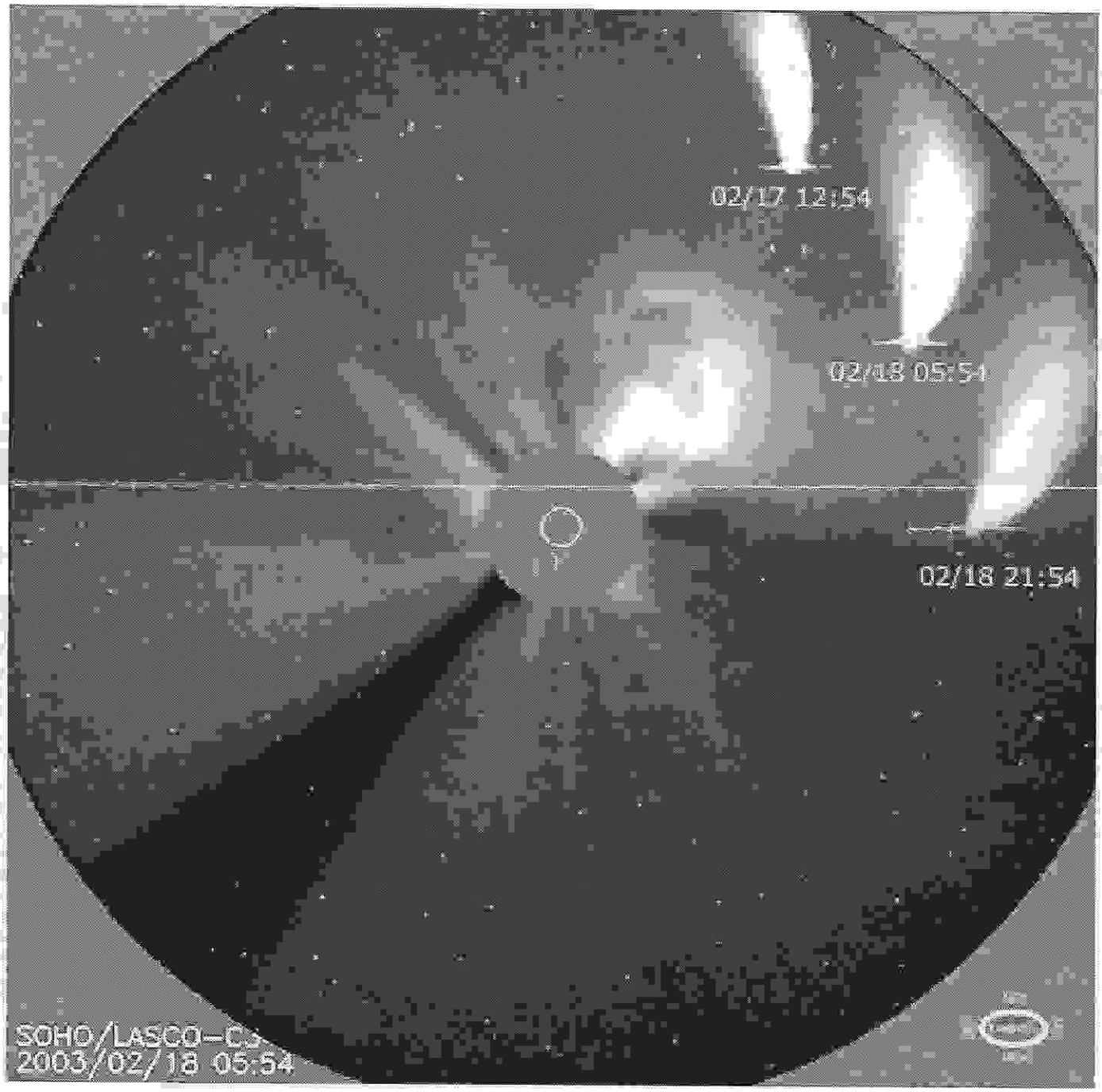
Desert Skies

Tucson Amateur Astronomy Association

Volume XLVIV, Number 3 March, 2003



Comet NEAT Swings Around the Sun

Cover Photo: SOHO Images show the tail of comet NEAT being swept by solar winds as the comet reaches perihelion. Composite by Phil Hollis using Photoshop.

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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President's Message

While the TAAA officially organizes two major public star parties each year at ASDM and helps organize a third (T4T) at Sabino Canyon there are a number of other public star parties available in the Tucson Area. Some of the best opportunities for public observing are at the events organized by Dan Brocious and the Whipple Observatory.

Located at their visitor center in the foothills of the Santa Rita Mts. These events feature a good dark sky and good access. The result is a large crowd to enjoy the offerings. This last Saturday I attended the event for the first time to see for myself. I did bring a contribution to the star party, my 18" dobsonian. And under dark skies the views in the scope were beautiful, making the effort of bringing and setting up this large scope well worthwhile. A result easily measured by listening to the comments when each guest got their turn at the eyepiece.

While Liz Kalas generously watched my scope for a few minutes I walked around the parking lot to see who was there, say hello to old friends and look at telescopes. What I learned was that you, the members of the TAAA are one the reasons for the success of this event. Providing your time, telescopes and mostly your skill and knowledge in presenting the night sky to our fellow citizens. Half heard questions in the crowd, returned with an answer and the flick of a green laser pointer showed you hard at work. The result was an audience who was glad they had taken the time to drive up to the mountain. An audience with a little more appreciation for the wonders of our night sky.

Andrew

Meeting Information and Calendar of Events

TAAA MEETING DATE: Friday, March 7 at the Steward Observatory Auditorium – Room N210

BEGINNERS LECTURE: 6:30 pm
Title: Some Telescope Basics
Speaker: John Johnson

Mr. Johnson will cover telescopes and telescope optics. Included will be basic optical layout as well as some notes about diagonal supports, illuminated field and field curvature and other subjects that can be useful to any amateur observer

GENERAL MEETING: 7:30 pm
Title: Finding Our Place in The Universe With Planetarium Software
Speaker: Tom Polakis

Tom Polakis will be speaking at the March meeting. His presentation is titled, "Finding Our Place in The Universe With Planetarium Software." Since 1990, Tom has been running planetarium software simulations that have helped him gain better astronomical perspective. He will run a number of these eye-opening simulations, and explain how they relate to what we see on the "celestial sphere."

Tom has been an amateur astronomer for 25 years whose main interests are observing and photography. His series of constellation observing articles appear most months in Astronomy magazine as "Celestial Portraits."

BOARD OF DIRECTORS MEETING: Wednesday, March 12 7:00 pm at Steward Observatory Conference Room N305

STAR PARTIES AND EVENTS:
1 Mar - TAAA Star Party at Las Cienegas
4 Mar - Robins Elementary Star Party
5 Mar - Cross Middle School Star Party
6 Mar - Lulu Walker Elementary Star Party
7 Mar - Flandrau Jupiter and Saturn Public Viewing
11 Mar - Desert Springs Charter Star Party
12 Mar - TAAA Board of Directors Meeting
13 Mar - Ventana Vista Elementary Star Party
13 Mar - Astro-Photo Special Interest Group
15 Mar - TIMPA Work Party
20 Mar - Ocotillo Elementary Star Party
22 Mar - TIMPA/TAAA Joint Activity
24 Mar - Rincon Country West Star Party
26 Mar - Bloom Elementary Star Party
27 Mar - Mission Manor Elementary Star Party
3 Apr - Pueblo Gardens Elementary Star Party

NEWSLETTER SCHEDULE: Deadline for articles: Mon, Mar 17. Printing: Mon, Mar 24. Folding Party: Tues, Mar 25. Mailing: Wed, Mar 26. 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 to join the TAAA: J Paige and James Audia, Les Hays, Don Kocsis, Ann Miller, Carter Smith and family, Thomas Stauffer, and Bob Youens. Glad to have all of you join! New members should 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.)

Club News (cont.)

Constitutional Amendment
By Andrew Cooper

In an effort to streamline our procedures the TAAA board is proposing a constitutional amendment. We will be voting on this at the March main meeting. The full club constitution can be found at http://www.tucsonastronomy.org/constitution.html

Change to Article 4 Section 6 add a new item to Subsection A.

6) In the event that the election ballot for the Board of Directors has no contested positions a simple show of hands shall be made to approve or disapprove the board as nominated. An official count of the votes shall be made for the record. This is in lieu of a secret ballot. Any absentee ballots shall be added to the count. If the result is negative a secret ballot shall be taken.

Flandrau Jupiter and Saturn Public Viewing
Fri. March 7

One more chance to show the general public Jupiter, Saturn, the bright winter sky and a thick crescent Moon on the UofA mall with the folks at Flandrau Science Center. Unfortunately this event is on a meeting night (unavoidable because of UA basketball, the moon phase and the Science Fair the following Friday). Jupiter is only a month past opposition, and the UA basketball team is not playing in Tucson, making this another good opportunity for public outreach. Join Flandrau Science Center on Friday, March 7, 2003 from 6:30 p.m. to 10:00 p.m., weather permitting (set up recommended at 6-6:15 p.m., no later than 7 p.m.). Flandrau Science Center will need a fair number of volunteers for the night of celestial viewing to handle the expected large crowd on the grassy mall in front of Flandrau. Lights on the mall will be specially turned off for the event. Parking on the grassy portion of the mall near or at the observing area will be only allowed with permission, in advance. If you intend on helping out (or have special parking needs) just let Michael Terenzoni at Flandrau know via e-mail (miket@ns.arizona.edu) or phone (621-3646) so he can have a mall parking permit ready for you.

Astro-Photo Special Interest Group
Thursday, 13 March 7pm
China Rose - Speedway/Rosemont

As always, we will be meeting the Thursday after the main meeting for Chinese food and astrophotography. We've been treated to a lot of digital imaging, so to balance things I'm encouraging all those film shooters to show us some of your results. Of course, everyone is welcome, and all levels are invited to show their work. See you there!

Telescopes for Telethon 2003
By John Kalas

The TAAA will be supporting the Muscular Dystrophy T4T activity again this year on Thursday, May 15th. This date was selected because the moon will rise in full lunar eclipse that night. Solar viewing will take place from 3:00 to 6:00 pm with evening observing running from 6:00 to 10:00 pm. David and Wendee Levy will be hosting the event. Starizona, Sky Works, Stellar Vision and Coronado Instruments will also be participating

Several changes are planned for the event this year. There will be two venues; the Sabino Canyon Recreational Area and the Flandrau Science Center, so lots of members will be needed to cover both places. Also, permission has been requested from Sabino Canyon to allow the collection of donations of the waived parking fee from visitors entering the area all day long. If this permission is granted, volunteers will be needed to staff a donation collection station near the entrance to the parking lot at Sabino Canyon.

John Kalas is the TAAA coordinator for the event. There will be signup sheets at the March, April and May meetings. Many volunteers will be needed to operate telescopes (solar and evening), staff donation areas and assist in general public support at both locations. Please consider supporting this worthwhile event. If you are unable to attend the meetings to sign up, please contact John at 620-6502 or via e-mail at jckalas@aol.com.

Refreshments

The sign up sheet for Refreshment Hosts will be in the back of the meeting room. Please sign up, as you are able. Hosts bring cookies, soda and other necessary supplies to the meetings. They also set up the refreshments and clean up after the feast is over. Costs are reimbursed up to $25/month. Bring the receipts to the meeting for reimbursement. 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 have questions.

Science Fair 2003

If you are interested in helping judge the 2003 Southern Arizona Region Science and Engineering Fair, please contact Terri Lappin (579-0185 or tklappin@earthlink.net). Judging takes place on Tuesday, Mar 18th at the Tucson Convention Center. It will include viewing the lower grade level displays that pertain to astronomy and interviewing the high school students who have completed projects in astronomy or a related field. No formal science training is needed, just an interest in recognizing the abilities of the young people in our community.

Club News (cont.)

Be a Guinea Pig for NASA's PlanetQuest

By Terri Lappin

PlanetQuest is a NASA program dedicated to the search for extra-solar Earth-like planets. It combines earth-based observations with proposed space missions over the next 15 years to seek out these difficult to detect planets. In conjunction with JPL and NASA, the Astronomical Society of the Pacific (ASP) is developing PlanetQuest educational kits for use by amateur astronomy clubs in concert with their education and outreach events. The TAAA is one of a handful of astronomy clubs that will receive a kit for alpha testing. Examples of the kits being tested are sky tours with a theme (such as star and planet formation), hands on activities (scale model of our solar system compared to other known systems), video and CD programs, as well as Power Point presentations. We have until the end of June to give our kit a whirl. I belong to an ASP advisory group giving direction regarding the content and usefulness of the proposed kits. The ASP wants as much input as possible, so I'm counting on TAAA members to provide useful comments that I can then relay back to the ASP. The kits will be appropriate for most any age group and can be demonstrated at any event where there is at least one other person attending...that shouldn't be too difficult! Results of this alpha-test will be incorporated into the beta-kits that will then be tested by 20 - 25 astronomy clubs for further refining. The final projects will be made available to astronomy clubs across the nation for use in their public outreach programs. If you have the opportunity and interest in participating in this testing, be sure to mention it to me (579-0185, tklappin@earthlink.net).

HELP WANTED: 2003 Holiday Party Assistance

Sheila Conrad has agreed to chair the committee for another year; now all we need is a committee! Twila and Thom Peck will help out, but we need at least two other persons to serve as assistants/trainees. We promise, no major decisions, no heavy lifting; a detailed manual is provided, and 24-hour support available! Yes, everyone is busy in December, but if we can get several people to help and get to know the needs and procedures, the responsibilities will be light and manageable. Please pitch in and help keep this fun event going! Call Sheila at 529-1750 or Twila/Thom at 327-7825, or email Thom at tpeck@optics.arizona.edu TODAY! And THANKS!

Items of Interest

WEBSITES: TRIPS ON THE INTERNET SUPER-SKYWAY

SERIOUSLY SOLAR

Since beginning the ALPO Solar Section in 1982, I have seen amateur solar astronomers go from taking pretty good pictures of sunspots, where you could identify the penumbra and umbra (see: http://www.enchantedlearning.com/subjects/astronomy/sun/sunspots.shtml for details on sunspots and solar nomenclature) or on a good day see granulation, to where they are now often on par with most professional imaging (but certainly not all).

Right now the top amateur solar imager is Art Whipple in Maryland. Heis observations sent in to the ALPO Solar Section are always at least 1" resolution. Take a look at his gallery of solar images at:http://www.chesapeake.net/~osprey/sunspots.html

Art's work is the best available in the amateur community but he only gets images when there is spectacular activity. Most amateurs do work in the 2-5" resolution range but do so more often. These have a different value serving as synoptic observations. The way to begin this kind of work is to keep an eye on solar activity both at the telescope and on the web. A current view of activity is available from Big Bear Solar Observatory (BBSO). http://www.bbso.njit.edu/arm/latest/. The observatory is located very close to the Riverside Telescope Maker's

Items of Interest (cont.)

Campground at Camp Oaks. This website shows the sun in a number of different filters, each showing a different level of activity in the solar atmosphere. But each one of these activity regions is numbered and tracked by the National Oceanographic and Atmospheric Administration's, Space Environment Center or NOAA-SEC. Their designations for these regions can be found at: http://www.solar.ifa.hawaii.edu/ARMaps/armaps.html. You can organize your own observations to look like those of BBSO by using Stonyhurst Disks as your drawing templates. There is a convenient website that has these for all the various orientations of the sun: http://www.meadows3.demon.co.uk/html/stonyhurst.html

So now you are armed with an excellent example of solar imaging (and a good goal) a source of up-to-date images in many filters, a site for obtaining current designations of features and templates for your own observations. Enjoy! There is still a lot of activity before solar minimum.

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

IDA Annual Meeting
March 20-23

TAAA members are cordially invited to participate in IDA's Annual Meeting, at the Holiday Inn on South Palo Verde, from March 20-23. Program information is available at "www.darksky.org" or by phone at 293-3198 in Tucson. The sessions on Thursday 3/20, in cooperation with IES-NA (the lighting professionals), are open to the public without charge. A free reception is scheduled for Friday 3/21 at 4:15pm with opportunities for meeting lighting distributors with their new products, lighting engineers, and friends of the night from around the world. This is a great time to mix with astronomers, technical people, light pollution warriors, and IDA/TAAA activists. IDA thanks TAAA for ongoing financial support in defense of the night.

In the near future, "GlareBuster", a full cutoff substitute for wall packs, porch lights, and area lights, will be available in Arizona through Ace Hardware stores. This "very good" outdoor light fixture can use compact fluorescent bulbs in a double-whammy of energy saving and glare prevention. Soon to be sold nation-wide by Ace, GlareBuster is a great example of new solutions to old problems of light pollution. For details on this innovative product see "www.TheGlareBuster.com".

Arizona Photographic Collectors Camera Show
Saturday 22 March 10am-3pm
Inn Suites, 475 N. Granada

Many TAAA members are regulars of these twice annual "shows", really swap meets of all things photographic. I've long been an advocate of these to pick up an inexpensive manual camera to get into astrophotography. I'll have some $1 off coupons at the March general meeting, as well as the Astrophoto SIG meeting.

Steward Observatory Public Evening Lecture

Since 1924 Steward Observatory has hosted public evening lectures in astronomy. The Steward Public Evening Lectures are held two Mondays each month when classes are in session. The Spring 2003 schedule is provided here and can also be found at http://viking.as.arizona.edu/~taf/pubeve/pub_lect.html. The lectures are held in the Steward Lecture Hall (N210), the same room we hold our meetings. Following each lecture, the 21-inch telescope will be available for viewing the night sky (weather permitting). The lectures and the use of the telescope are free of charge and open to the general public.

Date	Speaker	Topic
Mar 10	Mr. David Levy	Reflections on Four Decades of Comet Searching (Reception/book signing following lecture)
Mar 24	Dr. George Coyne	Galileo Still Haunts the Church
Apr 7	Dr. Joan Najita	Where do Planets Come From? Old Questions and New Directions
Apr 21	Dr. Xiaohui Fan	End of the Cosmic Dark Ages

2003 All Arizona Messier Marathon
March 29/30, 2003

Join fellow amateur astronomers from all across the state, and the continent, for the 2003 All Arizona Messier Marathon, an attempt to observe all 110 Messier objects in one night. It is possible! two years ago 25 observers managed this feat at this event. If you don't want to run a marathon, just come for one big star party, only about half of the attendees are running the list. Expect around 70 to 100 telescopes to be on the field.

This year offers a perfect chance to get all 110 objects, there will be no moon light interference in the evening, where only five objects are less than 10 deg from horizon at twilight; they are M74, M77 and the Andromeda Galaxy. Twilight in the morning finds our buddy M30 five degrees above the horizon and moon rise occurring another 35 minutes later.

If you feel intimidated by the 110 objects - DON'T BE! Set your own goals and don't bother with those high counts. The marathon is for having fun! Set your goals in order for you to have fun!

The rules are pretty simple:
It's an honor system
No one is going to be looking over your shoulder to verify your observations.

Items of Interest (cont.)

All you have to do is get a check off list from one of the coordinators
Fill out the heading
Find the objects
Observe through the main eyepiece of your telescope
Mark off the entry
Go to the next object

The event is held at the Farnsworth Ranch south of Arizona City. Plan on arriving at the site about 30 minutes before sunset to provide time for your telescope to reach thermal equilibrium - after setup. This will also give you time to meet old friends and make new ones. More information and directions can be found at http://www.saguaroastro.org/content/messier.htm or by e-mailing Aj Crayon at acrayon@mindspring.com or Jack Jones at spicastar@cybertrails.com.

Desert Sunset Star Party - May 1-4, 2003

EARLY REGISTRATION ends March 15. The Desert Sunset Star Party will be held at Kartchner Caverns State Park May 1-4, 2003. In addition to scheduled tours for Friday and Saturday, there are many places to visit in southern Arizona, many within a 1-hour drive. Vendors will be on hand in the afternoons along with several demonstrations. Dinner will be catered in for those who order it, followed by speakers, door prizes, and some great stargazing. Get your registrations in soon to take advantage of the early registration rates. And don't forget to order your T-shirts. Information and registration materials are available on the web at: http://chartmarker.tripod.com/sunset.html.

Chart Markers and More
Pat and Arleen Heimann
http://chartmarker.tripod.com

Grand Canyon Star Party
21-28 June, 2003

While June still seems a long way off, if you are hoping to get a room for any of the star party this June, you are quickly running out of time. Of course, you can likely get campsites nearly any time up to the event. If you are staying all, or nearly all of the star party, I'll be taking names for the few complimentary campsites we get starting on March 1st. So mark your calendar and call me on the 1st if you want one of the free campsites.

In other star party news, Joe Bergeron, well known GCSP regular and space artist has delivered artwork and we will have a T-shirt this year! It features Kokopelli looking thru a telescope (sorry refractor design only available) and is way cool! I've not yet figured out how the ordering process will work, but will let you know in a future notice. We've also heard from former regulars David and Elinor Levine from Texas that they will be joining us this year, as will Jane Houston Jones and Mojo from the San Francisco area. Again, make your plans soon and I hope you'll be joining us.

Dean Ketelsen

Dark Skies for March 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

Fr/Sa	28/ 1	19:42 - 5:31	Mo/Tu	10/11	1:37 - 5:19	Fr/Sa	21/22	19:58 - 22:43
Sa/Su	1/ 2	19:43 - 5:30	Tu/We	11/12	2:34 - 5:17	Sa/Su	22/23	19:59 - 23:53
			We/Th	12/13	3:28 - 5:16			
Su/Mo	2/ 3	19:44 - 5:28	Th/Fr	13/14	4:18 - 5:15	Su/Mo	23/24	20:00 - 1:01
Mo/Tu	3/ 4	19:44 - 5:27	Fr/Sa	14/15	5:03 - 5:13	Mo/Tu	24/25	20:00 - 2:03
Tu/We	4/ 5	20:03 - 5:26	Sa/Su	15/16	- - -	Tu/We	25/26	20:01 - 2:58
We/Th	5/ 6	20:57 - 5:25				We/Th	26/27	20:02 - 3:46
Th/Fr	6/ 7	21:51 - 5:24	Su/Mo	16/17	- - -	Th/Fr	27/28	20:03 - 4:26
Fr/Sa	7/ 8	22:46 - 5:22	Mo/Tu	17/18	Full Moon	Fr/Sa	28/29	20:04 - 4:54
Sa/Su	8/ 9	23:42 - 5:21	Tu/We	18/19	- - -	Sa/Su	29/30	20:04 - 4:53
			We/Th	19/20	19:57 - 20:21			
Su/Mo	9/10	0:39 - 5:20	Th/Fr	20/21	19:57 - 21:31	Su/Mo	30/31	20:05 - 4:51

Weekend	Sun	Sun	Mercury	Venus	Mars	Jupiter	Saturn	
Sa/Su	Set	Rise	Rise Vi	Rise Vi	Rise Vi	Set Vi	Set Vi	Vi=Visibility
1/ 2	18:19	6:49	6:13 8	4:38 -3	2:37 1	5:24 -2	2:12 0	-3 brilliant
8/ 9	18:25	6:40	6:20 -	4:41 -3	2:29 1	4:55 -2	1:45 0	0 conspicuous
15/16	18:30	6:31	Set -	4:42 -2	2:20 1	4:26 -2	1:19 0	3 moderate
22/23	18:35	6:22	18:38 -	4:41 -2	2:12 1	3:57 -2	0:53 0	6 naked eye limit
29/30	18:40	6:13	19:18 7	4:40 -1	2:02 1	3:29 -2	0:27 0	9 binoculars limit

By Erich Karkoschka

Star Parties & Events

**** ***Early Star Parties scheduled before March TAAA Meeting 7 March 2003*** ****

TAAA Star Party at Las Cienegas (Empire Ranch)
Saturday, 3/1/03

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. Expect very cold temperatures this time of year. 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.

Robins Elementary Star Party — West
Tuesday, 3/4/03 — No. of Scopes: 5

Robins Elementary Science Night will be conducted at 3939 N. Magnetite Lane. It's just west of Silverbell off of Sweetwater (west of the Pima Animal Control Center). Sweetwater is north of Grant and 1 mile south of Ruthrauff/Camino de Oeste. Scopes will be positioned on the school playground near the basketball courts. Contact person is Maggie Shafer; she can be reached at 908.4300 or email Maggie.Shafer@tusd.k12.az.us. Set-Up Time: 7:00pm Observing will be from 7:30pm to 8:15pm. Sunset: 6:23pm Dark Sky: 7:45pm Moon Phase: Crescent

Cross Middle School Star Party — Northwest
Wednesday, 3/5/03 — No. of Scopes: 7

Cross Middle School will be preparing for their annual Star Party at 1000 W. Chapala. Take Oracle Rd. north and turn left (west) at Ina Rd. Turn right (north) at the first stoplight (Paseo del Norte). Continue to the stop sign and turn left (west) on Chapala. Cross is about one block down on the street on the right side. The observing location is behind the library/administration building. Contact person Toby Drakulich (back from recent surgery!) He can be reached via email at tdrakuli@amphi.com. Set-Up Time: 6:30pm Observing will be from 7:00pm to 8:30pm. Sunset: 6:24pm Dark Sky: 7:46pm Moon Phase: Crescent

Lulu Walker Elementary Star Party — Northwest
Thursday, 3/6/03 — No. of Scopes: 6

The student body of Lulu Walker Elementary will be holding a Star Party at 1750 W. Roller Coaster Rd. Take Oracle north to River Rd., and turn left (west) on River to La Canada (approx. 1 mile). Turn right (north) on La Canada to Roller Coaster Road. Left (west) on Roller Coaster to Lulu Walker Elementary School. The observing location will be on the northeast side of school yard/playground in a large, dark, grassy area. Contact person Laura Ward can be reached at 696.6510 or email ljcward@msn.com. Set-Up Time: 7pm Observing will be from 7:30pm to 9pm. Sunset: 6:25pm Dark Sky: 7:46pm Moon Phase: Crescent

Desert Springs Charter Star Party — East
Tuesday, 3/11/03 — No. of Scopes: 4

Desert Springs Charter will be hosting "Night With the Stars" at 10355 E. 29th St., at Pantano Christian Church. Contact person Mary Kingsland can be reached at 546.9966 or email desertspringsacademy@earthlink.net. Set-Up Time: 7pm Observing will be from 7:30pm to 9pm. Sunset: 6:29pm Dark Sky: 7:50pm Moon Phase: First Quarter

Ventana Vista Elementary Star Party — Foothills
Thursday, 3/13/03 — No. of Scopes: 5

The third grade classes at Ventana Vista Elementary will be preparing for a Star Party to get a closer look at the moon and planets. The school is located at 6085 N. Kolb Rd. Head north on Swan to Sunrise and turn right. Continue east on Sunrise to Kolb. Take a left on Kolb (north) for about 1/2 mile; school entrance is on the left. Enter and follow driveway around to parking lot. The viewing area will be on the "Lower Field" next to the parking lot. Contact Person: Patty Chan 577-5070 or email pchan@fc.cfsd.k12.az.us. Set-Up Time: 6:45pm; Observing will be from 7:15pm to 8:15pm. Sunset: 6:30pm Dark Sky: 7:52pm. Moon Phase: Gibbous

Ocotillo Elementary Star Party — Central
Thursday, 3/20/03 — No. of Scopes: 3-4

Ocotillo Elementary Astro Night at 5702 S. Campbell Ave. will be the outdoor science highlight of the year. From Speedway go south on Park Ave to Irvington Rd., turn left (east). Proceed on Irvington Rd. to Campbell, turn right (south). On Campbell, continue to Drexel Rd. turn left (west); the school will be in view. Parking will be on the north side of the school. Contact person Ana Ramirez can be reached at 545.3632 or email aramirez12@hotmail.com. Set-Up Time: 6:45pm Observing will be from 7:15pm to 8:30pm. Sunset: 7pm Dark Sky: 8:28pm Moon Phase: First Quarter

Star Parties & Events (cont.)

TIMPA/TAAA Joint Activity
Saturday, 3/22/03

Have you ever wanted to try flying a radio-controlled airplane? TIMPA and TAAA will have another fun joint activity. During the afternoon, TIMPA will offer flying demonstrations, as well as free flying instruction to TAAA members and their friends. Their radio-controller transmitters have dual controls; so learning to fly the trainers is easy, fun, and safe. Their instructors are most skilled and, importantly, very patient teachers.

Bring your items to grill, and a dish to pass, because there will be a potluck and bar-b-que starting at 5:00 pm.

After sunset, the usual TAAA star party will begin, and we'll get a chance to show the TIMPA members some of the wonders of the night sky. Some of the more skilled TIMPA members may try a little night flying, too. It's really neat to watch. Be sure to dress very warmly, as the temperature can drop rapidly after sunset. Hot drinks can be enjoyable, too.

Rincon Country West Star Party (Paid) Southwest
Monday, 3/24/03 No. of Scopes: 8

Rincon Country West, 4555 South Mission Road. This is between Ajo Way and Irvington Road on the east side of Mission Road. There are two parks there, and we go into the first gate on the right after turning off of Mission Road. Stop at the gate and ask for directions to the star party. We have done this before, and it is always a great star party. We need 8 scopes. Setup time is 7:00 and start time is 7:30. The leader will be Bill Lofquist. email: wlofquist@comcast.net

Bloom Elementary Star Party East
Wednesday, 3/26/03 No. of Scopes: 4

The students of Bloom Elementary have been preparing for Night Sky Adventure at 8310 E. Pima St. Proceed east on Speedway to Pantano, turn left (north). Continue about a half-mile to Pima, turn right (east). School is a half-mile down, on the right. Contact person Rhiannon Scott can be reached at 731.3700 or email scorpius85@cox.net. Set-Up Time: 7:00pm Observing will be from 7:30pm to 9:00pm. Sunset: 6:39pm Dark Sky: 8:02pm Moon Phase: (no moon during viewing)

Mission Manor Elementary Star Party South
Thursday, 3/27/03 No. of Scopes: 2

Mission Manor Elementary is presenting "Race to the Planets" for their students and parents at 600 W. Santa Rosa. Go south on Alvernon Way to Valencia, turn right (west). Continue west to 12th Ave, turn right (north), go past stoplight (12th & Bilbee). The school is on the northwest corner. The viewing area is on the basketball court near the playground. Contact person Yvonne Flores can be reached at 545.3533 or email YvonneFl@sunnysideud.k12.az.us. Set-Up Time: 7:00pm Observing will be from 7:30pm to 9:00pm. Sunset: 6:40pm Dark Sky: 8:02pm Moon Phase: (no moon during viewing)

******* April Star Parties scheduled before April TAAA Meeting 4 April 2003 *******

Pueblo Gardens Elementary South-Central
Thursday, 4/3/03 No. of Scopes: 5

Pueblo Gardens Elementary Night With the Stars has been rescheduled after their "cloud out" February 11th. To get to the school at 2210 E. 33rd St., take Campbell south (becomes Kino) to 36th St. and turn left. Continue east to Plumer, turn left, and proceed to 33rd St and turn right. You will see their parking lot on your right as soon as you turn right on 33rd. The viewing area is on the playground near the library (northeast side of school). Contact person Molly McKasson can be reached at 225-2700 or email memckasson@aol.com. Set-Up Time: 7:00pm Observing will be from 7:30pm to 8:45pm. Sunset: 6:45pm Dark Sky: 8:08pm Moon Phase: Crescent

TIMPA Site News

Another successful work party improves the TIMPA site. Since the days leading up the work party brought heavy rains it was decide not to call in concrete, not knowing what condition the work area would be in. Not a bad choice as the evidence was there that a day or so before the forms for the new pads had been ponds and the soil was closer to mud. But the morning was clear and cool and perfect for getting work done.

So instead of concrete we continued to work on the observing pads, removing soil from around the first pads and spreading gravel in its place, digging out and building forms for another pad and setting the foundation for another cinder block column so can extend power to the furthest pads. My thanks to all who came out to help.

TIMPA Work Party
Saturday March 15th

As we continue to finish up the TIMPA observing site we have a few more things to do, hopefully this time we can pour concrete into the observing pad forms that have been waiting. So as usual we will begin at 9:00am and probably wrap up around noon. Bring water, gloves, hat and sunscreen, as well as basic hand tools. Contact Andrew Cooper at taaa@seds.org with any questions.

TAAA Board of Directors Meeting - February 12, 2003

Board Members Present: Andrew Cooper, Terri Lappin, Jane Tongate, Thom Peck, Bill Lofquist, Steve Peterson
Board Members Absent: Robert Callanan Club Member Present: Gary Rosenblum
Meeting opened at 7:10 pm.

1. Changes to the agenda: Andrew asked for additions to the agenda, items 7-12 were added.

2. Events: Andrew reviewed upcoming events for February and into the first week of March.

3. Treasurer's Report: Terri presented her report and talked about the cost of having Kinko's copy the newsletter. Bill suggested getting a quote from Alphagraphics and will present the cost at the next board meeting. Terri will invite the financial advisor to the next board meeting.

4. TIMPA: Andrew has a work party scheduled for February 15. rain will delay pouring the concrete but there is other work to be done. Andrew needs to purchase reinforcing mesh for the pads.

5. ASDM. Andrew reported on the status of this event. Chuck Dugan will do press release. The PA system should be operable for this event and there was discussion on how it might be used during the event. This discussion will continue at the next board meeting.

6. Loaner Telescope Program: Andrew reported that we may have someone to take over this responsibility. Joe Penegor expressed interest.

7. Phone Service: Terri reported that the club phone line had been disconnected, she will work on getting this resolved.

8. Holiday Party: Thom reported that Twila will not be in the lead for next year but will continue to be involved. Thom will check with Sheila to see if she will take the lead.

9. Fundraising: Terri asked for confirmation on the car plate idea. Bill will ask Joe Bergeron if he cares to submit a design.

10. Digital Projector: Steve suggested to the board that the club purchase a projector for club activities. Steve will research and report back.

11. Nomination Committee. Andrew asked Thom to serve, this needs to be finalized before the next general meeting.

12. Desert Sunset Star Party: Bill inquired about the club's involvement in this event. Many members will be participating but at this time the club is not sponsoring anything at this time. Pat Hyman will be invited to the March board meeting.

13. Old Business: The electronic newsletter was added to the old business list. Gary was present to answer question regarding the 30" telescope project. Bill commented that Reach for the Star is alive and well, several parents at the last general meeting expressed interest.

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

Object of the Month by Alfredo Garcia, Jr.

With springtime comes an abundance of celestial beauties to observe. This month's OTM is no exception to that and is a member of our own Milky Way Galaxy. It 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.

There are many fine examples of open star clusters in our galaxy and this cluster is one that is right past the limit of naked eye visibility. It is, however, well with in range of binoculars and small telescopes. It lies within the boundaries of

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

Cancer, the Crab that is well placed for observation this time of the year. This cluster is Messier 67 and it has no common name. Its NGC designation is 2682.

M67 was first discovered in 1779 by the astronomer Johann Gottfried Koehler. Koehler was, however, not able to resolve the cluster due to the inferiority of his instruments at the time. In April 1780, Charles Messier independently rediscovered the cluster and revealed its true nature. His telescope was able to resolve it into stars and he cataloged it as a star cluster and assigned it its current Messier number.

The estimated distance to M67 is about 2,700 light-years and it spans some 30 arcminutes (or one Full Moon's width) in apparent size in the sky. It has a visual magnitude of 6.9 and can be easily observed and resolved with just about any size telescope or good pair of binoculars.

The best time to observe M67 during this month is during periods when the Moon is not visible. If you go out observing (from the Tucson area) in early or late March at about 9:00 PM, you will find M67 at an altitude of about 60 degrees above the southeastern horizon (early month) to about 70 degrees above the southern horizon (late month). If you use setting circles or have an automated go-to telescope, its position in the sky is 08:50.4 (hrs:min) in right ascension and +11:49 (deg:min) in declination.

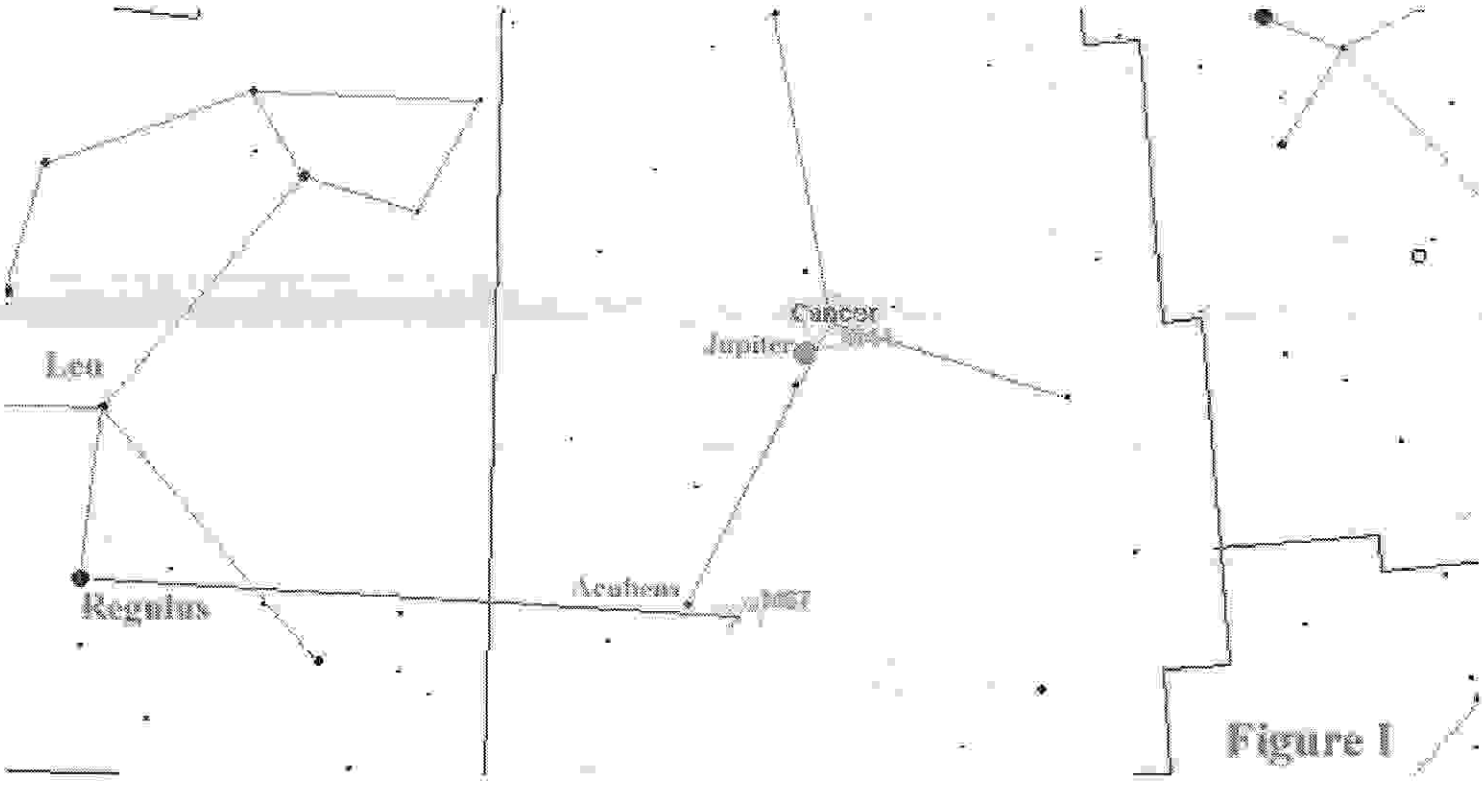


Figure 1

Since the stars that make up the constellation of Cancer are not bright, you can not easily "starhop" to it by using the constellation's stars. However, this year Jupiter is well placed in Cancer and can provide your starting point. The mighty Jupiter will be shinning at a brilliant magnitude of -2.4, so there is no way you can miss it! Once you locate Jupiter, look about 8 degrees south of it and you will the 4.3 magnitude star of Acubens in Cancer's southern region. M67 is about 2 degrees west of Alcubens. I also sometimes use Regulus in the constellation of Leo, the Lion to guide me to M67. Once you find Regulus (not difficult to do), you look about 20 degrees west of it and you will find Alcubens and then M67 (see Figure I).

As a side note of interest, M67 is one of the oldest known open clusters in our galaxy. Its estimated age is in the order of 4 billion years (about the same age as the Earth). Only few more open clusters are known to be older. Incidentally, the oldest known cluster in our galaxy is designated as NGC 6791 is about 7 billion years old. Current calculations estimate that M67 will exist as an open cluster for about another 5 billion years!

Desert Skies Classified

For Sale:	TAKAHASHI Epsilon-130 Astrograph (f/3.3 reflector corrected for photography) on EM-1 equatorial mount; 4.2 mm and 7 mm Televue Nagler eyepieces, 12 mm illuminated crosshair eyepiece; Olympus OM-1 for 35 mm photos (plus 24, 50, and 200 mm Olympus lenses); Mamiya attachments for: 6x7 rollfilm (120/220 Ektachrome, etc), Polaroid pack or sheet-film for medium format. Mamiya Universal Press camera w/ f2.8, 100 mm goes with the ensemble. $1,275. Jim Jondrow, 529-0933; jjondrow@fastucson.net (03/03)
For Sale:	CELESTRON C90 Telescope/Spotting Scope. Used 4 or 5 times. Includes 30, 18 & 9 mm oculars, Porro prism, star diagonal, Canon T mount, finderscope, foam-lined case. $335. BOGEN Super Pro Heavy Duty Tripod Model 3050 with a Delux 3-Way Bogen Pan Head w/Mounting Plate. New condition. $170. Both item above sold as a package, $455 Earl Richmond, 647-0162 or email erichmond@theriver.com. [05/03]
For Sale:	Partially completed 15" Dobsonian. The telescope is roughly half-completed, the secondary cage and mirror support being completed. Details of its early construction can be found at http://www.seds.org/~hyperion/scope/ and I would be more than happy to show the current scope to any interested party. Jacob Lauser at sirius@riverstyx.com. [05/03]
For Sale:	Losmandy G-11 Mount + Sky Commander $2500. Mount is in excellent condition and includes these extras: Extra 21 pound counterweight, Spare Electronics drive board, Spare Polar alignment scope, Spare RA or Dec drive motor, added a shortened set of legs to create a tripod short enough to get the eyepiece of a Newtonian closer to my eye level. The stock set of tripod legs are included. Contact Steve Coe at stevecoe@ngcic.org or 602-789-7786. [05/03]
For Sale:	6" f/6 Maksutov-Newtonian Tube Assembly $750. This is the Orion version of the Intes MN 61. It has a 2 inch focuser, 9X50 finder, dust caps for all optical surfaces and a dew shield. The images in this telescope are superb, a textbook set of Airy disks during the star test. It shows excellent detail on the Moon and planets at 250X and also is a terrific Rich Field Telescope for wide angle views along the Milky Way. Other Items: Meade Variguide Dual Axis Drive Corrector $80, 45 degree erect image diagonal 0.965" $20, Contact Steve Coe at stevecoe@ngcic.org or 602-789-7786. [05/03]
For Sale:	4"f/10 refractor, wood tripod, equatorial mount, 6x30 finder 3 1 1/4" eyepieces: 25 mm (40x), 10 mm (100x), 6.3 mm (155x), slo-mo controls, star diagonal, moon filter. $300. Jeff Brydges, 888-0591. [06/03]
For Sale:	Like-new Deluxe Sky Atlas 2000 2nd edition with ChartMarkers (30 telrad finder markers) $ 70.00 call Pat Heimann 882-5997 or e-mail: chartmarker@cox.net [06/03]
For Sale:	16.5' (5 meter) "Ash Dome" observatory dome already disassembled and ready for transport and reassembly at your observatory site. Complete with all hardware, motors, dome sections and shutter. This is a rare opportunity to purchase a previously used, professional type observatory dome in great shape at a fraction of the new price. $8500.00 obo. Contact Steve Peterson at: (520) 762-8211 or email at: swpeterson@theriver.com [06/03]
For Sale:	Celestron GPS-8. Purchased at Starizona in Jan '03 for $1995. Many extras include, a Starizona Landing Pad, Virtual View rotator, Feather Touch focuser, two filters; and TelRad Finder. Also, extra eyepieces; 12 mm, 20mm, and 35mm. In all, over $700 in extras. Signed by David Levy. Works perfectly! Unit is in pristine/immaculate condition with original shipping cartons. Military commitments; must sacrifice for $1900. Pls contact Paul Hill at 219-0318 or paulnshelly@comcast.net. Digital photos can be provided. [06/03]
Wanted:	Wanted: Local club member with experience in using Astrovid cameras for planetary imaging. Contact Roger Tanner, rtanner@darkotacom.net, 574-3876 [06/03]

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.

Constellation Report by Chris Lancaster

Crater

The Cup

Crater plays a role in an elaborate story involving the nearby constellations of Corvus, the crow, and Hydra, the water serpent. The myth tells of Apollo, who sent Corvus for a cup (Crater) of spring water. Beside the spring, Corvus spotted a fig ripening on a nearby bush. The fig looked so delicious that the crow waited for it to ripen. When he returned to Apollo, he brought along with him a water serpent (Hydra), saying that the serpent had attacked him and that was the reason it took him so long to return.
Apollo saw through the lie and banished all three to the sky.

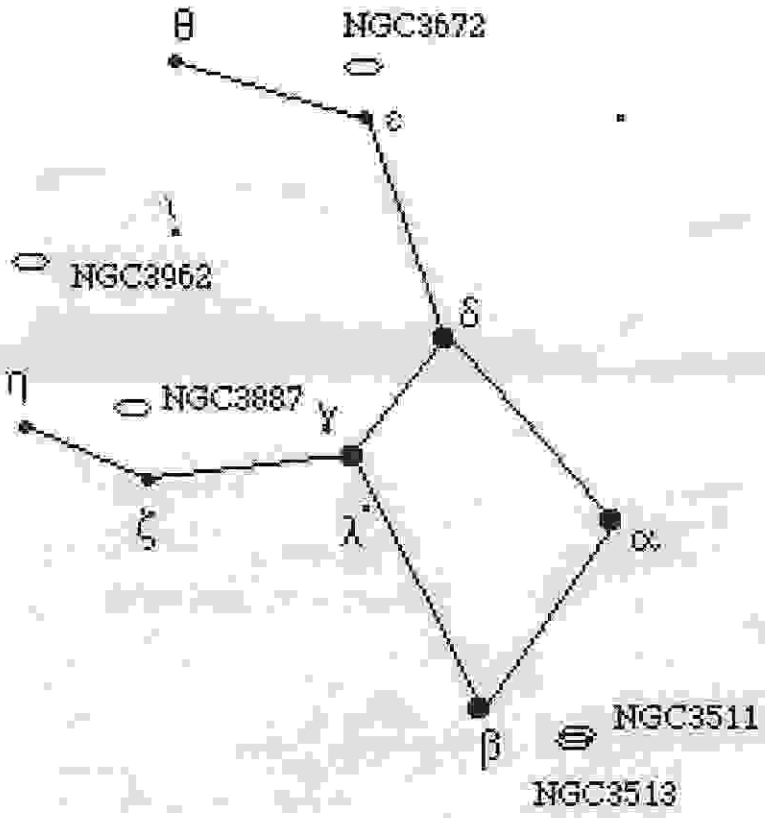
To find Crater, put yourself under some dark skies, since Crater's brightest star is magnitude 3.5 and most others are dimmer than magnitude 4. Look either 30 degrees west of Spica, the brightest star in Virgo, or 30 degrees south of the hindquarters of Leo. With not too much imagination, you should be able to see the shape of a cup that is tilted to the east.

Constellation Report by Chris Lancaster (cont.)

Looking toward Crater, which crosses the meridian just before midnight during the ides of March, will give you a view which is about 25 degrees away from the southern Milky Way. Through the sprinkling of nearby stars lies an unobstructed view of far away galaxies. Most of these are dim and challenging, but a few are within the grasp of small telescopes.

On our way to these galaxies, lets stop at double star Gamma Crateris. This pair, 78 light years away, is separated by 5 arc seconds, which allows it to be easily split at high power. The primary shines brightly at magnitude 4.1. The secondary is several times dimmer at magnitude 9 5. Both show a pure white color.

NGC3511 is one of the brightest galaxies in Crater. It is located 2 degrees west of Beta Crateris. While it shines at magnitude 11.6, its light is spread over a broad oval measuring 5.7'x 2.0'. Nearby (only 10 arc minutes to the southeast) is NGC3513. Here is a S-shaped barred spiral glowing faintly at magnitude 12.1 and measuring 2.8'x 2.3'. If you center your scope on RA 11h 3m 35s Dec -23d 9' 57", you will have both galaxies in a low power eyepiece.



Within or near the cup of Crater are three more galaxies of note. NGC3887 is a spiral located one and a half degrees north northeast of Zeta Crateris or RA 11h 47m 5s Dec -16d 52' 22". This is a tight spiral of magnitude 11.6 and is 3.3'x 2.5' in expanse. This galaxy shows a bright center with tightly wrapped arms that quickly disappear beyond its fuzzy boundaries.

Just above the lip of the cup is NGC3962. You'll find this elliptical galaxy about a third of the way between Eta and Theta Crateris and 1.5 degrees above the line connecting these two stars. Or you can dial up RA 11h 54m 40" Dec -13d 58' 23". NGC3962 shines at magnitude 11.9 but perhaps is easier to see because of its bright, condensed core. The entire galaxy occupies 2.5'x 2.2'.

Just over a degree north of Epsilon Crateris is NGC3672, yet another galaxy glowing with a fairly bright magnitude of 11.7. This spiral galaxy, centered at RA 11h 25m 13s Dec -9d 47' 43", is a spiral with a fairly bright center and mottled spiral arms.

The galaxies so far described only scratch the surface of the total number of galaxies present in Crater. However, most of them are reluctant to show themselves in very small backyard telescopes. Those with larger instruments may want to search for some of these others summarized below.

NGC3571--magnitude 13, RA 11h 11m 30s Dec -19d 18' 04". Size: 2.5'x 0.7'. Bright nucleus, distorted arms.
NGC3635--magnitude 12.7, RA 11h 20m 31s Dec -9d 0' 49". Size: 1.2'x 0.9'. A very small and faint spiral.
NGC3637--magnitude 12.9, RA 11h 20m 40s Dec -10 16' 32". Size: 1.6'x 1.5'. Paired with NGC3636, 3' from 6.5 magnitude star.
NGC3715--magnitude 12.0, RA 11h 31m 32s Dec -14d 13' 57". Size 1.4'x 0.9'. Very small, round spiral.
NGC3732--magnitude 13.0, RA 11h 34m 12s Dec -9d 51' 00". Size: 0.6'x 0.6'. Small, bright center.
NGC3865--magnitude 13.0, RA 11h 44m 52s Dec -9d 13' 59". Size: 2.0'x 1.5'. Diffuse spiral.
NGC3892--magnitude 12.0, RA 11h 48m 0s Dec -10d 58' 00". Size: 2.0' x 1.3'. Round spiral.
NGC3955--magnitude 12.6, RA 11h 53m 58s Dec -23d 9' 54". Size: 2.0'x 0.9'. Spiral tilted almost edge-on.
NGC3956--magnitude 12.9, RA 11h 54m 1s Dec -20d 34' 00". Size: 3.4'x 1.0'. Edge-on spiral.
NGC3957--magnitude 12.9, RA 11h 54m 1s Dec -19d 34' 06". Size: 3.0'x 0.7'. Lenticular galaxy.
NGC3981--magnitude 11.9, RA 11h 56m 7.2s Dec -19d 53' 42". Size: 5.2'x 2.3'. Double-armed spiral.
IC2627--magnitude 12.6, RA 11h 9m 53s Dec -23d 43' 35". Size: 2.7'x 2.3'. Face-on spiral. Star like nucleus.