



Desert Skies

Tucson Amateur Astronomy Association

Volume I, Number 10

October, 2004

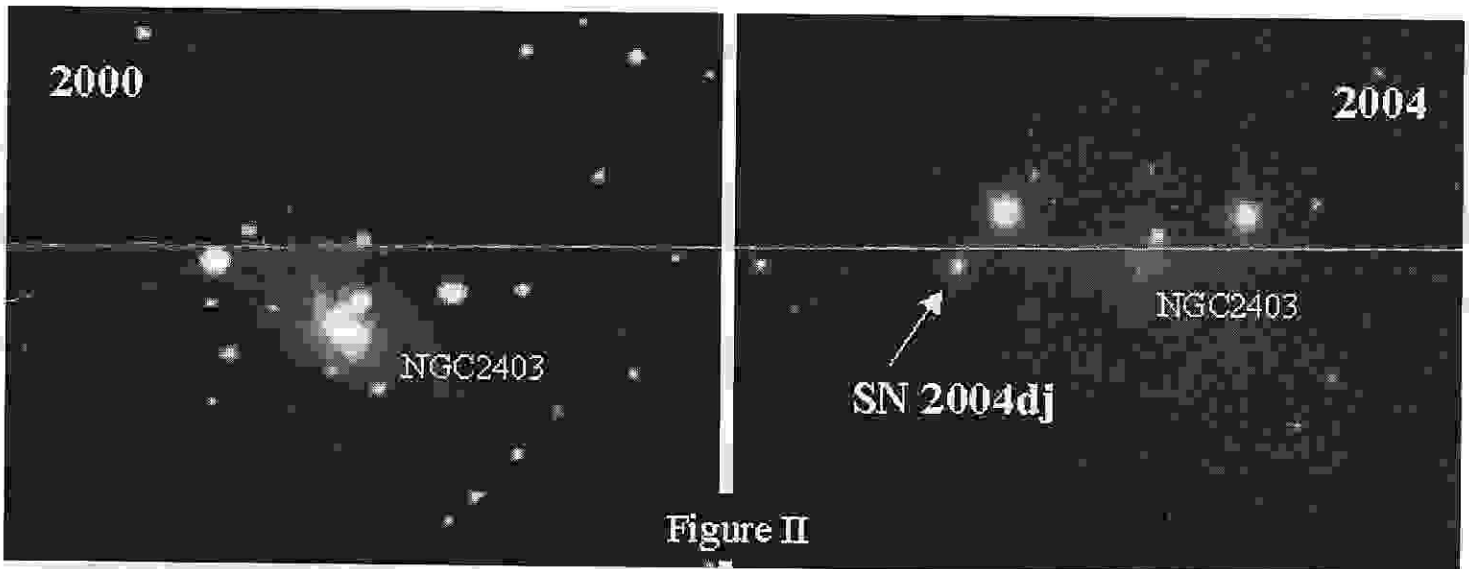


Figure II

Supernova 2004dj

Cover Photo: Supernova 2004dj. Our ever-changing Universe offers unique observing opportunities. Imaged by Alfredo Garcia, Jr.

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

TAA Phone Number: (520) 792-6414

Office/Position	Name	Phone	E-mail Address
President	Thom Peck	327-7825	thomas.peck@optics.arizona.edu
Vice President	Michael Turner	743-3437	Mrmgturner@earthlink.net
Secretary	Steve Marten	906-0049	TAAStarParty@yahoo.com
Treasurer	Terri Lappin	579-0185	tklappin@earthlink.net
Member-at-Large	Ed Finney	296-9266	eefinney@netzero.net
Member-at-Large	Bill Lofquist	297-6653	wlofquist@comcast.net
Member-at-Large	Ray Toscano	529-3074	Ray_toscano@earthlink.net
Chief Observer	Wayne Johnson	586-2244	mrgalaxy@juno.com
AL Correspondent (ALCor)	Nick de Mesa	797-6614	Demesan@onsetbeach.com
Astrophotography SIG	Dean Ketelsen	293-2855	ketelsen@as.arizona.edu
Computers in Astronomy SIG	Roger Tanner	574-3876	rtanner@dakotacom.net
Newsletter Editor	George Barber	822-2392	barbergj@flash.net
School Star Party Scheduling Coordinator	Steve Marten	906-0049	TAAStarParty@yahoo.com
Webmaster	Dean Salman	574-9598	ccdimages@galaxies.com
School Star Party Volunteer Coordinator	Rob Wilson	744-0263	rasjwilson@aol.com
Club Sales	Ann Scott	749-4867	Lbscott61@cox.net
Equipment Loan Coordinator	Jerry Penegor	320-1872	penegor@dakotacom.net
Librarians	Claude Plymate	883-9113	plymate@noao.edu
	Teresa Plymate		teresa@as.arizona.edu

Membership in the TAA

Annual Dues

Individual membership	\$ 25.00
Family	\$ 30.00
Senior (over 60) membership	\$ 23.00
Senior Family (at least one over 60)	\$ 28.00
Student membership (over 18 years old)	\$ 17.00

Family Membership includes two adults plus minor children. Persons under 18 may join at a special Reduced Family Membership rate (\$17/yr) upon parental or guardian acknowledgment of participation in TAA activities. Call the Treasurer to request the required form.

Options (add to above membership rates)

Tucson Soc. of the Astronomical League (TAL)	\$ 5.00
Sky & Telescope Magazine 1 year rate	\$ 32.95
Astronomy Magazine 1 year rate	\$ 29.00
2 year rate	\$ 55.00
Postage for New Member Pack	\$ 3.85

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.
- TAA 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 TAA. Do not send money directly to the magazines. To change an individual subscription to the group rate, pay the subscription amount to the TAA 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 dues plus any options or donations. Make it payable to TAA 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.

TAA 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. Partial page submissions should be submitted in Word compatible files via e-mail or on a floppy disk. Full-page articles, artwork, and photos can be submitted camera ready. 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
TAA/Desert Skies Editor
15940 W Ridgemoor Ave
Tucson AZ 85736
or by e-mail barbergj@flash.net

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President's Message

The skies are clearing from the monsoon season and the Star parties are piling up. We are going to be recognizing those who participate in outreach activities for the club, so sign up for school star parties, Project Astro, or anything else the club offers. Get involved with your fellow astronomers.

Don't forget the TAAA Family Picnic on October 30 at Reid Park. There are lots of things to do, or just meet people in the daylight for a change.

I hope you got a chance to see the Muscular Dystrophy Association Telethon on Labor Day. David and Wendee Levy presented a check from TAAA and the club in Sierra Vista for \$9975, of which \$7875 was raised by the TAAA. Way to go, TAAA! Next year looks to be even better.

We, the Board of Directors, are trying to clean up our act at the meetings. We are trying to be more efficient and

still allow for as much information as possible to be presented. With an organization the size of TAAA, the wealth of knowledge in the membership, and the number of activities we handle, it gets more and more difficult to cover everything in just a couple hours while still having the usual Main Lecture and Astronomy Essentials. Some things will be shortened, and some information will be given at a different time of the meeting. Nothing drastic, just tightening.

Please help out with the cleanup at the TIMPA site on October 2. Just show up (maybe with gloves and old clothes). There should be something for you to do.

Clear and steady skies,

Thom Peck

Meeting Information and Calendar of Events

TAAA MEETING DATE: Friday, Oct. 1 at the Steward Observatory Auditorium - Room N210

Note: The Beginners lecture is replaced by member presentations on Member's night. Be sure to arrive for the meeting by 6:30 pm!

GENERAL MEETING: 6:30 pm

Member's night

Here's your chance to share the spotlight. Contact Thom Peck via phone or e-mail to schedule your astronomy-related presentation.

BOARD OF DIRECTORS MEETING: Wednesday, Oct. 13 6:30 pm at Steward Observatory Conference Room N305

STAR PARTIES AND EVENTS:

02 Oct - Whipple Observatory Open House/Star Party
07 Oct - Astrophoto SIG
09 Oct - Arizona Sonora Desert Museum Star Party
09 Oct - TAAA Star Party at Las Cienegas
13 Oct - Marana Middle School Star Party
16 Oct - TAAA Fall Star-B-Cue at Kitt Peak
19 Oct - Sewell Elementary Star Party
20 Oct - Van Buskirk ES Star Party
27 Oct - Flandrau Science Center

NEWSLETTER SCHEDULE: Deadline for articles: Sat, Oct. 23. Printing: Mon, Oct. 25. Folding Party: Tues, Oct. 26. Mailing: Wed, Oct. 27. The newsletter is mailed at least one week prior to the following month's General Meeting.

Club News

Member News

We welcome the most recent members to join the TAAA: William Bränitz, Mike Finerty (returning member), and Joe Gianninoto (returning member). Glad to have all of you join! New members should be sure to pick up a new members pack at a meeting. Hope you'll make it to our star parties or meetings so we can all get to know you. (Updated membership lists are available to any member at most meetings, so pick one up if you need it.)

TAAA Apparel

Looking for Christmas gifts, or a way to make that fashion statement? Try on something from our fine line of club apparel. We've got hats, T-shirts, denim shirts, and

patches. Plan ahead with a new 2005 Calendar, also available at the apparel table. We take cash and checks.

Calendars for 2005

Calendars for 2005 will be sold at regular meetings this fall at the same table where you can purchase TAAA apparel. (Ann Scott also has new apparel available this fall.) The calendar we have selected is called Deep Space Mysteries and is published by the same people who bring us Astronomy magazine each month. The cost for the calendars is \$10 each (~\$2 off the regular selling price), or \$9 each for more than one. This calendar has daily information about astronomical events, both historical and observational...plus space for adding important events you need to remember. Each month features a

Club News (cont.)

full-color astronomical image of a deep sky object.

Proceeds from the sale of these calendars will be used appropriately as decided by the board. Thank you to all who support the TAAA through the purchase of the yearly calendars.

Basha's Thanks A Million Program

The Basha's Thanks A Million for Friends and Neighbors program is underway now through March 31, 2005. If you shop at Basha's, ask the cashier to link your Thank You card to the Tucson Amateur Astronomy Association. Our ID # is 23178. (Basha's customer service also has a list of ID numbers if you forget this number.) If you participated last year, you still need to sign up at the register again. At the end of the program, provided we meet their minimum of \$2500 in combined sales, the TAAA will receive a donation equal to 1% of the total purchases made by our members. Thank you to all the members who participated last year, which resulted in a donation of just over \$75. So, if you shop Basha's, remember to have your Thank You card linked to the TAAA (ID #23178).

Basha's Thanks a
Million
TAAA number
23178

Nametags

Nametags have been purchased for TAAA members who have participated in TAAA sponsored Public Outreach activities over the past few years. They can be picked up at a meeting. There is no charge for your nametag. The only way to get a nametag is to participate regularly in our outreach activities or serve as in an elected or appointed position. If you feel you have participated regularly in our school star party program, Project ASTRO, public star parties, or our paid star parties and you do not see a nametag with your name on it, let a board member know and we will rectify the error. We are certain to have overlooked some individuals.

Astrophoto Special Interest Group

7 October, 7pm

China Rose, NE corner Speedway/Rosemont

Some news on the SIG front - Dean Ketelsen is stepping down as the coordinator of the group in favor of Steve Peterson. Steve has been the acting host of the group since Dean's wife took seriously ill a year ago and thru his own illness last spring. Steve is quite proficient at CCD

imaging and will serve the group well.

There have been quite a few great presentations lately, even with the monsoon clouds the last couple months. If you want to check out the state of the art in astro-imaging, check out one of these get-togethers.

Other news - Carol Hunter, who has hosted us at her restaurant since we've started, has followed her dream of running a bar with live jazz music, and as a result, our meeting space will no longer be available. For this month we will relocate to the other side of the restaurant, and try that location, but stay tuned for a possible relocation of these meetings. If you have any ideas for possible meeting locations, contact Steve.

Upcoming Lecture Schedule

Below is our lecture schedule for the next 6 months. Topics we are trying to arrange are: Mars, Saturn & Titan, and Arizona weather patterns for observing. If you have a suggested topic or speaker in mind send an email to Terri at tklappin@earthlink.net or call her at 579-0185.

Date	Lecture	Speaker	Topic
Nov 5	Essentials	Dean Salman	Constellation ID
	Invited	Members	Backyard Observatories
Dec 3	Essentials	Nick DeMesa	Astronomical League Observe Program
	Invited	Dr. Andrew Potter	Mercury and Messenger Mission
Jan 7	Essentials	Bill Owens	Imaginary Lines
	Invited	Open	
Feb 4	Essentials	NONE	
	Invited	Members	Members Night
Mar 4	Essentials	Vivian Lewis	Solstices
	Invited	Open	
Apr 1	Essentials	Mary Turner	Single Mirror Telescopes
	Invited	Open	

TAAA Fall Star-B-Cue at Kitt Peak

October 16 (Saturday)

The TAAA has scheduled a star party and pot-luck barbecue at the picnic grounds up on Kitt Peak on Saturday, 10/16, starting at 4:00 pm. A maximum of 70 TAAA Members and families will be allowed to participate. The ramada gas-fired barbecue grill will be fired up starting at 4:30 pm and members are invited to cook their dinners between 4:30 and 6:30 pm. Bring a dish to share with other members. The grill will be turned off at 6:30

Club News (cont.)

pm. Telescope observing will commence after sundown and will be concluded by 11:30 pm. All members must be heading down the mountain by midnight. Be prepared for cool temperatures.

At this event, we will have a special opportunity. Claude and Teresa Plymate have graciously arranged for sunset viewing at the McMath-Pierce Solar Telescope for a maximum of thirty TAA Members. If you are interested in participating in this unique experience, please note it on the sign-up sheet. If there are more than thirty people interested, a lottery will be held to determine who will be eligible to attend. John Kalas will contact the eligible people to advise them. Those eligible will be required to arrive at the Star-B-Cue picnic area at 4:00 pm to check in and prepare to travel up to the telescope. Sunset from Kitt Peak will occur at approximately 5:00 pm. Departure from the picnic area will be at 4:20 pm. Participants are not to go directly to the McMath-Pierce Telescope and they will be asked to carpool to reduce the number of vehicles. Participants will cook their dinner and eat after they return to the picnic area following the sunset viewing activity.

There will be a sign-up sheet on the table at the back of the lecture hall at the start of the October 1st meeting. Because of the popularity of this event, attendance will be initially limited to TAA Members and their immediate family members only. If, after all TAA Members have had an opportunity to sign up, there are any openings or cancellations, the attendance of guests will be considered. If you are unable to attend the October meeting, phone and e-mail reservation requests will be taken on a first come, first serve basis **after** 9:00 am Saturday, 10/2. Contact John Kalas at 620-6502 or via e-mail at <jckalas@cox.net>.

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

1. No vehicles are allowed above the picnic grounds after 4:00 pm (exception: sunset viewing at the

McMath-Pierce Solar Telescope).

2. Only the ramada gas-fired barbecue grill is permitted for cooking food at the picnic grounds. No open fires or use of the personal barbecue grills is permitted.
3. All trash must be placed in the garbage receptacles.
4. Use of cellular phones and radio walkie-talkies is prohibited.
5. No alcoholic beverages are permitted.

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

Keeping Up with the Club - TAA FORUM

By Paul Olson

Do you know that the Tucson Amateur Astronomy Association has a very active Online Forum for members?

The conversations go on day and night. Impromptu observing sessions are set up. Viewing experiences are shared. Advice on equipment and techniques are discussed, not to mention the occasional great joke!

Last month there was an academic discussion of the horrors of "Moistions". If you don't know what a moistion is, you should become a member of the forum and find out all about this terrible phenomenon before you unpack your new telescope.

The files and photos sections of the group are fascinating with members contributing links to interesting places, Photo's from last nights observing session or whatever....There is an introduction section where you can show everyone what you look like in the daylight!

There are currently 88 club members in the TAA Forum. Some are quite verbal. Many just lurk and read the messages as they are posted or in a single daily email, your choice!

STARIZONA

ADVENTURES IN ASTRONOMY AND NATURE

5201 N. Oracle Rd. www.starizona.com
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http://chartmarker.tripod.com chartmarker@cox.net

Club News (cont.)

The TAAA Forum is fast becoming a major part of the club's ability to communicate with its members and a great place to make new friends.... Why not join us?

Here's How:

Just go to <http://groups.yahoo.com/>. Fill in the Sign up form and then just type in TAAA Forum in the box where you would search for online groups. This should take you here: <http://groups.yahoo.com/group/taaaforum/>. There are a few preliminary questions to answer such as how you wish to receive your messages. Click JOIN and you're in!

I want to thank the Club for setting this up. I spend some time over morning coffee on this group and I enjoy it a lot! See you there!

The Halloween Astronomy Project

By Terri Lappin

Halloween...little ghosts, goblins, and space aliens abound! What better time to treat these creatures to a peak through your telescope? This year the observing is going to be tricky since the only planets we have worth looking at are Uranus and Neptune. The moon will rise about 8:30pm washing out any faint fuzzy objects you might be brave enough to try. However, I still prefer spending the evening outside rather than being inside with the doorbell ringing all evening long! Gary and I have set up a telescope each Halloween, weather permitting, since 1990 and have always enjoyed the experience. Several TAAA members have done the same and have told me how much enjoyment they have had from the experience. Most parents have a real concern about sending kids out for trick-or-treating, but this is a treat that is relatively safe. And, the parents usually enjoy it as much as the kids do!

If you live in a neighborhood with bad lighting, use this casual observing session to make your neighbors aware of light pollution and how it affects our ability to see the night sky. Don't make it a lecture; just make them aware of the problem. You may be surprised at how many of your neighbors will agree that glaring lights are a problem.

Here are a few guidelines to help make your Halloween a success. Set up your telescope near the sidewalk with a jack-o-lantern or similar attention getting, but dim, light source nearby. Spooky music gets attention too! Make sure power cords don't become trip hazards. Leave your patio lights off to draw kids away from your front door and towards you and the telescope. Be sure to have a stepladder handy for the little ones. The tendency is for people to support themselves by leaning against the telescope so politely warn them not to touch your telescope. It's best to use an eyepiece with some eye relief, as they are more comfortable to use; however I also recommend using an eyepiece you didn't pay too much for. Many kids wear makeup, and that stuff will get all

over your eyepiece! You'll want to clean your eyepiece after the night is over. The TAAA members pack includes information about cleaning optics or you can request that information from me (Terri Lappin).

I am interested in hearing about your experience with the Halloween Astronomy Project. Tell me how many kids look through your telescope and what objects you show them. I hope that TAAA members can make the Halloween Astronomy Project an annual event in their neighborhood.

Astrophoto SIG: CCD Image Processing Workshops

By the time you read this our first session will have been completed and preparations will be underway for the second session. These workshops are intended for those imaging with dedicated astronomical CCD cameras such as SBIG and Starlight Xpress. Webcam imaging and processing require different software and techniques that will not be covered in these workshops. This next session will cover topics such as:

- The imaging Session
- Acquiring a Grayscale Image
- Basic Image processing techniques

The session will be split between lecture and hands-on lab work. You'll need your own laptop and software to follow along. Based on feedback we've received so far, this session will likely use MaxIm DL and possibly Photoshop, but that could change.

As of this writing a date has not been set for the next workshop, but it will likely occur before you receive the next newsletter. Further details will soon be posted to the TAAA's Yahoo Announcement list (<http://groups.yahoo.com/group/tucsonastronomy/>). These workshops are limited to TAAA members and **advance sign-up is required**. For more information or to register contact Ray Toscano at ray_toscano@earthlink.net or 529-3074.

TIMPA Use Fee Eliminated for TAAA Members

The TAAA Board of Directors has voted to eliminate the TIMPA use fee for members. This fee had been required whenever the facility was used on non-scheduled star party nights. The \$3.00 per person per night or \$6.00 per carload per night use fee will still apply to non-TAAA members.

If you would like to use the facility to observe on a non-star party night please contact one of the TIMPA "Key Keepers". After paying a refundable \$10 deposit you can borrow an access key for your use on a specific night(s). See the new TIMPA rules of use for more information: <http://www.tucsonastronomy.org/PDF/TIMPARules.pdf>

Here is a list of "Key Keepers" and their contact info:

Club News (cont.)

Member	Phone	email
Thom Peck	327-7825	thomas.peck@optics.arizona.edu
Michael Turner	743-3437	Mrmgturner@earthlink.net
Steve Marten	906-0049	TAAAStarParty@yahoo.com
Terri Lappin	579-0185	tklappin@earthlink.net
Ray Toscano	529-3074	ray_toscano@Earthlink.net
Bill Lofquist	297-6653	wlofquist@comcast.net
Ed Finney	296-9266	eefinney@NetZero.com
John Kalas	620-6502	jckalas@cox.net

Annual Picnic**Saturday, October 30 anytime after 2pm**

Reid Park Ramada 16

Plans are coming together for our picnic on Saturday, October 30th at Reid Park. This is a family event, so bring spouses, kids, grandkids, friends, or significant others. Plan to arrive around 2:30pm. While things are getting ready we will show demonstration activities from our Night Sky Network Toolkits. These demonstrations are well suited to the non-astronomer in your family and you might enjoy them, too. We will have solar observing throughout the afternoon (provided someone offers to bring a solar observing setup). You should be able to start cooking your food by 3pm. We will keep the grills going until 5pm. Around 4pm we will start a comet making activity. (See the note below if you want to make a comet.) Sunset is around 5:30pm but we have use of the ramada until 7:30pm. You can stick around for

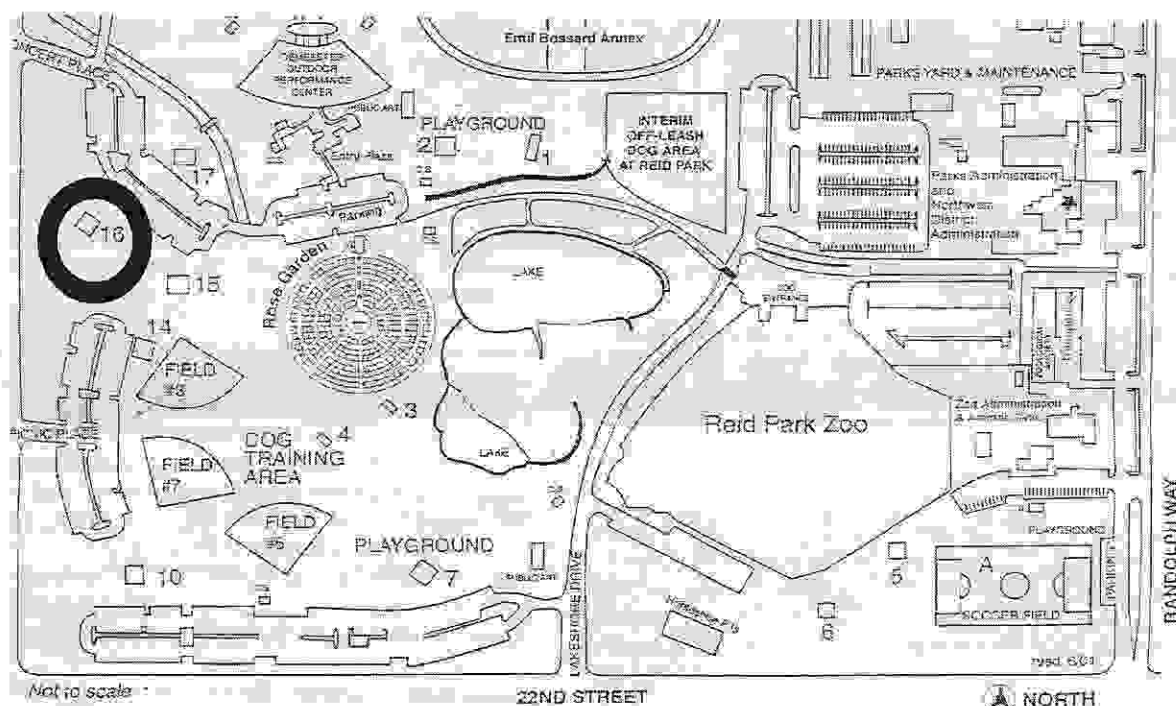
socializing or go down to the lake and look at the ducks. Being under the light dome of Tucson, we're not planning any serious observing. The only planets available will be Uranus and Neptune (Pluto, too but at magnitude 14!), so we might see them after dark if there's a telescope still around.

Bring your own main dish and something (salad, dessert, etc) to share. TAAA will supply drinks. You must provide your own utensils and place settings. We do not have a beer permit, so no alcohol is permitted at this activity. Also, remember the park has restrictions against glass jars and bottles.

Those wanting to go to the zoo should arrive at the zoo entrance by Noon. We do not qualify for discount pricing but regular rates are as follows: \$5 for those 15 - 61 years, \$4 for those over 62, \$2 for children 2-14, children under 2 are free. We will meet at the entrance at noon and we hope to finish in time to be at the ramada by 2pm. Please RSVP to Terri (tklappin@earthlink.net or 579-0185) if you will be going to the zoo. If you want to spend more time at the zoo you might want to do this activity on your own.

Note for comet making: Those making comets should bring a large plastic bowl (like used for a big bowl of popcorn or chips) and a mixing spoon (it will get dirty but will clean up easily). Other materials will be supplied. Please RSVP to Terri (see above) so we know how many supplies will be needed.

Directions: Take the west side entrance at Concert Place and Country Club (~1/4 mile north of 22nd St). Go to the parking area to the right (south). We are at Ramada 16, which has lots of tables. The ramada is the first big one you will see on your right after entering the parking area. See the big circle on the map.



Items of Interest

WEBSITES: TRIPS ON THE INTERNET SUPER-SKYWAY

IT'S FALL GALAXY TIME!

By Rik Hill

The monsoons have moved out (leaving too little water again) and we are back in the regime of clear skies. Soon the nights will cool down, the summer Milky Way will no longer dominate the evening skies, and Fomalhaut will hang low in the southern sky. These are some of the most pleasant nights for observing and especially observing galaxies.

Most amateurs look at the standard lists of galaxies, Messier and the brighter NGCs. This year try something different. Go after the weirdoes. Try bagging a few from Halton Arp's Catalog Of Peculiar Galaxies, which is online at: <http://nedwww.ipac.caltech.edu/level5/Arp/frames.html>

Most of them are faint but some, like M51 and M32, are bright. You may have looked at these for years but now you can see why they are "peculiar" and have a whole new appreciation.

You can extend this autumnal investigation by selecting from the Galaxy Pair and Interacting Galaxies Picture Gallery at: <http://crux.astr.ua.edu/pairs2.html>. Here is a wonderful atlas that will keep you busy for many a night!

In the northeast the dark sky will be ornamented with M31. Several years ago I pointed out, in one of these articles, the online version of Hodge's Atlas of the Andromeda Galaxy, which is still available at: http://nedwww.ipac.caltech.edu/level5/ANDROMEDA_Atlas/frames.html

Annual Picnic October 30

Well, now several enterprising amateur astronomers have made their own M-31 Atlas and put it on the web at: <http://www.regulusastro.com/regulus/papers/m31/>.

They have done an excellent job with a Takahashi CN-212 Reflecting Telescope in Newtonian Mode plus field flattener and SBig camera. In the images they identify many globular and open clusters but using the Hodge atlas you will see much more there. How much can you identify through the eyepiece?

Though our nights are longer they seem to pass more quickly. Before going to bed, as the Pleiades and Capella rise, take a look at M33 the Triangulum Galaxy or the "Pinwheel" Galaxy. It's M31's poor cousin. This is mostly due to the nearly face on appearance. However, it is nearly twice the size of the full moon! There is much that can be

seen in the amateur 'scope here. There are the bright HII nebulosities NGC 595 & 604 which are highlighted at: <http://schmidling.netfirms.com/m33.htm>.

NGC 604 should be high on your list of objects. It's M33's version of the Tarantula Nebula! Check out the Astronomy Picture of the Day of it for a breathtaking image at: <http://antwrp.gsfc.nasa.gov/apod/ap021102.html>.

You will have to keep reminding yourself that it is in another galaxy! This nebula alone makes the trip to this galaxy worth a slight loss of sleep.

There are many other things that can be identified in M33 like super giant blue stars, large stellar associations, open clusters and globular clusters. Some good online images to guide you through this galaxy can be found at: <http://astrim.free.fr/m331.htm>
<ftp://ftp.seds.org/pub/images/hst/96-27.jpg>
<http://www.lpl.arizona.edu/css/Images/M33d.jpg>

But what is needed is a comprehensive atlas of M33 similar to the ones for M31. Are you up to it?

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

ARCHAEOASTRONOMY

Presented by the Arizona Archaeological and Historical Society

Tuesday evenings, 7 p.m. - 9 p.m., November 9, 16, and 23, 2004

John Fountain, Instructor

This course will cover the history of archaeoastronomy, the many forms it takes, and review major examples throughout the world. There will be special emphasis on examples of archaeoastronomy in the southwestern United States and relevant ethnography. Methods of archaeoastronomical research will be reviewed. We will discuss basic concepts of astronomy without a telescope and consider how they may be applied to studying archaeological sites. We seek to better understand how astronomy played a role in the life, society, and religious practice of early people. No background in astronomy or mathematics is required.

John Fountain is retired from the Lunar and Planetary Laboratory at the U of A. During his 25 years there he studied the moon and planets by earth-based observation and with the NASA Ranger, Pioneer, and Voyager programs. He is co-author of the "Consolidated Lunar Atlas", used by the Apollo astronauts, and co-discoverer of two satellites of Saturn. For the past 12 years he has done research in archaeoastronomy. His co-edited volume, "Current Studies in Archaeoastronomy: Conversations Across Time and Space" (with Rolf M. Sinclair) is due out this fall.

Suggested reading: There are no good comprehensive

Items of Interest (cont.)

texts on archaeoastronomy. "Prehistoric Astronomy in the Southwest" by Malville and Putnam has a good introduction to astronomy relevant to archaeoastronomy and some examples of its application. "Living the Sky" by Ray Williamson gives more examples of archaeoastronomy and related ethnography. While not required for the course, both could be useful to class participants. . . .

Cost is \$30 for AAHS members and \$40 for non-members; \$10 discount available for students and K-12 teachers. Pre-registration is required. To register, please contact Laurie Webster at (520) 325-5435 or lwebster1@mindspring.com (please note the 1).

Basha's Thanks a Million
TAAA number 23178

Necessary But Not Sufficient!

What is the one thing absolutely necessary for observing or just gazing into the heavens? Clear skies! And, if you are lucky to have that, the next most important aspect is dark skies. We can't do much about creating clear skies except to move locations on a given night to get away from a cloud cover but we can do a lot about having dark skies!

We are fortunate in Southern Arizona to have Outdoor Lighting Codes to help minimize the amount of light pollution that is generated each night. As Tucson keeps growing at about 4% per year, we are struggling to keep our lighting levels low and ideally we would reduce them as more citizens become educated as to the light pollution problem and take action to help reduce it. Light Pollution not only has very adverse effects on astronomy and associated businesses; it also can affect human health, our safety, our wild life and plant life.

Our Building Code Officials are the ones that enforce violations but if not caught during construction of a residence or business, the non-compliant lighting fixture (s) may never be found so they can be modified or replaced. And many fixtures are added or changed out without permits. Our Building Code Inspectors do not drive around looking for bad fixtures; they only take action when a formal complaint is filed with their department.

The International Dark-Sky Association (IDA) and the local Southern Arizona Section of the IDA (SA-IDA) are committed to "Helping to Preserve and Protect the Nighttime Environment and Our Heritage of Dark Skies..." but their role is to be an **enabler** to make this happen. Professionals and lots and lots of concerned citizens need to take action to get the actual work done to ensure that we have only good light fixtures. See the SA-IDA.ORG Web site for more information including Obtrusive Lighting Complaint forms.

Dark Skies for October 2004

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

Th/Fr 30/ 1	19:30 - 19:31	Su/Mo 10/11	19:18 - 3:52	Th/Fr 21/22	0:52 - 5:11
Fr/Sa 1/ 2	19:29 - 20:03	Mo/Tu 11/12	19:17 - 4:53	Fr/Sa 22/23	1:59 - 5:12
Sa/Su 2/ 3	19:28 - 20:39	Tu/We 12/13	19:15 - 5:05	Sa/Su 23/24	3:04 - 5:13
		We/Th 13/14	19:14 - 5:06		
Su/Mo 3/ 4	19:27 - 21:20	Th/Fr 14/15	19:13 - 5:06	Su/Mo 24/25	4:06 - 5:13
Mo/Tu 4/ 5	19:25 - 22:06	Fr/Sa 15/16	19:12 - 5:07	Mo/Tu 25/26	5:07 - 5:14
Tu/We 5/ 6	19:24 - 22:57	Sa/Su 16/17	19:39 - 5:08	Tu/We 26/27	- - -
We/Th 6/ 7	19:23 - 23:53			We/Th 27/28	LUNAR ECLIPSE!
Th/Fr 7/ 8	19:21 - 0:51	Su/Mo 17/18	20:29 - 5:08	Th/Fr 28/29	- - -
Fr/Sa 8/ 9	19:20 - 1:51	Mo/Tu 18/19	21:27 - 5:09	Fr/Sa 29/30	- - -
Sa/Su 9/10	19:19 - 2:51	Tu/We 19/20	22:33 - 5:10	Sa/Su 30/31	18:58 - 19:14
		We/Th 20/21	23:42 - 5:10		

Weekend	Sun	Sun	Mercury	Venus	Mars	Jupiter	Saturn	
Sa/Su	Set	Rise	Set Vi	Rise Vi	Rise Vi	Rise Vi	Rise Vi	Vi=Visibility
2/ 3	18:05	6:18	18:02 -	3:06 -4	5:50 -	5:37 7	0:27 0	-3 brilliant
9/10	17:56	6:22	18:06 -	3:17 -4	5:44 -	5:16 3	0:01 0	0 conspicuous
16/17	17:48	6:27	18:09 -	3:28 -4	5:38 9	4:56 1	23:35 0	3 moderate
23/24	17:40	6:33	18:11 9	3:40 -3	5:32 7	4:35 0	23:09 0	6 naked eye limit
30/31	17:33	6:38	18:15 8	3:52 -3	5:26 6	4:14 -1	22:42 0	9 binoculars limit

By Erich Karkoschka

Star Parties & Events

Whipple Observatory Open House and Star Party Saturday, 10/2/2004

See The Stars Through A Telescope - free and open to the public. Courtesy of Smithsonian Institution's Fred Lawrence Whipple Observatory Offices near Amado, Arizona.

The Whipple Observatory will present an Open House and Star Party on Saturday, October 2. Observing will begin about 6:45 p.m. courtesy of telescopes provided by the Tucson Amateur Astronomy Association and Sonora Astronomical Society.

4:30 p.m. Visitors Center opens
5:45 p.m. Informal astronomy talk by Observatory staff
~6:45 p.m. Observing begins (in parking area next to Visitors Center).

Dress for cool evening temperatures. Small flashlights and binoculars are useful to bring.

Please cooperate with staff directing parking when you arrive. The parking spaces nearest the building are reserved for TAAA members and their telescopes. Visitors should park along the driveway or in the parking area outside the gate or along the road as directed. (Please note: Visitors will be allowed to park cars next to the building in the space usually reserved for telescopes until 5 p.m. At that time, visitors will have to move their cars to other parking spaces so that telescopes may be set up.)

For more information call 670-5707. In case of threatening weather, call 670-5707 after 4:30 p.m. on the 2nd for information about star party cancellation.

The Whipple Observatory, Tucson Amateur Astronomy Association, and Sonoran Astronomical Society present this opportunity to see the stars under dark Southern Arizona skies.

How To Find The Observatory Offices:

The administrative complex for the Fred Lawrence Whipple Observatory is 43 road miles south of Tucson and 38 road miles north of Nogales, Arizona.

From Tucson, drive south on Interstate 19 to exit 56 (Canoa). At the bottom of the exit ramp, turn left and drive under the freeway to the frontage road on the east side. Turn right and drive south three miles to Elephant Head Road. Turn left and drive east, crossing the Santa Cruz River on Elephant Head Bridge. One mile east of the river, turn right on Mount Hopkins Road. Drive southeast about seven miles to the Observatory Office (end of pavement).

From Nogales, drive north on Interstate 19 to exit 48 (Amado/Arivaca Junction). At the end of the exit ramp, turn right and then left onto the frontage road. Drive north for about two miles to Elephant Head Road. Turn right and drive east, crossing the Santa Cruz River on

Elephant Head Bridge. One mile east of the river, turn right on Mount Hopkins Road. Drive southeast about seven miles to the Observatory Office (end of pavement).

Arizona-Sonora Desert Museum Public Star Party

Saturday, 9 October 2004

The public is invited to the Desert Museum for a evening under the stars. We will set up around 6:00 pm in the lowest rows of the parking lot near the museum entrance. Security should have this area coned off for us when you arrive. Bring a jacket as the fall evening will cool quickly. This is a popular event, so be prepared for crowds around your scope. The museum will be closed but the bathrooms will be open. Activities will wrap-up around 11:00pm.

All of the media outlets, newspaper, TV and radio, have been contacted to invite the public, so we need every telescope and operator we can come up with. You don't have to be an expert to come out and enjoy the evening. In fact, a few volunteers are needed to handle non-telescope related items.

TAAA Star Party at Las Cienegas (Empire Ranch)

Saturday, 9 Oct., 2004

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 astrophotos. 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. There are no restroom facilities at the site, so be prepared. Las Cienegas is at 4000 feet, and fall is here, so be prepared for cold 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 on your bright white backup lights. See the directions to Las Cienegas on the outside flap of this newsletter.

Marana Middle School Star Party Northwest

Wednesday, 10/13/2004

7

No. of Scopes:

Marana Middle School will be preparing for Math and Science Family Night at 11279 W. Grier Rd Marana. Take I-10 to tangerine exit and turn left to go under the freeway then turn right and head west for 3 miles. Next, turn left at Grier road and the school is on the left side of the road.

Star Parties & Events (cont.)

Viewing will be on the open fields behind gym. Contact person Kasey Meisner can be reached at 682-4730 or email K.L.Meisner@maranausd.org. Set-Up Time: 7:00 pm. Observing will be from 7:30 pm to 9:00 pm. Sunset: 5:53pm Dark Sky: 7:14pm Moon Phase: near New Moon.

TAAA Fall Star-B-Cue at Kitt Peak

October 16 (Saturday)

See article in the *Club News* section.

Sewell Elementary Star Party

Tuesday, 10/19/2004

Scopes: 7

Central

No. of

Sewell Elementary will be holding a Star Party at 425 N. Sahuara. From Speedway & Craycroft go South to 5th Street, turn left (east) to Sahuara then right (south) to the main school entrance. Enter the Playground next to the dumpster and drive around back of school to the NORTH Playground. Set up will be at the Basketball Courts on the NORTH playground. Contact person Karen Vanlandingham can be reached at 791-2965 or email kvanland@as.arizona.edu. Set-Up Time: 6:00pm. Observing will be from 7:00 pm to 8:30 pm. Sunset: 5:46pm. Dark Sky: 7:08pm Moon Phase: First Quarter

Van Buskirk ES Star Party

Wednesday, 10/20/2004

6

Central

No. of Scopes:

Van Buskirk ES will be hosting MoonScope at 725 E. Fair Drive. From Ajo and Park go south to FAIR Dr (stoplight) then west (right) to Van Buskirk School. Follow signs from Fair Dr to entry gate located at very east end of parking lot. Go into lot, go through playground gates and follow signs to viewing area, which is behind school on playground. Contact person Dolores Lopez can be reached at 227.3750 or email dlopezsol@aol.com. Set-Up Time: 6:00pm. Observing will be from 6:30 pm to 8:15 pm. Sunset: 5:45pm Dark Sky: 7:07pm Moon Phase: First Quarter.

Flandrau Science Center

October 27 (Wednesday)

Total Lunar Eclipse Downtown with Flandrau Science Center! Here's a great opportunity to support Flandrau Science Center (in its transition to the Rio Nuevo project) and promote TAAA during one of the best and last evening total lunar eclipses of the next decade!

TAAA members with giant (or regular) mounted binoculars and large telescopes are needed to show the eclipsed moon to the general public in the over-flow parking lot of the Tucson Convention Center (TCC) just south-east of the corner of Granada Ave. and Cushing St (south of the new Federal Building). This event is co-sponsored with the Rio Nuevo Redevelopment Project and the Tucson Convention Center. Telescope viewing is free. Parking for the public may be \$4.00 per vehicle at the TCC (details have yet to be decided). A few telescopes may be needed on Flandrau's property, but because of UA

Desert Skies Classified


For Sale	Celestron Pixcell255 320x240 CCD, use for guiding or entry imager \$500. Celestron C80 F/5 OTA with rings and case \$100. Meade ETX60 with tripod plate and power supply \$100. Orion SteadyPix camera mount \$25. Orion 7-21mm zoom eyepiece \$60. 14mm Ifocus for SBIG 237 \$80. Contact Richard at 721-0694 or email at richard.schulze@cox.net . [12/04]
For Sale	2004 Meade ETX 125 Ultra Auto Star. Delux tripod. 6X30 finder & red dot finder. Custom hard case. Five Plossl eyepieces. Meade dew shield. AC/DC. 3 year Meade warranty. This is a new ETX in box. \$995.00. Have receipt for \$1350.00. Contact Perry at par@gci-net.com , 520-797-1450. [11/04]
For Sale	Meade LX-50 8" Schmidt-Cassegrain, excellent condition, with heavy-duty field tripod, manual, standard accessories (diagonal, ocular, motor controller, finderscope, etc). Includes Orion Tele-Extender, Olympus SLR camera "T" mount, Telrad, Celestron 2X Barlow. Asking \$1300.00 (cash or cashier's check only). Inspection by prior arrangement. Buyer must pick up. Steve McClain phone: 584-1284, cell: 235-3312, email: armcclain@comcast.net or steven.mcclain@tUSD.k12.az.us . [11/04]
For Sale	Unitron 4" f/15 Polarex refractor doublet, excellent condition for it's age (1950's), finder scope, manually operated equatorial mount, wood tripod and tray, eyepieces, tool box, solar screen (all original equipment). Three original wooden boxes (holds the ota, the mount, and the tripod). Stands over 6' tall. Optics show classic airy discs, with excellent stellar views and planetary details. Asking \$1200. Contact Jerry Farrar at 731-1104 or e-mail jandkfarrar@earthlink.net . [11/04]
For Sale	Celestron Photographic tripod, 5' max height with center post extended \$40. Contact Terri Lappin at 520-579-0185 or tklappin@earthlink.net [11/04]
Service	Laser Repair Works d'Arndt 11994 W. Vornac Rd. Dublin, Ca. 94568. Phone 1-510-816-3752 [12/04]

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 George Barber at 822-2392 or e-mail at barbergj@flash.net.

TAAA Board of Directors Meeting - September 8, 2004

Attending: TAAA Board members Thom Peck, Michael Turner, Steve Marten, Terri Lappin, Bill Lofquist, Ed Finney, Ray Toscano. TAAA members: Robert Crawford, Jay Penegor, Nora Toscano, and Robert Wilson. Guest: Doug Isbell, NOAO Manager of Public Affairs and Public Outreach.

1. TAAA Telescope Loan Program. Jerry Penegor reported "zero" interest in borrowing scopes over last 8 months.
2. TAAA 6' Dome Project. Robert Crawford reported on 6' Dome evaluation. It is repairable but costs are considerable and 8-10 weekends required. Discussion of current value, restored value and disposal options. Bill motioned to offer dome to membership via \$200 minimum silent auction. Unanimous. Board agreement only TAAA Board will accept charitable gifts in future.
3. TIMPA User Fee. Ray motioned that TIMPA User Fee be dropped for members (will remain for non-members). Unanimous (Terri absent for vote).
4. TAAA LX-200GPS Equipment. Michael reviewed plans for providing TAAA LX-200GPS scope instruction. Also, Peterson Engineering LX-200GPS Mounting Assistant II purchased for scope, cost \$83.99.
5. Star Party Participation Award. Michael reviewed Star Party Participation Award proposal. Discussion. Unanimous (Terri absent for vote). Steve was assigned Star Party Participation Award Coordinator.
6. NOAO Joint Projects. Doug Isbell, NOAO Manager of Public Affairs and Public Outreach discussed intentions for ongoing joint projects with TAAA. Also, NOAO has agreed to fund and host, with Flandrau, to host *Cosmic Connection* sponsored by NASA and NSF, beginning Oct 1 and continuing for three months. Next July AIAA American Institute for Aeronautics and Astronautics conference scheduled and NOAO will be covering comet impact through one of Kitt Peak telescopes. In mid-September ASP (Astronomical Society of the Pacific) will be hosting conference regarding public outreach. TAAA may want to be exhibitor as well as hold star party events.
7. TAAA Member Feedback. Board consensus to rename General Meeting "Beginners Lecture" to "Astronomy Essentials." Ray suggested buying a wireless headset for speakers to wear to enhance audibility, reduce feedback and other technical problems. Methods to limit "off-topic" exchanges on TAAA Forum were discussed.
8. Coordinated TAAA Lecture and Field Trip. Terri suggested using November General Meeting for presentation of how to construct and use amateur backyard observatories with the possibility of tours, Board agreed. Michael offered to coordinate November general meeting speakers and content and tours of backyard observatories.
9. Project Astro Teachers/Public Outreach. Suggestion from Paul Olson to offer free memberships to new Project Astro teachers. Terri concurred. Also, "honorary" membership could be offered. Ray noted that Raytheon Small Donation program could provide up to \$225 for this purpose. Terri suggested will call Connie Walker to ask whom she thinks should receive free memberships.
10. TIMPA Liaison and Inputs for 9.21 TIMPA Board Meeting. TAAA Clean-up of TIMPA scheduled for Oct 2, Joint activity in April '05, Strategic Plans for TIMPA, Alternate TIMPA use considerations, Rodeo Light Pollution Issue, Mike Cummins, president of TIMPA, meeting with Board in early October.
11. TAAA Reid Park Picnic Sat Oct 30. Discuss issues affecting picnic including UofA Homecoming football game at 4pm. Discussion. Terri will send announcement on TAAA Announcement Server and ask for help coordinating event.
12. Star Party Etiquette. Michael noted that he had posted proposal on website, 5 pages consisting of 5 etiquette rules covered in a "basic" and "expanded" format. Also, pages for TIMPA, Las Cienegas, and School Star Parties. Unanimous.



**Kitt Peak Star-
B-Que
Oct. 16**

Adjourn 9:55pm
Respectfully Submitted:
Steve Marten, Secretary

Basha's Thanks a Million
TAAA number 23178

Object of the Month by Alfredo Garcia

This month's OTM can be best described as one of the most energetic explosive events that can occur in a galaxy. This event is a stellar explosion. Stellar explosions occur in all galaxies, including our own Milky Way, and can be classified into two types: novae and supernovae.

Novae are stars whose brightness increases quickly by greater than 10,000 times and then return to normal over the span of a few weeks. Novae occur in a double star system where one of the stars is a more normal star and the other is a white dwarf. Over time, matter accretes in a thin layer on the surface of the white dwarf. When enough mass is accreted, the white dwarf eventually ignites in a thermonuclear explosion. This explosion blows off a thin surface layer of matter into space causing a large rise in light output.

Supernovae are some of the most energetic explosive events known. They occur at the end of a star's lifetime when its nuclear fuel is almost exhausted. There are two types of supernovae: Type I and Type II. Type I supernovae are associated with white dwarf stars that undergo a more violent explosion than in a nova. Type II supernovae are associated with particularly massive stars whose cores collapse. As the core collapses, it releases a huge amount of energy. This will in turn cause a blast wave that ejects the star's envelope into interstellar space and also cause a tremendous rise in the star's light output. Supernovae can blaze with the light of hundreds of millions of times that of our own Sun. At peak brightness a supernova might outshine its parent galaxy. Type II supernovae are further subdivided by the way their brightness fades.

Without any further introduction, I present the October 2004 OTM: Supernova 2004dj (SN 2004dj). Koichi Itagaki of Japan discovered this supernova on 31 July 2004 using a 0.6-meter, f/7 reflector. It's estimated brightness at the time of discovery was 11.2, making it is the brightest supernova to appear in several years. Spectrum analysis shows it to be a Type II supernova and in particular, a Type II-Plateau (IIP). This type supernova reaches maximum brightness, dims slightly, and then stays at almost the same brightness "plateau" for many days or months and then fades at a fairly regular rate. As such, this supernova should remain "bright" enough to observe well into October.

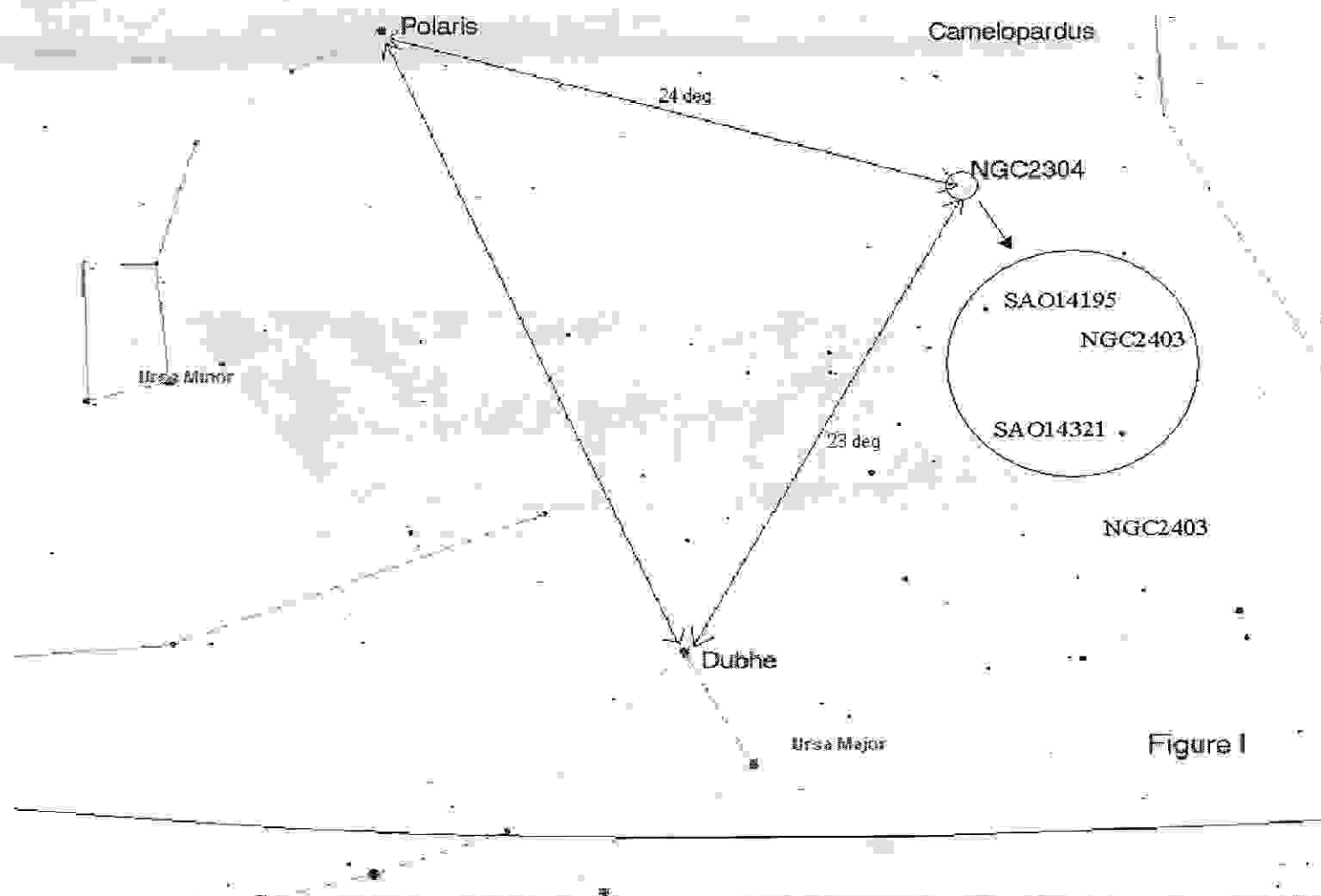


Figure 1

Object of the Month by Alfredo Garcia (cont.)

The star that became SN 2004dj is located on the outskirts of the spiral galaxy NGC2403 found in the constellation of Camelopardalis, the Giraffe. This galaxy is one of the nearest outside of our local group and is probably a member of the M81/M82 Group. It is located at a distance of 11 million light-years and about 37,000 light-years across. Astronomers estimate that the star was at least 15 times more massive than our Sun and only 14 million years old. In contrast our Sun is over 4.6 billion years old. Massive stars exhibit much shorter lives because they have more fuel to consume through nuclear fusion and use it up in at a much faster rate.

NGC2403 is well placed for observation in the October time frame; particularly in the early AM a couple of hours before dawn. From Tucson, if you go out at 03:00 AM on 15 October, you will find NGC2403 at an altitude of about 45 degrees above the northeastern horizon. Since NGC2403 (magnitude 8.4) is not visible to the unaided eye, you can use star hopping techniques to find it. Start by first locating Polaris, the North Star. Then find the constellation of Ursa Major and locate the Big Dipper asterism. In the asterism, find the bright star Dubhe (the brightest star in the "bowl stars" of the Dipper). NGC2403 is almost equidistant from these two stars. From Polaris go about 24 degrees to the southeast and from Dubhe go about the same distance to the northeast. There you will find NGC2403 between two 6th magnitude stars about 2 degrees apart. The stars are SAO 14321 and SAO 14195 (See Figure 1). If you have an automated Go-To telescope or setting circles, you will find NGC2403 at Right Ascension: 7hr 37min 20.9sec and Declination: +65deg 35min 29sec. Once you find NGC2403, SN 2004dj is located at Right Ascension: 7hr 37min 17.02sec and Declination: +65deg 35min 57.8 sec or roughly 160" east and 10" north of the galaxy's nucleus.

I was prompted to find and observe the supernova from the Astronomy Picture of The Day that was posted on the Internet during Sep 04. I then found some extra SN 2004 dj information and decided to image the supernova for presentation in this month's OTM article. On the morning of 12 Sep 04 (during the Las Cienegas Club star party), I was able to observe SN 2004dj very easily through my 10" f/6.3 LX200 SCT even in the early dawn skylight. Using a set-up that consisted of a monochrome Starlight X-Press SXV-H9 CCD camera and a 120mm f/5 Orion ShortTube Refractor piggybacked on my 10" f/6.3, this author produced the 3-minute exposure shown at Figure 11 (see front cover). To better show the supernova's location, I have included a previously taken image of NGC2403 (last year) in the same figure for comparison. You can clearly see where SN 2004dj is located. The magnitudes of some foreground stars are also indicated on the figure so you can get an idea as to how bright the supernova is. I would highly recommend SN 2004dj as a CCD imaging or astrophotography object. You will be rewarded with an image you can proudly display. Good luck and have fun!!

**Look Great!
with TAAA Apparel.**

Constellation Report by Chris Lancaster

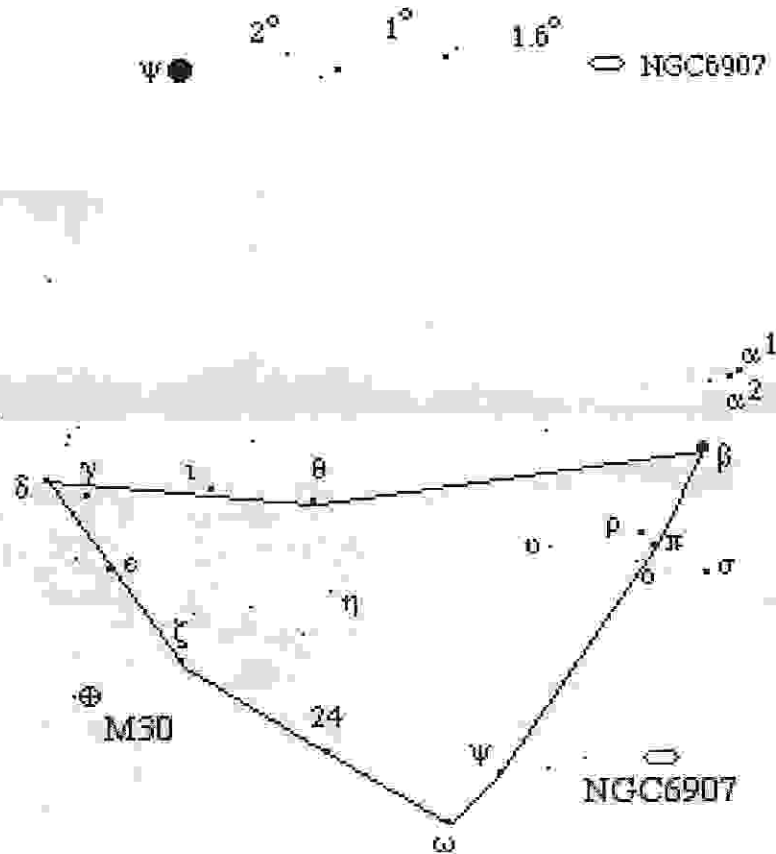
Capricornus

The Sea Goat

The area of the sky in which Capricornus finds itself is associated with the sea, since this is where we find other constellations connected with water grouped together such as Pisces, the fish, Eridanus, the river, Cetus, the whale or sea monster, and Aquarius, the water bearer. As far back as the Babylonians of 1000 BC, people have envisioned Capricornus as a creature that is mostly goat, but with its hindquarters replaced by the tail and fins of a fish. Myth tells us that this odd combination came into being after the monster Typhon surprised some gods picnicking beside the Nile. To escape the monster, the gods turned themselves into various animals to flee. But one of them, Pan, was indecisive. In his frightened state he ran through the shallow water at the edge of the river and while he was waist-deep his impulsive outcome is our fish-goat whatchamacallit.

Look south to find Capricornus. Its third magnitude and dimmer stars can be difficult to find, but if you look in the area between Altair, the brightest star in Aquila on the eastern edge of the Milky Way, and Fomalhaut, the solitary first magnitude star sitting all by itself far to the southeast, you will see a shape in the stars resembling a fat letter V or perhaps an orange segment.

The premier object in Capricornus is without doubt M30. Here is a fine globular cluster comparable to most others of its type elsewhere. It shines with a healthy magnitude 8 glow in a space about 10 arc minutes wide. Look to RA 21h 40m 25s Dec -23d 11' 00", or you can simply point to 5.2 magnitude δ Capricorni which is 3.5 degrees southeast of Zeta (ζ) Capricorni. M30 should then be in your low power field of view 1/3 of a degree to the northwest. Messier saw it in his telescope as a nebula, but soon afterward other astronomers noticed that they could resolve it into stars and even described the cluster as being oval shaped containing spiral pattern of stars.



Looking opposite M30 to the western side of the constellation presents the spiral galaxy NGC 6907. This is a suitable object for larger telescopes since it is a faint 11.9 magnitude covering 3.3' x 2.7' of the sky. It sits at RA 20h 25m 6s Dec -24d 48' 30" in a blank area of the sky. You can star hop to it by starting at Psi (ψ) Capricorni. Move west 2 degrees to a 6th magnitude star, 1 degree west again to a pair of stars, one sixth magnitude and one seventh magnitude, that are 8' apart, and then another 1.6 degrees west to NGC 6907.