Desert Skies

Tucson Amateur Astronomy Association

Volume XLVII, Number 7 July, 2001

2001 Riverside Telescope Makers Conference

Calendar of Events

BEGINNERS LECTURE: July 6, 6:30 pm at the Steward Observatory Auditorium - Room N210. This month's topic will be *TIMPA Long-Range Plans.*

GENERAL MEETING: July 6, 7:30 pm at the Steward Observatory Auditorium – Room N210. Topic is *By Jove! - Ultraviolet Observations Of Jupiter's Aurora* by Dr. Mark Vincient.

BOARD OF DIRECTORS MEETING: Monday, July 9, 7:00 pm at Steward Observatory Conference room N305.

STAR PARTIES AND EVENTS:

- July 14 - TAAA TIMPA Star Party
- July 18 - TIMPA Long Range Planning Sub-Committee Mtg.
- July 21 - TAAA Empire Ranch Star Party
- July 21 - Tucson Children's Museum Star Party

Newsletter Schedule: Deadline for articles: Monday, July 16. Printing: Monday, July 23. Folding Party: Tuesday, July 24. Mailing: Wednesday, July 25. The newsletter is scheduled to be in the mail at least one week prior to the following month's General Meeting.

Cover: Some of the TAAA Members who attended the Riverside Telescope Makers Conference standing in front of Roger Ceragioli's 8" Refractor that won Honorable Mention at RTMC. (See article in Club News).

TAAA Web Page: http://www.tucsonastronomy.org **TAAA Phone Number: (520) 882-1950**

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TAAA Mission Statement

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

Annual Membership in the TAAA:

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

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

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

Four Easy Steps to Membership Renewal:

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

- Call the Treasurer if you have any problems.
- Send address changes to the above address.

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

TAAA - Desert Skies
c/o George Barber
15940 W. Ridgemoor Ave
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or e-mail: barbergj@flash.net

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President's Message

The rod has been passed as I take up the task of running the club. John is slowly phasing out of his role and I am beginning to assume more and more of the tasks. I don't think that the change of presidency will bring a change of policy. John and I agreed on too many things. A change of style perhaps, but that is inevitable. Priorities will remain the same, proceed with TIMPA to give the club permanent facilities, continue a strong public star party program and provide an environment that encourages a high standard for amateur astronomy

As was mentioned to me recently, the club is many things to many people, and this must be encouraged. The club must provide for beginners, providing them with the environment and resources needed to progress in the hobby. Beginner's lectures and star parties are good tools to accomplish this. I will make an effort to see that beginner's lectures are just that, primers in the basic skills of our avocation, this means repetition for our advanced members, but that why we call them "beginner's". The club must also serve the advanced amateurs, providing them with lectures and star parties that continue the endless quest for knowledge.

I believe strongly in our public star party program. This program allows our members to give something personal and important to our community. Particularly the young people of our city who often don't get a chance to see the universe beyond day to day life. We can show them that the sky isn't remote and unreachable. Media often portrays science as the realm of professionals with multi-million dollar budgets who sit on remote mountaintops, or a select few astronauts that spend their life training for that chance. The universe is their for everyone, and can be reached from any backyard with a modest effort.

Only some of this can be accomplished by the president and board. We can set the direction and schedule events, all of which is nothing without you, our members. The club is it's members. If any one of you can find time to come to a school star party, or help a fellow with his equipment, we all benefit. My thanks to all of you who give your time to the club and our community.

If you have visited TIMPA lately you will see the progress. A foundation dug for the 16' dome. A pier cast for the 6' dome with forms built to complete this project soon. I hope that by the end of the summer a good bit of what the long range committee has planned will have become reality. I will push for completion of the 16' dome and I think installing observing pads (w/power) is also a good immediate goal.

A everyone is painfully aware, monsoons are upon us. I too feel the frustration of looking up at a cloudy sky on a moonless night. Let's use this time to get things accomplished that will be ready when the skies again clear.

Andrew Cooper

Meeting Information

Beginners Lecture

The TIMPA Long-Range Planning Committee has developed a plan for the future of the TIMPA observing site. At this month's Beginners Lecture, this plan will be presented to the TAAA general membership. Attend this lecture to learn what lies ahead.

Main Lecture

Title: By Jove! - Ultraviolet observations of Jupiter's aurora
Speaker: Dr. Mark Vincient

Jupiter's aurora deposits about 100 trillion Watts into the planet's polar regions; that is 10,000 times more powerful than Earth's aurora. This immense energy produces intense auroral emissions and large quantities of hydrocarbon "soot," which settles into Jupiter's atmosphere to form thick polar hoods. In visible light, the polar hoods appear relatively featureless. Ultraviolet images from the Hubble Space Telescope reveal auroral-aligned features in the polar hoods.

Mark will talk about his discovery of the auroral-aligned features and the chance that amateur astronomers might be able to image them. Mark is a postdoc at New Mexico State University in Las Cruces, New Mexico working for the Planetary Data System, Atmospheres Node. Before this he spent 10 days at the South Pole working on the Viper cosmic background radiation telescope, and was involved in 3 sounding rocket flights to study Jupiter's aurora

Construction Again to Cause Problems

Cherry Avenue is again under construction making it nearly impossible to get from the south side of the University Mall to Steward Observatory. It is highly recommended that members park at the lots north of Steward Observatory and walk down Vine, crossing 1st and 2nd Streets to reach the lecture hall. Handicapped parking is available in the small lot immediately northwest of Steward Observatory. There are a very limited number of spaces. The handicapped spaces on Hawthorne are not recommended, as crossing Cherry in front of Steward is not an easy thing.

Club News

Member News

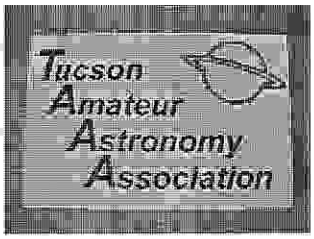
We welcome the most recent members who have joined the TAAA: Robert and Stephanie Blanchette, Jason and Shannon DeLeo, Katy Garmany, Linda Gill, James and Laura Goodall, Cindy Lind, Ira Lugerner, Joseph and Audrey Marshall, Mark McArdle, Jim O'Lech, Danny Rowland, Dorothy Schrumpf, Barb Stone. Glad to have you join! If you haven't already, be sure to pick up a new members pack at a meeting. Hope you'll make it to our star parties or meetings so we can all get to know you.

Demo Night in September

A little twist to the idea of a members night. We are planning a "Demo Night" instead of a regular meeting in September. The night will be a chance for members to demonstrate the basic skills and equipment of our craft. Setups for telescope control, astrophotography, eyepiece comparisons, and basic hands-on stuff. A swap table will also be available for exchanging equipment. Get your ideas together, dust off that stuff you are not using to bring to September's meeting. If you have ideas for a presentation contact Andrew Cooper at taaa@seds.org.

Thanks, Pat!

TAAA Member, Pat Heimann, generously donated three 2'x3' painted aluminum signs for use at our TIMPA Site (see photo below). The words "Tucson Amateur Astronomy Association" are a reflective light blue color and the Saturn symbol is a reflective gold color, all on a white background. The signs really look sharp! They will be installed at TIMPA within the next few weeks. One will be placed at the entry gate to TIMPA on Reservation Road. Another will be located at the start of the long driveway heading back to the parking lot. The third sign will be temporarily kept in the TAAA's storage cage at TIMPA until we are ready to install it at observatory building site. Thanks, Pat!



TIMPA Long-Range Planning Meeting

The TIMPA Long-Range Planning Committee will meet on July 18th in the Steward Observatory 3rd floor conference room. We will review our plan now that the 6' dome has been placed in the wrong location.

Daytime Resources Needed

By John Kalas

Every so often, the TAAA gets a request from a school to give an astronomy presentation or solar observing session to children in the classroom. For example; the club received two requests in late June from the Parks & Recreation Dept. to speak to kids enrolled in their summer programs at two elementary schools. Robert Wilson and myself handled the activities. We observed the sun and the moon. Currently, our school star party program is geared to evening activities. Most of our star party volunteers work during the day and it is difficult to take time off from work to supply the requested service. What we need are a few retirees to volunteer to help with daytime requests. If you would be interested in helping out, please contact John Kalas at 620-6502 or at <jckalas@aol.com>.

2001 Riverside Telescope Makers Conference

By John Kalas

Held in the beautiful San Bernardino Mountains just outside of Big Bear, CA at a YMCA Camp called Camp Oaks, this major conference lived up to its notoriety as one of the premier amateur astronomy gatherings in the nation. Held every year during the Memorial Day Weekend, this year's event drew about 1700 visitors. The three-day conference included a huge commercial area with all of the major telescope and accessories manufacturers showing off their wares. There were also smaller distributors and used equipment dealers represented. Exhibitors included; Meade, Celestron, Lumicon, JMI, Starsplitter Telescopes, Discovery Telescopes, TeleVue, Pocono Mountain Optics, Coronado Instruments, Astronomy Magazine, Sky & Telescope Magazine, Stellarvue, Astronomy To Go and many more. World-class astrophotographers Tony and Daphne Halas and Jim and Sally Fletcher had booths and were selling their spectacular photos. A painter/astronomer by the name of Hulan Fleming from the state of Washington displayed his astronomy-related paintings. I purchased one of Hulan's prints depicting a typical star party. I will frame it and donate it to the club for hanging in the new observatory at TIMPA.

Scheduled during the days were fascinating presentations by well-known amateur and professional astronomers. The TAAA's own Wayne Johnson was one of the speakers. Wayne has been involved with the RTMC organization for many years. On Saturday morning, the traditional "Swap Meet" was held along the sidewalk leading down to the eating/lecture hall. Folks displayed their "treasures" on blankets and card tables. It was fun to just walk around and listen in on the negotiating taking place.

One of the main objectives of the conference is to invite amateurs to show their unique telescope designs or constructions for judging. Many incredible telescopes were displayed in the center of the commercial area, down "Telescope Alley" and around the campsite. TAAA Member, Roger Ceragioli, entered his newly finished 8" diameter refractor telescope. TAAA Member and Past President, Dean Ketelsen, was invited to be one of the judges and also participated in the awards presentations. Roger received Honorable Mention. Congratulations, Roger!

Club News (cont.)

Each evening, all of the telescopes were "open for business" and the conference attendees enjoyed a fantastic star party. The weather this year was quite good and everyone had a great time. TAAA Members who attended the conference included; Roger Ceragioli, Dean Ketelsen, Terri Lappin, Gary Rosenbaum, David Lunt (owner of Coronado Instruments), Wayne and Arlene Johnson, Byron Skinner, Don Higgins, Jim and Delia Brix and my wife, Liz and I. Also present were Steve and Sharon Koerber from Sky Works.

The last time that I had attended the RTMC was in 1987. I was very impressed with the improvements to the conference, especially the lectures. If you haven't attended this event yet, you should place it on your calendar for next year.

ASTRONOMY APPRECIATION 101 - A CLASS FOR VISION HIGH SCHOOL: PIMA COMMUNITY COLLEGE

By Bill Lofquist

This course was specially designed by the Tucson Amateur Astronomy Association at the request of Dr. Wilma Soroosh, Principal of Vision High School. Its purpose was to give an introduction to astronomy for a group of students with no background in astronomy and thereby stimulate an interest in the subject. The students get 30 hours of credit for taking the course. The class began on May 22 and ended June 19.

The course consisted of nine two-hour sessions in the classroom and four field trips. For each classroom session different volunteer astronomers, some amateurs and some professionals, made presentations on different subjects. The subjects included solar eclipses, the scale of the universe, an overview of deep sky objects, astrophotography, the sun/asteriods/meteors/comets, the moon, supernovae, Mars, the Planets, galaxies and careers in astronomy.

The students also made observations and drawings of the sun and sunspots, did some brief research on important astronomers of past years, became familiar with Astronomy and Sky and Telescope magazines and explored astronomy web sites. Field trips included Kitt Peak National Observatory, Starizona Astronomy Shop, Bill's Backyard Observatory for some hands-on observing, the Flandrau Planetarium and the Steward Observatory 21 inch telescope.

There are 11 students in the class. Volunteers from TAAA, Kitt Peak National Observatory, the Flandrau Planetarium, NOAO, the U of A Astronomy Department and the Lunar and Planetary Lab are assisting in the course. Thanks to all of the people and organizations who have volunteered their time and knowledge to make this class a success.

From the Mailbag: Kalmbach Astronomy Book Sale

Kalmbach, publisher of Astronomy magazine, is liquidating their inventory of astronomy books. There will be a list books, all at substantial savings, available at the July meeting. A single order will be placed in mid July if anyone wants to purchase these books. Payment in full must be received by July 15th. If a book sells out your money will be returned. See Terri for details.

Kitt Peak Docents

The National Optical Astronomy Observatory (NOAO) at Kitt Peak needs docents to conduct daily public tours of its telescopes and to assist visitors in the Visitor Center. Docents are required to work two six-hour shifts per month (10:00 a.m. to 4:00 p.m.). Benefits include training, transportation, and free meals. Interested persons should contact Robert Wilson at 318-8440 or rwilson@noao.edu.

White Sands Star Party

Sept 21 -23, White Sands National Monument, New Mexico, www.zianet.com/wssp, or see details at the July meeting.

Items of Interest

WEBSITES: TRIPS ON THE INTERNET SUPER-SKYWAY

Barsoom!

By Rik Hill

If, after the oppressive heat of our days, you have gone out into the welcome cool of our summer evenings and looked east you cannot help but be awed by the dazzling sight of Mars rising above the mountains. I hope you have taken time from other observational pursuits to use a good high power and look at this planet. If you have not there is still time to do so and to inspire you to do so you should visit some images of other amateur astronomers.

On the high end of the imaging scale are the pictures by Don Parker. His work with a 16" Newtonian, made by Dan Joyce in Chicago, from his home in Florida are among the best earth based images available. You can see some of these images at the ALPO Mars Section pictures page at:

http://www.lpl.arizona.edu/~rhill/alpo/marstuff/marsalert.html

Items of Interest

Images on that page by Frank Melillo are more akin to what the average amateur observer can achieve. His work is done with a C8 from Holtsville, New York is very impressive.

Also on that page are excellent drawings by a number of observers from around the world. Some of these are as spectacular as the digital images, perhaps more.

A number of superb images can be seen on the Communications in Mars Observations (CMO) page at:

http://homepage2.nifty.com/~cmons/Gallery.htm

This page is run by the Oriental Astronomical Association (OAA) and is slow to load but worth the wait!

Of course the best collection of Mars images can be found at:

http://elvis.rowan.edu/marswatch/images.html

This is the site of MarsWatch 2001 Mars Images. It is very slow to load as none of the images are thumbnail but you will enjoy what you will find there. Both drawings and digital images are posted done with many different kinds of telescopes. There are instructions on how you can add your images to this site too!

But one does not need to cyber travel the glove in search of such high quality images. Here in our own backyard of Phoenix, David Moore does a spectacular job with his 14" Cassegrain. He started covering Mars, in this apparition, back in April and has posted his images at:

http://www.fortunecity.com/victorian/canterbury/222/vrimoore.htm

So after sunset as the cycadids quiet down and the crickets begin their nocturnal serenade, point your telescope east and enjoy our neighbor planet as it passes close to us over the next month.

Dark Skies for July 2001

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

Sa/Su	30/ 1	2:25 - 3:41	Tu/We	10/11	21:12 - 23:03	Sa/Su	21/22	21:04 - 3:57
			We/Th	11/12	21:11 - 23:32			
Su/Mo	1/ 2	3:03 - 3:41	Th/Fr	12/13	21:10 - 0:01	Su/Mo	22/23	21:25 - 3:58
Mo/Tu	2/ 3	- - -	Fr/Sa	13/14	21:10 - 0:31	Mo/Tu	23/24	22:05 - 3:59
Tu/We	3/ 4	- - -	Sa/Su	14/15	21:09 - 1:03	Tu/We	24/25	22:42 - 3:59
We/Th	4/ 5	FULL MOON				We/Th	25/26	23:17 - 4:00
Th/Fr	5/ 6	- - -	Su/Mo	15/16	21:09 - 1:40	Th/Fr	26/27	23:51 - 4:01
Fr/Sa	6/ 7	- - -	Mo/Tu	16/17	21:08 - 2:21	Fr/Sa	27/28	0:26 - 4:02
Sa/Su	7/ 8	21:13 - 21:23	Tu/We	17/18	21:07 - 3:10	Sa/Su	28/29	1:03 - 4:03
			We/Th	18/19	21:07 - 3:54			
Su/Mo	8/ 9	21:12 - 21:59	Th/Fr	19/20	21:06 - 3:55	Su/Mo	29/30	1:43 - 4:04
Mo/Tu	9/10	21:12 - 22:32	Fr/Sa	20/21	21:05 - 3:56	Mo/Tu	30/31	2:27 - 4:05

Weekend	Sun	Sun	Mercury	Venus	Mars	Jupiter	Saturn
Sa/Su	Set	Rise	Rise Vi	Rise Vi	Set Vi	Rise Vi	Rise Vi=
30/ 1	19:33	5:19	4:16 7	2:33 -3	3:36 -2	4:27 6	3:18 2
7/ 8	19:32	5:22	4:00 5	2:32 -3	3:02 -2	4:06 3	2:53 1
14/15	19:30	5:26	4:01 4	2:32 -3	2:31 -2	3:45 1	2:29 1
21/22	19:27	5:31	4:19 4	2:34 -3	2:03 -1	3:25 0	2:04 1
28/29	19:22	5:35	4:54 7	2:38 -3	1:38 -1	3:04 -1	1:39 0

Vi=Visibility
-3 brilliant
0 conspicuous
3 moderate
6 naked eye limit
9 binoculars limit

By Erich Karkoschka

Star Parties & Events

Tucson Children's Museum (Downtown)
July 21, (Saturday) No. of Scopes: 3

This star party is the second of three the TAAA is supporting during the summer months for this facility. The Children's Museum is located at 200 S. 6th Avenue. Take Broadway, west to downtown Tucson. Turn left (south) on Scott Avenue and proceed to 12th Street. Turn left (east) on 12th Street. The museum will be to your right side. The set up area is located on the southeast corner of the museum lawn and is at the intersection of 6th Avenue and 13th Street. Set up is at 7:45pm to 8:00pm with observing from 8:30pm to around 10:30pm. A Star Party leader is needed for this event, and a sign up sheet will be available at the July meeting. Please consider supporting this worthwhile event!

TIMPA Site News

Sub-Committee Meeting:

The next July 18 - TIMPA Long-Range Planning Sub-committee meeting is scheduled for Wednesday, July 18, at 7:00 pm in Steward Observatory Conference Room N305.

TIMPA Update (Large Observatory)

The club is working to prepare the necessary paperwork to apply for the permits to proceed with further construction tasks at TIMPA. The large ring footer, with rebar installed, has yet to be filled with concrete. Due to the construction effort on the smaller 6' diameter dome, the support structure for the large 16' diameter observatory will probably not be transferred from Kitt Peak to TIMPA until August.

What is TIMPA, Anyway?

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

TIMPA stands for Tucson International Modelplex Park Association. It is a parcel of land (approx. 160 acres) located about seven miles west of the Saguaro National Park West. The property is leased from the city of Tucson by the TIMPA organization and is to be used as a specialty park. The TIMPA organization flies radio-controlled model airplanes at the site. The Southern Arizona Rocketry Association (SARA) also uses the site to launch model rockets.

About three years ago, TAAA member John Polacheck heard about the site and inquired whether the TIMPA organization would be interested in acquiring another partner, the TAAA. The TIMPA group was very interested because the relationship would be non-competing. TIMPA and SARA use the site during the day and the TAAA would utilize the facility at night. The TAAA has used the site, by permission, for about a year for scheduled star parties. On July 14th, the TAAA and the TIMPA organizations signed a letter of agreement allowing the TAAA unlimited use of the site for scheduled star parties as well as member use at other times. Ultimately, the TAAA intends to develop an observing area on the site that will include an observatory for the club's 16-inch reflector telescope. Many club and joint benefit projects will be undertaken in the next several months to improve the facilities at the site.

1. Run electricity and telephone lines to our observing area and on to TIMPA's ramada. Also, run a water line to our site. (Completed -10/9/99)
2. Construct a secure storage cage in the TIMPA barn. (Completed - 12/11/99)
3. Move the TAAA property from the mini-storage unit to the new security cage in the TIMPA barn. (Completed 12/12/99)
4. Construct permanent bathroom facilities. (Completed 4/01)
5. Construct observatory to house club's 16" telescope.
6. Upgrade club's 16" telescope for improved ease of use and additional capability.
7. Construct additional site improvements. (Schedule to be determined)

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

TAAA Board of Directors Meeting - June 11, 2001

Location: Steward Observatory Conference Room N305 University of Arizona
Call to Order: 7:05 pm
Board Members Present: Andrew Cooper, Thom Peck, Terri Lappin, Jane Tongate, Bill Lofquist, Robert Callanan.
Board Members Absent: Steve Peterson.
Other Members Present: Past President John Kalas, and Barbara Callanan.

1. Changes to the agenda: Items 8-11 were added to the agenda.
2. Events: Andrew Cooper went over the list of events through July 21. More scopes are needed for the Public Star Party on June 15 with the AZ Hotel/Motel Assoc. Terri is waiting for confirmation on the Beginner's Lecture for July.
3. Treasurer's report: Terri Lappin read over the Treasurer's report and will get a copy to the Secretary for the record.
4. Insurance: Andrew distributed copies of an email from Robert Crawford regarding the club's insurance coverage. Liability is currently covered, the question was whether property was covered against loss. John Kalas will put some information together for Mr. Crawford regarding the club property.
5. Officer Workload Reduction: Ray Wallace will be taking over as the Beginner's Lecture Coordinator. Terri reported that three months have already been planned. Guidelines and subjects for the presentation will be given the Ray. Website and Newsletter Mailing Coordinators are still needed.
6. TIMPA Progress: Andrew reported that the foundation for the 6 foot dome is ready for the concrete to be poured. He suggested that a few more pads be readied for concrete to take advantage of the truck load. Several workers will be needed for this project to work the concrete once it is poured. Rich Watson reported that his neighbor does concrete work and that he may be available to supervise the work.
7. Starizona Recognition: Bill Lofquist to recognize Starizona for its continued support of the club. This was discussed by the Board. John suggested recognizing Skyworks also. Andrew will look into plaques for the two shops. Thom suggested a mention in the monthly newsletter.
8. Name Tags: Robert Callanan would like to acknowledge new members by giving them a name tag at the monthly meetings. This way other members would make it a point to speak to new members and make them feel welcome. Terri agreed that this is a good idea and will work with Barbara Callanan to see what they could come up with. It was also mentioned that a plastic nametag for the Board Members would also be a good idea. This way new members and old could approach Boards Members at the monthly meetings. Andrew will look into the plastic nametags.
9. Reach For The Stars (RFTS): Bill Lofquist gave an update on the Astronomy 101 course. All those involved have made great contributions to the program. Home Schooler's Association has expressed interest in star party.
10. Special Raffle: John Kalas reported that Pat Heimann (member) approached him at the June meeting and suggested a quarterly raffle to support the TIMPA project. Andrew reminded the board that paid public star parties are used for this purpose and are currently covering expenses. Concerns were mentioned about conflicts with the current raffle. Terri suggested that an annual fund drive may be needed once TIMPA is operation.
11. September Meeting: Terri and Andrew started a discussion on the September meeting, which is demonstration night for members. A sign-up list will be made available to the members. The demo night will include a swap table and a chance for members to bring in items to compare and share. Practical demonstrations will be presented also
12. Other Business: Rich expressed his gratitude for the support the club has shown him and his son, David. David's interest in astronomy and engineering has been greatly encouraged. Terri passed around the bank signature card for the some of the Board members to sign.

Meeting adjourned at 9:20 pm.

Respectfully submitted,

Jane Tongate, Secretary

Object of the Month by Alfredo Garcia, Jr.

Well, here we are again at yet another Object of The Month (OTM) column! Hard to believe that June went by so very fast, but it did. I hope you were able to get out and do some observing during some the great clear skies we had in May and June. Let's hope we get some clear skies in July to observe some of the summer celestial wonders.

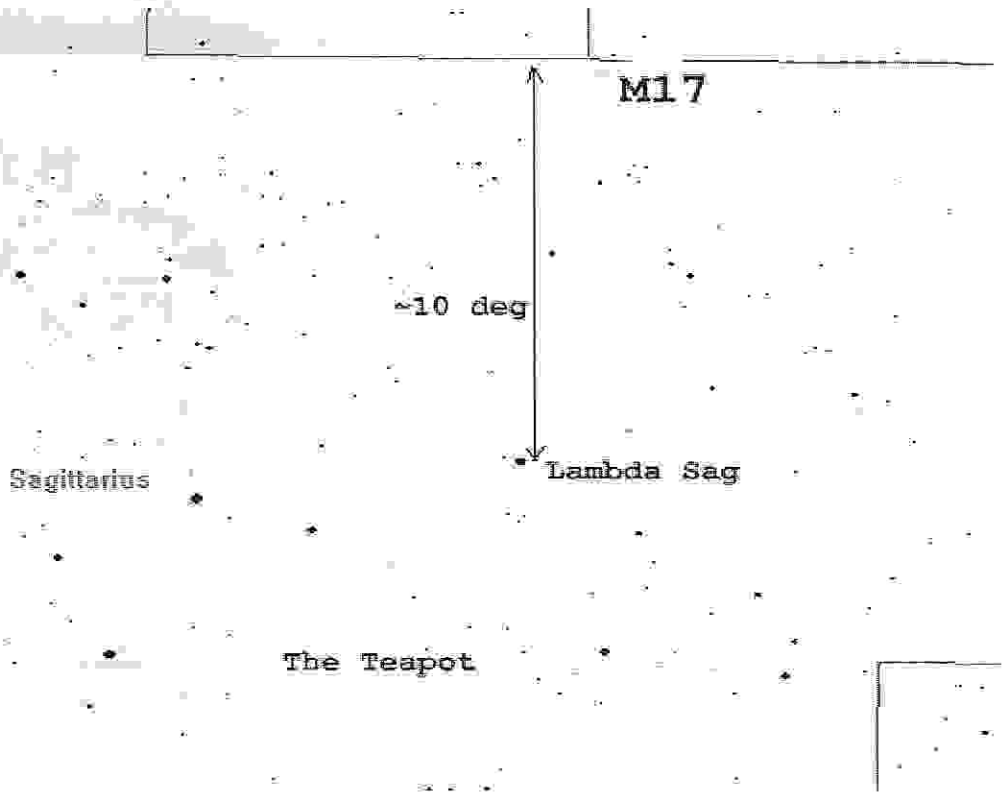
I have decided to change the class of object from last month and highlight one of those fantastic clouds of gas known as a nebula. The word nebula is derived from the Latin word for cloud or mist. There are two broad classes of nebulae: bright and dark. The nebulae are primarily composed of hydrogen gas and make for some of the most spectacular objects in the sky. All of us can name at least one wondrous nebula that we have observed. Nebulae are not unique to our galaxy and are found in other galaxies as well.

For this month's OTM, I have decided to pick one of the summer's best examples of a bright nebula that our Milky Way Galaxy has to offer. This nebula lies in the constellation of Sagittarius and goes by several popular names. These include its designation as the last letter of the Greek alphabet, its depiction as a beautiful feathered creature, its resemblance to the devices placed at the bottom of horses' hoofs, and its likeliness to a wondrous sea creature. The nebula I am referring to is of course none other than Messier17, the Omega Nebula also referred to as the Swan, Horseshoe, and/or Lobster Nebula. I prefer to call it the Swan Nebula myself as it is the more romantic name and in keeping with the beautiful sky above us! Also, this is what it looks like the most to me when I am viewing it through a telescope.

If you go out observing (from the Tucson area) around mid-Jul at about 9:00 PM and look to the southern sky, you will find M17 at an altitude of about 35 degrees above the southeastern horizon. The easiest way to find M17 is to first find the well-known "teapot" asterism in Sagittarius. Once you do this, find the top of the lid of the teapot designated by the 2.2 magnitude star, Lambda Sag. Look about 10 degrees to the North of Lambda Sag and there you will find the Swan Nebula glowing at about magnitude 6 (see map). From a good dark sky location, you should be able to spot M17 with the naked eye as it is about 46 arcminutes in size or some 1.5 times the size of the Full Moon's apparent disc in the sky.

The Swan Nebula is not only an excellent object visually through a scope, but it also an outstanding astrophotography or wide-field CCD imaging target due to its brightness and size. I have done both and I would recommend it to anyone who is trying deep space object astrophotography and/or CCD imaging.

Shown below are a couple of CCD images I took of the nebula. As I mentioned above, even visually through a small scope you can see much detail in this celestial wonder. The "swan shape" is unmistakable whether it is observed visually or imaged. Try it out, you won't be disappointed!



(Map From StarTraveler Software)

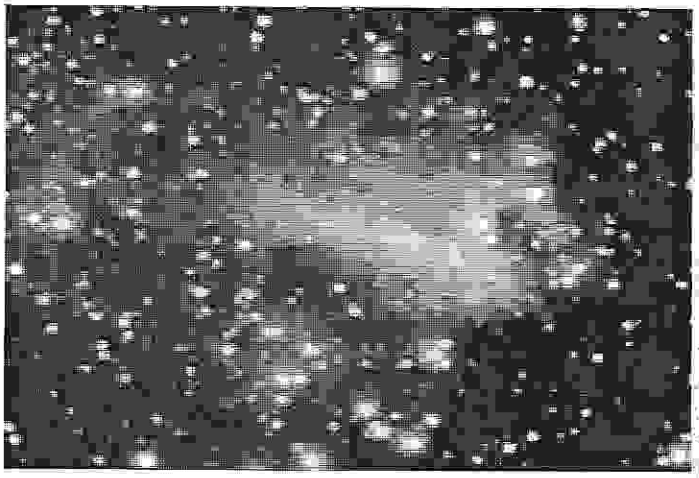
M17 Vital Statistics

Position:
RA 18 h 20 min 53 sec
DEC 16 deg 10 min 57 sec
Size: 46 arcminutes
Magnitude: 6.0

M17 has an interesting history. Philippe Loys de Cheseaux discovered the Swan Nebula in 1745-46. Charles Messier independently observed it and listed it in his famous catalog in the same year and gave it the designation of M17 that we

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

most know it by today. In 1893, Isaac Roberts took the first known photograph of M17 with a 20-inch reflector and a two-hour exposure.

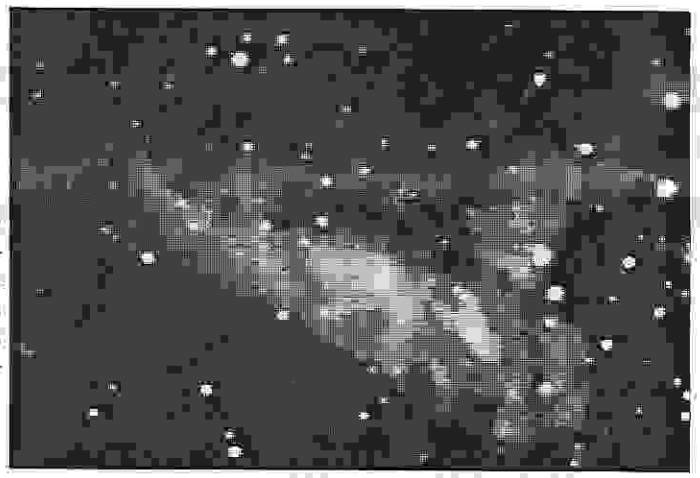


CCD Image
M17, The Swan Nebula
(10' exposure, MX5C & 80mm, f/5 Orion Short Tube Refractor)

The Swan Nebula is about 5,000 to 6,000 light years distant and its dimensions are estimated at 60 by 75 light-years. The total mass of the gas in this nebula is enough to form 800 stars as large as the Sun. It is a region of star formation that it is still active or recently ceased. It shines by excited emission from the high-energy radiation of young, forming stars.

The color of the Omega nebula is reddish, with some graduation to pink. This color comes from the hot hydrogen gas, which is excited to shine by the hottest stars that have just formed within the nebula. Unlike in many other emission nebulae, however, these stars are not obvious in optical images, but hidden in the nebula. A small cluster of about 35 bright obscured stars is imbedded in the nebulosity.

CCD Image
M17, The Swan Nebula
(10' exposure, MX5C & 10" f/4 LX200 SCT)



And one final note about our July OTM. The Swan Nebula is the second brightest galactic nebula visible in the northern sky, unsurpassed only by the Great Orion Nebula! As such, M17 has not only a unique shape, but also a special place in our northern sky!! So if the monsoon's permit and we get a clear, moonless summer night (or two!!), go out and observe this wondrous nebula for yourself and see what it looks like to you!!.

Desert Skies Classified

FOR SALE:	Elysium telescope mount made by Gary Rosenbaum. Includes Meade 12" f/10 Schmidt Cassegrain Telescope, 14" Mathis RA gear (micro lapped), ball bearing worm (6.5 arc sec periodic error), custom dovetail mounting bracket w/Losmandy plates on OTA, DEC tangent arm w/12VDC motor, 11.4" RA & DEC setting circles, 2 counterweights, NGF-S 2" motorized Crayford focuser w/digital readout, 8x50 finderscope, 2" Tele Vue star diagonal, two drive correctors, 12mm Kellner illuminated guiding eyepiece, counterweight bar with 3 weights for OTA. Everything in new condition. Asking $4000. Call Gary (520) 579-0185 or email garyr90@earthlink.net for info. Scope is in the San Diego area. (10/01)
FOR SALE:	One like new C11 tube assembly. Bought new May 17, used for the Southern Skies Star Party (since we didn't finish the scope we were building to take down there). Gives nice straight ronche lines on star test, good images on CCD camera. Has typical focus shift when reversing focus. Comes with 1.25" diagonal, 26 mm Plossle eyepiece, Celestron dovetail plate on bottom, 50 mm finder Has David Levy signature on side. Asking $1600. Roger Tanner 574-3876 H or 621-1218 W. (10/01)
FOR SALE:	Canon AE-1 body with lenses listed below, with flash, 2X, and bag. 50mm 1:1.4; 50mm 1:1 8; 2 Close Focusing Zooms 1:3.5 and 1:3.8; Macro 1:2.8. All for $200. Pat Heimann, 882-5997(10/01)
FOR SALE:	C-11 Optical Tube Assembly, black tube, less than 6 month old. Good condition. Includes: Losmandy dovetail plates both on top & bottom, Kwik focus and dew shield. No eyepiece or diagonal. Asking for $1100.00. Contact: Ted Wu at 806-3808 or CTGWC@aol.com (8/01)
SERVICE:	Custom machine shop work - design and manufacture of telescopes and mountings. Fabrication of small parts or repair of existing hardware. For consultation and price quotes, call Duane Niehaus at 290-1722.

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 barbergi@flash.net.

Constellation Report by Chris Lancaster

Scutum

the shield

Johannes Hevelius takes credit for naming this constellation. The year was 1690, and the Polish astronomer selected a group of stars lying north of Sagittarius and southwest of Aquila and named it "Scutum Sobiescianum," or Sobieski's shield. It was in honor of King John III Sobieski, who had recently won an important battle in the defense of Poland against the Turks, and Hevelius decided that the constellation should represent the king's coat of arms. Currently, it is simply known as Scutum. Look for Scutum to cross the meridian at 11pm July 15th about 50 degrees above the horizon looking south.

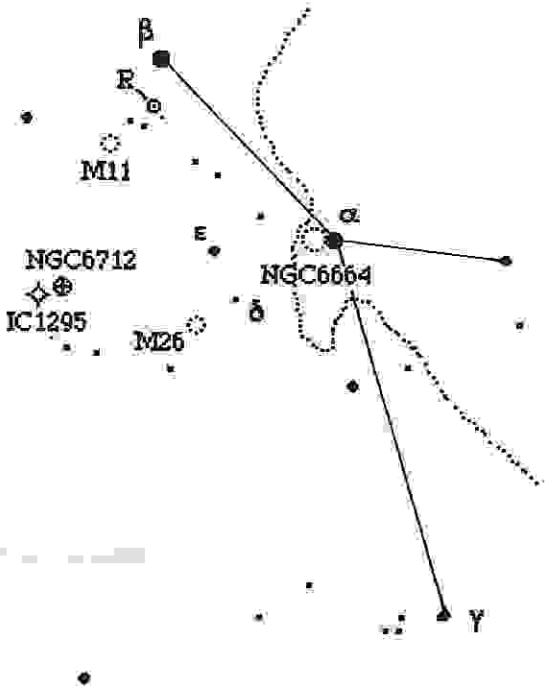
The area of the sky in which Scutum resides is one of the more richly packed areas of the Milky Way. The Scutum star cloud, a particularly dense region, occupies the northern half of the constellation. The area benefits from a lack of obscuring dust as you look through the inner arms of the Milky Way Galaxy, allowing the light of the star cloud to come through relatively unimpeded. Here's where we find Scutum's best star cluster, M11, 2 degrees southeast of Beta (β) Scuti. This cluster lies in the foreground of the star cloud, and is one of the most densely populated clusters that you can hope to observe. Also known as the "Wild Duck" cluster after English observer William Smyth described it as "a flight of wild ducks," M11 shines at magnitude 5.8. The individual stars, numbering in the many hundreds, range in brightness from a single 8th magnitude star slightly offset from the center, to approximately 16th magnitude, all packed into an area measuring 15'. M11 is approximately 3,000 light years away and has been around for 150 million years. The total intrinsic brightness of this magnificent cluster is equivalent to about 10,000 suns.

Looking south, this time 1 degree southeast of Epsilon (ε) Scuti (or RA 18h 45.2m Dec -9° 24'), we find M26, another galactic cluster containing about 30 stars also occupying an area of 15'. It's total magnitude is 8.0, and its brightest stars shine at magnitude 10.

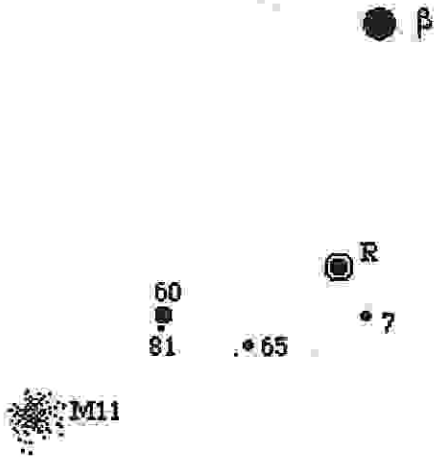
A very easy star cluster to find is NGC6664. It's a mere one-half degree directly east of Alpha (α) Scuti, putting the two in the same field of view with low to moderate power. This one is a bit more scattered than M26, having about 40 stars filling an area of 17' and assuming a paisley shape. Even though this cluster is quite a bit more sparse than the others, it is away from the edge of the Scutum star cloud where the stars thin out, so the cluster's contrast with surrounding space enhances it some.

A star cluster of a different type is in the form of NGC6712. This globular cluster is 10 minutes in RA east and one-half degree south of fifth magnitude Epsilon Scuti (RA 18h 53.1m Dec -8° 42.0'). It's as bright as many of the globulars in Messier's catalog, so it's easy to pick out in small telescope, and you may even see it in your finder scope. It glows at magnitude 8.2. Even very small instruments can partially resolve this cluster, and large telescopes will present detail in the core.

Those of you with dark skies and large apertures may want to hunt for a faint planetary nebula, IC1295. It's a slightly elongated circle 1.5' across glowing feebly at magnitude 15. If you go back to our globular cluster, NGC6712, slide your telescope 23' to the east south-east to RA 18h 54.6m Dec -8° 50'. At the center is a dim 17th magnitude stellar core which gave birth to the nebula.



R Scuti provides an interesting study of variable stars. Officially, it is classified as an RV Tauri type, characterized by more than one period overlapping another. An approximate estimation of its period is 140 days, and most often its variations cover about a magnitude, from 5.0 to about 6.1. Every 4 to 6 oscillations, however, the minimum dips to magnitude 8. There are several adjacent stars which provide good magnitude estimations. Regular observations of this star are necessary if you want to catch it in one of these deep minima, since it begins to rise in brightness after only a few days.



R Scuti finder chart with comparison magnitudes