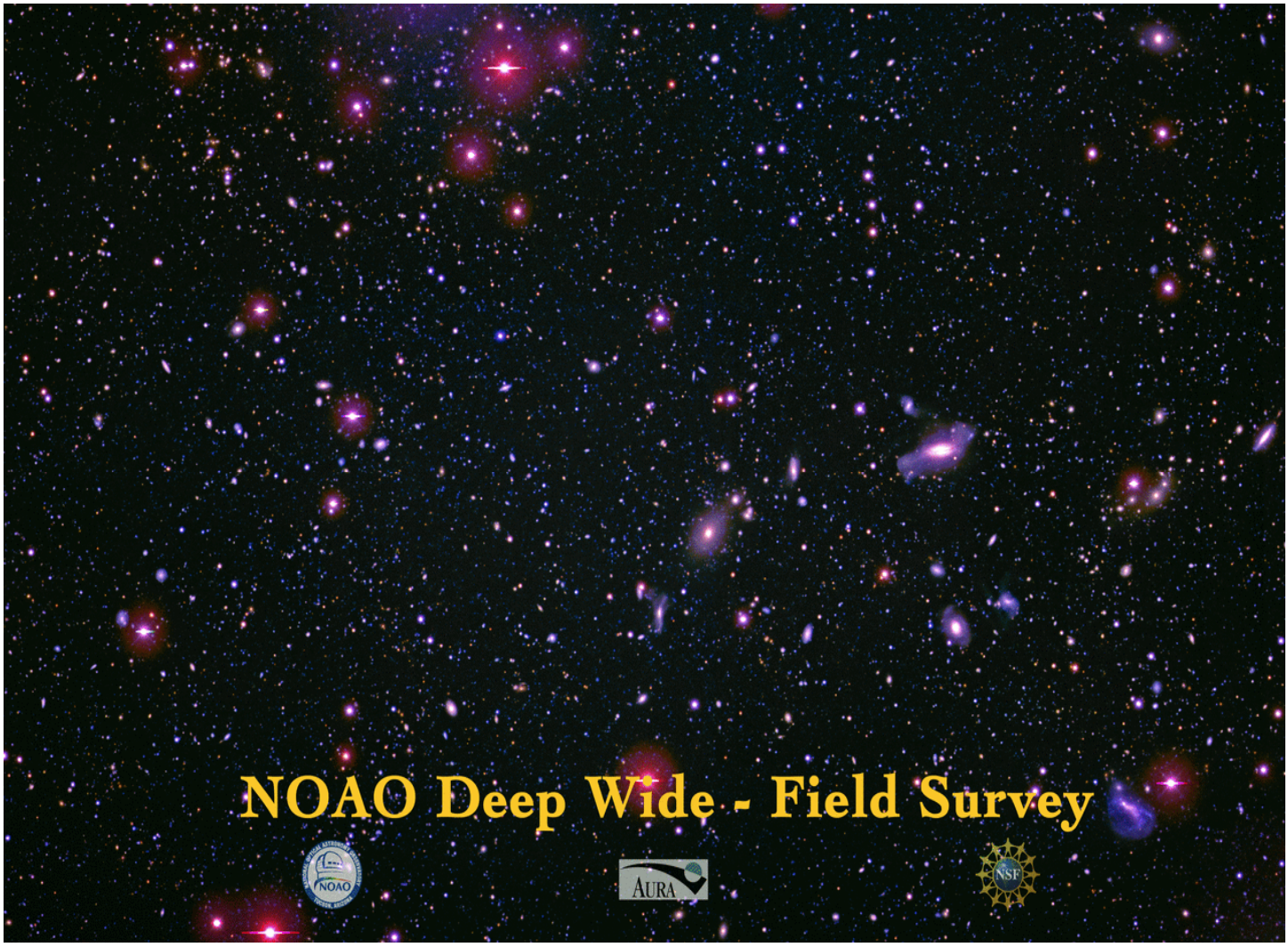
Desert Skies

Tucson Amateur Astronomy Association

Volume LIII, Number 6 June, 2007



Inside this issue

Cover Photo: The picture is a small region from the third NDWFS data release (DR3).

TAAA Web Page: http://www.tucsonastronomy.org **TAAA Phone Number: (520) 792-6414**

Office/Position	*Name*	*Phone*	*E-mail Address*
President	Bill Lofquist	297-6653	wlofquist@comcast.net
Vice President	Ken Shaver	762-5094	vice-president@tucsonastronomy.org
Secretary	Steve Marten	307-5237	secretary@tucsonastronomy.org
Treasurer	Terri Lappin	977-1290	treasurer@tucsonastronomy.org
Member-at-Large	George Barber	822-2392	mal1@tucsonastronomy.org
Member-at-Large	Keith Schlottman	290-5883	mal2@tucsonastronomy.org
Member-at-Large	Teresa Plymate	883-9113	mal3@tucsonastronomy.org
Chief Observer	Wayne Johnson	586-2244	chief-observer@tucsonastronomy.org
AL Correspondent (ALCor)	Nick de Mesa	797-6614	alcor@tucsonastronomy.org
Astro-Imaging SIG	Steve Peterson	762-8211	astro-photo@tucsonastronomy.org
Computers in Astronomy SIG	Roger Tanner	574-3876	astro-comp@tucsonastronomy.org
Beginners SIG	JD Metzger	760-8248	novice@tucsonastronomy.org
Newsletter Editor	George Barber	822-2392	taaa-newsletter@tucsonastronomy.org
School Star Party Scheduling Coordinator	Paul Moss	240-2084	School-star-party@tucsonastronomy.org
School Star Party Volunteer Coordinator	Claude Plymate	883-9113	school-sp-volunteers@tucsonastronomy.org
Webmaster	Loretta McKibben	245-3942	taaa-webmaster@tucsonastronomy.org
Club Sales	Ann Scott	749-4867	taaa-sales@tucsonastronomy.org
TIMPA Gate Card controller	Ray Toscano	529-3074	Ray_toscano@earthlink.net
Equipment Loan Coordinator	Richard Dougall	245-5441	elc@tucsonastronomy.org
Librarians	Claude Plymate Teresa Plymate	883-9113	librarian@tucsonastronomy.org
Grand Canyon Star Party Coordinator	Dean Ketelsen	293-2855	gcsp@tucsonastronomy.org
General Information	Terri Lappin	977-1290	Taaa-info@tucsonastronomy.org
TAAA Board Of Directors	All Board Members		taaabod@tucsonastronomy.org

Membership in the TAAA

Annual Fees

Individual membership $25.00
Family (includes two adults plus minor children)..... $30.00

Youth under 18 years must join as a family upon parental or guardian acknowledgement of participation in TAAA events. Ask the Treasurer for the required form.

Discounts (one discount allowed, subtract from above rates)

Seniors (over 60 years) $2.00
College Students, Teachers (K – 12)..... $8.00

Youth under 18 yrs (form required, contact the treasurer) $13.00

Options (add to above membership rates)

Tucson society of the Astronomical League (TAL) fees $ 5.00
Sky & Telescope Magazine 1 year (12 issues)..... $32.95
Astronomy Magazine 1 year (12 issues)..... $34.00
2 years (24 issues) $60.00
Postage for New Member Pack ..... $ 4.05

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

Renewal Information

- Your membership expires as indicated on your mailing label.
- TAAA members may join the Tucson society of the Astronomical League (TAL) at the time they join or renew.
- Discounted Sky & Telescope or Astronomy magazine subscriptions are available to members and can be started or renewed at anytime. Rates are given above. Allow 3 months for processing. Subscriptions must be sent through the TAAA. *Do not send money directly to the magazines.* To change an individual subscription to the group rate, pay the subscription amount to the TAAA treasurer. Include your magazine renewal notice.
- Please include a note explaining what you are paying for. Credit cards are not accepted. Write one check or money order for fees plus any options or donations. Make it payable to TAAA and send to:

Tucson Amateur Astronomy Association
PO BOX 41254 Tucson, AZ 85717

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

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

Desert Skies Publishing Guidelines - All articles, announcements, news, etc. must be submitted by the newsletter deadline. Materials received after that date will appear in the next issue. The editor retains all submissions unless prior arrangements are made. Submissions should be submitted in Word compatible files via e-mail or on a recordable media.. We will not publish slanderous or libelous material! Send submissions to:

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

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President's Message

As you know, we held our annual election for TAAA officers at the May General Meeting. I appreciate your giving me the opportunity to be your president for another year. I originally joined TAAA so I could rub shoulders with people who know a lot more about astronomy and observing than I do, and that has paid off many times over for me. Being on the board of directors multiplies that opportunity, and I look forward to another year of working with the club in this position. I strongly suspect the other board members see it the same.

Members' Night at the May meeting was another big success, as it usually is. One thing that became apparent is that there is interest in our having another program on backyard observatories followed by visitations to some of them as we did a couple years ago. Several members have completed new ones since the last time we did this, so we have some more examples to see up close.

On Saturday, May 19, we became the owners of a mobile storage unit at TIMPA. This will replace the one we have been renting, so it will save us money in the long run. It will be used immediately to store the parts to the dome that we are not able to erect at this time at TIMPA. In the meantime we will be constructing a smaller observatory as George Barber reported at the May meeting. This will house a 14" SCT which should attract a lot of users and enable us to teach people how to use it for observing and, we hope, for astrophotography, as well as for other educational purposes. We will have a new road to that part of the area which will open up use of the concrete observing pads. We will be having some work days at TIMPA, so be on the lookout for them and come join us.

Also on May 19 many of us in TAAA had a wonderful outing at David and Wendee Levy's home and observatory to follow up on the April Sharing the Sky Foundation event on the UofA mall. The Levy's thought the April event was a great success, and I thought the gathering at their house was a great success as well. The crescent moon right next to Venus was spectacular. The Levy's impressive array of telescopes, plus a number that were brought by members provided ample opportunity under a dark sky for observing. David's hot dogs and the food that everyone brought was delicious, and the time together in a relaxed atmosphere for visiting and talking about astronomy was special. The Sharing the Sky event is an important annual occasion for us in a number of ways, and we thank the Levy's for making this happen for all of us.

At a recent star party for which TAAA provided the telescopes about the only objects visible were Venus and Saturn. The light pollution in the area was such that little else was available. But that did not dampen the enthusiasm of the visitors to our scopes. Saturn, of course, was the biggest hit. Toward the end of the evening Jupiter became visible. So we will have these planetary highlights until the summer rains take over.

It appears that we will have a good delegation from TAAA at the Grand Canyon Star Party. It is not too late to make plans to be there.

I hope all of our members get in some great observing this summer, and I wish you safe and enjoyable travel wherever your trips might take you.

Clear skies,
Bill Lofquist

Meeting Information and Calendar of Events

TAAA MEETING DATE: Friday, June 1, at the Steward Observatory Auditorium – Room N210

ASTRONOMY ESSENTIALS: 6:30 pm
Title: The Ever Changing Sky
Speaker: Louis Faix

A few of the adults at our public convention Star Parties have expressed the misunderstanding that the night sky may be dull and boring because "nothing ever changes up there". A picture show is presented to help beginners understand that the universe is really a dynamic and lively place with something new or different to see almost every night. There's so much activity in the sky that this show is limited to just fifteen categories of objects and events that make up our "Ever Changing Sky".

GENERAL MEETING: 7:30 pm
Speaker: Buell T. Jannuzi, Director, Kitt Peak Nat'l Obs.
Title: The NOAO Deep Wide-Field Survey and the Future of Kitt Peak National Observatory

Dr. Jannuzi will review some of the scientific results from the NOAO Deep Wide-Field Survey (NDWFS), for which he serves as co-principal investigator. Undertaken with the telescopes of NOAO from 1998 through 2003, the survey covers 18 square degrees while still being sensitive to extremely faint objects. The data have already been used in research that has made significant contributions to the study of the evolution of galaxies and active galactic nuclei. NASA's great observatories, the Hubble Space Telescope, the Chandra X-Ray Observatory, and the Spizter Space Telescope, have been used to follow-up the NDWFS. Dr. Jannuzi will use the resulting science to demonstrate the synergy between space and ground-based observatories. Finally, as Kitt Peak National Observatory nears its 50th anniversary, Dr. Jannuzi will review some of the plans for the next 5 years and beyond.

Meeting Information and Calendar of Events (cont.)

Dr. Jannuzi did his undergraduate work at Harvard College and received his Ph.D. in astronomy from the University of Arizona in 1990. His specialty is observational cosmology; quasar absorption line systems; active galaxies; and instrumentation for surveys.

BOARD OF DIRECTORS MEETING: Wednesday, June 6, 6:30 pm. The meeting is held at Steward Observatory Conference Room N305. Note that the meeting occurs on the first Wednesday of this month to accommodate members attending the Grand Canyon Star Party.

STAR PARTIES AND EVENTS:
06 June – Beginner's SIG at China Rose
09 June – TAAA Star Party and Beginner's SIG at TIMPA
08-09 June – Three Planet Public Viewing at Flandrau
09 to 16 June – Grand Canyon Star Party
11 June – Astro Imaging SIG at China Rose
16 June- Pima County Parks Star Party
16 June – TAAA Star Party at Las Cienegas
29-30 June- Three Planet Public Viewing at Flandrau

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

Club News

Member News

We welcome these members who have recently joined the TAAA: David Brooks, **Larry East Reed Ethington**, Steve Platte, and Tim Roelike. Glad to have all of you join! New members can pick up a members pack at a meeting if they didn't request it by mail. Hope you'll make it to our star parties or meetings so we can all get to know you. (Updated membership lists are available online at either Yahoo Groups email list website under Files, or at most meetings.)

Election Results

Elections for officers of the TAAA Board of Directors were held at the May Meeting. Keith Schlottman was elected to Member at Large, as JD Metzger did not run for re-election. All other incumbents were elected to retain their positions on the board for the next year.

Astro-Imaging SIG Meeting

Monday, 11 June, 7pm
China Rose, NE corner Speedway/Rosemont

Our presentations feature CCD images, planetary webcams, and film. Come see some of the state of the imaging art over some Chinese food. Just show up and enjoy the show! For more information, contact Steve Peterson.

TAAA Apparel

Looking for a special gift or a way to make that fashion statement? Try on something from our fine line of club apparel. We have got hats, T-shirts, denim shirts, and patches. We take cash and checks.

Beginner's Special Interest Group

BSIG for June

The Beginner's Special Interest Group will gather for the monthly dinner meeting and TIMPA warm-up at the China Rose restaurant (NE corner of Speedway and Rosemont) on Wednesday, June 6, at 6:00 pm. An observing list for the TIMPA star party the following Saturday, June 9, will be presented, along with other topics of interest. Join us at the China Rose for information and good company, and at TIMPA for (we hope) clear skies!

BSIG Committee Volunteers Needed

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

Grand Canyon Star Party

North Rim 9-13 June
South Rim 9-16 June

Greetings to all my Grand Canyon attendees! Look for your fee waivers and other info to arrive in the days after Memorial Day. There are some changes this year, all will be outlined in the mailing (will go with the e-mail delivery again this year). The highlights:

The lower field will be available this year, but everybody and their brother want to set up down there, so you are forewarned! Note that this star party is for the public, and only a small percentage make it down there, so rethink the strategy of avoiding the occasional headlights up top. Of course, we suffer a bit from our own success and the field serves as a bit of an overflow area too. The rangers

Club News (cont.)

are hoping to have the former bus parking area on the east side of the lot serve in that capacity as well.

We will be official volunteers in the park system this year. The advantage is that if any injuries are sustained in our service there is some coverage. The drawback is that everyone must be signed up IN ADVANCE and you need to log your volunteer effort for the week and turn in your hours before you leave. It is a small inconvenience, and protects both the Park's interests as well as our own. If anyone wants to volunteer going thru the parking lot to make sure everyone is signed up every night, let me know!

Joe Bergeron has another t-shirt design, and I'm working with the silk screener for a non-white shirt this year. I'll bring the usual assortment of sizes, including more of the smaller sizes that always seem to go quickly.

Let me know if you have a twilight talk this year - I think a couple of our regulars are absent this year, so I'll put you to work to entertain the public for that 40 minutes or so till it gets dark enough to observe. Digital projection seems the way to go these days, but I will attempt to have a slide projector too for the Luddites among us.

That is about it. As always, drop me a line if you have any questions. If you are expecting a fee waiver package from me and haven't heard from me by the general meeting (1 June), let me know - your notice of your intent to attend might have been misplaced!

Dean 293-2855
ketelsen@as.arizona.edu

TIMPA Access Card Agreement Changed

The TAAA Board of Directors has revised the TIMPA Access Card Policy and updated the Agreement to agree with the new policy. The new policy goes into effect on June 1st. The most important change is to limit long-term agreements to one year. Access card agreements will be reviewed annually and new agreements will need to be signed each year. Deposits and late fees have been changed and the process for borrowing a card has been streamlined. All members currently holding access cards will be contacted individually so new agreements can be signed.

Temporary TIMPA Access Cards are available for TAAA members and non-members for use on specific dates. Temporary cards are available by contacting any of the following people: Terri Lappin, Bill Lofquist, Ray Toscano, Michael Turner, and John Kalas (see page 2 for contact information).

Upcoming Lectures

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

July 6	*Astronomy Essentials*	Mary Turner Seasonal Objects
	Invited Lecture	Mark Dickinson, NOAO "Multi-wavelength deep field surveys: watching galaxies grow"
Aug 3	*Astronomy Essentials*	Luke Scott The Moon
	Invited Lecture	Fulvio Melia (tentative to speak about black holes)
Sept 7	*Astronomy Essentials*	TAAA Project Status Report
	Invited Lecture	Backyard Observatories
Oct	*Astronomy Essentials*	Mary Turner, Seasonal Objects
	invited Lecture	Steve Howell, Kitt Peak, TBA

Club News (cont.)

Sharing the Sky Star Party: A Job Well Done!

By Wendee & David Levy

The annual fundraising star party on the UA Mall always feels like a real party. Everyone is always so excited, enthusiastic and motivated; it is a pleasure to be there. David and I wondered if switching charities and eliminating the WalMarts would make a big difference, and in some ways it did. Cash flow was down a little because there were no matching funds for us. It didn't matter. The rest of the event, including the monies you helped to raise on Saturday, was a huge success.

We took in just under $800 at the event. When added to the corporate sponsors and the donations which were made in advance of our night, we totaled about $2530. Words cannot describe how much David and I appreciated all of your help. Special thanks go to George Barber for loaning his sound system and providing musical background; and to Mike Terenzoni for all his help, and being our liaison with the University of Arizona.

Again, thanks for all of your time and efforts and for the job well done!

Three Planet Public Viewing at Flandrau June 8/9, 29/30

Here are four chances this season to show the general public on the UofA mall: Saturn and Venus close in the sky (less than one degree apart on June 29/30), and Jupiter near opposition. Mercury will also be available on June 8/9 but will be dim and low. The full moon will brighten things on June 29/30. Also, Venus is at greatest elongation on June 9. Join the folks at Flandrau Science Center on these Friday and Saturday nights from 6:45 p.m. (setup) to 10:00 p.m., weather permitting. There may be a large turnout for these events, as news coverage is expected to be good. TAAA volunteers wishing to participate and/or needing a mall parking pass must contact Mike Terenzoni at Flandrau (miket@ns.arizona.edu, or phone 621-3646). A sign up sheet should be available at the June meeting. Thank you TAAA for all your help!

"Lawnchair Astronomy: The Summer Zoo"

TAAA is teaming up with Pima County Parks for a star party on June 16th! The theme will be "Lawnchair Astronomy: The Summer Zoo" and will focus on animal-related constellations of the summer sky. Rob Yaksich will spend the first half-hour walking the folks through the summer constellations, then they will come to our telescopes to view objects in those constellations. Rob is looking for 5 telescopes from 8:30 to 10-ish. This will be held at Ironwood Picnic Area in Tucson Mt Park off of Kinney Road. A signup sheet and directions to the star party will be at the June meeting. You can sign up or ask questions by emailing Teresa Bippert-Plymate at teresa@as.arizona.edu.

TAAA members can borrow any of the five Night Sky Network toolkits for use at outreach activities like star parties, classroom presentations, or other events where you are talking about astronomy. The five toolkits are listed below. Each contains a training tape or DVD, a Resource CD which contains PowerPoint presentations and NASA animations, plus the materials for doing the projects. Contact Terri Lappin (see page 2) for more information about these kits and their use.

PlanetQuest: materials to explain how planets are detected, why we put telescopes in space, treasure hunt for objects related to stellar evolution, star chart of naked eye stars known to have planets in orbit
Our Galaxy, Our Universe: scale model of the Milky Way galaxy and the Universe
Black Hole Survival Kit: what is a black hole and how does it affect objects nearby, includes a game that a group or family can play
Telescopes – Eyes on the Universe: explains the basic principles of optics, the human eye, and observing
Shadows and Silhouettes: covers lunar phases, eclipses, and transits

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

Newsletter Costs on the Rise

Due to changes in the Kinko's discount policy and increased postage rates, the newsletter is taking a bigger chunk out of our budget. The TAAA Board is working with our webmaster, Loretta McKibben, to make the newsletter available to members only on our website. We are also willing to consider using another vendor for our copying needs should a member suggest a reliable provider. Should you have input to this matter, please speak to a board member.

Items of Interest

Websites: Trips On The Internet Super-Skyway
By Rik Hill

Bar-low

I will assume in this article that most of you, being married with kid(s), pursue your backyard astronomy on a shoestring budget, after the appropriate consultation with other fiducial managers in your household of course. Many of these multi-kilo-buck toys you see in the magazines are just not in your future. I find it hard to justify an eyepiece that costs much more than the RV6 I bought in 1965 and my spouse finds it even harder. So when it comes to buying new items for webcam imaging, I have to make a good case. This has made me a frugal shopper, which appeals to the Scottish ancestry of my dear wife.

Recently when talking to Christopher Go (http://www.christone.net/astro/) about my Saturn images he had one major criticism…."Why so small?" Chagrined I began to pursue ways to increase my image scale with some surprising results. The first maxim to be followed was the old 'least optics is the best optics'. This left the trusty old Barlow lens as the method of choice. To understand how this works check out:

http://www.astunit.com/tutorials/barlow.htm

My first surprise was how many Barlow lenses do not work well in this application. I had a bunch of them that I selected for this test: Meade 2x, Klee 2.8x and the Apogee 3x. Most of these I used in one capacity or another over the years, but always visually. These all cost $40 or less but you can spend up to nearly $200 for some. Those are out of my range and it seems inappropriate to spend more on the Barlow than the camera you are using!

The Meade Barlow was completely unusable for imaging. What works visually will not necessarily work in an imaging capacity. It produced hazy indistinct images with substantial residual color, as did the Klee. Part of the problem may have been that the distance between the chip in the camera and the Barlow lens was almost twice what it would have been for the field lens of an eyepiece and the same lens. These must have been designed for a limited distance between these elements…or my telescope was not as good as I thought!

I was pretty sure it was not the telescope optics. I had used the 3x Apogee Barlow (on sale for less than $20 and still in stock, see Apogee Inc. http://www.apogeeinc.com) and it worked very well for imaging at extreme magnifications.

I used it during the last Mars apparition with my C14 and got good results using a video camera:

http://www.lpl.arizona.edu/~rhill/marsobs.html

But that was too much magnification on the moon and Saturn. I rarely have seeing that allows me to use 3 times my f/11 focal length on the C14 or C11. So I needed something less.

So the 3x Barlow worked but was too much magnification and the 2x ones were not of a flexible enough design to produce good images. What I needed was one of a design that allowed for variable magnifications. Back in the 1950s-1970s just such a high quality Barlow was made, the Goodwin Barlow. This was a variable power Barlow that worked from 1.5x-3x and was of reputed high quality, the best "back in the day." Occasionally they show up on AstroMart (http://www.astromart.com/) or on Cloudy Skies Classifieds (http://www.cloudynights.com/classifieds/) and are well worth the purchase. It just so happened that I had one. After a day's search I found it and first used it at 1.4x. The images were larger, and sharp!

The moral of the story is this, often the telescope is not the problem and the solutions to many such problems need not cost an arm and leg. However, not all barlows or other auxiliary optics are created equal. The new triplet or multiple element barlows and "magnifiers" are often designed for very specific spacing and uses. I would be very interested in hearing if other variable power barlows work similarly with webcams and video equipment.

As always, if you have comments (be nice), or suggestions drop me a line at: rhill@lpl.arizona.edu

MEMBER'S EVENTS

TAAA and BSIG Star Party at TIMPA
Saturday, June 9

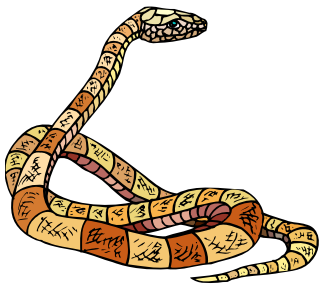
Come on out and enjoy the summer skies! TIMPA star parties are great for both beginners and experienced observers. Our novice members can get help with observing issues or equipment problems, as there are many experienced members there who would be happy to help. If you don't own a telescope, come anyway,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

MEMBER'S EVENTS (cont.)

TAAA Star Party at Las Cienegas (Empire Ranch)
Saturday, June 16

Las Cienegas (formerly Empire Ranch) has been our normal dark-sky observing site for quite a number of years. Please try to arrive before sunset. Stay as long as you like, but let everyone know when you are ready to leave; someone may be taking astro-images. Bring a telescope if you have one, but you don't need one to attend. Any member would be glad to let you look through their telescope. And, there are now restroom facilities at the site. Las Cienegas is at 4000 feet so be prepared for cool temperatures and insects. 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.

Rattlesnake Alert!



Be alert for rattlesnakes! Rattlesnakes are generally aggressive only if disturbed. If you see one, keep a safe distance and DO NOT try to interact with it in any way. Snakes are much faster than our reflexes, and should be handled only by professionals. Wear boots and long jeans. For more information, go to http://www.friendsofsaguaro.org/rattlesnakes.html.

Along with rattlesnakes, other desert critters, such as gophers and ground squirrels, make their home at TIMPA. These residents can leave holes and other potential tripping hazards, so be careful when walking.

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

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

For more information, go to: www.sa-ida.org. Or feel free to contact: John Polacheck, President of SAIDA, E-mail: jpolach@dakotacom.net, Telephone: 743-1362

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

Dark Skies for June 2007

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

Th/Fr	31/ 1	Full Moon	Su/Mo	10/11	21:10 - 2:11	Th/Fr	21/22	0:11 - 3:37
Fr/Sa	1/ 2	- - -	Mo/Tu	11/12	21:11 - 2:49	Fr/Sa	22/23	0:36 - 3:38
Sa/Su	2/ 3	21:05 - 21:29	Tu/We	12/13	21:11 - 3:34	Sa/Su	23/24	1:01 - 3:38
			We/Th	13/14	21:12 - 3:37			
Su/Mo	3/ 4	21:06 - 22:17	Th/Fr	14/15	21:12 - 3:36	Su/Mo	24/25	1:29 - 3:38
Mo/Tu	4/ 5	21:06 - 22:58	Fr/Sa	15/16	21:13 - 3:36	Mo/Tu	25/26	2:00 - 3:38
Tu/We	5/ 6	21:07 - 23:35	Sa/Su	16/17	21:33 - 3:37	Tu/We	26/27	2:36 - 3:39
We/Th	6/ 7	21:08 - 0:07				We/Th	27/28	3:19 - 3:39
Th/Fr	7/ 8	21:08 - 0:38	Su/Mo	17/18	22:15 - 3:37	Th/Fr	28/29	- - -
Fr/Sa	8/ 9	21:09 - 1:07	Mo/Tu	18/19	22:50 - 3:37	Fr/Sa	29/30	Full Moon
Sa/Su	9/10	21:10 - 1:38	Tu/We	19/20	23:20 - 3:37	Sa/Su	30/1	- - -
We/Th	20/21	23:46 - 3:37						

Weekend	Sun	Sun	Mercury	Venus	Mars	Jupiter	Saturn	
Sa/Su	Set	Rise	Set Vi	Set Vi	Rise Vi	Set Vi	Set Vi	Vi=Visibility
2/ 3	19:24	5:16	21:12 3	22:43 -4	2:18 1	5:36 -2	23:52 1	-3 brilliant
9/10	19:28	5:15	21:00 5	22:38 -4	2:04 1	5:05 -2	23:26 1	0 conspicuous
16/17	19:30	5:15	20:32 9	22:31 -4	1:51 1	4:34 -2	23:00 1	3 moderate
23/24	19:32	5:17	Rise -	22:20 -4	1:38 1	4:03 -2	22:35 1	6 naked eye limit
30/ 1	19:33	5:19	5:15 -	22:06 -3	1:25 1	3:33 -2	22:09 1	9 binoculars limit

By Erich Karkoschka

Public Star Parties and Community Events

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

Pima County Parks
16 June

See article in *Club News* section.

Three Planet Public Viewing at Flandrau
08-09 June
29-30 June

See article in *Club News* section.

TAAA Board of Directors Meeting - May 9, 2007

TAAA Board of Directors Meeting Minutes
May 9, 2007
Attending: TAAA Board Members present: Bill Lofquist presiding, Ken Shaver, Steve Marten, Terri Lappin, George Barber, and Teresa Plymate. Members present: None. President's Call to Order: 6:35PM
April Minutes. Accepted. Unanimous.
Member Feedback – None.
Announcements
The Board of Directors will meet on the first Wednesday in June (6th) vs. the usual second Wednesday of the month.
Our current Star Party Volunteer Coordinator will step down September 1, 2007. Members interested in participating in this outreach position please call Bill Lofquist 297.6653
TIMPA Observatory – **George Barber**
George announced that most of the TIMPA Observatory plans have been completed; he is considering a redesign of the anchor device to hold the structure firmly in place over the scope.
Mobile-Mini Storage at TIMPA – **Teresa Plymate**
Teresa reported that cost of a refurbished Mobile-Mini unit is $3250; refurbishing includes new paint, weatherproofing seals and lock box. New unit cost is $3950. Board voted on purchase of refurbished unit plus taxes and miscellaneous delivery and set-up fees not to exceed $4,000.
TAAA Website Redesign Update – **Terri Lappin**
Website upgrade continues; next review will be within next 1-2 weeks.
TIMPA Board Representative – **Terri Lappin**
TIMPA Board has approved Bill Lofquist to be member of the TIMPA board for the next one year term replacing Terri Lappin.
TAAA Bank Account – **Terri Lappin**
Board approved (unanimous) Terri's request to select account type that best suits TAAA requirements. Also, the Board approved a suggestion to dedicate $20,000 from checking to Vanguard Money Market account, an interest bearing cash equivalent account.
Adjourned at 9:05p.m.
Respectfully Submitted,
Steve Marten
Secretary

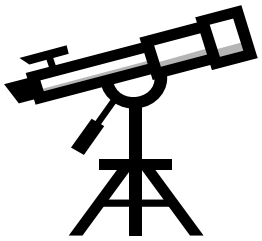
MEMBER'S FORUM

Dark Skies and City Skies: Making Use of Both

By Tom Watson

Most of us live under (or all too near) the light dome created by the city of Tucson and its associated communities. Although we deal with less light pollution than other cities our size, that unfortunate glow does impose some limitations on what we can observe from our own back yards. Because of this it's easy to get into the habit of thinking of observing as some sort of treat, indulged in only once a month by making the trek to TIMPA or La Cienegas. If you look at observing this way, a thing to be done *only* under *dark* skies, the effect of light pollution is compounded by a great reduction in your opportunities to observe. This in turn makes it hard for beginning amateur astronomers to gain experience in a reasonable amount of time. Few of us can get out of town as often as we would like for a night under the stars. And when you *do* get out there under dark skies, you might find yourself hurrying to see as much as possible during that

Telescopes for Borrowing



Free service

✦

Only for Members

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

These telescopes are in the program

Sears 60mmf/15 on equatorial mount
Unitron 62mmf/14.5 on equatorial mount
Meade 90mm ETX
Coulter Odyssey8 8-inch f/4.5 Dobson
Meade 8-inch f/4 Schmidt-Newtonian LXD-55
Meade10-inch f/4.5 on equatorial mount
Meade 10" LX200 GPS (requires training session)

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

MEMBER'S FORUM (cont.)

small window of opportunity, and not seeing any of it very well.

A better way to approach observing is to make use of clear nights both in and out of town, matching objects in the sky to the conditions under which you are able to observe. The basic approach is to divide observing targets into those that really need a dark sky for proper observation, and those that do not. And although the dividing line between these two categories is not always clear (and varies depending on where you are and the size - aperture - of your telescope) it is possible to generalize a bit for the sake of setting guidelines. Your own experiences will allow you to refine this idea to best suit your circumstances.

Since you are more likely to have opportunities to observe from your back yard, consider first objects that can be viewed easily regardless of the glow. The Moon is, of course, an obvious target, and not one for beginners only. It is a fantastic and intricate landscape, and can take years to understand to any degree. Treating the Moon as an observing target, and not a source of light pollution, opens up many clear nights to eyepiece time. The brighter planets provide their own opportunities that shine through moonlight and city light very well. You can also observe most double stars without regard to city or moonlight; I say *most*, because on a bright moonlit night it might prove difficult to star hop to some of the fainter doubles – unless "go to" is your thing. Some of the brighter open and globular clusters are also suitable targets within the city's light limits, as are bright nebulae such as M42 (especially with appropriate filters in place) – but with these types of object we enter a gray area. You will need to try a few such objects and see how they work in your back yard to get a feel for this.

Galaxies, most nebulae (including planetary nebulae), and many star clusters (open and globular – although again, you should give them a try at home just to find out for sure) are best reserved for nights under darker skies. To be sure, you can locate and observe brighter galaxies such as M104 and M31 in town, as well as nebulae such as M78 in Orion and the Ring Nebula in Lyra. But to really appreciate them, save such objects for a night out at TIMPA or La Cienegas. This is *especially* true of galaxies. Of course, even bright open star clusters will be more dramatic in a dark sky, and it can be useful to observe some objects from both your back yard and a dark sky site. The comparisons you make between these views will be helpful as you refine your approach to dividing objects in the sky between those easily observed from your home, and those that really show their stuff under dark skies. We learn best by *doing,* so by all means, experiment and make use of observing opportunities both in town and out. The time you spend at the eyepiece in your own backyard will make you a more practiced and efficient observer when you finally have an opportunity to enjoy darker skies.

Desert Skies Classified

For Sale	Meade 8" LX200R with UHTC. The scope is less than one year old, purchased from Starizona, in excellent condition, has built-in GPS, includes the field tripod, and is available with many optional accessories. If you are interested, please email J.D. Metzger at jayhawk68@cox.net for details. [09/07]
For Sale	Parts for Newtonian telescope: pressure molded fiberglass tube about 12" diameter with mount holes for spider and Novak primary mount and mount flat for focuser. Protostar 3 vane spider and diagonal mount. Kenneth Novak 9 point mirror mount. 2" diagonal mirror. 10" f/6 parabolic primary by Galaxy Optic of Buena Vista, Colo. Full thickness very fine optic. Over coated silver. All parts for $700. Also: Nagler 7mm eyepiece--$125.00, Leitz Trinovid 8x32 Binoculars--$300. Call John McAfee at 520-762-0064. [09/07]
For Sale	Losmandy G11 Gemini Go-To mount. Less than 1 year old, includes dovetail, tripod, 21 lb CW, 12V power supply, Pelican Case for EQ head, $2,500. Canon 20D (NOT the "a" model) mint condition, includes programmable timer, AC PS, and 55-200mm zoom, and all standard accessories, $900. John Davis (585)355-5360 teledavis@yahoo.com [08/07]
For Sale	Celestron Ultima 11 Schmidt-Cassegrain Telescope, fork mounted. Excellent condition, well cared for, fantastic optics, many extras. Heavy-duty wedge, 2" diagonal, 10X50 finderscope with illuminated reticle eyepiece. Equipped with JMI Motofocus, Telrad mount and piggyback camera mount. This scope is ideal for deep sky and solar system visual observing and photography. The f10 11 inch mirror has given me outstanding sharp views rivaling larger scopes. Comes with custom made padded case w/built-in wheels. Also, Thousand Oaks solar filter (11-inch), mylar cover, visual back and Kendrick dew remover system for corrector plate and finderscope. $2,000. Optional eyepieces available, Celestron 30mm - $25, Orion 9mm illuminated reticle - $35, old-style Televue 55mm plossel (incredible FOV) - $50 or $90 for all three. Call Gary Freiburger in Tucson, 626-6121 (W), 742-9494 (H), garyf@ahsl.arizona.edu [08/07]

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

Kitt Peak Star-B-Que—Photos by John Kalas

Constellation Report by Chris Lancaster

Ursa Major

The Great Bear

Just about everyone is familiar with this constellation from the asterism of bright stars that outline the famous dipper shape. Show someone the night sky for the first time and usually he will ask, "Where's the Big Dipper?" Van Gogh has painted it, Shakespeare and Tennyson have mentioned it in their literature, and, it should be safe to say, every civilization has taken note of it throughout history and prehistory. But the Big Dipper is only part of the complete constellation called Ursa Major. The most popular form which these stars have assumed in the eyes of observers is a bear. The Greeks called it Arktos, the origin of our word "arctic"--an appropriate derivation for a constellation that circles over the extreme northern latitudes. Greek legends explain that Callisto, who was a maiden that caught Zeus's eye, was turned into a bear by Zeus's jealous wife, Hera. Zeus gave the bear an honorary spot in the sky, but Hera had the last word by moving it near the pole so the bear would never enjoy rest, but endlessly circle the celestial pole.

Ursa Major is rich in objects to view. You can start with your naked eye by looking at the 2.3 magnitude star in the handle of the Big Dipper where the handle bends (this is Zeta Ursae Majoris, also called Mizar). Those with sharp eyes can spot, even without optical aid, a companion to Mizar of magnitude 4 about 12 arc minutes away called Alcor. Through a telescope Mizar becomes a double itself with a 4th magnitude companion 14" away. Not only was this the first double star to be discovered (in 1650), but it was also the first double to be photographed (1857). There is little or no color contrast between these stars. They all appear a pure white. Squeezing this trio of stars in your eyepiece makes for a truly striking sight. Another naked eye sight is found in three pairs of stars which, to the Arabs, represented the footprints of a leaping gazelle. As part of the bear, the stars form the toes of two of his hind feet and one front foot. Nu and Xi form the first leap, Mu and Lambda the second leap, and Iota and Kappa the third.

Ursa Major lies far from the galactic equator, which means that it is packed with galaxies. A pair of outstanding ones, M81 and M82, are in the northern part of the constellation centered near RA 9h 56m Dec +69d 28'. Upon first sight this duo becomes a favorite of many observers. They are separated by only 37 arc minutes so both can be seen in a low power field. They have quite distinct personalities. M82 glows at magnitude 9.2 with a size of 11.3'x 4.3'. Small telescopes will show a thin oval with perhaps a hint of dusty mottling toward the center. Large instruments will capture the inner calamities of this tortured galaxy. Whatever is happening in M82, it is a source of loud radio noise as well as the cause of a tremendous explosion of material rushing out from its nucleus resulting in streamers and filaments similar to those which contribute to the appearance of M1, the supernova remnant in Taurus. M81, on the other hand, is a handsome spiral of magnitude 7.9. It is much larger than M82, covering 26'x 14'. Most will see a uniform oval since only very large scopes will be capable of bringing out its spiral arms. An easy way to find this pair is to start at Gamma Ursae Majoris (the lower left star of the Dipper's bowl), move diagonally across the bowl to Alpha, and then double that distance in a straight line to arrive at your target.

While we are in the neighborhood, you may want to move 46 arc minutes east to galaxy NGC3077, a decently bright galaxy (mag. 10.8) 5.3'x 4.4' in size. Being a dwarf elliptical, this galaxy shows a fat oval structure that is quite bright in the center, and then fades out to its boundaries.

Another pair of objects can be seen along the bottom surface of the Dipper's bowl. One and a half degrees ESE of Beta Ursae Majoris is M108. This galaxy is very similar to M82 from the fact that it is oriented edge-on, measures 8.3'x 2.5, and has a dispersal of dusty lanes across its entire disk. M108 shines brightly at 10.1 and is located at RA 11h 11.5m Dec +55d 40'. Move only 48 arc minutes virtually in the same direction and you will see M97. A dark sky and at least a medium sized telescope will reveal why this planetary nebula is given the popular name of the Owl Nebula. You will see two dark circles forming the eyes of the bird within the round face of the nebula with the 12th magnitude central star exactly in the middle. Unfortunately, the Owl glows at only magnitude 11.5 from a disk 3 arc minutes in diameter, so it can be elusive depending on seeing conditions.

Move toward Gamma Ursae Majoris to find another easy galaxy--number 109 in Messier's catalog (RA 11h 57.6m Dec +53d 23'). It is 38 arc minutes from the magnitude 2.4 star marking the lower left corner of the Dipper. This is a bright magnitude 9.8 barred spiral galaxy covering 7.6'x 4.9', so it is an easy target in any telescope. But 8 to 10 inches is necessary to attempt seeing details of the bar and spiral arms.

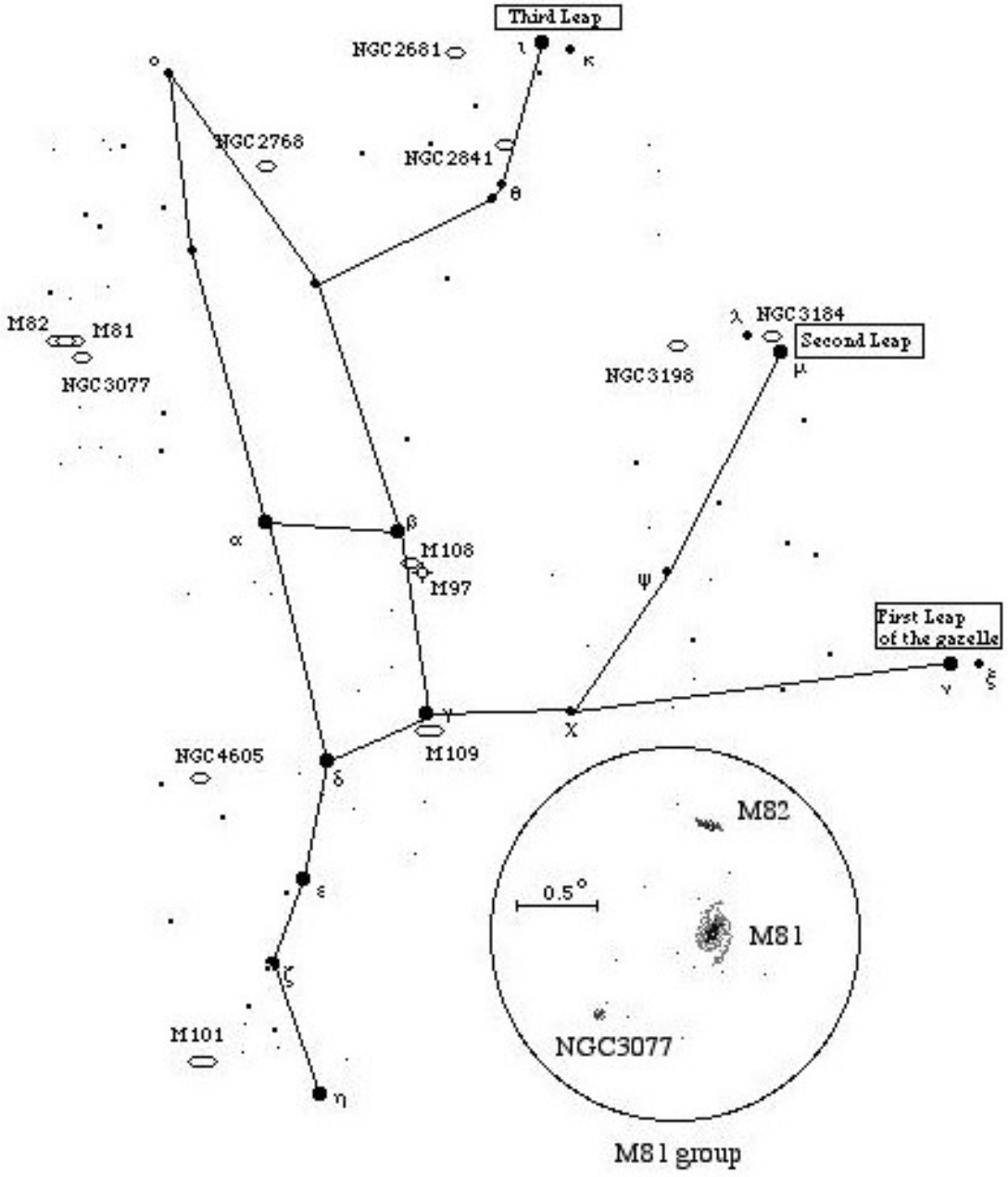
Forming a slightly flattened equilateral triangle with Zeta and Eta Ursae Majoris is the huge galaxy M101. It spans nearly half a degree across its face. Even though this galaxy shines strongly at magnitude 7.7, it has such a low surface brightness that little detail can be observed. I've spotted it in a telescope as small as 60mm, but I had to look twice to make sure it was there. Larger scopes, of course, make it an easier target, but most views will still only show a soft glow with a slightly brighter middle. M101 sits at RA 14h 3.2m Dec +54d 21'.

Constellation Report by Chris Lancaster (cont.)

Several other bright galaxies populate Ursa Major, as well as many dozen additional faint ones. Here's a partial list of some of the remaining brighter ones:

NGC #	RA/Dec	Mag.	Size
2681	8h 53.5m/+51d 19'	10.9	3.6'x 3.4'
2841	9h 22m/+50d 59'	10.1	8.1'x 3.5'
2768	9h 11.5m/+60d 2'	10.8	8.1'x 4.33'
3198	10h 19.8m/+45d 33'	10.8	8.6'x 3.3'
3184	10h 18.3m/+41d 25.5'	10.4	7.4'x 7.0
4605	12h 40m/+61d 36.5'	10.9	5.7'x 2.1

Let's end with an interesting double star, Xi Ursae. The two stars average 26 AU of actual separation, but they are close enough to Earth that even small telescopes can split them. Currently, they are separated by 1.8" which will increase to its maximum of 3.1" by the year 2035. The total period is only 60 years, which helped M. Savary in 1828 to be the first to compute the orbit of a binary star. Due to its relatively fast orbit, it is possible to see a distinct change in PA in a short time. It is now in a prime spot so that during the next thirteen years you will be able to see their PA turn by about 90 degrees.



M81 group

So many more binary stars, variable stars, and galaxies that cannot be covered in a short article await you in Ursa Major. The only limitations are time and aperture.

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

Address Service Requested

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

Directions to TIMPA and Empire Ranch

Directions to TIMPA Site

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

From the North:

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

From the East:

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

NOTE

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

Directions to Las Cienegas (Empire Ranch)

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

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