

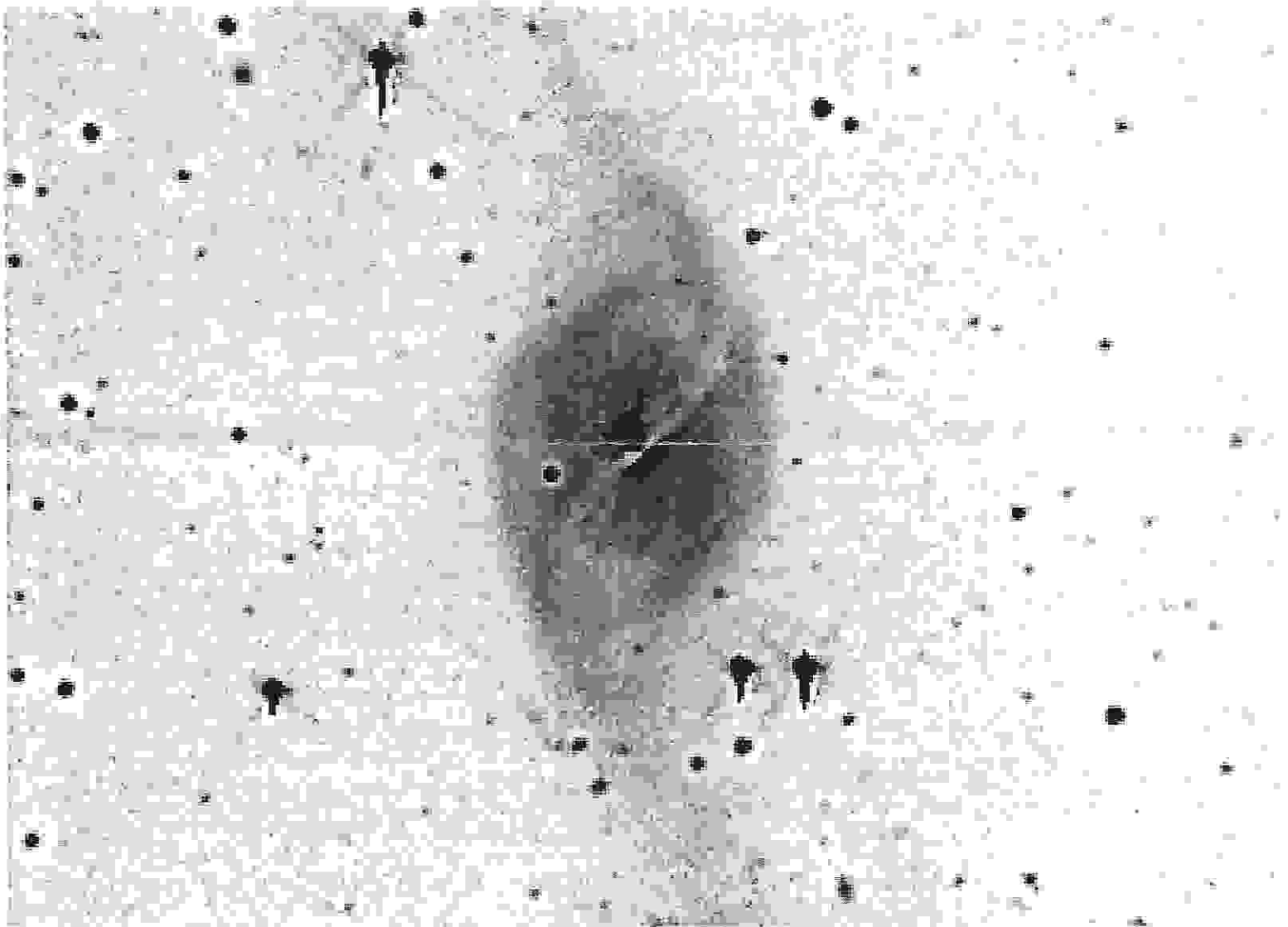


Desert Skies

Tucson Amateur Astronomy Association

Volume XLVI, Number 9

September, 2000



Galaxy NGC3718

Calendar of Events

BEGINNERS LECTURE: Sept 1, 6:30 pm at the Steward Observatory Auditorium - Room N210. This month's topic is *What Type of Star...* by Andrew Cooper.

GENERAL MEETING: Sept 1, 7:30 pm at the Steward Observatory Auditorium - Room N210. Topic is *Fundamentals of CCDs* by Wayne Brown.

BOARD OF DIRECTORS MEETING: *NEW DAY!* Monday, Sept 11, 7:00 pm at Steward Observatory Conference room N305.

STAR PARTIES AND EVENTS:

- Aug. 29 - TIMPA Site Prep Sub-Committee Meeting
- Sept. 2 - TAAA Empire Ranch Star Party
- Sept. 5 - TIMPA Site-Committee Meeting
- Sept. 9 - TIMPA Star Party
- Sept. 21 - Hendrick School Star Party
- Sept. 23 - TAAA Empire Ranch Star Party
- Sept. 30 - TAAA/TIMPA Joint Activity at TIMPA

Newsletter Schedule: Deadline for articles: Monday, Sept 18. Printing: Tuesday, Sept 26. Folding Party: Wednesday, Sept 27. Mailing: Thursday, Sept 28. The newsletter is scheduled to be in the mail at least one week prior to the following month's General Meeting.

Cover: See *Club News* for details on the cover photo.

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

TAAA Phone Number: (520) 882-1950

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Newsletter Editor	George Barber	822-2392	barbergj@flash.net
Star Party Coordinators	Maggie & Jeff Buzek	760-4578	jeffbuzek@aol.com

TAAA Mission Statement

We are a resource for anyone interested in astronomy. It is our mission to nurture a person's natural curiosity about the night sky. By giving people a knowledge and understanding of astronomy, we enhance their enjoyment of the solar system and beyond. Through our public activities and school evening observing sessions, we bring astronomy to persons of all ages. Our regular meetings and observing sessions offer members a forum to meet others with similar interests and experiences and to learn from one another.

Annual Membership in the TAAA:

Regular membership	\$ 23
Senior membership (over 60)	\$ 21
Student membership	\$ 15
Add for Family membership	\$ 5
Add for Astronomical League (optional)	\$ 3
Add for contribution to Southern Arizona Section of I.D.A. (optional)	\$ 3 (recommended minimum)
Add for Sky & Telescope Magazine Subscription	\$ 29.95
Add for Astronomy Magazine Subscription	\$ 29

Rates for membership are given above. Family Membership includes two adults plus minor children. Members may subscribe to *Sky & Telescope* or *Astronomy* magazine (or both) at the time of membership renewal, saving substantially over the regular subscription rates. To assure we understand what you are paying for, please identify which class of membership and what options you want. Send one check made payable to TAAA to cover membership dues, magazine subscription(s) and any contributions to:

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

Four Easy Steps to Membership Renewal:

1. Pay your dues 2-3 months early. Your month of membership expiration is listed on your newsletter mailing label.
 2. Find your membership class and its rate. Add the Family Membership rate to this, if applicable.
 3. If you desire membership in the Astronomical League or magazine subscription (s) or wish to make a donation, add the appropriate amounts to your membership rate. If a magazine subscription renewal is desired, include the magazine renewal notice, if possible. Be sure to identify which options you are paying for. Write one check, payable to TAAA, and send it to the address given above.
 4. Call the Treasurer if you have any problems.
- Send address changes to the above address.

Desert Skies Publishing Guidelines:

All articles, announcements, news, etc. must be submitted by the newsletter deadline noted above. Materials received after that date will appear in the next issue. All submissions are retained by the editor unless prior arrangements are made. Partial page article submissions should be submitted in Word compatible files via e-mail or on a floppy disk. Full page articles, artwork, and photos should be camera ready. We will not publish slanderous or libelous material! Send articles, announcements, etc. to:

TAAA - Desert Skies
c/o George Barber
15940 W. Ridgemoor Ave
Tucson, AZ 85736

or e-mail: barbergj@flash.net

Desert Skies is published monthly by the Tucson Amateur Astronomy Association, PO Box 41254 Tucson, Arizona 85717

President's Message

Had enough of those monsoons yet? I sure have. Again this month, Mother Nature interfered with our 7/29 Empire Ranch and 8/5 TIMPA Star Parties. That's three in a row and it has been a while since so many activities have been adversely affected by the weather. It's been so long since I have observed, I opened the manual to my telescope to refresh my memory of its operation.

The TIMPA Site activities will continue this month with a Site Prep Sub-Committee Meeting on Tuesday, 8/29 and a full TIMPA Site Committee Meeting on Tuesday, 9/5. The club received good news from the engineering firm that tested a soil sample from TIMPA. The soil has no abnormalities that would require special considerations for the observatory building and telescope pier concrete footers.

Project ASTRO, the partnership of astronomers and teachers, is gearing up for the coming school year but the program needs more astronomers. Speaking from experience, participation in Project ASTRO is an extremely rewarding activity. It is not nearly as time consuming as it may seem and a vast knowledge of astronomy is not a requirement. The individual classroom activities are very well structured in the project notebook. If you would enjoy helping school children understand some fascinating astronomy concepts, this program is for you. Please consider supporting this worthwhile endeavor. See the article in the *Items of Interest* section of this newsletter.

John Kalas

Meeting Information

Beginners Lecture

Title: What Type of Star...

Speaker: Andrew Cooper

Andrew Cooper will lecture on Stellar classification, how astronomers classify stars and what color can tell us about a star, spectroscopy and the H-R diagram.

Main Lecture

Title: Fundamentals of CCDs

Speaker: Wayne Brown

Wayne Brown will give us an introductory lecture about CCDs at this month's lecture. Wayne, owner of Apogee Instruments, gave this same lecture at the IAPPP meeting in California last May. While still a bit on the pricey side, more and more amateurs have CCDs. Just consider how many of

our own members are showing CCD images at our Members Nights. CCDs are on the used-market at reduced prices and there are even designs that you can build yourself. This will not be a sales pitch to buy Apogee CCDs, but rather a lecture about the "Fundamentals of CCDs". We appreciate Wayne for taking time from his busy schedule to talk to us.

Wayne Brown moved his family and business to Tucson from California in 1995. His company is currently building a remote observatory in the Catalina foothills area. Take a look at the Apogee website (<http://www.apogee-ccd.com/>) for information about this observatory. On this web site you will also find the CCD University, a good starting place for someone just getting into CCD imaging.

Club News

Cover Photo Caption

NGC 3718 (Arp218) in Ursa Major is an unusual galaxy that is hard to classify. It has faint spiral arms with a large nucleus that would put it in SB but the dark lanes across the nucleus give a peculiar designation also. The even more unusual thing about it is the fact that the dark lanes are 90 degrees to the plane of the galaxy, and they are twisted not straight. The current explanation as I understand it is they are left over from the assimilation of two other galaxies. Roger Tanner and Brian Close took this image at the Sunglow ranch on March 28, 2000 with a 17.5" Newtonian telescope. Three 240-second images were median combined, dark subtracted and flat fielded. The image was then processed in MaxIM DL with the digital development algorithm. The image converted to a .tif format and resampled in Photoshop to correct the aspect ratio.

Member News

We welcome the most recent members who have joined the TAAA: Vin Boyen, Sheila Czech, Chuck Dugan Jr, Louis Faix, Christopher Merle, John R Sawyer, and Sam and Barb Sollenberger. Glad to have you join! If you haven't already, 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.

Watch for the next issue of Sky & Telescope. TAAA member and photographer Howard Lester, who works for the MMT Observatory, has a beautiful photo of the new MMT in the October issue News Notes section.

2001 Calendars

The new 2001 Astronomy Calendars are here! The same company that produces Astronomy Magazine publishes these calendars. We sold about half our supply of these calendars at the August meeting, so if you want one get one soon before we run out. The cost is \$10 each (~\$3 off

Club News (cont.)

the regular selling price), or \$9 each for more than one. This calendar, which features a full-color astronomical photo each month, has daily information about astronomical events, both historical and observational plus space for adding important events you need to remember. This year's photos are stunning! From Hubble and NASA images to a beautiful Tony and Daphne Hallas print of the Orion Nebula, this is the calendar to have!

October Meeting is Members Night

Every four months, the TAAA dedicates an entire monthly meeting to members for presentations of their astronomy-related projects or interests. There will not be a main lecturer. Instead, members will present 15 to 20 minute talks about activities they have been working on. So get your presentations ready and let's have an interesting session. There will be a sign-up sheet at the September meeting or you may call John Kalas at 620-6502 to reserve a spot on the Members Night agenda.

TAAA Board of Directors Meeting Day Change

by John Kalas

At the 8/10 meeting, the TAAA Board of Directors agreed to change the day of the month for board meetings. Starting in September, board meetings will be held on the second Monday of each month. The September meeting will be held on 9/11. TAAA Members are always welcome to attend the board meetings.

Club Developing 2001 Schedule

by John Kalas

As I mentioned at the August meeting, the club is developing a schedule of major events for the coming year, 2001. The success of the last Desert Museum Public Star Party on May 6th has prompted the museum's interest in having two public star parties per year. TAAA Member, John Polacheck, is coordinating selection of the dates with the museum. The mutual popularity of the TAAA/TIMPA Joint Activity (radio controlled airplane flying/barbecue/star party and night flying) has resulted in the desire to hold two of these events per year, as well. Mr. Polacheck is busily negotiating dates with the TIMPA organization. The club is also proposing two Kitt Peak Star-b-ques for members. TAAA Member and ALCor, Laurel Dunlap, is working with the administration at Kitt Peak to set the dates for these events. The 3rd annual Telescopes for Telethon MDA Fundraiser Public Star Party is proposed as a two-day event for Friday and Saturday, March 30 and 31, 2001. Confirmation of those dates should be forthcoming within a month. Next year's TAAA Annual Picnic is already scheduled for April 21st at the Vega-Bray Observatory in Benson. As soon as the dates for all of these activities are confirmed, we will announce the 2001 schedule in the newsletter. 2001 is shaping up to be another outstanding year for club events.

Astro-photo Special Interest Group

31 August Organizational Meeting at 7pm
by Dean Ketelsen

I've been asked by a few folks if the Astro-photo SIG will be holding regular meetings. To tell you the truth, I hadn't thought that far ahead. The plans were to make occasional presentations at the general meetings, or have other TAAA members speak about their specialties in regard to photography. However, if there is interest in regular get-togethers or observing/photo sessions or field trips, I'd be glad to organize them. For the moment, let's take advantage of the monsoon weather to hold an organizational meeting the night before the general meeting thursday, 31 August at the Steward Observatory Mirror Lab, under the east stands of the UA football stadium at 7pm. Bring any photos or slides you wish to share, otherwise we will just have a get together to see how folks want to proceed. There are a number of great opportunities to do photography. There is the TAAA picnic at Kitt Peak in October, the All-Arizona Star Party also in October, and you can likely twist my arm to plan a trip to the Chiricahuas almost anytime. If you are interested but cannot make the 31st meeting, call me at 293-2855 or e-mail me at ketelsen@as.arizona.edu. Otherwise see you there!

Kitt Peak Barbecue and Star Party

Saturday October 21, 2000

Well, mark your calendars for Saturday October 21, 2000; and be ready to get in line to "sign up" at the October general meeting. I have arranged with KPNO/NOAO to host another Star-b-que during LQM at the Kitt Peak Picnic Ramada.

The event is again limited to 50 people, NO MORE and NO EXCEPTIONS! Last year 48 people attended. We are expecting another heavy turnout for this year's event; therefore, Current Club Members, and their families, will have first priority during the sign up process. There are some strict rules regarding a night visit to the mountain, e.g., no cellular phone use, no radio transmissions of any kind, no ETOH (no ethanol/no alcoholic beverages). I will have a list of the KPNO/NOAO rules and regulations at the October general meeting, to give to the first 50 people signed to the list. Last year, I asked for either an e-mail address, or phone# for communication with those on the attendance list. BE ADVISED THAT IF YOU DO NOT PROVIDE A WORKING PHONE# OR E-MAIL ADDRESS ON THE SIGN UP SHEET, YOU WILL BE AUTOMATICALLY REMOVED FROM THE LIST. Sorry... only those people on the official sign-up list, will be allowed to attend this year's event.

So... get ready and make arrangements to be at the October meeting to sign up. If you cannot attend the October meeting, phone-in/e-mail sign-up will not begin until 10/7/2000 and will be on a first come, first serve, basis, for any remaining spaces.

The Fall Barbecue and Star Party at Kitt Peak has been a

Club News (cont.)

long time favorite event for many club members. Hope to see you there! If you have any questions regarding the Kitt Peak Barbecue, you may contact me, Laurel Dunlap: 544-7780, or e-mail: taloftaaa@earthlink.net. Look for additional details regarding the Kitt Peak Barbecue in the October edition of Desert Skies.

Donations to TAAA

Would you like to make small monthly donations to the TAAA to help with the TIMPA project? It's easy to do. Each month, the TAAA will automatically transfer an amount you specify from your designated checking account. It shows on your bank statement as an EFT. There's a form that you need to be filled out to authorize

the TAAA to do this and we need a voided check. See the treasurer about how to start it up. Money can be donated to the TIMPA Project, the Light Pollution Fund (which gets turned over to the SA-IDA), the 30" Land and Telescope Fund, Education Fund, or the General Fund. Monthly donations need to be at least \$5/month. The transfers can be stopped at any time with proper notification. Forms will be available from the treasurer at the next meeting.

Items of Interest

WEBSITES:

TRIPS ON THE INTERNET SUPER-SKYWAY

by Rik Hill

Here it is, that once in a decade time! It's solar activity maximum. If you haven't been watching the Sun you might want to take advantage of the opportunity now. This has not been a strong maximum but still there is plenty to see. Many websites and magazine articles (see the Sept. Sky & Telescope for a couple of them) describe safe observing procedures. But maybe you're interested in the Sun but don't want to go through the trouble to convert that 40" f/4 dobsonian to a solar telescope? Well you still can watch the solar activity from the comfort of your monitor. There are a number of websites which daily post images of the Sun (weather permitting at the observatory in question). One of the best is the Big Bear Solar Observatory, in the middle of Big Bear Lake in the San Bernardino Mountains very close to the location of Riverside Telescope Maker's Conference. This observatory, because of its unusual location at the end of a causeway out into the lake, has some of the best seeing in the world. Their images show it too. You can see their latest image at:

<http://www.bbso.njit.edu/Images/daily/images/wfullb.jpg>

or visit their whole website at:

<http://www.bbso.njit.edu/>

Another good site for the latest images is at the Mees Solar Observatory in Hawaii. It can be found at: <http://www.solar.ifa.hawaii.edu/MWLT/Today/latest.jpg>

This observatory also posts daily maps of the sun (or for any previous day in their archives) with all the designations of the active regions (areas around sunspot groups as seen in all wavelengths) at:

<http://www.solar.ifa.hawaii.edu/ARMaps/armaps.html>

This is an invaluable source for the amateur solar ob-

server as it allows you, for example, to find the region you were observing last weekend, no matter how much change it's gone through.

These and other solar observatories also post their observations on the NASA page at:

<http://umbra.nascom.nasa.gov/images/>

where you can sample everything from x-ray to infrared views of the Sun everyday.

Professional observations may not be what you are interested in. Perhaps you want to watch to see what amateur solar astronomers are doing. At present the best site for the most up-to-date collection of amateur solar images is on the A.L.P.O. Solar Section website's Recent Observations page:

<http://www.lpl.arizona.edu/~rhill/alpo/solstuff/recobs.html>

Here you will find some spectacular images being done by amateurs with everything from an ETX-90 to an 8-inch Schmidt-Cassegrain. Many of the images rival and even surpass work being done professionally. Gordon Garcia, a regular contributor and Coordinator of the Section, and Art Whipple, regularly do sub-arc-second work from suburban observatories. Gordon lives in the metropolitan area of Chicago!

To stay current with the activity on the sun you need to get on one of the email lists for solar observers. The A.L.P.O. Solar Section has one called SolNet, which you can join by going to Egroups.com, using their search engine to find SolNet and then touching the "subscribe" button. This list posts the latest activity and auroral alerts with both amateur and professional subscribers. Professional astronomers on the list have solicited for amateur help and observations of specific events as they are occurring!

While at Egroups find "solar-observers" and join that list as well. It is mostly amateurs and discussion can range from

Items of Interest (cont.)

equipment, to activity to techniques in observing.

And now for a crass commercial announcement: The A.L.P.O. Solar Section is looking for people that are interested in making a contribution to the organization. We are, of course, always interested in observers, but we are presently looking for amateur astronomers, with or without solar observing experience, that are interested in working in helping to archive observations of other and/or working in the regular production of the Rotation Report (see:

<http://www.lpl.arizona.edu/~rhill/alpo/solstuff/bkissues.html>

for examples of this newsletter). If you are interested or have any questions contact me at: rhill@lpl.arizona.edu. I stress again, you need not have solar observing experience but if you're interested in making a contribution and working on the ALPO staff, you are the person we're looking for.

As always, if you know of a particularly good list that should be highlighted, drop me a line at rhill@lpl.arizona.edu

Project ASTRO Needs Your Help

by John Kalas

Ginny Beal, Project ASTRO Coordinator, has been soliciting for help from TAAA Members for several months now in our newsletter. The shortage of astronomers is getting acute. With the training workshop right around the corner on October 13 & 14, the need is getting even more pressing. Won't you consider helping? I assure you that you will enjoy a great deal of satisfaction working with a teacher to bring some basic but intriguing astronomy ideas to the students. Applications for participation are being accepted until August 30". TAAA Members make great astronomer partners. To learn more about Project ASTRO, visit their website at: www.noao.edu/outreach/astro/ or contact Ginny Beal at 318-8535 or via e-mail at: gbeal@noao.edu.

Let's Talk Stars

By Dean Koenig

"Let's Talk Stars" is Arizona's new radio show about the night sky, on Tuesdays at 2:30 PM. Have you ever sat outside after dinner, looked up at the stars, and wondered? With all those stars up there, where do we fit in? "Let's Talk Stars" is hosted by Emmy award-winning astronomer David Levy. David co-discovered Comet Shoemaker-Levy 9, which smashed into Jupiter in 1994 in the most awesome display ever witnessed in the Solar System. David is one of history's most prolific comet discoverers, having discovered 20 comets in addition to Shoemaker-Levy 9. He is Parade Magazine's science editor and a contributing editor for Sky & Telescope magazine. "Let's Talk Stars" with David Levy airs Tuesdays at 2:30 PM on KTKT, 990 AM, the Information Station.

2000 NORTHERN ARIZONA STAR PARTY

Coordinator: Marilyn Unruh booknook@northlink.com

Registrar: Gary Frey gfreynpo@primenet.com

NASP Web site: <http://www.pacnet.org/1999nasp.htm>

Northern Arizona, in astronomical terms is synonymous with high altitude and dark skies. It is the serious amateur astronomer's destination of choice on September 22 & 23, 2000. Hosted by the members of the Prescott Astronomy Club, and located 17 miles West of the town of Paulden, the Northern Arizona Star Party event has a lot to offer in addition to dark skies and lots of room.

Activities include two nights of observing and astrophotography, afternoon & evening speakers and a swap meet.

REGISTRATION COSTS \$10/person, (+ \$5/additional person, under 14 yrs are free)

ACCOMMODATIONS

CAMPING - \$14 for 2 people, \$2 ea additional person

RV SITES - There are 6 full hook-up sites available. \$30 per site

BUNKHOUSES - There are 3 bunkhouses available. Each bunkhouse has 1 double bed in 1 room, 2 or 3 bunk beds each in 3 additional rooms, a common living room, 2 full bathrooms. \$40/person

Registration form and liability form are on the web site (given above), or by writing to the Prescott Astronomy Club at: P.O. Box 1178, Mayer, Arizona 86333-1178 or by calling Marilyn Unruh at 520-541-1201.

Tucson Astronomical League News:

by Laurel Dunlap ALCor TAL

The Tucson society of the Astronomical League (TAL) has reached a record membership level of 139+ members. I want to extend to all of you a great big THANK YOU to the many TAL members who volunteer their time to assist at star parties, and other TAL/TAAA activities. Thank you for your continued support of the National Astronomical League, with your TAL membership.

Some of you already know that I maintain a TAL web page linked to the main TAAA page. With technical assistance from my sons Matt and Mike, I'm learning more about web writing than I ever thought possible. For those of you unfamiliar with the site go to: <http://www.tucsonastronomy.org/tal/tal.html> to get some of your basic questions about the TAL answered.

Many TAL members this Summer are reaping the benefit of a year-or-so of disciplined observations, by participating in the various Observing Clubs of the Astronomical League. The following members have already, or will receive, the following certificates of completion. Please join me in congratulating all of them!

Andrew Cooper- Double Star Club

Items of Interest (cont.)

James McGaha- Asteroid Club "Gold"
 Douglas Smith- Double Star Club
 Gordon Gower- Lunar Club

I look forward to my 3rd year as ALCor and hope to continue to answer any questions you may have regarding League activities, or any of the AL's Observe Clubs. The job of ALCor, has truly been a rewarding, and enjoyable experience. I have developed some great friendships, and made many, many acquaintances across the USA and abroad, via my required correspondence as ALCor. It's a unique and rewarding job, for a unique, and extraordinary group of members. Thanks to all of you!

Telescopes For Telethon 2000

by Laurel Dunlap

Telescopes For Telethon had a wonderful year in 2000! We may have endured some of the worst weather ever for a star party, but the event brought public awareness, and with that a tremendous outpouring of donations to the cause. The Tucson combined efforts have reached a donation level of \$2,500+ this year! That's wonderful! I want to personally thank the TAL/TAAA members who participated this year, and hope to see their continued participation in the 2001 event.

On June 14th 2000, I had the pleasure of attending the

MDA children's camp in Heber, AZ. What a delightful group of kids! So many questions, such curiosity, and such patience; born (no doubt) from those life experiences, and circumstances they have lived with, beyond their control. I hope to see other TAL/TAAA members there next year. David Levy, Dean Koenig, and I, had long lines at each of our scopes. We could have used a couple more scopes that night, but everyone had a great time regardless.

The culmination of the MDA event occurs on Labor Day weekend this year. Be on the lookout for some of our local astronomy buffs to be there to present the Tucson donation for the MDA Telethon. Yours truly is tremendously camera shy, but word has it, that John Kalas isn't!

Dark Skies for September 2000

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 31/ 1	20:42 - 4:35	Su/Mo 10/11	3:59 - 4:43	Th/Fr 21/22	19:43 - 0:29
Fr/Sa 1/ 2	21:16 - 4:35	Mo/Tu 11/12	- - -	Fr/Sa 22/23	19:41 - 1:33
Sa/Su 2/ 3	21:51 - 4:36	Tu/We 12/13	- - -	Sa/Su 23/24	19:40 - 2:40
		We/Th 13/14	FULL MOON		
Su/Mo 3/ 4	22:27 - 4:37	Th/Fr 14/15	- - -	Su/Mo 24/25	19:39 - 3:47
Mo/Tu 4/ 5	23:06 - 4:38	Fr/Sa 15/16	19:51 - 20:00	Mo/Tu 25/26	19:37 - 4:53
Tu/We 5/ 6	23:47 - 4:39	Sa/Su 16/17	19:50 - 20:34	Tu/We 26/27	19:36 - 4:54
We/Th 6/ 7	0:31 - 4:39			We/Th 27/28	19:34 - 4:55
Th/Fr 7/ 8	1:19 - 4:40	Su/Mo 17/18	19:48 - 21:11	Th/Fr 28/29	19:33 - 4:55
Fr/Sa 8/ 9	2:10 - 4:41	Mo/Tu 18/19	19:47 - 21:52	Fr/Sa 29/30	19:46 - 4:56
Sa/Su 9/10	3:03 - 4:42	Tu/We 19/20	19:46 - 22:38	Sa/Su 30/ 1	20:22 - 4:57
		We/Th 20/21	19:44 - 23:31		

Weekend	Sun	Sun	Mercury	Venus	Mars	Jupiter	Saturn		
Sa/Su	Set	Rise	Set Vi	Set Vi	Rise Vi	Rise Vi	Rise Vi	Vi=Visibility	
2/ 3	18:44	5:59	19:17 9	19:48 1	4:24 5	23:07 -2	22:38 0	-3 brilliant	
9/10	18:35	6:03	19:17 7	19:43 1	4:18 4	22:41 -2	22:10 0	0 conspicuous	
16/17	18:26	6:07	19:16 6	19:38 0	4:12 4	22:15 -2	21:43 0	3 moderate	
23/24	18:17	6:12	19:12 6	19:33 0	4:05 3	21:48 -3	21:15 0	6 naked eye limit	
30/ 1	18:07	6:16	19:06 5	19:29 -1	3:58 3	21:21 -3	20:47 0	9 binoculars limit	

By Erich Karkoschka

Star Parties & Events

TAAA Empire Ranch Star Party

September 2 and September 23 (Saturdays)

The Empire Ranch has been our normal dark-sky observing site for quite a number of years. Empire Ranch is about 4000 feet in elevation, so be prepared for cool temperatures and 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. Bring insect repellent, just in case. 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 backup and turn on your bright white backup lights. One nice advantage of belonging to the TAAA is the opportunity to observe among friends. Help in finding an object or the sharing of equipment always goes on at our star parties. If you haven't attended a star party yet, you're missing the best part of belonging to the TAAA. See the directions to Empire Ranch on the outside flap of this newsletter.

TAAA Star Party at TIMPA

September 9 (Saturday)

What makes this event special is that our novice members can get help with observing issues or equipment problems. There will be experienced members present who would be more than happy to help. If you don't own a telescope, don't worry. There will be lots of scopes set up and everyone is invited to look through them. This is a great way to check out the different telescope designs before you make that all-important decision to buy. There is no scheduled talk for this activity. Just come out with lots of questions and we'll do our best to get you the answers you need. Arrive at about 7:30 pm for a group question and answer session. It should be dark enough to observe by 8:30 pm. If you have friends who might be interested in amateur astronomy, bring them along. Be prepared for mosquitoes and bring some insect repellent. Directions to the TIMPA site are located on the outside flap of this newsletter.

Hendricks Elem. Star Party

September 21, 2000 (Thursday) No. of Scopes: 7-9

Southwest

This star party is actually being held at the Double V Scout Camp located at 3801 S. Kinney Road. Take Ajo Road west from I-10 to Kinney Road. Turn right (north) on Kinney Road and proceed approximately ½ mile. The Double V Campground will be on the right. Turn into the camp and follow the markers to the "Ramada Grande." Set-up begins at 7:00pm. Observing is from 7:30 pm to approximately 9:00 pm. A star party leader is needed for this event. A sign up sheet will be available at the August meeting.

Joint TAAA/TIMPA Flying Event/BBQ/Star Party

September 30 (Saturday)

Mark your calendars!!! This is going to be a fun activity. We've done these events for the past two years and they've been a blast! The club has arranged for a joint activity between the TAAA and the TIMPA organization. The event is designed to be entertaining and beneficial to both organizations. The TIMPA group has offered to give TAAA members hands-on instruction for flying radio-controlled model airplanes. The flying activity, along with solar viewing, will take place between 3:00 and 5:00 pm in the afternoon. At 5:00 pm, the grills will be started and there will be a barbecue/pot luck dinner. Attendees are requested to bring their own main dish (i.e. meats, buns, condiments, etc.), drink, plates, utensils and also a side dish to share with other attendees. The side dish may be a vegetable, salad (garden, fruit, pasta, etc.), bread/buns, desert or snacks. After the dinner at about 6:30 pm, TAAA members will open up their telescopes for an evening of viewing for both organizations. The TIMPA group will also demonstrate some night flying between 7:00 and 8:00 pm. Be there or be square! Directions to the TIMPA site are on the outside flap of this newsletter.

TIMPA Site News

What is TIMPA, Anyway?

We forget that not all TAAA members know about the TIMPA project. For our new members, this explanation will appear in all future newsletters.

TIMPA stands for; Tucson International Modelplex Park Association. It is a parcel of land (approx. 160 acres) located about seven miles west of the Saguaro National Park West. The property is leased from the City of Tucson by the TIMPA organization and is to be used as a specialty park. The TIMPA organization flies radio-controlled model

airplanes at the site. The Southern Arizona Rocketry Association (SARA) also uses the site to launch model rockets.

About three years ago, TAAA member, John Polacheck, heard about the site and inquired if the TIMPA organization would be interested in acquiring another partner, the TAAA. The TIMPA group was very interested because the relationship would be non-competing. TIMPA and SARA use the site during the day and the TAAA would utilize the facility at night. The TAAA used the site, by permission, for about a year for scheduled star parties, such as Beginners Star Parties. On July 14th, 1999 the TAAA and the

TIMPA Site News (cont.)

TIMPA organization signed a letter of agreement allowing the TAAA unlimited use of the site for scheduled star parties as well as member use at other times. Ultimately, the TAAA intends to develop an observing area on the site that will include an observatory for the club's 16" reflector telescope. Many club and joint benefit projects will be undertaken in the next several months to improve the facilities at the site:

1. Run electricity and telephone line to our observing area and on to TIMPA's ramada. Also, run a water line to our site. (Completed - 10/9/99)
2. Construct a secure storage cage in the TIMPA Barn. (Completed - 12/11/99)
3. Move the TAAA property from the mini-storage unit to the new security cage in the TIMPA Barn. (Completed 12/12/99)
4. Construct permanent bathroom facilities. (Tentative schedule 2nd quarter 2000)
5. Construct observatory to house club's 16" telescope. (Tentative schedule 2nd quarter 2000)
6. Upgrade club's 16" telescope. (Tentative schedule 2nd quarter 2000)
7. Construct additional site improvements. (Schedule to be determined)

Watch the newsletter for announcements about TIMPA activities and how you can help.

TIMPA Meetings

Two committee meetings have been scheduled:

- Tuesday, 8/29 - TIMPA Site Prep Sub-Committee
- Tuesday, 9/5 - full TIMPA Site Committee

The meetings will be held in the Steward Observatory Conference Room N305 at 7:00 pm. If you are interested in learning more about this project, you are welcome to attend any of the meetings.

TIMPA Update

by John Kalas

Good News! The soil at TIMPA is ordinary dirt; a little powdery maybe but still just dirt. A soil test, facilitated by TAAA Member, Bruce MacIlroy, revealed no problems with the soil sample acquired and submitted by TAAA Member, Bob Schwartz. This means that no special considerations must be made for the footer design. The Site Prep Sub-Committee will now proceed with the footer designs for the observatory building and the telescope pier.

TAAA Board of Directors Meeting - August 10, 2000

Location: Steward Observatory Conference Room N305 University of Arizona

Call to Order: 7:14 pm

Board Members Present: John Kalas, Andrew Cooper, Terri Lappin, Jane Tongate, Robert Callanan, Steve Peterson

Board Members Absent: Bill Lofquist

Members Present: John Polacheck

1. **Events** - John Kalas presented upcoming events through October 5. An updated schedule of events will be reprinted for the September newsletter. John also reported that the August 19 Optical Sciences Star Party at Kitt Peak is well supported.
2. **TIMPA Site Update** - John Polacheck reported that TAAA and TIMPA will have joint activities twice a year at the TIMPA site. For 2001, the dates will be June 23 and September 15. Future dates will need to be mapped out. John also gave an update of the TIMPA site preparation. Meetings have been scheduled with the Site Committee and the telescope committee. Regarding the site, nothing will be done with the toilets until September. There is a 12 acre site (4 acres/home) to the south of TIMPA that may be planned for development. The Board will keep an eye on this and John is looking into who owns this property. Another site in the area is being developed for farmland for the Tohono O'odham Reservation.
3. **Treasurer's Report** - Terri Lappin distributed and reviewed copies of the financial statement for July. 30 of the 70 Astronomy 2001 calendars were sold at the August general meeting. There are four new members bringing the total membership to 360.
4. **Board Meeting Day Change** - To accommodate the schedule of a board member, the Board decided to change the meeting day to the second Monday of each month. The next Board meeting will be September 11.
5. **TAAA Holiday Party** - John Kalas reported that a location is still needed. The Board will check into this and set a date before the next Board meeting. The party is still in the planning stage.
6. **TAAA E-Mail Exploder** - Andrew Cooper reported that the listserver that he established on the SEDS computer works and he has set up John Kalas and Terri Lappin to send messages to test out the system. Andrew has purchased a book to help him configure the software. The e-mail exploder will allow only board members to send messages to the TAAA Members whose e-mail addresses are in the system. It was proposed to load all TAAA Member e-mail addresses into the system and then send out an introductory e-mail message explaining the exploder and allowing members to "unsubscribe", if they so desired.

TAAA Board of Directors Meeting- (cont.)

7. Report on Media Seminar – Terri Lappin attended a seminar on August 8. The information gathered at this seminar will be used to improve the publication of TAAA public events. Terri recommended membership in the Tucson Non Profit Council, the Board agreed and authorized Terri to pursue membership for January 2001. Another option for public events is a website called "Do Tucson". This is free to non-profit organizations and is similar to a two-page brochure online. The TAAA will need a publicity person.
8. Desert Museum Public Star Party – John Polacheck proposed dates for two public star parties at the Desert Museum for 2001. The tentative dates are May 19 and October 20. These dates will need to be confirmed by the museum.
9. Club Apparel – The Board gave Andrew Cooper approval to place another order for apparel. He will purchase the apparel soon in order to bring the items to the September meeting.

Meeting adjourned: 8:55 pm.

Desert Skies Classified

FOR SALE: Celestron 7x50 Binoculars with case. Asking \$100. Call Duane Niehaus at 290-1722. (9/00)

FOR SALE: Celestron C-5+ with tripod/wedge, RA clock drive (9-volt battery runs 50 hours), hand controller, 1x red dot pointer, piggyback photography bracket, more. Was \$900+, must sell! \$650 obo. Call Randy at 520/795-5720 or e-mail <randystars@aol.com>. (9/00)

FOR SALE: TeleVue 5x Powermate Barlow Lens gives high magnification to long eye relief eyepieces (good for eyeglass use), fully multi-coated, 4-lenses with blackened edges, internal antireflection threading for excellent contrast. \$125 firm. Call Randy at 520/795-5720 or e-mail <randystars@aol.com>. (9/00)

FOR SALE: Celestron 9x56 Large Binoculars with case, excellent condition. \$100. cash. Call Eric at 323-8435. (9/00)

FOR SALE: Takahashi FC-76 fluorite refractor telescope with EM-1 German Equatorial Mount, "Vari-Extender", f/5.9 Reducer, 7X50 finder scope, 7mm, 12.5mm, & 18mm Takahashi Orthoscopic eyepieces, assorted filters, star diagonal, Zeiss 25mm eyepiece, battery pack and hand controller. Excellent Condition! Complete outfit \$2500 obo. Call Steve Peterson at 326-5303 or email at: <swpeterson@theriver.com>. (9/00)

FOR SALE: Tele Vue 2" Big Barlow. Inside tube lined with Protostar flocked paper for marked improvement in contrast. 1 yr old. Perfect condition. \$100 firm. Call Roger at 498-5019 or e-mail roger.brubaker@tucson-linux.com (1/01)

FOR SALE: Celestron 11" Starhopper Dobsonian telescope with JMI 2" Crayford focuser and Telrad base. Also has handles and eyepiece tray. Mint condition with excellent optics. \$750.00 Great scope but it keeps aggravating my back. Will consider a trade for a 6" Mak or 4" to 5" refractor. Contact Frank Cathell at 520-825-5540 or <Fcathell@aol.com>. (1/01)

FOR SALE: Celestron Rubber-Armored C-90 Spotting Scope #81027. Comes with a hybrid 45° erect image diagonal and a 26mm Plössl 38x eyepiece, both 1¼". Eye relief is 22mm and the field of view is 1.4°. The 1¼" size diagonal and eyepiece give a wide field of view and greater eye relief than the .96" size. This model also has a protective covering of black rubber over the body. New in box! \$375. obo. Call Steve Peterson at 326-5303 or email at: <swpeterson@theriver.com>. (9/00)

SERVICE: Custom machine shop work – design and manufacture of telescopes and mountings. Fabrication of small parts or repair of existing hardware. For consultation and price quotes, call Duane Niehaus at 290-1722.

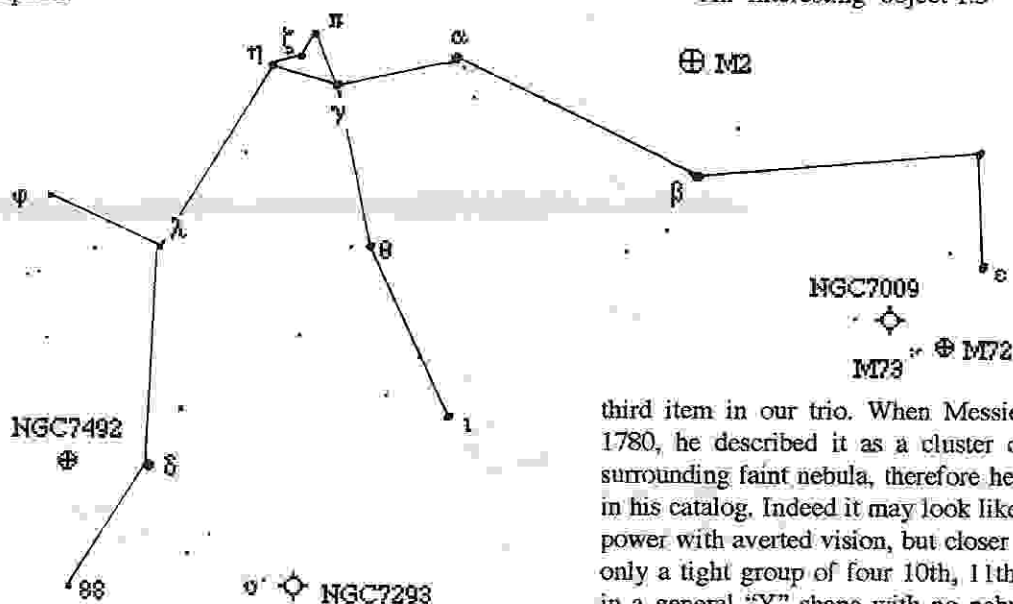
Constellation Report by Chris Lancaster

Aquarius

The Water bearer

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

To spy the rather dim stars of Aquarius, look due south near midnight at the beginning of September, or 10 p.m. near the end of the month. Aquarius is between the head of Pegasus to the north and the solitary 1st magnitude star Fomalhaut to the south. The most conspicuous feature of Aquarius is the "Y" shaped asterism of the water jar marked by Eta (η), Zeta (ζ), Pi (π), and Gamma (γ) Aquarii.



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

Moving over to the western half of the constellation, we will find three targets within 3 degrees of each other. NGC7009, on the northeast corner of this triangle of objects, is another planetary nebula nicknamed the Saturn Nebula. It earned this name from the spikes which jut from the ends of its oval shape, thus resembling the rings of the planet Saturn. At magnitude 8.3, it is almost two magnitudes dimmer than the Helical Nebula, but it measures a compact 25" across. This means that its higher surface brightness stands out against the background sky. NGC7009 is located at RA 21h 41.2m, Dec -11 $^\circ$ 22', or 1.3 degrees west of 4.5 magnitude Nu (ν) Aquarii.

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

An interesting object 1.3 $^\circ$ east of M72 represents the

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

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

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

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