Desert Skies

Tucson Amateur Astronomy Association

Volume XLVIII, Number 9 September, 2002

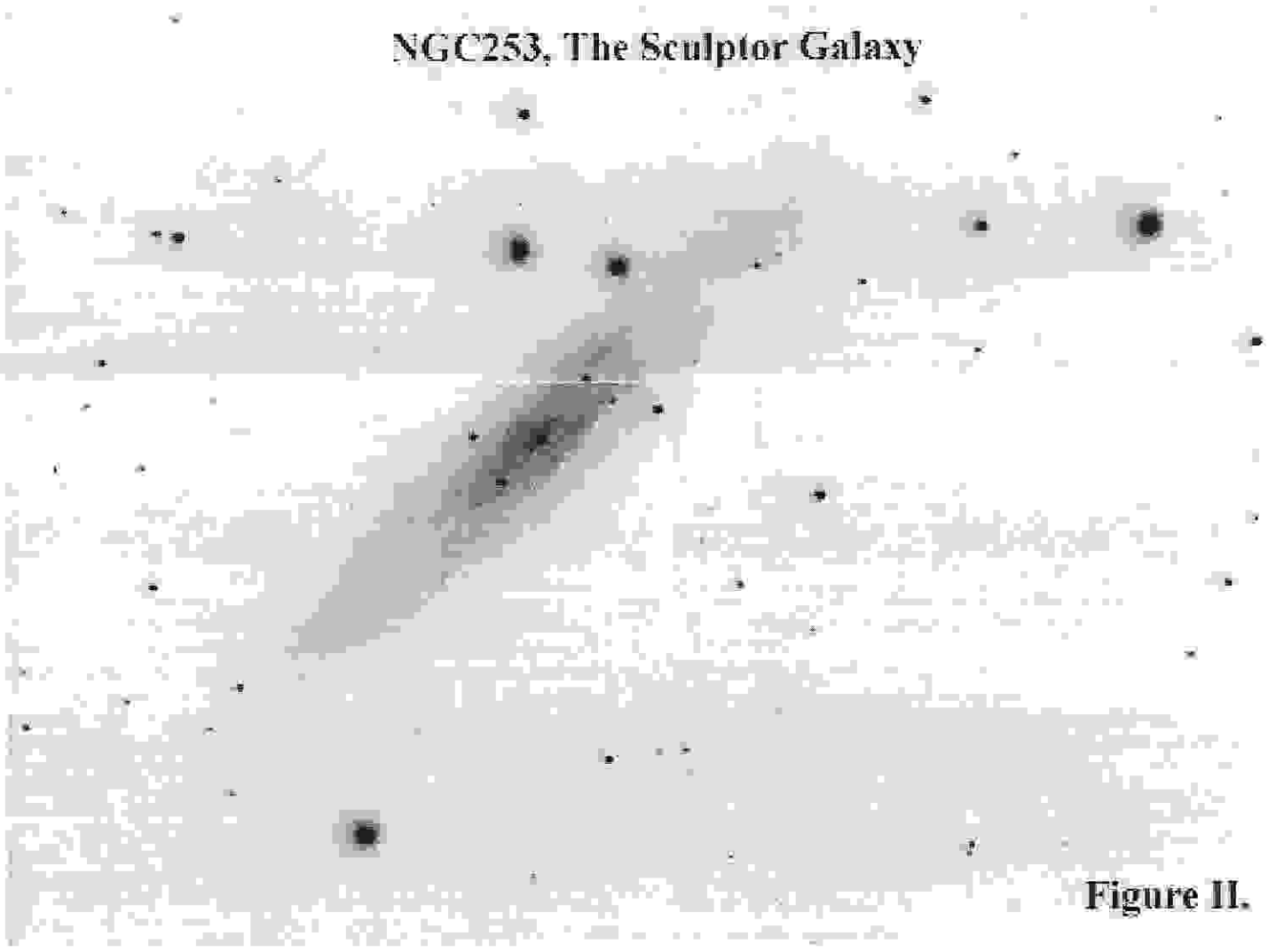

Figure II.

NGC 253—The Silver Coin Galaxy

Cover Photo: In the constellation Sculptor is NGC 253, The Silver Coin Galaxy. Imaged by Alfredo Garcia, Jr. See the *Object of the Month* for more information

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

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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:

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or by e-mail barbergj@flash.net

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President's Message

A quick glance at the calendar will show that the school star party program is starting up again. Last spring we had some ideas and started to put some into place, but this fall should really give us a chance to do this right. Some training, and getting a mentor program underway will be the first items to concentrate on. Let's get this important and successful club program started off right and show our city the stars.

Our fall Kitt Peak star party is confirmed for Sep 28th! Look for a sign up sheet for the meeting. As usual expect this popular event to fill up quickly. Moonrise is at 2249 so most of the evening will be dark with over three hours of full dark after the barbecue. As usual we have to leave around 2300 anyway so no loss.

We are also preparing for the large public star party for ASDM on Oct 5th. Be sure to mention this to those who ask when they can come look through a telescope. We will be putting out the message to the newspapers and radio station again, but I really think word of mouth can be more effective in getting our invitation out to the city to come see what wonders the sky has to offer.

Meeting Information and Calendar of Events

TAAA MEETING DATE: Friday September 6, at the Steward Observatory Auditorium - Room N210

BEGINNERS LECTURE: 6:30 pm
Title: Telescope Eyepieces
Speaker: Roger Ceragioli

GENERAL MEETING: 7:30 pm
Title: Solar Astronomy for Amateurs
Speaker: David Lunt

As the only star on which we can directly study physical phenomena and due to the modern day, pragmatic requirements for understanding 'space weather,' the Sun is becoming an increasingly important target for the professional astronomer. We will look at some of the interesting solar events that are within the observing capability of the amateur and describe the instrumentation and techniques necessary to do this.

After studying Math, Physics and Astronomy at Harvard, David Lunt changed careers and has spent forty years developing optics, coatings and their processing techniques. Specific emphasis has been in the areas of Fabry-Perot etalons, very high-energy laser optics and x-ray Synchrotron components. Coupled with his interest in solar astronomy, these techniques have led to advances in solar instrumentation from the Orbiting Solar Observatory in the mid-sixties to the more recent GONG system.

Nick de Mesa will host refreshments after the meeting. Remember to thank him for his time. We have filled the refreshment host slots through December. A sign up sheet will be available at the December meeting if you want to host the refreshments next quarter.

BOARD OF DIRECTORS MEETING: Tuesday, Sept. 10, 7:00 pm at Steward Observatory Conference room N305.

STAR PARTIES AND EVENTS:

Sep 7 - TAAA Star party at Las Cienegas
Sep 12 - Astro-Photo Special Interest Group Dinner
Sep 13 - Girl Scouts of America Star Party
Sep 28 - Friends of Sabino Canyon Star Party
Sep 28 - TAAA Star Party at Kitt Peak

Newsletter Schedule: Deadline for articles: Mon, Sept 16. Printing: Mon, Sept 23. Folding Party: Tues, Sept 24. Mailing: Wed, Sept 25. The newsletter is mailed at least one week prior to the following month's General Meeting.

Club News

Member News

We welcome the most recent members who have joined the TAAA: Casey R Berent, Jerry Carney, Nelson de Jesus, returning member Brian D Harris, Ron Ohm, Phil and Jeanne Oholendt, Dennis B Schultz, Timothy Takahashi, and Jessica Towslee. Glad to have all of 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. (Updated membership lists are available at the regular meetings, so pick one up if you need it.)

Calendars for 2003

We will be selling calendars for 2003 beginning at the September meeting The calendar selected this year comes from the Royal Astronomical Society of Canada. The cost is $10 each (~$7 off the regular selling price), or $9 each for more than one. They make great gifts. This calendar, which features full-color astronomical photos taken by amateur astronomers, has daily information about astronomical events, including moonrise and moonset information, plus space for adding important events you need to remember. Calendars will be sold at our meetings this fall until supplies are exhausted. Be sure to get yours soon!

Club News (cont.)

Astrophoto Special Interest Group

12 September, 7pm
China Rose, NE corner Speedway/Rosemont

Another gentle reminder that our monthly astrophotography SIG meeting will be getting together over dinner at the China Rose 12 September at 7pm. Last month we had a great presentation about asteroid hunting by Roy Tucker and Dean Salman showed us some of his latest great images.

Speaking of Dean, he donated an H-alpha filter to the SIG for those who want to try their hand at chasing down HII regions. The 52mm filter (fits most Nikon lenses) when combined with 2415 Tech Pan hypered film is the ultimate for recording faint extended gas clouds. Let Dean Ketelsen know if you would like to borrow it. Also as a reminder, the TAAA also has a Nikon 8mm F/2.8 fisheye lens on long-term loan from the UA. It is currently on loan with on the waiting list, but will become available eventually. Hope to see you on the 12th!

Dean Ketelsen

Star Party for 55,000

14 September, 5pm
NE corner Arizona Stadium

This will be the 5th year I've planned a session of public observing at a home UA football game. It is a lot of fun if you enjoy public observing, though there are complications since parking is generally not available because of the game. Of course, if you are attending the game, you are all set! If you would like to join me, we need to coordinate efforts and perhaps drop your telescope off at the Mirror Lab early that day. When you find your way onto campus at 5pm or before, we can set up to show families and kids the 8 day old moon as they arrive. By game time at 7pm, the crowd trickles to zero and off we go after serving up lunar views to hundreds of people. We have another opportunity in November, but lets see how this one works out first. Let me know if you'd like to join me!

Dean Ketelsen

TAAA Fall Star-B-Cue at Kitt Peak

September 28 (Saturday)

The TAAA has scheduled a star party and pot-luck barbecue at the picnic grounds up on Kitt Peak on Saturday, 9/28, starting at 4:00 pm. A maximum of 60 TAAA Members and families will be allowed to participate. The ramada gas-fired barbecue grill will be fired up starting at 4:30 pm and members are invited to cook their dinners between 4:30 and 6:30 pm. Bring a dish to share with other members. The grill will be turned off at 6:30 pm. Telescope observing will commence after sundown and will be concluded by 11:30 pm. All members must be heading down the mountain by midnight. Be prepared for cool temperatures.

Thanks to TAAA Member, Claude Plymate, permission has been granted to allow 30 attendees to visit the McMath-Pierce Solar Telescope to view the setting sun. Since this activity will occur toward the end of the barbecue period, anyone interested in attending the activity will have to eat early. To minimize the number of vehicles driving up to the telescope site, carpooling will be required. Further details will be available at the meeting.

There will be a sign-up sheet with the school star party sign-up sheets on the table at the back of the lecture hall at the start of the September 6th meeting. Because of the popularity of this event, attendance will be initially limited to TAAA Members and their immediate family members only. If, after all TAAA Members have had an opportunity to sign up, there are any openings or cancellations, the attendance of guests will be considered. If you are unable to attend the September meeting, phone and e-mail reservation requests will be taken on a first-come, first-serve basis after 9:00 am Friday, 9/6. Contact Steve Peterson at 762-8211 or via e-mail at <swpeterson@theriver.com>.

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

1. No vehicles are allowed above the picnic grounds after 4:00 pm. Exception: Solar viewing activity.
2. Only the ramada gas-fired barbecue grill is permitted for cooking food at the picnic grounds. No open fires or use of personal barbecue grills is permitted.
3. All trash must be placed in the garbage receptacles.
4. Use of cellular phones and radio walkie-talkies is prohibited.
5. No alcoholic beverages are permitted.
6. When leaving the picnic grounds after dark, if possible, use your parking lights until you have reached the main road and are headed downhill after exiting the picnic area.

2002 HOLIDAY PARTY

Hey, we know it's barely September, but it's never too soon to start panicking! The party-planners are welcoming help from club members at this time in two ways:

1. Donations of goodies for door prizes. In addition to the usual assortment, we will consider quality craft items, collectors'/vintage items, anything with an astronomical theme, and/or of use for stargazing sessions. If you are marketing an item, we will be glad to give you a plug.
2. Program volunteers/ideas. We'd be especially glad to hear of any untapped musical talent that might be willing to come forth to entertain our troops.

Club News (cont.)

Please contact one of the following people ASAP: Twila Peck 327-7825 twilap@email.arizona.edu; Tom Peck 327-7825 tpeck@optics.arizona.edu; Sheila Conrad 529-1750

TAAA Land Search Questionnaires

In June, a questionnaire was published for all TAAA members regarding our search for a site to develop a permanent observing facility. The September meeting will be your final opportunity to submit your questionnaire to one of the land search committee members: Andrew Cooper, John Paul Sosville, George Barber, Paul Olson, Steve Ratts, or Terri Lappin. We plan to compile the results in September with an article summarizing them in October.

Astronomical League Correspondent Needed

We are looking for someone to take over the Astronomical League Correspondent (ALCor) responsibilities for the Tucson society of the Astronomical League (TAL). The ALCor is very important as he or she serves as the contact between the Astronomical League and the club, providing information to our members regarding AL benefits. These benefits include the observing awards, regional and national conventions, and any other League information that is received. Most importantly, the ALCor is responsible for keeping the AL informed of membership changes by sending a complete list of TAL members to the AL 4 times a year. This information is obtained from the TAAA treasurer, but it is the ALCor's responsibility for getting it to the AL.

If you want to learn more about the position, go to http://www.astroleague.org/al/general/alcors/dutyalcr.html or talk to Terri Lappin (contact info on page 2). You must be a member of the TAL to hold this position.

(Members of the TAAA may join the TAL which will entitle you to receive the quarterly publication the *Reflector*, participate in the AL Observe program, purchase astronomy related books at a 10% discount (with no shipping and handling charges), and to take part in other AL benefits. All this will cost you only $3.50. For more information about the Astronomical League, go to http://www.astroleague.org.)

Beginners Lecture Presenters Needed

Have you ever considered giving the Beginner's lecture? The club is always looking for someone who is willing to share the benefit of their experience. And, if you can't come up with a topic, Andrew has a number of topics, which would greatly benefit those who are new to astronomy, as well as the seasoned astronomer. This gives you a chance to learn something new, as well as help others. So, step up to the spotlight! Give Andrew Cooper a call at 295-3585, or e-mail at acooper@pobox.com.

New School Star Party Coordinator

Hats off to Steve Marten, who has taken on the position of School Star Party Coordinator. His phone and e-mail are on page 2.

Looking for Astrophotos

Our newsletter cover needs you! Get your pride-and-joy astrophotos out of mothballs and onto the cover of our monthly newsletter. Send them to George Barber, with a short write-up on the technique and equipment used.

Grant Money

Two of our fellow club members have received grants from The Planetary Society to assist in their work in finding and monitoring asteroids, in particular potentially hazardous near earth objects. James McGaha received $10,000 to upgrade the facilities at Grasslands Observatory (http://www.3towers.com/). Roy Tucker

Club News (cont.)

received $2,950 for computer equipment and software for his Goodricke-Pigott Observatory (http://gpobs.home.mindspring.com/gpobs.htm) to aid in the analysis for the enormous amount of data gathered by his "three-shooter". James and Roy are among five amateurs awarded Shoemaker Near-Earth Object (NEO) grants this year.

Roy presented images and information on his project at the August astrophoto SIG meeting where he discussed the issues involved with analyzing the sheer amount of image data his equipment generates. He is currently looking to enlist help in searching these images for asteroids. So if you don't have a telescope and CCD set up for asteroid searching, but do have a computer and are interested in helping you can contact Roy at gpobs@mindspring.com. This is a fairly technical task and does require acquiring some advanced skills.

Items of Interest

WEBSITES: TRIPS ON THE INTERNET SUPER-SKYWAY

The New Season on TV.

In Dec. 2000 I did one of these articles on video astronomy for the amateur astronomy and what could be achieve with that kind of observing. What a difference a year and a half makes! There are less limits to video astronomy today than ever before. New lines of cameras have come out that are more sensitive, have better color and are easier to use.

The first place to always go is the home of video astronomy the VIDEOASTRO website run by the manager of the videoastro email list:

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

This site shows off the usual solar, lunar and planetary images but now there are a whole section of deep sky images of objects like M82, M81, M51, M57 and globular clusters! In 1995 I bought the GBC505e, which was at the time the most sensitive video camera available. Current cameras are more than 10x better than this camera and one-third the price!

The hottest video item right now is the Deep Sky AstroVid Stellacam EX. This one is not cheap but is the most sensitive on the market. Details on this are at AstroVid s website at:

http://www.astrovid.com/astrovid__stellacam.htm

(No, I m not making a commission, but I wish I were at these prices!) Some of the breathtaking work being done with this camera can be seen at:

http://aaobc.com/Stellacam/ http://www.lafterhall.com/avastellacamex.html
http://home.att.net/~nightsight1/wsb/html/view.cgi-photo.html--delay-5-SiteID-367938.html

Getting a little more cost conscious, there's the video work of Thomas Williamson using an 8" telescope and an $80 video camera! The work is as good or better than what was being done with 16" telescopes only 15 or 20 years ago. See:
http://www.flash.net/~rubyw1/

There is an excellent how-I-did-it page by Bob Pilz of North Carolina at:
http://www.astrovideoimaging.com/
He documented everything including his reasoning being going ahead with video instead of CCD or photography. It s a great site that you will want to bookmark if you are thinking about doing video astronomy.

If you do get turned on to video astronomy, you might want to order a copy of the book *Video Astronomy* by Steve Massey, Thomas A. Dobbins, and J. Douglass. I have yet to get one for myself but if it is anything like the work of Steve Massey it should be a good read. See his work at: http://members.optushome.com.au/ssmassey/vidast.html

So there is something good on TV this week, but you may have to put it there. Video astronomy is a relatively inexpensive means of permanently capturing your evenings under these Arizona skies.

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

New Public Program at Kitt Peak

How do astronomers search the night skies for asteroids and comets? Now you can find out on September 13 with the Asteroid Hunting program at Kitt Peak National Observatory. Participants are first treated to a tour of the Spacewatch facilities, including a presentation by Spacewatch staff: http://spacewatch.lpl.arizona.edu/. Find out how professional astronomers search for Near-Earth-Objects and what hazard these objects present to our planet. Participants are then introduced to the Visitor Center's equipment and its uses, receive an introduction to the night's observing, and assist in imaging "randomly" along the ecliptic in search of asteroids. Participants learn about the software and the taking and reducing of data. Also included are a box meal, Astrometrica software, a copy of all data collected during the program, and a 10% discount on related books. Of course, because the program involves an actual search of the night sky, it is possible that participants will take part in a discovery! Call (520) 318-8726 for additional information and reservations.

Star Parties & Events

TAAA Star Party at Las Cienegas (Empire Ranch)
September 7 (Saturday)

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. Mosquito repellent is also advised. 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.

Girl Scouts of America; Hacienda Program Northern Foothills
September 13 (Friday) No. of Scopes: 5

Take Tanque Verde east to Sabino Canyon Road. Turn left (north) on Sabino Canyon. You will see the Tack Room Restaurant on the right. Turn left at the 2nd possible left turn after the Tack Room. It will say Hacienda Program on the gate sign. Drive onto the property and go right all the way around the back of the building to park. Check in at the main building for set-up. The observing area will be the cleared dirt area north of building. Set-up will be between 7:30 and 8:00 pm. Observing will run from 8:00 pm to about 9:00 pm. A Star Party leader is needed for this event. A sign up sheet will be available at the September meeting.

Friends of Sabino Canyon Star Party Northern Foothills
September 28 (Friday) No. of Scopes: 3

This event will be held at Sabino Canyon to celebrate the courage and hard work of area fire fighters that battled the fires in the Catalina Mountains this summer. For those who haven't been to Sabino Canyon: Take Tanque Verde Rd. east. Turn left at Sabino Canyon Rd. and continue north. The park is located on the right just north of the corner of Sunrise and Sabino Canyon. We plan to set up near the tram loop between 6:30 and 7:00 pm. Observing will run from 7:00 pm to about 9:00 pm with a break between 8 and 8:30. A Star Party leader is needed for this event. A sign up sheet will be available at the September meeting.

TAAA Fall Star-B-Cue at Kitt Peak
September 28 (Saturday)

See article in the ***Club News*** section.

Dark Skies for September 2002

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 morningobject, set for evening object

Sa/Su	31/ 1	20:14 - 0:05	Tu/We	10/11	21:20 - 4:42	Sa/Su	21/22	- - -
			We/Th	11/12	22:00 - 4:43			
Su/Mo	1/ 2	20:12 - 0:56	Th/Fr	12/13	22:44 - 4:44	Su/Mo	22/23	- - -
Mo/Tu	2/ 3	20:11 - 1:55	Fr/Sa	13/14	23:33 - 4:44	Mo/Tu	23/24	19:41 - 19:44
Tu/We	3/ 4	20:10 - 3:00	Sa/Su	14/15	0:27 - 4:45	Tu/We	24/25	19:39 - 20:13
We/Th	4/ 5	20:08 - 4:10				We/Th	25/26	19:38 - 20:44
Th/Fr	5/ 6	20:07 - 4:38	Su/Mo	15/16	1:24 - 4:46	Th/Fr	26/27	19:37 - 21:19
Fr/Sa	6/ 7	20:05 - 4:39	Mo/Tu	16/17	2:23 - 4:47	Fr/Sa	27/28	19:35 - 21:59
Sa/Su	7/ 8	20:04 - 4:40	Tu/We	17/18	3:22 - 4:47	Sa/Su	28/29	19:34 - 22:46
			We/Th	18/19	4:19 - 4:48			
Su/Mo	8/ 9	20:07 - 4:41	Th/Fr	19/20	- - -	Su/Mo	29/30	19:32 - 23:40
Mo/Tu	9/10	20:42 - 4:41	Fr/Sa	20/21	FULL MOON	Mo/Tu	30/ 1	19:31 - 0:41

Weekend	Sun	Sun	Mercury		Venus		Mars		Jupiter		Saturn	
Sa/Su	Set	Rise	Set	Vi	Set	Vi	Rise	Vi	Rise	Vi	Rise	Vi
31/ 1	18:47	5:57	19:50	5	20:38	-3	5:24	-	3:24	-1	0:28	0
7/ 8	18:39	6:01	19:34	6	20:24	-2	5:18	-	3:03	-1	0:03	0
14/15	18:29	6:06	19:09	9	20:09	-2	5:11	8	2:42	-1	23:37	0
21/22	18:20	6:10	18:34	-	19:51	-2	5:04	7	2:21	-2	23:11	0
28/29	18:11	6:15	18:00	-	19:31	-1	4:58	6	1:59	-2	22:44	0

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

By Erich Karkoschka

TAAA Board of Directors Meeting - May 14, 2002

Board Members Present: Andrew Cooper, Terri Lappin, Thom Peck, Steve Peterson, Robert Callanan, Bill Lofquist, Jane Tongate.

Other members present: John Kalas, George Barber, Steve Ratts, Paul Olson, and John Paul Sosville.

Meeting opened at 7:07 pm.

Introductions of members present were made.

1. Additions to the agenda. Andrew asked for additions to the agenda. Items 8-11 were added.
2. Events: Andrew reviewed upcoming May events with the Board and handed out a list of events for June. There was discussion of whether there would be enough scopes.
3. Treasurer's Report: Terri handed out the club balance sheet for April. It was decided to invite our financial advisor to the June Board meeting to discuss investments. Discussed astronomy calendars for 2003, this was deferred to a later time. Member lists were distributed to the Board members only.
4. Land Search Committee: John Paul began reading a report on land search. Past efforts have been unsuccessful. He would like to resurrect the land search committee with George Barber, Steve Ratts and Andrew Cooper representing the Board. A discussion pursued on how to go about this and it was moved to reform the committee; moved by Robert Callanan and seconded by Thom Peck. Along with George, Steve, John Paul and Andrew, Terri will be included to provided past history of previous land search. Paul Olson presented a 12-question survey for the membership to assist in determining land needs. John Kalas added the consideration of the 30" telescope. John Paul will contact Dean Ketelsen for history information also.
5. Library and Surplus Books: Terri reported that 14 people showed to sort books at Robert Crawford's house. The books were sorted into three categories, to be appraised, to be sold and to be kept for reference. A book sale was favored, selling at a minimal cost.
6. Member's Night: Andrew reported that two presentations have been scheduled. There is still plenty of room for others. There will be an article in the June newsletter.
7. Lifetime Membership: Andrew handed out a proposal by Paul Olson. Paul would like to see a subcommittee formed to look at the impact on membership. There was discussion on this matter. Terri will consult with the accountant on tax issues.
8. Meade Award: John Kalas read a letter from Wendy Levy regarding the award of an 8". The Board discussed the option of an upgrade to 10"
9. Qwest: Terri read a letter regarding deadlines for listing the club in the yellow pages. Nothing additional will be done.
10. Responsibility Redistribution: John Kalas reported that he needs to unload some responsibilities, especially paid star parties. Options for redistribution were discussed and agreed upon. John also reported that this is his last Board meeting. John will solicit volunteers in the next newsletter.
11. Solar Eclipse June 10: This event is on the TIMPA calendar but is a not an organized event. TIMPA will be open for members to observe if they wish.

Before adjourning, results from the May election were recorded given to the Secretary.
Meeting adjourned at 9:10 pm.

Respectfully submitted,

Jane Tongate
Secretary

Amendments to Board Meetings requested by Teresa Lappin

May 14, 2002

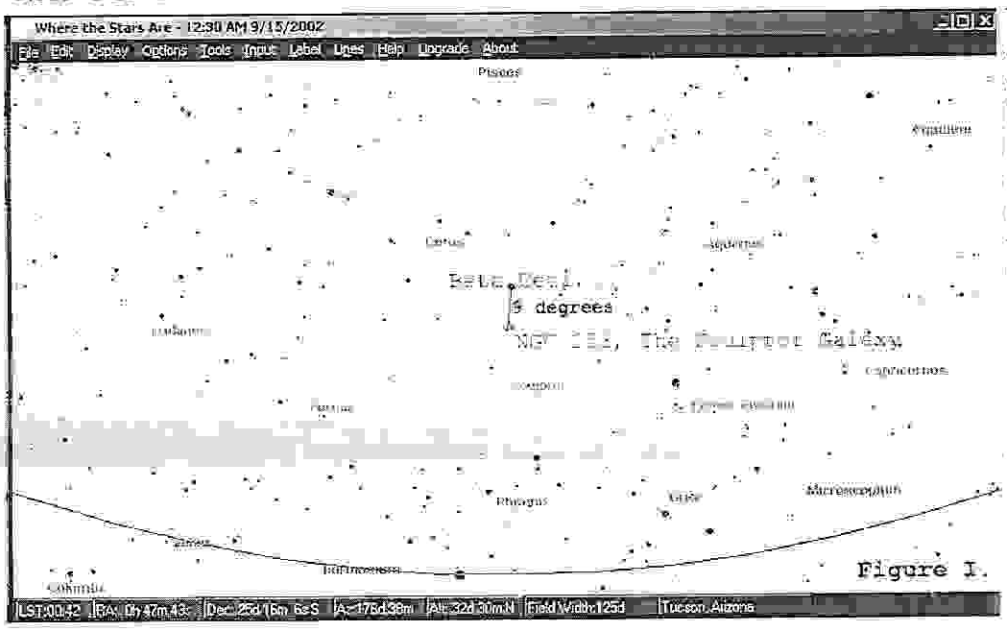
All Board Members were present. The addition to the minutes will be to state that the new Board is seated and publish the final results from the ballots at the May general membership meeting are as follows:

President- Andrew Cooper 85 votes, unchallenged
Vice President- Thom Peck 86 votes, unchallenged
Treasurer- Terri Lappin 88 votes, unchallenged
Secretary- Jane Tongate 89 votes, unchallenged
Members at Large (vote for three)- Robert Callanan 86 votes, Bill Lofquist 87 votes, Steve Peterson 88 votes, write-in David Levy 1 vote

Object of the Month by Alfredo Garcia, Jr.

This month's object that belongs to one of the most wondrous class of objects we have to observe in the sky - that of galaxies, and in particular a type known as a spiral galaxies. Spiral galaxies, of which our own Milky Way Galaxy is one, abound in the universe and are some of the grandest objects to observe. But, without a doubt, one of the best of all these objects is a particular spiral galaxy found in a constellation named after an artist's tool. This "tool" is of course none other than the rather dim southern constellation of Sculptor (which the original constellation of the Sculptor's Tool eventually came to be known as). But, don't let the dim stars of Sculptor fool you as the constellation contains wonderful objects to observe. Within Sculptor's boundaries is one such celestial beauty that is known as NGC253, the Sculptor Galaxy. It is also referred to as the Silver Coin Galaxy.

The Sculptor Galaxy is the brightest member of a group of galaxies known as the Sculptor Group. These galaxies are grouped around the South Galactic Pole and are sometimes referred to as the South Polar Group. NGC253 is also one of the brightest galaxies beyond those of our Local Group of galaxies. Caroline Herschel, the sister of William Herschel, discovered it in 1783.



The estimated distance to NGC253 is about 10,000,000 light-years. At this distance estimate, the galaxy has a linear size of approximately 80,000 light-years. The galaxy has an apparent size of 25 x 7 arcminutes, covering an area the sky of about 85% the apparent size of the Full Moon in length and about 25% in width. Despite its rather large apparent size, NGC253 is still beyond view with the unaided eye and requires a telescope and/or binoculars to view it.

When viewed through a sizeable aperture telescope or imaged, NGC253 reveals darkened dust lanes and clumpy gas clouds that are all signs of vigorous star forming activity. This type of galaxy is called a starburst galaxy and is very bright in the infrared spectrum due to the infrared radiation given off by the warm dust. As a matter of fact, the Hubble Space Telescope took an image of the galaxy's core and found a violent star forming region about 1,000 light-years across thus confirming that new star creation is occurring in the galaxy.

If you go out observing (from the Tucson area) in mid-September at about 12:30 AM and look to the southern sky, you will find NGC253 at an altitude of about 32 degrees above horizon. At this time, it is at transit and therefore at its highest point above the southern horizon for observation. Since the stars that make up the constellation of Sculptor are not that bright, the best way to find NGC253 is to first find the 2.2 magnitude star Beta Ceti (Diphda), the star that marks the tail in the constellation of Cetus, The Whale. Then look about 9 degrees south of the star and their you will find the Sculptor Galaxy glowing at magnitude 7.1 (See Figure I). Since NGC253 may be difficult to find in less than dark skies, you may want to use setting circles or an automated go-to scope. It is located at coordinates of RA: 00hr 47.6min and DEC: -25deg 17min.

NGC253 is visually unmistakable through a telescope or even pair of binoculars. But, when it is astrophotographed or CCD imaged, it reveals its true beauty! Only in this manner can you truly get the fantastic views we all see published in magazines and websites on the net. The galaxy is easy to photograph or CCD image as there plenty of stars in the vicinity to use as guide stars. I used an 80mm f/5 Orion ShortTube Refractor piggybacked on a 10" f/6.3 LX 200 to produce the image at Figure II (See front Cover). It was taken with a Starlight X-Press MX5C CCD camera and is a composite of two 5-minute exposures. If you have the equipment to astrophotograph or CCD image NGC253, I recommend you do so. Your time and effort will be rewarded with an image of one of the best galaxies in the sky that you can be truly proud of.

Another interesting tidbit about NGC253 is that only one supernova has ever been observed and recorded among its stars. This was Supernova 1940E, which was discovered by Fritz Zwicky. It was located just west and south of the galaxy's nucleus and glowed at a maximum magnitude of 14.0.

TAAA Board of Directors Meeting - August 13, 2002

Board Members Present: Andrew Cooper, Thom Peck, Terri Lappin, Jane Tongate, Steve Peterson, Robert Callanan, Bill Lofquist,

Meeting opened at 7:15 pm.

1. Changes to the agenda: Andrew asked for additions to the agenda. Terri requested to talk about calendars for 2003 and discuss the Certificate for Deposit (CD), these items were combined with the Treasurer's Report; Robert requested discussion on IDA request.
2. Events: Andrew reviewed upcoming August events with the Board. The Buzzes are handling star parties until school starts (September) they will be phasing out their involvement. Andrew mentioned the Project Astro deadlines; the fall workshop will be October 11-12.
3. Treasurer's Report: Terri handed out her report. Terri presented CD options and made a motion to "open a CD account at Commercial Federal for 14 months in the amount of $9,000 from checking and savings. The signers on the account will be the current President, Vice President, and Treasurer. At the end of one year Terri will prepare a report for the Board to review." Motion seconded by Thom; motion passed by a unanimous vote. Terri decided not to purchase the Quicken upgrade, not cost effective. Calendars: Terri requested to purchase 100 from RSC, photos are submitted by amateurs. Terri also reported that the club was solicited to advertise in the yellow pages, the Board decided against it.
4. AZ Sonoran Desert Museum (ASDM): Andrew reported that Chuck Dugan will do a write-up for this October event. Andrew will contact him. ASDM has specific guidelines for the event, Andrew would like to propose TAAA guidelines and stress this as a "shared event". There was discussion of the required deposit and determined it was worth the exposure for the club. From this item came the Kitt Peak Star B' Que, an article will be included in the September newsletter and a sign-up sheet will be present at the September general meeting. Steve will make sure all is OK for the event.
5. TIMPA: Andrew reported that the 6' dome is bolted down. Discussion on the use of the 10" scope in this dome pursued. Andrew will attend the next TIMPA Board meeting to discuss access next to the pads. Steve interjected about the 16' dome and offered to copy plans he obtained from the Biosphere. This was briefly discussed, no definite decision made. A structural engineer will be needed, Andrew will check into this.
6. IDA: Robert requested to discuss the need of IDA to provide their own support at TAAA events. Andrew will discuss this with IDA to have their information available if appropriate for the event. Promoting dark skies would be a casual informed conversation at public star parties. Presentations at the general meeting would also be a good platform

Meeting adjourned at 8:55 pm.
Respectfully submitted,
Jane Tongate, Secretary

Desert Skies Classified

FOR SA[illegible]	[illegible]DE 3.5" telescope: Includes AutoStar controller, deluxe field tripod, hard carry case, 2 eyepieces (26mm and 9.7 [illegible] lens, moon filter, 8x25 right-angle finder, 8x21 erect image viewfinder, owners manual. New condition. Cost [illegible] will sell for $650. Call Wes or Rene Ellingson at 586-9292 (located in J-six area near Benson, AZ) (09/02)
FOR SALE:	Arizona Observatory, Home/Land for Sale in Cochise County House: 28'x52' doublewide on 167 acres, fenced; well; underground utilities; r.v.site with full hookup; barn/garage. Observatory: 14'x14'; two panel roll off roof, adjacent warm room Altitude 4500 feet. Telescopes: Two C-14's; one on Losmandy G-11 mount, with installed CCD camera from SW Cryogenics (Roy Tucker), 13.1" binocs. Contact Jim Kessel (jwkessel@mac.com) 520-384-3637 fax: 520-384-3282. 6650 Covered Wagon Road, Willcox, AZ 85643 (10/02)
FOR SALE:	Moto-Focus. Gently used for 1 year on Celestron C-8. Have all parts and accessories. Perfect condition. Original price was over $100.00. Asking $50.00. Contact Jeff Buzek at 760-4578 or e-mail at jeffbuzek@aol.com (11/02)
FOR SALE:	Mint condition Celestron C-5+ with excellent optics and JMI Minimax computer/database installed. Hardshell Celsestron case, finder, metal bayonette dewcap, off-axis solar filter (50mm) hand controller, tabletop wedge, diagonal, and all manuals. Original owner. $825.00. Contact Frank at 743-0018 or Fcathell@aol.com (11/02)
FOR SALE:	8" f/15 Fraunhofer (= coma-free) achromat. Superb objective. 1/30th wv (532nm) PV (=1/43rd wv RMS) correction on wavefront (interferogram available). Strehl ratio = 97.7% for green light. Standard visual color correction. Very smooth figure. Rouge polished and hand corrected. Easily resolves to Dawes' limit (e.g. omega Leonis) and gives excellent images of sun, moon, planets, and deep sky. Uncoated, but polish is complete (= low-scatter). Comes in an aluminum cell. Also available are two excellent folding flats (6" Cervit; 4" Fused-Silica), both flat to 1/10th wv (550nm) or better and smooth (interferograms available). Recently recoated with Beral. A wooden tube (Baltic birch: 42"x18"x12") adapted to a G-11 mount is also available to form a complete folded refractor system. $4000 firm for complete system. Or $2500 for objective in cell, $1000 for 6" flat and $500 for 4" flat. I am the maker and will be glad to demonstrate the telescope to any serious buyer. Roger Ceragioli, rogerc@as.arizona.edu, 798-3263(evenings)/621-9084(days). (12/02)

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Constellation Report by Chris Lancaster

Vulpecula

(vul-PECK-you-lah)
The Fox

The last constellation alphabetically in our list of 88 is the dim collection of stars which Johannes Hevelius originally named Vulpecula cum Anser, or the "Fox with the Goose". In the 312 years since he invented that name, the goose has been forgotten, and only the fox remains. Since it only contains one star with a Bayer designation–magnitude 4.4 Alpha (α) Vulpeculae, its brightest star--it is easily overlooked. To find this dim constellation, take advantage of one of early September's rare clear nights and look on the meridian around 9pm. Between Albireo, the beak of Cygnus the swan, and Sagitta, the arrow, are the brightest stars of Vulpecula shining between magnitudes 4.5 and 5. The rest of the constellation is a collection of even dimmer stars scattered to the east.

Vulpecula's claim to fame is that it is home to what many observers would call the most spectacular planetary nebula in the sky. This, of course, is M27, or the Dumbbell nebula. And, no, it is NOT named after the astronomer who discovered it, but rather it gets its name from its unmistakable shape. Probably the easiest way to find M27 is to point your finder scope at the small, distinctive group of stars forming Sagitta. The two center stars, Zeta (ζ) and Delta (δ) Sagittae, fall in a line oriented toward the northeast. Follow this line in that direction about 4 1/2 degrees and your finder scope (or binoculars) will show you a small, ghostly disk of light. M27, therefore, is visible in a telescope of any size, but the degree to which you will recognize detail is determined by your aperture. Small scopes will pick out a roughly rectangular shape of gasses expanding away from an invisible central star. Telescopes in the 8-inch category will begin to see some mottling within the brightest areas of the Dumbbell and also give you a chance to spot the magnitude 13.9 central star, while 10-inch and larger instruments will, in addition, show you an unmistakable haze forming oval shaped lobes extending in a perpendicular fashion to the bright dumbbell.

High power will fill your eyepiece with this very large nebula and give you a chance to spot some of the small detail within the knotty tangle of gasses being pushed away from the hot central star which has a surface temperature near 85,000 degrees Kelvin. The vital statistics of the Dumbbell Nebula are as follows: magnitude: 7.6, size: 350", location: RA 19h 59.6m Dec +22d 43'.

While M27 grabs your attention, most of Vulpecula's other deep sky objects, which are destined to be present since the constellation inhabits the dense summer Milky Way, are subtle by comparison. NGC6940, however, demands scrutiny as one of the better open clusters around. Immersed in the thickest part of Vulpecula's Milky Way, NGC6940 is a huge open cluster of more than a hundred dim stars 31' across--as big as the full moon. Use low magnification on this cluster, otherwise it will fill the view of your eyepiece and lose its identity. Find NGC6940 at RA 20h 34.6' Dec +28d 18'.

NGC6885 is another open cluster and slightly easier to find since it surrounds a magnitude 5.9 star, 20 Vulpeculae, which acts as the cluster's centerpiece. Here is a sprinkling of about 35 stars ranging in brightness from 6 to 11 and arranging themselves in a shape resembling a spade or arrowhead around 20 Vulpeculae. The overall brightness of the cluster is magnitude 6 and it is located at RA 20h 12.0m Dec +26d 29'.

Moving over to the southwest corner of the constellation we find a large asterism whimsically nicknamed the "coat hanger". Oriented upside down, this collection of stars measures 1.5 degrees across and, indeed, looks like a simple coat hanger, complete with a conspicuous hook formed from four stars and six other stars forming the "shoulders" of the hanger.

If you follow the straight edge of the coat hanger toward the east and you have at least a medium sized scope, you will see a star cluster which is truly different than the other clusters described so far. It is difficult to see and would truly be a challenge to find if it weren't for the line of stars pointing directly at it. It lies 17' due east of the eastern most star of the coat hanger. This cluster, NGC6802, is formed from stars shining at magnitudes 13 through 18, and, therefore, very few, if any, stars can be resolved. The brightness of the entire cluster is magnitude 8.8, is bar-shaped, and measures 3' along its length. If you didn't know that you were looking at a galactic star cluster, you may mistake NGC6802 for a nearby irregular galaxy as it will appear in most scopes only as a diffuse glow.