".

Announcements: <http://tinyurl.com/e7o3y> (same as <http://groups.yahoo.com/group/tucsonastronomy>)  
 TAAA Forum: <http://tinyurl.com/hwoau> (same as <http://groups.yahoo.com/group/taaaforum>)  
 TAAA Dark Site: <http://tinyurl.com/3d8ts9> (same as <http://tech.groups.yahoo.com/group/TAAADarkSite/>)

*If you aren't a member of Yahoo:*

Join Yahoo by going to the above URLs and registering when you see the Login screen. Before joining Yahoo, it's recommended that you visit the Yahoo!Groups website (<http://groups.yahoo.com/>) to learn about their privacy policy (link is at the bottom of the screen). Once you join, you should check the default "Marketing Preferences" for your account by clicking on "My Account" (top of the screen), and then "Edit your marketing preferences" (about center of screen).

*If you don't want to join Yahoo:*

Send a blank email to the following addresses using your email account where you want the messages to be sent.

Announcements:	tucsonastronomy-
subscribe@yahoogroups.com	
TAAA Forum:	taaaforum-
subscribe@yahoogroups.com	
TAAA Dark Site:	TAAADarkSite-
subscribe@yahoogroups.com	

If you have any problems, contact Terri Lappin.

## TIMPA Site News—More Photos of the Observatory Construction



## Constellation Report by Chris Lancaster

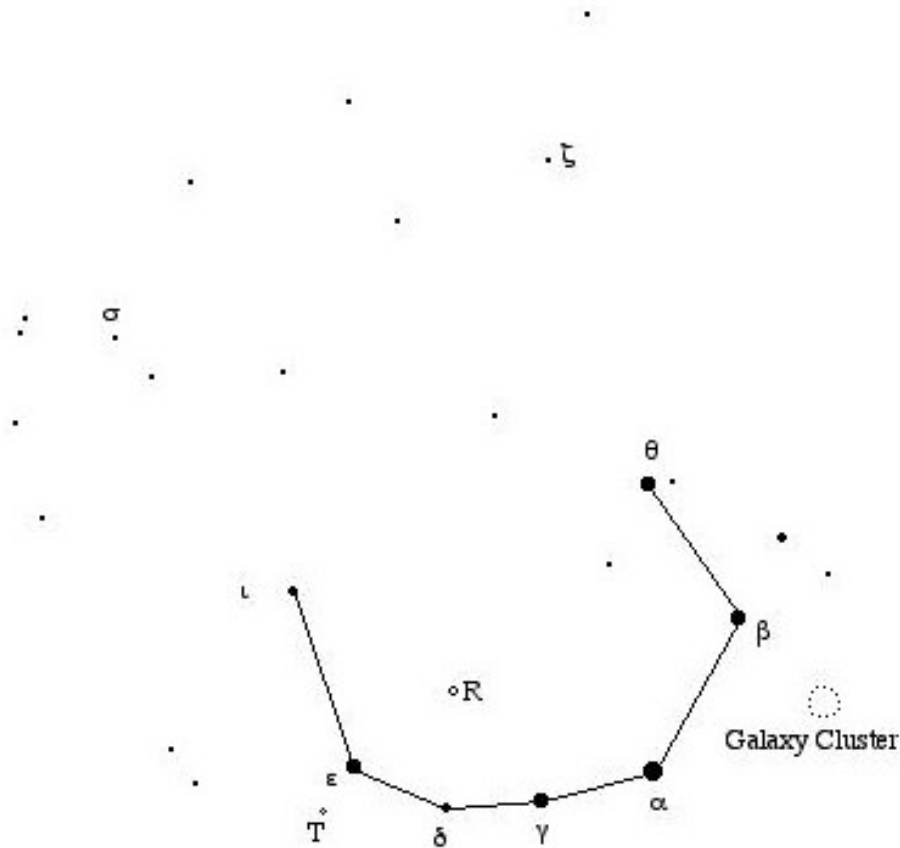
### Corona Borealis

The Northern Crown

This constellation, with its beautiful name and lovely shape, is one of the smaller ones in the sky. It sits between Bootes, with its bright star Arcturus, and Hercules, reaching the meridian just after 10pm June 15. With its 2nd, 3rd, and 4th magnitude stars, it assumes the shape of an incomplete circle.

The brightest stars of Corona Borealis form an isolated group and are therefore easily recognizable. The most ancient story behind the crown involves the order by the king of Crete, Minos, that the city of Athens send him 14 young men and women each year to be sacrificed to the Minotaur, a creature that was half man, half bull living in the inescapable Labyrinth. One year, a man by the name of Theseus, the son of Athen's own king, was sent as one of the sacrifices, but Minos' daughter, Ariadne, fell in love with him. She gave him a sword and a ball of string before he was sent into the Labyrinth. He successfully killed the Minotaur with the sword and found his way out of the Labyrinth by following the string which he had trailed behind him. Theseus and Ariadne left Crete for Athens, but Theseus had a change of heart and decided to leave her during the journey. As Ariadne wept, the god Dionysus found her and presented himself to proclaim his love for her, but Ariadne was distrustful. To prove he was a god, he took the crown he was wearing and threw it into the sky, where it turned into the stars of Corona Borealis.

In North America, the Shawnee tribe of Native Americans saw this constellation as a circle of dancing women appearing as stars in the heavens. The circle is incomplete because one of them decided to leave for Earth to live with a mortal.



You won't find any nebulae or galaxies in Corona Borealis, but what you will encounter are some very intriguing stellar objects. Epsilon Coronae Borealis is a very challenging double star along the east side of the crown. The primary star shines at magnitude 4.1, which is easy enough to find. Spotting the companion will require some skill, however. First of all, it sits only 2 arc seconds from the primary, and secondly, it glows reluctantly at magnitude 12. You will see that the secondary is lost in the light of the primary unless very high magnification is used.

Two much easier binaries are Sigma and Zeta Coronae Borealis. Zeta is a pair made of one 5th and one 6th magnitude stars separated by 6.3 arc seconds. The two stars are identical in color, both being of spectral type B. Sigma is virtually an exact copy of Zeta. Except for their slightly different PA's, you'll have trouble telling the two apart.

The variable star R Coronae Borealis is the epitome of what is called an irregular variable. Since it was first observed in 1795 the star has followed no predictable pattern. Maximum

brightness is near 6th magnitude, and it can hold steady at this brightness for either several years or just a few days! And at other times, it fluctuates wildly between 6th and 15th magnitude. Observations have shown these fluctuations can last anywhere from one to ten years before stabilizing back to maximum again. As of this writing, R is behaving at its brightest, but it is anyone's guess how bright it may be at any date in the future.

Earlier, I mentioned that no galaxies are apparent in Corona Borealis. There is, however, a galaxy cluster that rivals the well-known Virgo/Coma cluster in terms of numbers and actual size in space. The difference is that this cluster of over 400 galaxies is so much more distant, that from Earth its brightest members are fainter than 16th magnitude! Unless you have a 45-inch telescope, let your imagination ponder this vast collection of spirals and ellipticals.

Tucson Amateur Astronomy Association  
P.O. Box 41254  
Tucson, AZ 85717

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Please consider renewing your membership on time. Renewal month and dollar amount appears on your address label. Magazine subscriptions are not included. TAL fee is included if participating in TAL. See details on page 2.

### Directions to TIMPA and Empire Ranch

#### Directions to TIMPA Site

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

##### **From the North:**

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

##### **From the East:**

1. Take Speedway Blvd. west and it turns into Gates Pass Rd..
2. Go over Gates Pass and continue west to Kinney Rd..
3. Turn right (north) on Kinney Rd. and continue past the Desert Museum.
4. Kinney Rd. bends left at the entrance to Saguaro National Park West and becomes Mile Wide Rd..
5. Take Mile Wide Rd. west about five miles to Reservation Rd.. Mile Wide Rd. ends at Reservation Rd. and you must turn right (north) onto Reservation Rd..
6. Take Reservation Rd. north about one mile. The entrance to TIMPA will be on the right.

#### **NOTE**

A gate card is required for TIMPA access. Please **DO NOT** ask the caretakers for entry to the TIMPA SITE. A list of TIMPA key keepers is available on the TAAA website, or by contacting a board member. For scheduled TIMPA star parties, a designated TAAA representative will provide access to the site.

#### Directions to Las Cienegas (Empire Ranch)

GPS coordinates: 31 deg 47.356' N, 110 deg 37.913' W

Take I-10 East from Tucson. Take Exit 281 (Route 83 Sonoita-Patagonia Highway South). Travel south on Route 83 for about 19 miles, watch for green and white milepost 40 sign on the right side of the road. Approximately ¼ mile past milepost 40, turn left into Las Cienegas. The road is dirt and is "washboarded" so go carefully. At about 2.9 miles, there is a fork in the road. Stay to the right. When the road ends in a "T", take a left. Cross over a concrete section of the road down in a wash. Just up the hill from the wash (about .2 mile), turn left. 0.1 mile ahead will be the end of an abandoned airstrip with a covered ramada. The club members have been setting up several tenths of a mile down the runway. If you arrive after dark, as a courtesy to other members, use only your parking lights to approach the set-up location.