Desert Skies

Tucson Amateur Astronomy Association

Volume XLVIV, Number 8 August, 2003

The Crescent Nebula

Cover Photo: Imaged by Dean Salman using a TeleVue 76 F/5 Refractor and ST-10XME camera. 16 10-minute exposures, 1x1 binning, H-alpha filter.

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

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Membership in the TAAA

Annual Dues

Individual membership	$ 23
Family	$ 28
Senior (over 60) membership	$ 21
Senior Family (at least one over 60)	$ 26
Student membership (over 18 years old)	$ 15

Family Membership includes two adults plus minor children. Persons under 18 may join at a special Reduced Family Membership rate ($15/yr) upon parental or guardian acknowledgement of participation in TAAA activities. Call the Treasurer to request the required form.

Options (add to above membership rates)

Tucson society of the Astronomical League (TAL) dues	$ 3.50
Sky & Telescope Magazine	$ 29.95
Astronomy Magazine	$ 29.00
Postage for New Member Pack	$ 3.50

Donations are accepted for any of the TAAA funds: SA-IDA/Light Pollution, TIMPA, Education, 30" Telescope & Land, or General Fund.

Renewal Information

- Membership expires the last day of the month indicated on your mailing label. You will receive a renewal notice when they are due.
- TAAA members may join the Tucson society of the Astronomical League (TAL). TAL expiration will match your TAAA expiration.
- Discounted Sky & Telescope or Astronomy magazine subscriptions are available to members and can be started or renewed at anytime. Only single year subscriptions are accepted. Allow at least 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, send the above subscription amounts and your magazine renewal notice to the TAAA treasurer.
- To ensure proper credit to your account, please include a note explaining what you are paying for. Credit cards are not accepted. Write one check or money order for dues plus any options or donations. Make it payable to TAAA and send to:

Tucson Amateur Astronomy Association
PO BOX 41254 Tucson, AZ 85717

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

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 sun, moon, and stars. 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.

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. The editor retains all submissions unless prior arrangements are made. Partial page submissions should be submitted in Word compatible files via e-mail or on a floppy disk. Full-page articles, artwork, and photos can be submitted camera ready. We will not publish slanderous or libelous material! Send submissions to:

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

or by e-mail barbergj@flash.net

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President's Message

Many thanks to Steve Peterson et al for conducting club business while I've been out of town. On July 5, I helped with a star party at the Lake Afton Observatory west of Wichita, Kansas. There was a good crowd of eager tourists; some of who had no idea the sky was so filled with stars, let alone various unusual objects. The night was capped by a good Iridium flare of -6 magnitude. In western Kansas, where I have been most of the time, star extinction is about 2 or 3 degrees from the horizon, so I could get most anything normally seen from average Arizona observing sites.

On top of good dark skies, Hutchinson, Kansas has the best space museum outside the Smithsonian. I highly recommend going there if you're ever within a couple hundred miles. Check the web site:

http://www.cosmo.org. That's the Kansas Cosmosphere and Space Center.

I have been trying to keep up with the fires and dangers to our observatories. As far as I can tell, everything is going to be okay. Kudos and thanks to all who made efforts to stop the fire and save our playground.

Thom Peck

Vice President's Message

The perennial summer monsoons are here, which usually puts a "damper" on our observing or imaging the night sky. However, this period ushers in time to attend to other aspects of amateur astronomy and personal life. Telescope acquisition, building, maintenance, etc. are examples of how to fill in our lost time under the night sky. While we're mourning the cloudy skies, it wouldn't hurt to reflect and get reacquainted with friends and family (especially "non-believer-significant-others" who "tolerate" our nocturnal hobby). Break out the Scrabble game, get caught up on some magazines, and dig around the sofa to find that missing remote. You get the picture.

After a day or two of those replacement activities you may get to the point you can't stand it any more. Remember this: more often than not, the sky clears after the evening thunderstorms revealing your old celestial friends once again! Plan accordingly! Also, remember this month's record-setting opposition of Mars is an excellent opportunity to patiently wait into the wee hours for the sky to clear and glimpse this rare opportunity.

Remember, adapt, improvise and overcome those things that get in the way of our hobby (without getting fired and/or winding up in divorce court)!

Steve Peterson

Meeting Information and Calendar of Events

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

BEGINNERS LECTURE: 6:30 pm
Title: Project ASTRO
Speaker: Robert T. Wilson

Learn how to get involved in Project ASTRO-Tucson, an educational outreach program hosted by NOAO, which forms partnerships between teachers and astronomers.

GENERAL MEETING: 7:30 pm
Title: An Astrophotographer's Special!
Presenters: Gil Jones and Dean Ketelsen

The August meeting will be presented by two of TAAA's experienced astrophotographers. If astrophotography is your thing, then don't miss this meeting. If it's not, then plan to attend just to see the nice work these two members are doing.

Gil Jones will discuss the use of his ToUcam Webcam. He will explain how he acquires his images and will process a pre-recorded video from start to finish using the two freeware software programs K3CCDTools and Registax. The ToUcam has become the favorite Webcam among planetary imagers and this combination of camera and software comes highly recommended. Webcams such as the ToUcam, typically costing under $100, can image bright objects like planets and the moon but do not work well for low brightness deep sky objects.

Dean Ketelsen will talk about film-based astrophotography. He'll cover everything from the basic tripod mounted camera to do star trails to autoguided images through a telescope. He'll include some recent images taken through his newly assembled Celestron 14 Schmidt-Cassegrain telescope.

Both presenters will give interesting and non-technical lectures. Much of what they will discuss is easily within the grasp of most TAAA members without laying out too much money (assuming you already have the telescope!). This promises to be an excellent meeting.

BOARD OF DIRECTORS MEETING: Wednesday, August 6 7:00 pm at Steward Observatory Conference Room N305

STAR PARTIES AND EVENTS:
Aug 8 - Accelerated Learning Laboratory Star Party
Aug 23 - TAAA Star Party at Las Cienegas

Meeting Information and Calendar of Events (cont.)

Aug 27-30 - Flandrau Mars at Opposition
Aug 30 - TAAA Star Party at TIMPA

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

Club News

Refreshments

Refreshments will again be served after our August lecture. Refreshment Hosts bring cookies, soda and other necessary supplies to the meetings. (It's real easy this month since we already have the soda and most of the cookies already purchased.) They also set up the refreshments and clean up after the feast is over. Costs are reimbursed up to $25/month. Arrangements can be made if you need help carrying the supplies into the meeting room. Call Terri (579-0185 or tklappin@earthlink.net) if you want to volunteer to bring them to a future meeting.

TAAA Publicity Team

The TAAA Board of Directors decided that we need to do something about our publicity. We have relied on press releases and the generosity of the media to announce our public events. This has proven very unreliable, as anyone who has attended our last two public star parties will attest. The lines at even the largest telescope have been short. Anyone with ideas and more importantly experience in publicity are encouraged to contact Terri Lappin (579-0185 or tklappin@earthlink.net). Terri will arrange a meeting (date, time to be decided) of those interested members to share ideas. Our objective is the publicizing of our upcoming October public star party at the Desert Museum.

PROJECT ASTRO-Tucson
Astronomers and Teachers as Partners for Learning

Amateur astronomers are the largest single group of astronomer partners in Project ASTRO-Tucson. Over the past 7 years, amateur astronomers have contributed so much to students and teachers across Tucson. If you have a desire to share your enthusiasm for astronomy with the community at large, involvement in Project ASTRO is a way to give to the community, get children curious about science and possibly develop their interest into future careers. Your contribution would also enhance the teacher's knowledge and confidence in teaching astronomy. Consider this opportunity to make an important contribution to community service without excessive commitment. You could be a part of fostering the future. Testimonials supporting the Project ASTRO program can be viewed at http://www.noao.edu/education/astro_testimonials.jpg. (You may need to copy the URL out of the email message and paste it into your browser.)

Project ASTRO-Tucson is an educational outreach program hosted by NOAO, which forms partnerships between teachers (grades K - 9) and astronomers (professional, amateur, and students). We have had seven successful years of Project ASTRO. To date, Project ASTRO astronomers and teachers have reached nearly 18,000 students throughout Arizona. In addition, Project ASTRO-Tucson is one of a dozen Project ASTRO sites nationwide. Visit http://www.noao.edu/education/astro_poster.jpg for a composite of photos and key elements describing Project ASTRO-Tucson.

Our seventh training workshop will be held in Tucson October 3 and 4, 2003. During the workshop and throughout the year resources (including solar telescopes, an encyclopedia of proven hands-on activities, and supplies for the activities) are given out or lent out at no charge. A sample workshop agenda can be found at http://www.noao.edu/education/astro_agenda.pdf.

We need more astronomers to partner with teachers who are eager to learn about astronomy and do hands-on activities their students. A minimum of 4 classroom visits per year is all that is required. (Attendance at our upcoming workshop is required for new partners.) Please consider applying as an astronomer partner to get involved in this worthwhile science education program. Join the "A" Team! A workshop brochure and application form can be found at http://www.noao.edu/education/astrogram/fall2003_workshop.pdfand http://www.noao.edu/education/astronomerapp_2003.pdf, respectively. Applications can be sent to the address below or faxed to 318-8451.

For more information about Project ASTRO, visit the web page: http://www.noao.edu/education/astrotucson html or contact me at cwalker@noao.edu or 318-8535. Applications will be accepted through September 26.

Thank-you,
Connie Walker
Site Coordinator, Project ASTRO
Senior Science Education Specialist/Astronomer, NOAO

NOAO Educational Outreach
950 N. Cherry Ave.
Tucson, AZ, 85719

Club News (cont.)

LBT Observatory Tour

Saturday, 13 September 2003
Mt. Graham, AZ
This is a tour we've been trying to plan for years and it looks like it will finally take place. John Hill, LBT project scientist will be leading a tour for TAAA members only, limited to a max of 50 attendees. A lot of the details have yet to be worked out, but with the distance involved, carpooling is encouraged, and preference may well be given to those members who can offer rides to 5 or more members. Look for the final plans in the next newsletter, and signup will be at the TAAA meeting on 5 September. Note there is a home football game on 13 September, precluding UA as a potential meeting point. A tentative schedule:

8am: Meeting Point TBD for carpooling.
10:30am: Regroup at base camp @ base of mountain
12 noon: Arrive at Observatory, sack lunch (you supply).
1pm: Tour of LBT Observatory and telescope.
2:30pm: End of Tour - depart for Tucson
6pm: Arrive back in Tucson

While there is no cost involved for the tour, I would suggest a contribution of $5 per head for the driver of your vehicle for gas. Again, check back in the September newsletter for final details, you can contact me for any questions at ketelsen@as.arizona.edu.

Dean Ketelsen

GRAND CANYON STAR PARTY

Text by Brad Campbell, Las Vegas, NV
(nevers99@hotmail.com)
Photographs by Dean Ketelsen

Location: Grand Canyon, Arizona (South Rim, Yavapai Point)
Weather: Temps; Upper 70's to Lower 40's. Winds; Breezy the first few nights to calm later in the week
Sky Conditions: No clouds, some night hazy due to a fire in the northwest

This event was almost everything but what I expected. When I first learned of the Grand Canyon Star Party, I thought I was going to get a week of super dark skies sharing the nights with other amateur astronomers, comparing equipment and searching for new objects. As the days approached the event, I started to realize that this is more of a public event then that of an astronomer's event. I had mixed feelings, seeing I had never done anything like this before. The first night out changed my thoughts and I realized how lucky I was to be a part of the Grand Canyon Star Party.

For me, each day started out by taking my equipment from Aspen Loop campsite located in the Mather camping area to Yavapai Point. Once there, I set up with all the others in the parking lot waiting for darkness. It was quite an impressive sight looking around at all the different astronomical equipment. There must have been at least a million dollars worth of

Club News (cont.)

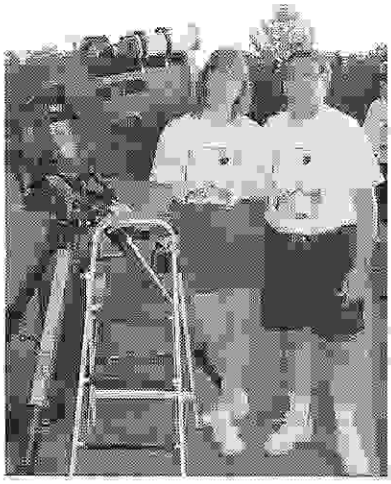
gear, or so it appeared. Scopes ranged from apertures of 70mm to 28" and every type of mount possible from alt-az to the GoTos. There were even some impressive

binoculars set up too. On any given night, approximately 50 scopes were present on Telescope Row.

The people involved were from a wide range of locations. Most people were from the various clubs throughout Arizona. Others, like myself, and made the solo journey and were from places as far away as Colorado, Illinois, Virginia and Florida. I thought I even heard mention of an observer from France!

Each evening before nightfall different participants gave a lecture about Astronomy in which the public and astronomers alike were invited. Following that, the public wandered down to the viewing field just as Jupiter was becoming visible. This is where our telescopes came into play and my previous mixed feelings vanished.

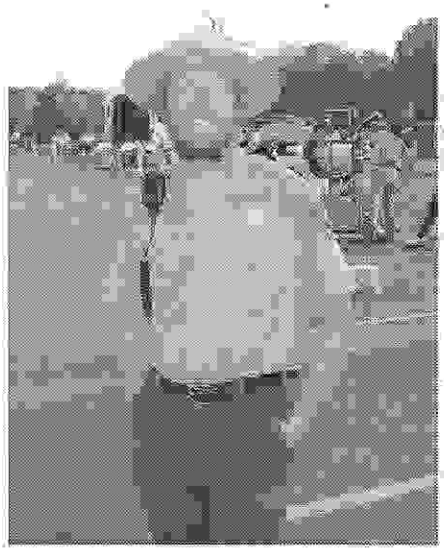
It never occurred to me that most of the general public had never seen a distant planet before. To have somebody come up to your scope and take a look at the King of Planets for the first time is beyond words. Reactions ranged from awed silence, the stunned "oh my word", the excited "holy mackerel", and the incredible "hey, you've got to look at this!" Reactions like this are what made the whole trip worthwhile. To have somebody take that first look, stare, then look at you with a huge smile, reach out to shake your hand with a sincere "thank-you" made the trip an unforgettable event.



As darkness uncovered the beauty of the night sky, scopes turned to look at different wonders. People wandered around gazing through all our scopes, listening to what we had to say about them and the objects they were aimed at. The best part was when somebody exclaimed how beautiful the chosen object was or when they would look through the eyepiece they hurriedly back off so one of their family members could look. Some went as far as running off only to bring a friend or family member back to your scope telling them "hey, you gotta see this!" Not only was I surprised at the number of questions people had but also at how well they listened to our answers. It was a learning experience for me also. I think I must have learned more in a week then I would have in a year on my own. Many of the guests stayed well into the night frequently coming back for a second look.

Between the hours of 11pm and 2am the crowds as well as the telescope owners thinned out. I chose to stay on till daylight catching my fill of the darkest skies I had ever seen to date. I looked at some of the more familiar objects I had seen previously and did manage to find some more obscure objects I had not ever seen. There was also the time to check out others equipment and to make comparisons between them and what I may want to up-grade to in the future. Secondary to the public interaction and the companionship with my fellow amateur astronomers, the highlight of the event for me was being able to

Club News (cont.)



take over the controls of the 2 largest scopes at the event; both scopes belonged to members of the Sirius Lookers from Sedona. The first being Ara's 24" reflector and then the next night Dennis's 28". What an honor!

As I sit in reflection of last weeks events, thinking about my fortune of being a part of this event and all the people who have made it all possible, I can only conclude; my place in our immense Universe is minuscule yet blessed.

Thank-you's for me are more than I can mention. To Dean Ketelsen for allowing me the opportunity to be a participant, to Thom and Ellen and all the Sirius Lookers for taking such good care of me, to Alan; my friendly Galaxy Guide, to Doug and Marilyn of the Prescott Club, to George of TAAA for his knowledge data-base and laughter and to Steve of whom I never really got to know which club he belongs but offered me one of the best views of M51 I've ever seen through his hand-built 18" EQ Newtonian! But mostly I think we should all thank our Ranger, Brian & the National Parks Service for allowing us to share our passion of the Night Skies with such an inquisitive public audience like the one we had.

Items of Interest

WEBSITES: TRIPS ON THE INTERNET SUPER-SKYWAY

Monsoon Maintenance
By Rik Hill

It has finally started to rain! For those of us that have telescopes, cabins, homes and observing equipment in the Catalina Mountains, we thought the rains would never get here! But now that they are, and the fires are out we have traded smoky skies (especially us on the east side of Tucson) for cloudy. So it's time to do the monsoon maintenance to our equipment.

For many of us the smoke and soot of the last month has deposited crud (technical term) on our optics. They have to be cleaned. There are a number of good methods for cleaning and many resources on the web to guide you. If your mirrors or lenses are not terribly dirty you can use a colloidal material to first coat the optics and then, as you peel it off, strip away the dirt. An article on this is posted at:
http://www.rhinodev.com/oldscope/atspages/techtips.htm

For dirtier mirrors, a good collection of methods can be found at:
http://www.astro-tom.com/tips_and_advice/cleaning_optics.htm

A similar set of instructions can be read at:
http://www.madbbs.com/~bemusabord/cleaning.html

with a more technical method at:
http://observers.org/cleaning.optics.html

You will need to spruce up the collimation too, especially if you took the mirror out for cleaning. A detailed discussion and guide can be found at:
http://zebu.uoregon.edu/~mbartels/kolli/kolli.html

The expert planetary imager Thierry Legault has a page of discussion on the effects of misalignment at:

http://perso.club-internet.fr/legault/collim.html

This is worth seeing even if you only look at the pictures!

How about an improvement to the telescope while you're at it? Many amateur telescopes I've seen suffer from tiny finder syndrome. Frequently, when I ask about it I'm told, "Have you seen the prices of finder scopes these days?" They are a bit steep at times. But fear not - there is an economical solution.
The market is literally flooded with inexpensive binoculars, which, while maybe not serving well as binoculars, will give you two finders for less than the price of one. For example, K-Mart is selling 10x50 binoculars for $20. Can you believe it?! If you don't go to:

http://www.kmart.com/product/index.jsp?productId=1327440&cp=945368.702345&parentPage=family

(or you can go to www.kmart.com and search on "binoculars" and then peruse the different size categories)

Sure, they may not have full sized prisms, or may be misaligned, but who cares? You're going to take them apart and use them for pointing a telescope! With 50mm finder scopes $50-75 range, getting two for $20 (correct image no less) is a pretty good deal. The only tricky part will be designing a bracket that can be adjusted. But then, you need something to keep you busy on these rainy monsoon nights!

Star Parties & Events

Accelerated Learning Laboratory — Northwest

Friday, 8/8/03 — No. of Scopes: 4

Accelerated Learning Laboratory Summer Star Party will be held at 5245 N Camino de Oeste. Go west on Camino del Cerro to Silverbell and continue west on Camino del Cerro for about a mile and a half. Make a right on Camino de Oeste, continue approximately a half-mile and make a left at the big brick mailbox, which is the driveway to the school. Set-Up Time: 7.30pm Observing will be from 8:00 pm to 10:00 pm. Sunset: 7.15 Dark Sky: 8.46 Moon Phase: Gibbous

TAAA Star Party at Las Cienegas (Empire Ranch)

Saturday, 8/23/03

Las Cienegas (formerly Empire Ranch) has been our normal dark-sky observing site for quite a number of years. Please try to arrive before sunset. Stay as long as you like, but let everyone know when you are ready to leave; someone may be taking astrophotos. Bring a telescope if you have one, but you don't need one to attend. Any member would be glad to let you look through their telescope. There are no restroom facilities at the site, so be prepared. At 4000 feet, it will be cooler than the Tucson area. Also, be prepared for a possible rain shower, as the monsoon season is underway. 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.

Flandrau Mars at Opposition

August 27-30

Here are several chances to show the general public Mars, Uranus, and the waxing crescent moon on the UofA mall with the folks at Flandrau Science Center. Mars is at opposition on August 28 as we all know, but it is closest to Earth on August 27 (UT). Also, the UA football team is playing at home on Saturday, August 30, giving TAAA and Flandrau volunteers the opportunity to have a star party for 10,000 plus. Join Flandrau Science Center each night from Wednesday, August 27 through Saturday August 30 from 7:15 p.m. (setup) to 10:30 p.m., weather permitting. Parking on the grassy portion of the mall near or at the observing area will be only allowed with permission, in advance. Because of the monsoon weather and coordination needed, Flandrau Science Center is requesting volunteers please call or e-mail Mike Terenzoni at Flandrau (miket@ns.arizona.edu, or phone 621-3646). A sign up sheet will be available at the August meeting.

TAAA Star Party at TIMPA

Saturday, 8/30/03

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 anyways, 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. There is no scheduled talk for this activity, just come out and enjoy. 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 a possible rain shower, as the monsoon season is underway. Directions to the TIMPA site are located on the outside flap of this newsletter.

Desert Skies Classified

For Sale:	Olympus OM 2000 camera with spot metering (only 1 year old). Includes 35-700 zoom lens and 80-200 zoom lens. Asking $225 for both. Also, a complete computer system. Details at www.galaxies.com/pc Phone 520 250-0407. [09/03]
For Sale:	12" F4.5 truss-tube dobsonian telescope. 1 1/2" rack & pinion focuser. Includes 25mm eyepiece, 2x barlow, LED finder. Asking $800. Gary Vecere, 409-0113. [10/03]
Wanted:	Looking for up to five individuals who would be interested in think tanking, developing, finding funding for and implementing a totally new kind of public observatory. To be operated as a for profit business. Will cost 12 million to build if funded 100% and will generate about 1 million per year in after expenses revenue. Can also be franchised nationally, then internationally. This will not be a paid position until fruition and will require much of your personal time to develop to that point. Thereafter, the rewards would be great. If interested please contact Jim at; starman100@cox.net and use "Universe City" in the heading. [10/03]
For Sale:	JMI NGC-Max Digital Setting Circles (Modified with current Tangent Instruments Firmware). Includes: NGC-Max computer, 2ea 4,096 step encoders, encoder cables, user documentation and database listings. Asking $225.00 or best offer. Contact Jim Waters 480-554-8789 or mailto:James.t.waters@intel.com [11/03]
For Sale:	8", F/6 Skywatcher Dob with 50mm finder and 26mm eyepiece. Excellent condition and used very little. Very good optics and construction. $300. Call Frank at 520-743-0018 or E-mail me at fcathell@aol.com. [11/03]

Your ad will run for 4 months unless specified. Month and year of last appearance is last item of ad. For additions or changes to this list, call George Barber at 822-2392or e-mail at barbergj@flash.net.

Dark Skies for August 2003

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	21:24 - 4:06	Su/Mo	10/11	- - -	Th/Fr	21/22	20:29 - 0:46
Fr/Sa	1/ 2	21:56 - 4:07	Mo/Tu	11/12	Full Moon	Fr/Sa	22/23	20:27 - 1:35
Sa/Su	2/ 3	22:26 - 4:08	Tu/We	12/13	- - -	Sa/Su	23/24	20:26 - 2:31
			We/Th	13/14	- - -			
Su/Mo	3/ 4	22:58 - 4:09	Th/Fr	14/15	20:38 - 21:03	Su/Mo	24/25	20:24 - 3:33
Mo/Tu	4/ 5	23:32 - 4:10	Fr/Sa	15/16	20:37 - 21:30	Mo/Tu	25/26	20:23 - 4:29
Tu/We	5/ 6	0:11 - 4:11	Sa/Su	16/17	20:35 - 21:57	Tu/We	26/27	20:21 - 4:30
We/Th	6/ 7	0:55 - 4:11				We/Th	27/28	20:20 - 4:31
Th/Fr	7/ 8	1:47 - 4:12	Su/Mo	17/18	20:34 - 22:24	Th/Fr	28/29	20:19 - 4:32
Fr/Sa	8/ 9	2:46 - 4:13	Mo/Tu	18/19	20:33 - 22:53	Fr/Sa	29/30	20:27 - 4:32
Sa/Su	9/10	3:51 - 4:14	Tu/We	19/20	20:31 - 23:26	Sa/Su	30/31	20:59 - 4:33
			We/Th	20/21	20:30 - 0:03			

Weekend Sa/Su	Sun Set	Sun Rise	Mercury Set	Vi	Venus Rise	Vi	Mars Rise	Vi	Jupiter Set	Vi	Saturn Rise	Vi	Vi=Visibility
2/ 3	19:19	5:38	20:32	4	5:18	9	21:05	-2	20:05	6	3:05	1	-3 brilliant
9/10	19:12	5:43	20:25	4	5:32	-	20:36	-2	19:42	9	2:42	1	0 conspicuous
16/17	19:05	5:47	20:12	5	Set	-	20:06	-3	Rise	-	2:17	1	3 moderate
23/24	18:57	5:52	19:51	7	19:06	-	19:34	-3	5:45	-	1:53	0	6 naked eye limit
30/31	18:49	5:56	19:22	-	19:03	-	19:02	-3	5:25	9	1:28	0	9 binoculars limit

By Erich Karkoschka

Object of the Month by Alfredo Garcia, Jr.

Without a doubt, the object of the month for August 2003 is the planet Mars! Especially since it will be well placed for observation during this month , but you can find plenty of information on Mars' close approach to Earth in many other sources like "Astronomy" and "Sky And Telescope". So in light of this, I decided to pick one of my favorite summer time objects. August's OTM is a member of our Milky Way Galaxy that belongs to the class of objects known as open star clusters.

Open clusters are physically related groups of stars held together by that powerful, governing force of the universe known as gravity They are believed to originate from large cosmic gas and dust clouds in the galaxy and orbit the galaxy through the disk. Most open clusters have only a short life as a cluster. As they drift along in space, some members escape the cluster due to velocity changes in mutual closer encounters; tidal forces in the galactic gravitational field; and encounters with field stars and interstellar clouds crossing their way. On average, an open cluster has spread most of its member stars along its path after several 100 million years and only few of them have an age counted by billions of years.

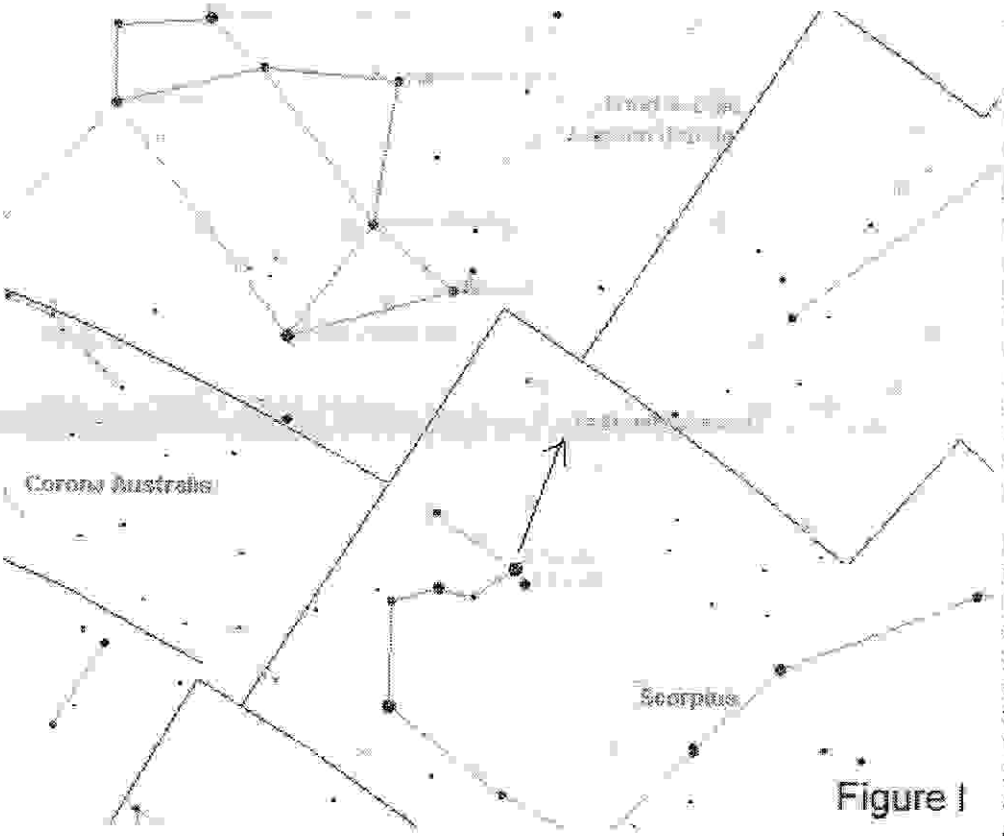


Figure I

There are many fine examples of open star clusters in our galaxy and this cluster is one that is visible to the unaided eye. It is well placed for observation this time of the year and lies within the boundaries of Scorpius. This cluster is none other than Messier 6 or as it is more commonly referred to: the Butterfly Cluster. Perhaps its most unique characteristic is that it has a "shape" that really resembles what it is named after It consists of an interesting group of stars whose celestial arrangement suggests the outline of a butterfly with open wings, hence its popular name.

M6 has been known since 1654, when the Italian astronomer Giovanni Batista Hodierna (1597-1660) discovered it. He included M6 in his catalog of some 40 nebulous objects which was published and long forgotten. The cluster went unknown for sometime until it was independently rediscovered by astronomers De Cheseaux in 1745-46 and Lacaille 1751-51. Charles Messier added it to his catalog where it came to called M6, its most well known designation.

The estimated distance to cluster is about 2,000 light-years and it spans some 20 light-years across. This close distance and large size gives it an apparent size in the sky of about one Full Moon's width. It has a visual magnitude of 4.2 and can be easily observed by the naked eye and resolved in just about any size telescope or pair of binoculars. Like most open clusters, M6 is composed predominantly of young blue stars, although the brightest star is nearly orange and has a magnitude of 6.2. The Butterfly Cluster is estimated to be about 100 million years old and comprised of about 80 stars.

The best time to observe the Butterfly Cluster during this month (if you can get past the monsoons here in Southern Arizona!) is during periods when the Moon is not visible. If you go out observing (from the Tucson area) in early or late August at about 9:00 PM (MST), you will find M6 at an altitude of about 25 degrees above the horizon (early month) to about 20 degrees above the horizon (late month).

Since the M6 is a naked eye object, it is easy to find this "celestial butterfly". To get to M6's location you must first start by finding the stars that make up the "stinger" of the tail of Scorpius: Shaula and Lesath. If you look 5 degrees almost due North of these stars, you will find M6 (see Figure I). Within about a 1.5 degree radius of M6, you will also find other open star clusters like NGCs 6383, 6374, 6416, and 6425. So make sure to "drop in" and observe these other celestial wonders in the area! If you use setting circles or have an automated go-to telescope, you can find M6 at RA 17hr 40min 06sec and DEC -32deg 13min.

TAAA Board of Directors Meeting - July 2003

The Board: absent: Cooper, Peck (vacations)
Members present: Ellen Finney and Nora Toscano

V. President's Call to Order: 7:02PM

1. Changes to the agenda allowed. Steve would like to see a two (2) hour limit on Board meetings.
2. Star Party schedule acknowledged, with the information to be given to George by Ken.
3. Projector: Steve has been given info by Pat Heimann on models/costs. A discussion of further fund-raising followed, with a budget of approx. $2400-2900 determined. Steve will get more info from Pat.
4. Treasurer's Report: another rise in the TAAA investment account; payment to SAIDA from directed donations; Terri informed the Board of the CD maturation in Sept.: our invest. Rep. will be summoned to the Aug. Board meeting to discuss options; late memberships given to MALs for inquiries; Ed motioned to accept the report: seconded by several and unanimously passed.
5. Reach For The Stars: Bill is developing an astronomy course for the new charter school *Pima Partnership H.S.* It may include an ATM section. Bill will recruit from membership those with specializations to help.
6. Telescope Raffle: due to many legal complications, tickets will be sold to members only (non-transferable); ticket design by Liz Kalas & Terri; Ray will investigate the focuser adj.
7. Charity Status: following state registration (under their educational section), the TAAA qualifies for consideration for a donation from Raytheon; Ray and Steve will follow this application.
8. 4th Ave. Street Fair: after discussing the logistics/benefits, Bill motioned to not apply this time; seconded by Ed and passed with one dissenting vote; left open is the opportunity for a member(s) to take on this endeavor.
9. Article/letter submission: the Board read and unanimously rejected a letter for newsletter publication on the grounds that it is inappropriate; the sender will be notified.
10. Liability: Ken is checking on Star Party volunteers' risk exposure; Terri informed the Board of the policy currently in place to cover the TAAA; Ken will follow the question of *individual* vs. club coverage, both equipment and medical.
11. Lunar Scheduling: a proposal to schedule the Gen. Meeting around moon phases: Fridays, but avoid the new moon to accommodate observing. Much discussion: problems with University scheduling of Steward; new-member confusion, etc. After securing the President's approval, this will be put to a vote during the August General Meeting. Ken motioned to take this under advisement 'til next month, seconded by Steve and unanimously passed.
12. Las Cienegas: BLM improvements are planned, including a waste facility; Ray is selected and accepts as the TAAA contact to Catie Fenn (Outdoor Rec. Planner) @ the BLM; he will deliver our schedule to her for coordination.
13. Yahoo News Groups: proposed is a member-selectable preference for types of messages received; also to allow all members to post messages; multiple vs. single moderator set-up; all, of course, for members only, yet allow access to *some* of the news by non-members. Ray may give a Beginners' Lecture on this to ensure everyone understands the proposal(s) and how they would work.
14. Webmaster: Andrew is meeting with Dean Salmon to coordinate the change.
15. Meeting Time Limit: Due to time constraints, old business is shelved until next month. Steve discusses the need for a two-hour limit: submit agenda items four (4) days in advance but retain agenda flexibility.

Adjourned: 9:48PM
Respectfully Submitted,
Ken Wheelock
Secretary

Object of the Month by Alfredo Garcia, Jr. (cont.)

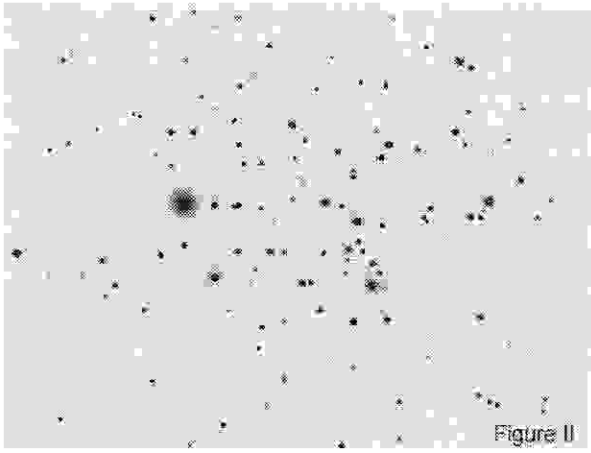


Figure II

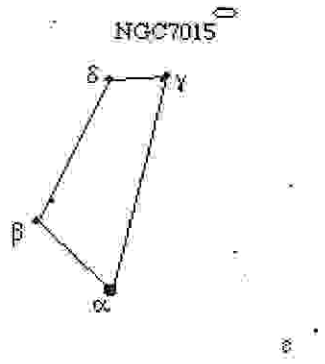
In addition to M6 being a great visual object, it is also a very nice and easy target to astrophotograph or CCD image. I used an 80mm f/5 Orion ShortTube Refractor to produce the image at Figure II. It was taken using a Starlight X-Press MX5C CCD camera and is a composite image of two 5-minute exposures. Do you see "The Butterfly"?

And here is one final note of interest on M6. Of all the Messier objects, it is the one that is located at the closest angular distance from the Galactic Center. The center is located in the constellation Sagittarius, but very near to the three-constellation edge of Sagittarius, Scorpius and Ophiuchus. So when observing M6, be aware that you are looking within about 4 degrees from where the center of our Milky Way Galaxy is found!

Constellation Report by Chris Lancaster

Equuleus

The little horse



This month we feature two small, rather uninteresting constellations, which don't merit a full article on their own. Even though they present rather little to the backyard observer, it's worth learning about these two obscure constellations.

This small, little known constellation lies between the nose of Pegasus and Delphinus and reaches its highest point in the sky at 11pm during middle to late August. Pegasus seems to be looking at his small counterpart which is just beyond his nose, and which is considered to be the invention of the Greek astronomer Hipparchus. Little mention of it is found in astronomical works since then, probably because it has only a few dim stars and virtually no interesting objects. Myth has it that Equuleus is the horse Celeris, which is the brother of Pegasus. Depending on which story you follow, Celeris was a gift to Castor (one of the twins of Gemini) from the god Hermes, or a gift to Pollux (the other twin) from Hera, the wife of Zeus. Another story contends that Celeris sprung from the earth when Poseidon's trident struck the ground in a contest with Athena.

Equuleus is a four-sided figure made up of stars no brighter than 4th magnitude. If you look toward Gamma Equulei, you'll see a visual binary star separated by 5.5 degrees. The brighter star shines at magnitude 4.7, while the dimmer one is magnitude 6. The two are of spectral types A (for the brighter star) and F, so you'll see stars of white or yellowish white color.

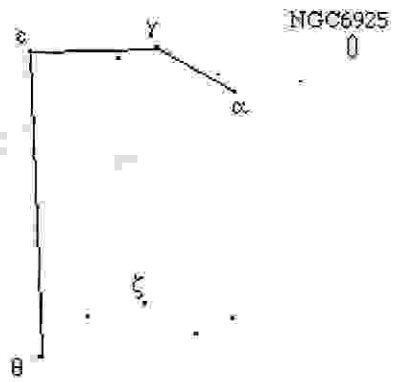
For large telescopes, a dim galaxy, NGC7015, sits 1.7 degrees northwest of Gamma Equuleus. There are virtually no stars with which to star hop, so luckily it's not too far away from Gamma. Its position is 21h 5m 37s Dec +11d 24' 50". If you have enough aperture, you'll see a dim, 13th magnitude spiral galaxy measuring 1.8'x 1.6' with diffuse boundaries getting gradually brighter toward the center.

Although not generally observable through an average telescope, an interesting double star is Delta Equulei, which marks the northeast corner of the box shape of Equuleus. The semi-major axis of this star is a tiny .26" with maximum separation of about .35". What sets this star apart is that its period of rotation is a short 5.7 years.

Microscopium

The microscope

This is a more modern constellation created by Nicolas-Louis de Lacaille in or about the year 1750. He named it along with Telescopium to honor two instruments that revolutionized the study of science. To the ancient observers, the area occupied by Microscopium had no named figures and was known as a vast area called "the sea" rising in the sky above the horizon.



Microscopium is made of very dim stars (4.7 and dimmer) south of Capricornus and between Sagittarius and Grus. Similar to Equuleus, it also passes through the meridian at around 11pm during the second half of August.

Making your way around Microscopium is difficult because there are no bright stars with which to navigate. One of the brighter stars of Microscopium, Alpha Microscopii, is an easy double star within the grasp of any telescope, and provides a good starting point. Individually, they shine with magnitudes 5 and 9.8, giving a naked eye integrated brightness of 4.9. Only 20 arc seconds separate the two, so low power is all that's necessary to split them. These two stars are very similar to the sun, having a spectral type of G8, compared to G2 for the sun.

There are a number of galaxies in Microscopium, but all are faint. One of the brightest that we find here is a fine example of a spiral galaxy--NGC6925. We can star hop from Alpha by going 2 degrees west to a star of 5.5 magnitudes, and then another two degrees northwest to NGC6925 (or go to RA 20h 34m 21s Dec -31d 58' 50".) This magnitude 12.1 galaxy is turned very close to edge on and measures 4.4'x 1.2', so you'll see a dim spear of light oriented almost straight north-south. In very large instruments or CCD images, some texture can be seen along the tightly packed spiral arms.