

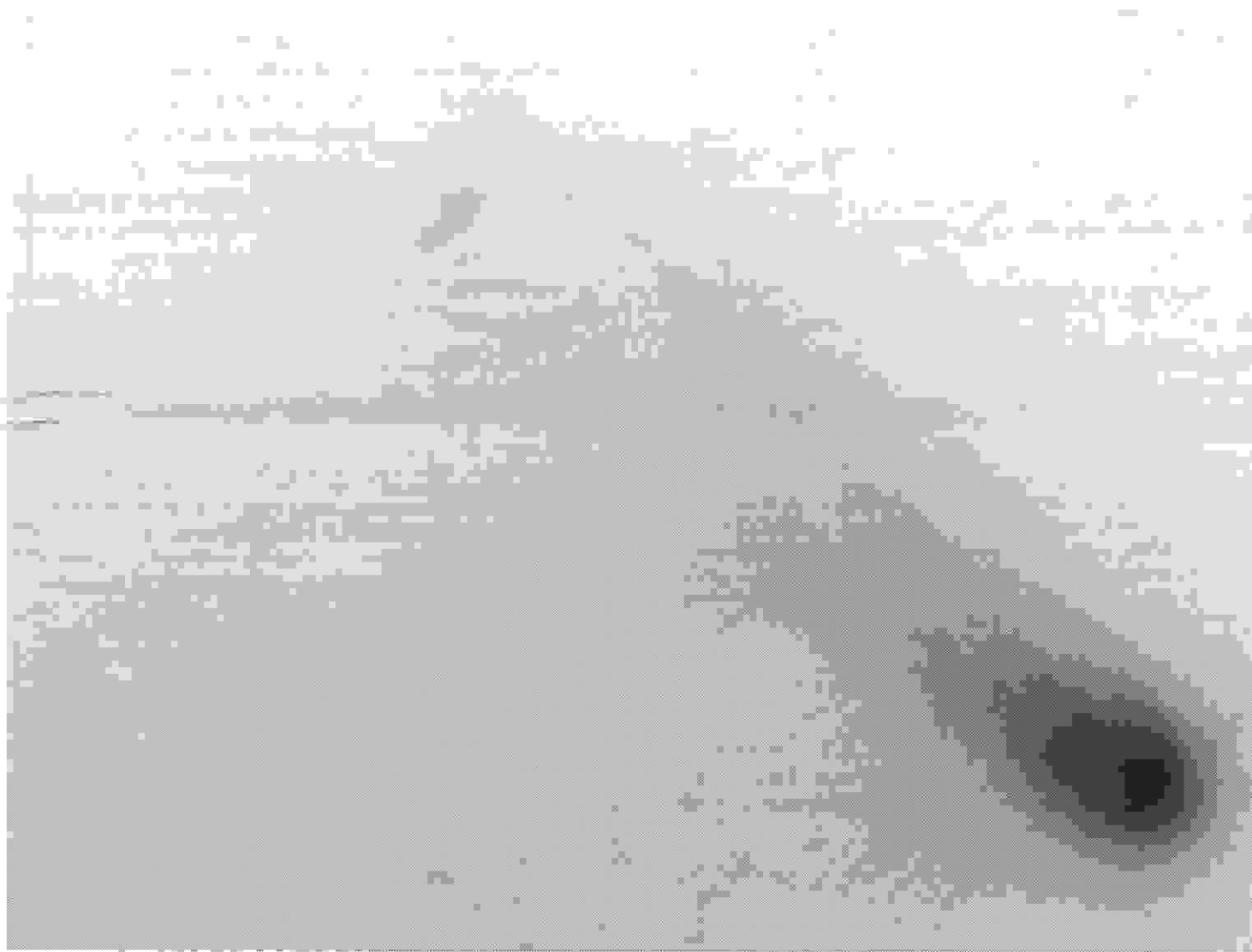


Desert Skies

Tucson Amateur Astronomy Association

Volume L, Number 6

June, 2004



Comet NEAT Q4 2004

Cover Photo: Comet NEAT made a great sight in binoculars and telescopes in the May evening skies. Imaged by Dean Salman on May 6, 2004, using a TeleVue 76 F15 refractor and ST-2000 XM CCD camera.

TAAA Web Page: <http://www.tucsonastronomy.org>

TAAA Phone Number: (520) 792-6414

Office/Position	Name	Phone	E-mail Address
President	Thom Peck	327-7825	thomas.peck@optics.arizona.edu
Vice President	Michael Turner	743-3437	Mrmgturner@earthlink.net
Secretary	Steve Marten	906-0049	TAAAStarParty@aol.com
Treasurer	Terri Lappin	579-0185	tklappin@earthlink.net
Member-at-Large	Ed Finney	296-9266	Cefinney@netzero.com
Member-at-Large	Bill Lofquist	297-6653	wlofquist@comcast.net
Member-at-Large	Ray Toscano	529-3074	Ray_toscano@earthlink.net
Chief Observer	Wayne Johnson	586-2244	mrgalaxy@juno.com
AL Correspondent (ALCor)	Nick de Mesa	797-6614	Demesan@onsetbeach.com
Astrophotography SIG	Dean Ketelsen	293-2855	ketelsen@as.arizona.edu
Computers in Astronomy SIG	Roger Tanner	574-3876	rtanner@dakotacom.net
Newsletter Editor	George Barber	822-2392	barbergj@flash.net
School Star Party Scheduling Coordinator	Steve Marten	906-0049	TAAAStarParty@aol.com
Webmaster	Dean Salman	574-9598	ccdimages@galaxies.com
School Star Party Volunteer Coordinator	Rob Wilson	744-0263	rasjwilson@aol.com
Club Sales	Ann Scott	749-4867	Lbscott61@cox.net
Equipment Loan Coordinator	Jerry Penegor	320-1872	penegor@dakotacom.net

Membership in the TAAA

Annual Dues

Individual membership.....	\$ 25
Family	\$ 30
Senior (over 60) membership.....	\$ 23
Senior Family (at least one over 60).....	\$ 28
Student membership (over 18 years old).....	\$ 17

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\$	5.00
Sky & Telescope Magazine.....	\$ 32.95
Astronomy Magazine	\$ 29.00
Postage for New Member Pack.....	\$ 3.85

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. All material copyright Tucson Amateur Astronomy Association or specific author. No reproduction without permission, all rights reserved. We will not publish slanderous or libelous material! Send submissions to:

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

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President's Message

Thanks go out to Ken Wheelock for presiding over the May Board of Directors Meeting. I had to be out of town for personal reasons.

Thanks also go to all those who voted at the May elections for your 2004-2005 Directors of the TAAA, and to the past year officers who made my task so much easier.

This past TIMPA star party was very well attended, and somewhat of a surprise. It just reminds us of the need to inform new members and the general public of star party etiquette. Maybe a sign instructing to turn off head lights next to the "NO DUST" sign. But what a great scene to have so many new people interested in the night skies. To hear the wonder in their voices makes this all worthwhile.

Monsoon rains are around the bend, so get out and view while you can. This month we get to use the 60-inch scope on Mt. Lemmon once again. The stuff you can see in that aperture is amazing. If you can, go to this star party, and bring food. We'll have a wondrous time.

The TAAA June meeting is a Members' Night. If you want to make a 10 to 15 minute presentation, any subject related to astronomy, please contact me via email. If you already signed up for a presentation, please contact me again, so I can keep the order close to first come first serve.

Meeting Information and Calendar of Events

TAAA MEETING DATE: Friday, June 4 at the Steward Observatory Auditorium - Room N210

BOARD OF DIRECTORS MEETING: Wednesday, June 9 6:30 pm at Steward Observatory Conference Room N305

Note: The Beginners lecture is replaced by member presentations on Member's night. Be sure to arrive for the meeting by 6:30 pm!

GENERAL MEETING: 6:30 pm
Member's night

Here's your chance to share the spotlight. Contact Thom Peck via e-mail to schedule your astronomy-related presentation.

STAR PARTIES AND EVENTS:

04 June - Cub Scouts Old Pueblo District Star Party
10 June - Astro-photo SIG Meeting
12 June - TAAA Star Party at TIMPA
12 June - TAAA Star Party at Mt. Lemmon
12 - 19 June - Grand Canyon Star Party
19 June - Public Viewing with LPL & Flandrau
19 June - TAAA Star Party at Las Cienegas

NEWSLETTER SCHEDULE: Deadline for articles: Sat, June 19. Printing: Mon, June 21. Folding Party: Tues, June 22. Mailing: Wed, June 23. The newsletter is mailed at least one week prior to the following month's General Meeting.

Club News

Membership Dues Increased

Effective June 1st, all membership dues will increase by \$2. This was voted on and passed at the May General Meeting. Individual membership is now \$25; senior (over 60) is \$23. Family membership is \$30 and Senior Family is \$28. Student and Reduced Family (under 18) membership is \$17.

Member News

We welcome the most recent members to join the TAAA: Shawn Hermann, Gerald Melino, Daniel and Kim Pinda, Steven Quick, Perry and Kathleen Rivkind, Erhard Sehl, William Silvey, Randi Stepanek and Norm Saborski, Catherine Warren, and Dick West (Dick is a returning member from many years ago). 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 to any member at most regular meetings, so pick one up if you need it.)

Astro-Photo Special Interest Group (SIG)

10 June, 7pm
China Rose, NE corner Speedway/Rosemont

We had a quiet meeting last month, but with the evening appearance of Comet Neat, we should have a new crop of both CCD and film images. I've got some film images myself, so knowing how many active folks we've got, there should be a great selection of images. See you there!

Club News

Grand Canyon Star Party

12-19 June 2004

North and South Rims

By Dean Ketelsen

We are counting down the days till we once again head north to higher elevations, cooler temperatures, and the blessedly dark skies of the Canyon. I've got the fee waivers and info to mail about ready to go out by the end of the month. If you don't get this snail-mailing from me by the June meeting on the 4th, let me know ASAP, preferably by e-mail at ketelsen@as.arizona.edu to let me know, along with your mailing address to make sure I've got it.

Last year the National Park Service had plans to rebuild the overlook at Yavapai and there was talk of relocating the star party. That construction has been delayed, though, so the event will take place at our "home base" and will likely resemble the last 13 star parties we've had there. One of the exciting changes is that with the donation to the TAAA of a video projector, we can now do PowerPoint presentations for the twilight talks - sort of bringing us into the new century technology-wise. We've got at least one speaker, tentatively talking about the Mars Landers, who will be taking advantage of it. For those offering twilight talks this year let me know if you have any preferences for which night you appear.

Many of our regular attendees will be returning and I'm getting lots of new people coming too. Of course, they all want to set up in the lower field to avoid the headlights, and miss many of the public too, but they will learn how much more fun it is up where the public is. The Saguaro Astronomy Club, who for years has sponsored the Sunday pizza fest, will be attending the north rim event this year, so we'll have to pass the hat if we want to continue the tradition. If you want to plan an event, either a food or travel/tour function (say a trip to Lowell or Meteor Crater), you can spread the word yourself down the line of telescopes, or let me know, and we can get a volunteer to spread the word.

That is about all I've got for now - this event will be the swan song for Brian Gatlin, our ranger from last year. He has accepted another position and will be leaving the Canyon the week after our star party. The event has improved in both conveniences for us, as well as safety with his efforts and we wish him well. Let me know if any of you have questions regarding the star party, otherwise look for that mailing if I know you are coming.

Mt Lemmon Star Party June 12

Escape the summer heat! TAAA members are invited to a BBQ and star party at the Steward Observatory Mt Lemmon Observatory on Saturday, June 12th. Arrive anytime after 4pm. Bring your own food, beverage, utensils, and telescope. The TAAA is providing the BBQ grills and charcoal for members use between 5 and 6pm. We have permission to set up our telescopes inside the

observatory complex near the 40" and 60" telescopes. Plan to use battery power to run your telescope. Depending on the number of vehicles you may be asked to set up your scope and then park your car away from the telescope field. You can leave at anytime but we must leave the observatory complex by 2:30 am when the Moon rises.

Gary Rosenbaum, TAAA member and Steward Observatory Senior Instrumentation Specialist, will be operating the 60" telescope equipped with an eyepiece and everyone is invited to look through the scope. (The TAAA has plans to put the TAAA 30" mirror in the 40" telescope. If you want to see the 40", let Gary know ahead of time.) There will be a limit of 10 people permitted in the 60" dome while observing. If you have special requests for objects you want to see, keep in mind the 60" has an f/16 focal ratio with a focal length of 24,384 mm. A Tele Vue 55mm Plöds eyepiece gives a 0.1-degree field of view (6.5 arc minute) with a magnification of 443x. Lowest magnifications work best unless the seeing is absolutely superb.

Directions to the observatory: From Tanque Verde Road, turn north onto the Mt Lemmon Catalina Highway. Due to the Mt Lemmon Highway road construction there is a one-way section of dirt road with a stoplight but there are no construction delays on weekends. The section of dirt road is easily passable by cars. Stay on the Catalina Highway until you reach Ski Valley Road. Turn right onto the Ski Valley Road at milepost 24.7. Continue up the mountain to a locked gate at the end of the Ski Valley parking lot. The padlock combination is 1776. Enter the combination then squeeze the padlock to open it. *Lock the gate after you go through.*

IMPORTANT!

It is mandatory that you lock the gate at the Ski Valley parking lot both when you go up to the observatory and when you leave. Even if the gate is open when you arrive, lock it after you go through. The US Forest Service has closed the forest to the public above Ski Valley due to the dangerous conditions still remaining from last years Aspen Fire. Please do not leave it unlocked for the next guy.

Continue to the observatory complex going through another gate (which should be open but the combination is the same). You can leave this upper gate open. Once inside the fenced observatory compound, turn right on either the first or second road and go up to the top of the small hill to the main telescope field.

If you plan to hike earlier in the day remember that sections of the forest remain closed due to damage from last year's Aspen Fire and you will need to pay for the recreation-parking fee at the Molino Basin Campground at milepost 5.5. However, if you go straight up the mountain and do not stop at any of the parking pullouts or use any of the recreational facilities or bathrooms you do not need to pay the fee. You don't need a permit to visit Summerhaven either.

Club News (cont.)

For more information contact Gary Rosenbaum (579-0185, garyr90@earthlink.net).

Beginners Lectures

We are looking for speakers to present specific topics to our Beginners. These lectures are about 30-40 minutes long. The topics are listed below. If you can present one of these topics, please talk to Terri Lappin.

The "Beginner's Lecture Series"

1. Moon & Planets (solar system)
2. Stars & Our Sun (stellar evolution)
3. Telescopes and Their Use
4. Imaginary Lines (coordinate systems)
5. Deep Sky Observing
6. Important People in Astronomy
7. Cosmology

Annual Picnic in the Fall - October 30

We are going to try something different this year for our annual picnic. We have reserved a huge ramada at Reid Park for Saturday, October 30th. Mark your calendars now. We hope to have a few fun things to do in the afternoon (our reservation begins at 2pm). Terri is willing to make a comet - great fun if you haven't seen it done before, and surely we'll have at least one solar telescope set up. If you want to help with the planning of this event let Terri Lappin know.

TAAA Strategic Planning Process Produces Results

By Bill Lofquist

This article summarizes the strategic planning process for TAAA that was started at the March 2004 Members' Night meeting. At that time members were asked to suggest topics that they thought the planning process should address. Additional member ideas were solicited through

the TAAA Forum and an article in the April issue of Desert Skies. Members were also invited to participate in an all day session to be held on April 3, 2004.

The ideas generated on April 3 are reported briefly here. The meeting began with a consideration of the mission, or purpose, of TAAA. A draft of a new mission statement was completed. It is as follows: "The mission of the Tucson Amateur Astronomy Association is to provide opportunities for members and the public to share the joy and excitement of astronomy through observing, education and fun."

This statement and a report on the planning process were presented at the Beginners' Lecture during the May 2004 meeting of TAAA. It was suggested that we consider this mission draft for a period of time to be determined by the board of directions and submitted to the membership at a future meeting for change or ratification.

The strengths of TAAA were reviewed. These included our strong membership and the vast knowledge and skill base; the public star party program; the newsletter, web site and TAAA Forum; our clear skies and good weather; our available observing sites; a very active 50 year history; professional resources available to us; an excellent, well-equipped meeting place; strong organizational leadership; retail astronomy outlets that support us and supply our astronomy needs; the International Dark Sky Association; the Astronomical League programs; skilled astrophotographers; Kitt Peak, Project Astro, etc., etc.

Some of the challenges we face are as follows: the need for better communication, a more friendly atmosphere, support for new beginning members, more opportunities for experienced members, more volunteer time for the many star party opportunities we have, expansion of special interest groups, securing a dark observing site with facilities, support for protection of dark skies, more opportunities for young people to learn about astronomy, etc.

A vision for the future of TAAA was shaped that includes: A convenient dark sky observing site with facilities;

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Club News (cont.)

Regular gatherings where people can bring scopes, share scopes with others, and learn about astronomy; varied membership - amateur and professional, youth and adult - with support for all levels of experience; introductory curriculum for beginners; workshops and hands-on special interest groups; family star parties with directed activities; active involvement in protecting the night skies; public outreach programs with educational materials; a public presence that inspires curiosity about astronomy; a friendly, welcoming atmosphere in which members get to know one another; an emphasis on enjoyable, fun activities.

Two action groups were created. One group was to focus on support of new/beginning members, and the other to focus on support of more experienced and advanced members.

The first group discussed the following: a new member committee to oversee a variety of opportunities for new members; a Reach for the Stars type program for adults as well as young people; ad hoc special interest groups on basic topics and skills; use of Desert Skies and the web site for beginning information; development of a mentor list for new members to access; sharing of member experience and biographies at meetings; better use of the Astronomical League programs.

The second group discussed the following: a dark sky site with facilities, perhaps using Mt. Lemmon for the near term and gathering funds for developing a long term site; advanced field trips; reintroducing the second part of meetings for show and tell; using the pads at TIMPA for advanced observing, with the use of the parking lot for beginners; more "how to" workshops and special interest groups.

Since strategic planning is an on-going process, we hope TAAA members will continue to think about ways the organization can better pursue its mission and make them known to the board of directors and other members. The plan is to revisit this process from time to time to pursue it further. In the meantime, the board of directors will be implementing the ideas that have been generated.

William A. Lofquist
Development Publications
P. O. Box 36748
Tucson, AZ 85740
520-575-7047
wlofquist@comcast.net

SUPPORT FOR TAAA MEMBERS WANTING TO SHARPEN THEIR SKILLS

By Bill Lofquist

In order to give an assist to our members who want to develop their skills in astronomy, we are refining our list of people who would like to share their knowledge with other members.

The recent planning process we have been going through as a club has identified this as a clear need and a high priority. If you would like be part of a group of resource people who can be called upon to work with a small group of members interested in learning something specific about astronomy, please consider adding your name to this list.

Obviously, a lot of this kind of mentoring goes on naturally and informally. The intent is to make it more purposeful and better known within TAAA.

Some examples might be: helping people with new go-to scopes learn to use them; finding the galaxies in Leo that Terri Lappin talked about at the May meeting; beginning skills for using a DOB to find the planets and deep sky objects; meeting three or four times with a small group of people interested in learning their way around the sky; helping new members get into piggy-back photography, etc.

If you would like to have your name added to a list of Astronomers On Call, please contact Bill Lofquist by calling him at 297-6653, or by email at wlofquist@comcast.net.

This is a way that more experienced TAAA members can help less experienced TAAA members sharpen their knowledge and skills. And everyone can have lots of fun at the same time!

Desert Sunset Star Party a Success

By Pat and Arleen Heimann

Thank you for helping make the 2004 DSSP a success. We are already making plans for next year - the new moon is May 8 so mark your calendars for Wednesday May 4 through Sunday May 8.

We hope to go back to the format of the first year and have some scheduled group trips to Mt. Hopkins' Whipple Observatory, UA Mirror Lab and EOS Technologies and possibly a few others. If there is a place in particular that you think would make a good group trip, let us know.

In order to make the DSSP an annual event, we could use any assistance you might want to offer. We need help to make this a success. Foremost, you can help us with spreading the word. There will be a printable flyer on the website in the near future that you can distribute when you go to other star parties. If you know of someone who has a unique product to sell, invite him or her to come to the DSSP. We don't charge vendor fees - just ask for a donation or two for door prizes.

And of course we are always looking for speakers. Many of the more established star parties have big name speakers who charge for their time. We'd like to keep the DSSP at a low cost for everyone. So if you hear someone speak on an interesting topic (long or short topic) who you think would be willing to help out our fledgling star

Club News (cont.)

party - let them know about the DSSP and ask them to contact us.

Again, we thank you for coming out this year and hope to see you again next May.

Pat and Arleen Heimann
ChartMarkers and More
<http://chartmarker.tripod.com>

Visit To Jet Propulsion Laboratory Open House

By Terri Lappin

This was my first visit to the Jet Propulsion Laboratory (JPL) and the Open House was an excellent way to see all that goes on there. Of course, I was aware that the Mars Rovers were assembled and tested at JPL and it was great to see the full sized and scaled models of several spacecraft and rovers including Cassini, Pathfinder, Mars Exploration Rovers, and Mars Global Surveyor. (Do you know JPL has 17 missions "flying" right now?) What really amazed me was how the research required for space exploration benefits us right here on earth. One area at JPL specializes in micro devices. One poster showed how a small sensor, inserted into the eye, could feed a signal to the optic nerve, restoring eyesight to those suffering from Age-Related Macular Degeneration. The New Technologies Lab developed a really neat material called Aero gel. This is a mechanically strong material, but it is also the lightest known solid. It's chemically the same as glass but it's over 99% air. You can literally see through a 4" thick block of the material - it's like looking through a ghost! It is the material on board the Stardust Mission into which the particles from Comet Wild impacted, to be returned to the earth in January 2006. Aero gel was also used on Sojourner, Spirit, and Opportunity to keep their electronics at a nice warm even temperature. Someday it might be used as insulation in your house.

All this was fun, but I was really at JPL as an Open House volunteer participating in "The Search for Life display area. The Astronomical Society of the Pacific (ASP) paid for my trip and hotel expenses. Earlier this year the ASP selected two people from different astronomy clubs who had used the Night Sky Network PlanetQuest Toolkit in education outreach activities. Jean Grendler and her friend Sue Moe from the Eugene (Oregon) Astronomical Society joined me for this exciting experience. Security was a big deal; after all, JPL is a national lab that was opening its doors to over 50,000 people for the weekend. We were issued security badges and t-shirts to help identify us as JPL volunteers. Two-hours of volunteer time each day doesn't seem like payment enough for all that I saw and learned, especially considering I had been asked to do something I enjoy! The projects from the Night Sky Network PlanetQuest Toolkit easily communicate to the public some rather technical aspects of the search for small extra-solar worlds (those more likely to sustain life as we know it). Everyone seemed to "get it" after seeing how the atmosphere can distort an image, or the affect that a

planet has on its parent star as it makes a revolution about that star.

I feel greatly privileged for having had this opportunity and thank everyone at JPL and the ASP who had a part in making my trip possible. I met great people from both organizations, including Michael Greene, head of education and public outreach for the PlanetQuest program, and Marni Berendsen, from the ASP, who coordinates the Night Sky Network and was our host for the entire trip. The open house made it possible to talk with many JPL scientists and it was easy to see that they enjoy their work. Everyone was very open about answering questions posed to them, something that's not often seen in industry or government. It was a great educational and superbly fun experience for me.

Kitt Peak Picnic Area Available to TAAA Members

The Public Outreach Department is implementing new programs and events throughout the current fiscal year, including a two-day CCD workshop this summer. Another fund raising effort involves the picnic area. Public outreach has reserved the area for use by TAAA members only on June 12, 19; September 11, 18; and October 9. The area will be available from sunset to midnight for a fee of \$10.00 per member, limit 30 members per evening. Reservations are on a first-come-first-serve basis and may be made by calling or emailing Robert Wilson at 318-8440 or rwilson@noao.edu. Reservations and cancellations must be made at least two days prior to the desired evening for purposes of staff scheduling and logistics. Payment will be made upon arrival and refunds will not be granted for weather, so check the forecast before coming up. Ideally, if there appears to be a demand for the use of the picnic area, we can make it regularly available for less or perhaps for free. In the meantime, consider the fee a donation to the outreach efforts of the Kitt Peak Visitor Center.

August Newsletter Submissions

By George Barber

During the month of July, I will be visiting Australia. Terri Lappin has graciously offered to coordinate the newsletter during my absence. You will need to send her your August newsletter contributions at tklappin@earthlink.net by the July 24 deadline.

May 8 Kitt Peak Picnic

Text by George Barber

Photos by Michael and Mary Turner

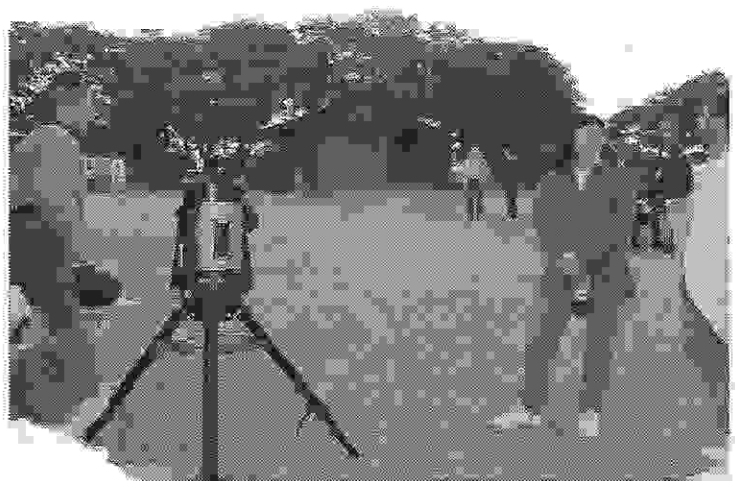
A nice-sized group of TAAA members gathered for the semi-annual Kitt Peak picnic on May 8. We enjoyed a bar-b-que dinner and pot luck.

Club News (cont.)

A couple of members set up their scopes to try to catch the daytime sun between clouds. The clouds did not



promise a good evening for stargazing, but did provide a



beautiful sunset. Nevertheless, most people had their



gear set up and ready before darkness set in. As the evening wore on, the clouds began to thin, and areas of



the sky opened up. By 9:00 pm or so, the sky was mostly clear. Everyone enjoyed the views of comet NEAT, as well as their favorite astronomical objects. The star party lasted until around 11:30 pm.



Items of Interest

WEBSITES: TRIPS ON THE INTERNET SUPER-SKYWAY

By Rik Hill

From Earth to the Moon...web style.

Years ago I was lucky enough, during one of my bookstore crawls, to come across a full copy of the imagery from the 5 Lunar Orbiters that were sent to the moon in the late 1960s and early 1970s. This has been an invaluable reference in sorting out small features at the edge of resolution. But not all that many were printed so few amateurs have one. This is too bad since it is so helpful in lunar observing. But recently, Lunar & Planetary Institute in Houston has put the whole thing on the web at:

http://www.lpi.usra.edu/research/lunar_orbiter/

with the ability to search by feature name, photo number or coordinate position on the moon. What a resource to have at your fingertips! A warning, this website is rather slow so be patient.

If you are interested in getting into lunar observing but the above is a bit daunting, try the freeware Virtual Moon Atlas at:

http://www.astrosurf.com/avl/UK_index.html

This handy piece of software has lots of Earth-based and spacecraft imagery combined with drawings that will get you acquainted with what is visible at any given moment.

Once you have gotten the hang of getting around on our natural satellite, you might want further detail visible. You'll be surprised, if you're not a lunar observer, just how much detail is visible in even a little ETX90! Try your hand at seeing how small a feature you can see, just how close you can get, by going to the Ranger 9 imagery page at:

http://nssdc.gsfc.nasa.gov/imgcat/html/mission_page/

[EM_Ranger_9_page1.html](#)

How close was the spacecraft when it had the same resolution as your telescope? I think you will be surprised at what you find!

Lunar & Planetary also has put the entire Consolidated Lunar Atlas on line. It was done at our own Lunar & Planetary Lab. on the U/Az campus back in the late 1960s and is the highest resolution comprehensive Earth-based atlas ever done.

<http://www.lpi.usra.edu/research/cia/>.

Again, this is a slowish website so be patient.

There is also an excellent atlas, done in many formats, of sections on the moon that is maintained by The Lunascan Project at:

<http://www.astrosurf.com/lunascan/sections.htm>.

Here you click on a portion of the moon that you want to know more about or select a feature from a list, and you will be given a list of relevant images of that region or feature done with different spacecraft or telescopes.

How good a job of lunar imaging can you do from Earth? Among the best of the lunar images taken by amateurs today are those of Antonio Cidadao (Portugal) at:

www.astrosurf.com/cidadao/moon.htm

and Thierry Legault's (France)

<http://perso.club-internet.fr/legault/>.

Their work is breathtaking. Nothing like it had been achieved by amateur astronomers until the advent of the digital camera. Hopefully it will be very inspirational to you.

As always, if you know of a particularly good website you would like mentioned here, drop me a line at

Star Parties & Events

Cub Scouts Old Pueblo District

Friday, 4 June, 2004

Southwest

No. of Scopes: 5

Cub Scouts Old Pueblo District will be "Scout Moonscapes at Double V Scout Ranch. Go south on Interstate 19 to Ajo. At the end of the ramp, turn right (west) and continue approx 5 mi to Kinney Rd. Turn right onto Kinney and proceed about 3/4 mi to the ranch entrance on the right. Follow signs to the viewing area. Contact persons Jim or Lee Ann Herriman can be reached at 661-168-8 or email LeeAnn.Herriman@fourpoints.com. Set-Up Time: 7:30 pm. Observing will be from 8:30 pm to 10:00 pm. Sunset: 7:27pm Dark Sky: 9:07pm Moon Phase: Full Moon.

TAAA Star Party at Mt Lemmon Observatory

Saturday, 12 June, 2004

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

TAAA Star Party at TIMPA

Saturday, 12 June, 2004

Come on out and enjoy the early summer skies! TIMPA star parties are great for both beginners and experienced observers. Our novice members can get help with observing issues or equipment problems, as there are many experienced members there who would be happy to help. If you don't own a telescope, come anyways, because there are lots of telescopes set up and everyone is invited to look through them. This is a great way to

Star Parties & Events (cont.)

check out different telescope designs before you make that all-important decision to buy. There is no scheduled talk for this activity, just come out and enjoy. We'll do our best to get you the answers you need. If you have friends or relatives who are curious about amateur astronomy, feel free to bring them along. The TIMPA site features a large parking area, and full restroom facilities. Be prepared for cool temperatures after sunset. It's also a good idea to bring insect repellent. Directions to the TIMPA site are located on the outside flap of this newsletter.

Public Viewing with LPL & Flandrau

Saturday, 19 June 2004

Here's a chance to show the general public Jupiter, Mars, and the razor thin crescent Moon on the UofA mall with the folks at Flandrau Science Center on Saturday, June 19 from 6:45 p.m. (setup) to 10:00 p.m., weather permitting. This event is the outside portion of the UA's Lunar & Planetary Lab (LPL) sponsored "Saturn: Lord of the Rings" space exploration open house. Those TAAA volunteers wishing to participate who need parking permits (to park on the UA mall) should contact Rich Watson (AZTUC@aol.com, or phone 884-9347). Otherwise parking (on Saturdays & Sundays) will be open and free of charge in any metered space or any "Service Vehicle only" spaces. A sign up sheet will be available at the June meeting. Free

pizza and cake are available for those who help with this event!

TAAA Star Party at Las Cienegas (Empire Ranch) Saturday, 19 June, 2004

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. Las Cienegas is at 4000 feet so be prepared for cool temperatures after sunset. It's also a good idea to bring insect repellent. 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.

Dark Skies for June 2004

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

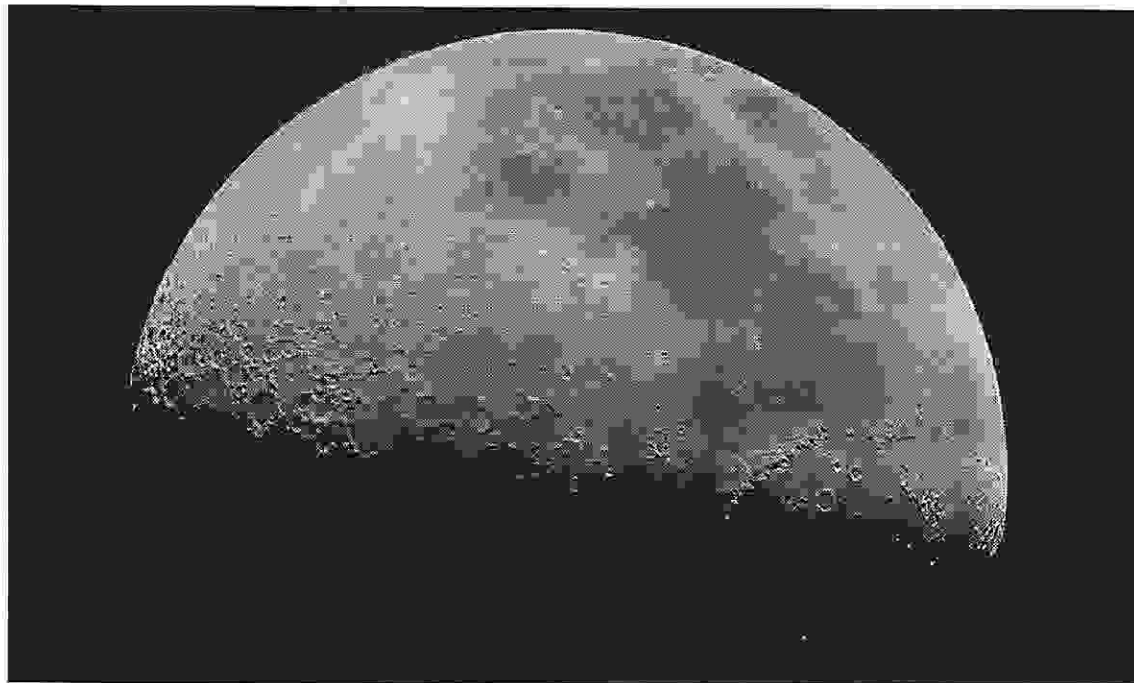
Mo/Tu 31/ 1	- - -	Fr/Sa 11/12	21:11 - 2:05	Mo/Tu 21/22	22:47 - 3:37
Tu/We 1/ 2	- - -	Sa/Su 12/13	21:12 - 2:33	Tu/We 22/23	23:19 - 3:38
We/Th 2/ 3	Full Moon			We/Th 23/24	23:48 - 3:38
Th/Fr 3/ 4	- - -	Su/Mo 13/14	21:12 - 3:02	Th/Fr 24/25	0:16 - 3:38
Fr/Sa 4/ 5	21:07 - 21:46	Mo/Tu 14/15	21:13 - 3:35	Fr/Sa 25/26	0:44 - 3:39
Sa/Su 5/ 6	21:08 - 22:44	Tu/We 15/16	21:13 - 3:36	Sa/Su 26/27	1:14 - 3:39
		We/Th 16/17	21:13 - 3:37	Su/Mo 27/28	1:47 - 3:40
Su/Mo 6/ 7	21:08 - 23:31	Th/Fr 17/18	21:14 - 3:37	Mo/Tu 28/29	2:26 - 3:40
Mo/Tu 7/ 8	21:09 - 0:10	Fr/Sa 18/19	21:14 - 3:37	Tu/We 29/30	3:12 - 3:41
Tu/We 8/ 9	21:10 - 0:43	Sa/Su 19/20	21:31 - 3:37	We/Th 30/ 1	- - -
We/Th 9/10	21:10 - 1:12			Th/Fr 1/ 2	- - -
Th/Fr 10/11	21:11 - 1:39	Su/Mo 20/21	22:11 - 3:37		

Weekend	Sun	Sun	Mercury	Venus	Mars	Jupiter	Saturn	
Sa/Su	Set	Rise	Rise Vi	Rise Vi	Set Vi	Set Vi	Set Vi	Vi=Visibility
5/ 6	19:26	5:15	4:27 7	5:24 -	21:51 3	0:37 -2	21:21 3	-3 brilliant
12/13	19:29	5:15	Set: -	4:48 7	21:40 4	0:11 -2	20:57 4	0 conspicuous
19/20	19:31	5:16	19:40 -	4:13 2	21:29 4	23:45 -2	20:33 6	3 moderate
26/27	19:32	5:18	20:18 7	3:42 -1	21:17 5	23:20 -2	20:09 -	6 naked eye limit
3/ 4	19:32	5:21	20:41 5	3:18 -3	21:04 5	22:55 -1	19:45 -	9 binoculars limit

By Erich Karkoschka

Lunar Photography by Dan MacInnis

Webcams still continue to provide superb images of the planets and our nearest neighbor, the Moon. These images were taken by Dan using a 4" refractor and ToUcam Pro II webcam.



TAAA Board of Directors Meeting - May 12, 2004

The Board present: Terri Lappin, Ken Wheelock, Bill Lofquist, Ed Finney, Ray Toscano

Members present: Michael Turner, Steve Marten, Nora Toscano

Acting President's Call to Order: 6:35PM

1. Agenda changes: None.
2. Announcements: Ed Finney is interested in developing training for new scope owners similar to training he observed at Kitt Peak. Bill suggested renaming TIMPA Star Party to TIMPA Beginner's Star Party.
3. Star Party Schedule: School year winding down. Steve agreed to note Project Astro Star Parties in Newsletter announcements and sign-up sheets for 2004-05.
4. Treasurer's Report: Terri is awaiting proper credit paperwork from Kinko's due to overcharges; Board discussed newsletter printing and vendor; TAAA member info brochure reviewed; 50th Anniversary misc. memorabilia items have been sold, 50th Anniversary event accounting nearly completed; Terri is researching cost of Adobe Acrobat for TAAA use; Board approved purchase of Quick Books program for TAAA.
5. Amado Territory: Discussion on TAAA priorities, our purpose, costs, Amado interests and expectations, possible liabilities; it was suggested that Amado representatives be invited to a Board meeting to discuss further.
6. Member Survey: Board reviewed 1997 survey to suggest updates for 2004 survey expected to be disseminated this fall; Bill noted that survey fits well with Strategic Planning process but additional items need to be known from membership; discussed training/mentoring structure, dedicated advisers/guides, qualifications, etc.; Bill offered to act as coordinator and Board accepted; Terri noted there is an adviser/expert list but it needs to be updated; Bill will write article for an upcoming newsletter.
7. Strategic Planning: Bill is developing tasks arising from recent Strategic Planning sessions.

Adjourned: 9:10 PM

Respectfully Submitted:

Steve Marten (for Ken Wheelock, Secretary)

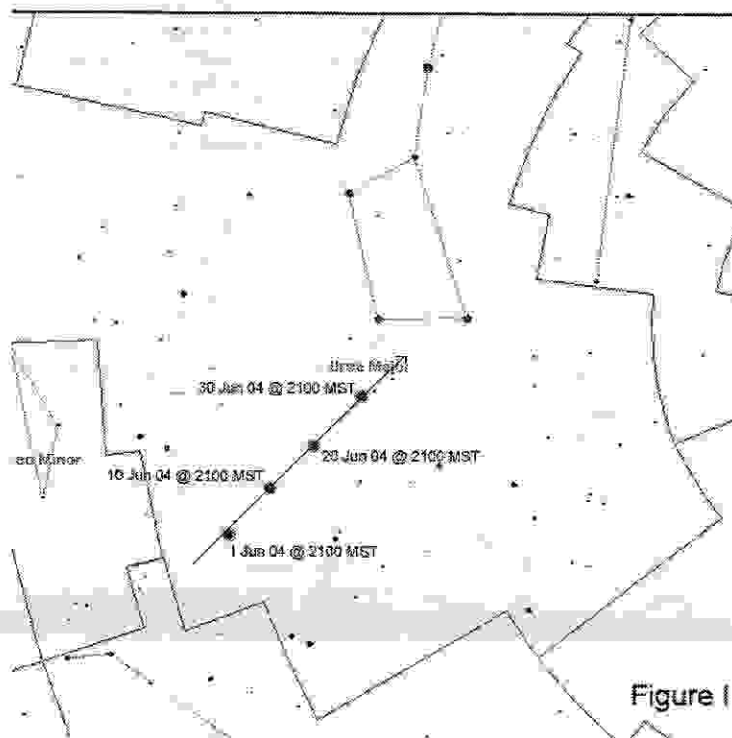
Desert Skies Classified

For Sale	Starry Night Pro, version 3.0, \$70. Soft case for 8" Celestron, \$125. Call Richard at 245-5441. [06/04]
For Sale	Celestron C80 F/5 OTA with rings and case \$100. Meade ETX125 with #884 tripod, #497 hand controller, power supply \$750. Meade ETX60 with tripod plate and power supply \$100. Celestron Orange Tube C8 with many acc. \$500. Orion SteadyPix camera mount \$25. Orion 7-21mm zoom eyepiece \$60. 14mm Ifocus for SBIG 237 \$80. Meade electronic eyepiece \$40. Contact Richard at 721-0694 or email at richard.schulze@cox.net. [06/04]
For Sale	Celestron NexStar 114GT Mount. Mount only - no OTA. Includes GoTo hand controller with 4,000 object database, tripod and manual. Adapters for attaching small refractors are commercially available. One year old, \$75.00. Also, Televue 12mm Nagler (Type 2). Fits 2" or 1.25" focuser, \$150.00. Can deliver to Messier Marathon. Contact Sam at sam&anne@pobox.com or (480) 924-5981. [06/04]
For Sale	Orion 4" APO F/9 refractor Vixen VX102FL on GP mount with dual drive motors/ controller and JMI moto-focus. Four years old in very good condition. 9X50 finder scope. Asking \$2400 John Bianchi, bbianchi6@comcast.net, 520-572-2246 [07/04]
Service	Laser Repair Works d'Arndt 11994 W. Vomic Rd. Dublin, Ca. 94568 USA. Phone 1-510-816-3752 [12/04]

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 822-2392 or e-mail at barbergj@flash.net.

Object of the Month by Alfredo García, Jr.

This month, the OTM is a visitor to our solar system. The ancient Greeks referred to such visitors as "aster kometes" or long-haired stars. These long-haired stars are referring to the class of objects we know as comets. There have been very many fine examples of comets in recent times as well as in the distant past. Who can forget the simply awesome views that Comets Hyakutake and Hale-Bopp offered us in the recent past! Though this month's OTM will not be of that majestic quality, it has none the less turned out to an outstanding view in telescopes as well as binoculars and even to the unaided eye!



Without any further introduction, I present to you the June OTM, Comet C/NEAT (2001 Q4). Comet C/2001 Q4 was first discovered on 24 August 2001 by a team of astronomers from the Near Earth Asteroid Tracking (NEAT) program and later confirmed as a comet on 26 and 27 August by other observatories. It was discovered by the 1.2-m Schmidt telescope at Palomar Observatory used in the NEAT program. At its discovery, the comet was placed at magnitude 20.0.

Comets are composed mostly of dust and gas which is primarily carbon dioxide, ammonia, and methane. Astronomers often refer to them as dirty snowballs. As comets approach and recede from the Sun, gas and dust is burned off of them. Sunlight reflecting from this material makes the comet's head, or coma, grow brighter. In addition, the gas and dust is pushed away by charged particles from our Sun known as the solar wind. This results in the formation of comet tails. The dust particles form a yellowish dust tail and the ionized gases form a bluish ion tail.

Figure I

Predicting how bright these dirty snowballs will get as they approach the inner solar system has proven tricky in the past. Comet C/2001 Q4 slowly brightened during the remainder of 2001 and throughout 2002. In early 2003, the comet was still fainter than magnitude 15. It steadily brightened as 2003 progressed and reached magnitude 14 near the end of May, magnitude 13 in early July, and magnitude 12 in mid-September. September 2003 also marked the time that amateur astronomers in the Southern Hemisphere began supplying regular visual observations of this comet. The comet finally appeared to us Northern Hemisphere amateur astronomers on the night of May 3/4. At this time, estimates placed the comet at magnitude 2.8 to 3.0. According to the NASA ephemeris data, C/2001 Q4 will continue to dim as June 04 progresses. It will dim from magnitude 4.7 to 6.7, but it will still be well within range of small telescopes and binoculars! For more information on C/2001 Q4, you can refer to Seiichi Yoshida's homepage at comet@aerith.net or Gary Kronk's Cometography homepage at <http://cometography.com/icomets/2002t7.html>.

Comet C/2001 Q4 will be well placed for observation during June 2004 and easy to find using star hopping techniques. Look for the comet in the constellation of Ursa Major where it will reside as the month progresses. (See the map at Figure I). It is best to observe the comet away from bright city lights and when there is no moonlight.

For those with setting circles and automated go to scopes, I have provided location data for the comet below. I picked an arbitrary time of 2100 MST local to compute the comet's right ascension and declination coordinates; azimuth and altitude; and estimated magnitude for the time periods shown. The data was computed from the NASA Ephemeris Generator at <http://ssd.jpl.nasa.gov/cgi-bin/eph>.

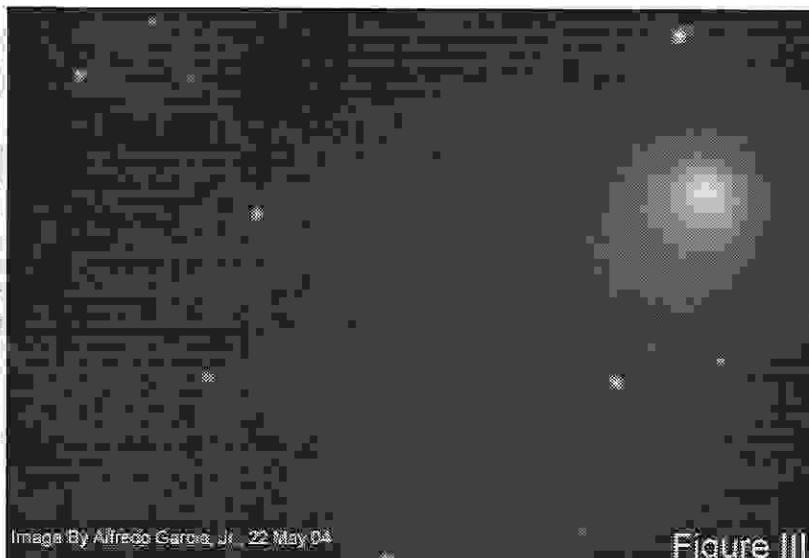
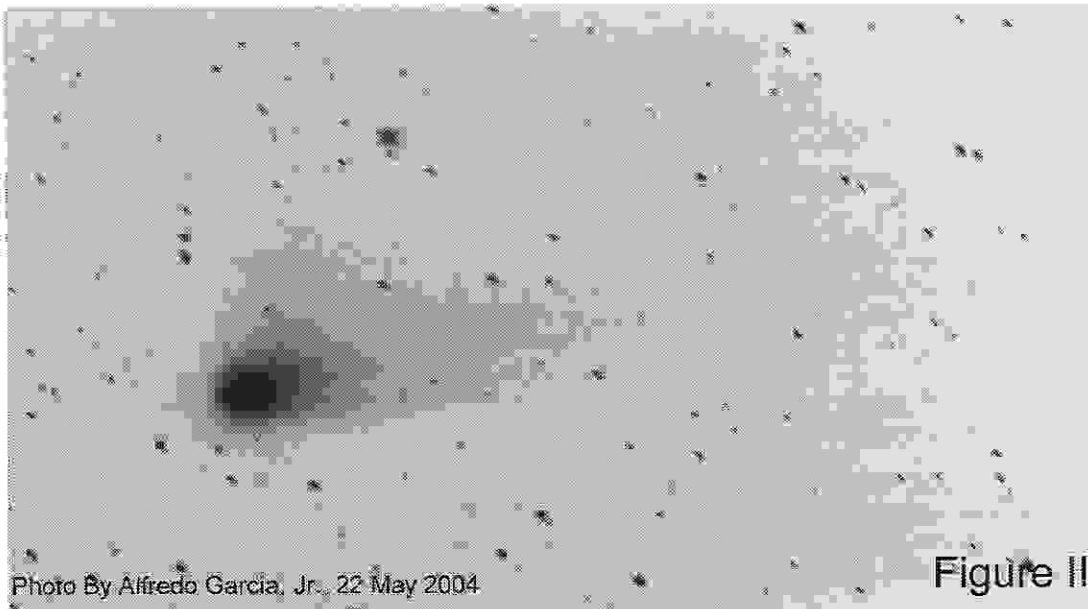


Image By Alfredo García, Jr., 22 May 04

Figure III

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

Date	Time (MST)	RA	Dec	Az	Alt	Mag
2004-Jun-01	21:00	09 40 53.48	+45 23 55.1	303.9	46.2	4.74
2004-Jun-10	21:00	09 59 07.02	+49 54 44.6	310.4	43.5	5.43
2004-Jun-20	21:00	10 15 22.03	+53 01 35.7	314.7	39.9	6.10
2004-Jun-30	21:00	10 30 11.63	+55 09 44.6	317.7	36.5	6.69



Though C/2001 Q4 presents itself as a nice view in a telescope, it is even a greater view in a wide field astrophotograph or CCD image. The Figure I image was taken through a 120mm f/5 Orion Short Tube Refractor piggy-backed on a 10" f/6.3 LX200 using an Olympus OM1n SLR Camera and ASA 400 film exposed for 15 minutes. At this time, the comet was easily visible to the naked eye from a dark sky location. The Figure II image was taken through the same refractor and set-up as above, except a Starlight X-Press MX5C CCD Camera was used and exposed for 5 minutes. C/2001 Q4 continues to be

Photo By Alfredo Garcia, Jr. 22 May 2004

Figure II

and excellent object! So all of you astrophotographers and CCDers get your cameras out and snap away. We all have a great imaging opportunity to enjoy!

Constellation Report by Chris Lancaster

Virgo, the maiden

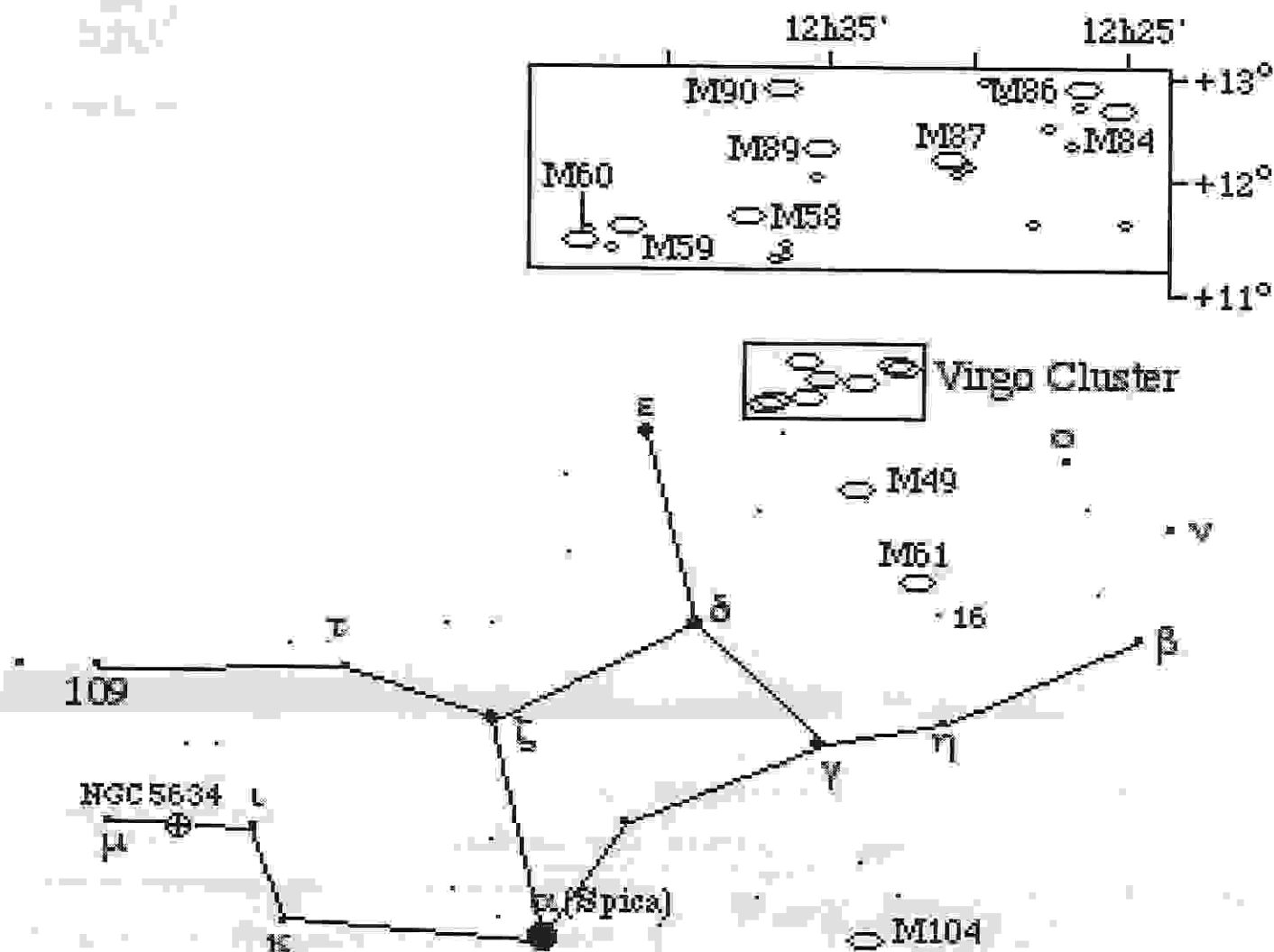
Throughout the millennia, Virgo has been seen as a female representing many different goddesses in various ancient cultures. Among them are Ishtar, the goddess of fertility in ancient Babylonia; Isis, goddess of nature for the Egyptians; Astraea, Roman goddess of justice; the terrible Gorgon Medusa; an Anatolian goddess of the Earth called Cybele; and various Greek goddesses such as Artemis, the Moon goddess; Athena, goddess of wisdom and war; Demeter, Greek goddess of agriculture; and her daughter Persephone. The brightest star of Virgo, the hot blue star Spica of spectral type B1, is traditionally depicted as the stalk (or "spike") of wheat the maiden is holding in her left hand.

Virgo is synonymous with galaxies, but before we delve into these, let's start with NGC5634, a magnitude 9.6 globular cluster sitting midway and slightly below a line connecting Iota and Mu Virginis (RA 14h 29.6m Dec -5d 59'). This is a fairly bright globular visible even through Tucson's light polluted skies, but rather small at 4.9' across. Through most amateur telescopes it appears as a soft glow sitting within a triangle of dim stars.

Now then, beginning our tour of galaxies we can start with M104, a wonderful edge-on spiral popularly called the Sombrero Galaxy. It is in a fairly empty part of the sky on the boundary between Virgo and Corvus. You can sweep 11.1 degrees west of Spica to find it or center your scope on RA 12h 40m Dec -11d 37.3'. A well-defined dark lane around its large central bulge pierces its ghostly 8.3 magnitude glow. Any telescope will provide a breathtaking view of this galaxy.

Moving north we will see M61. It's perhaps not quite as striking as M104, but still spectacular nonetheless. Start at Eta Virginis, move north 4 degrees to the 5th magnitude star 16 Virginis, and then 1.2 degrees NNE to M61 (RA 12h 21.9m Dec +4d 28.3'). What you will find in M61 is a magnitude 10.1 face-on galaxy with a compact, almost stellar nucleus, with spiral arms forming a broad patch of light measuring 6.5'x 5.8'. Those of you with large apertures may see a curious feature about M61's arms. Instead of following graceful curves, they show sharp corners like the bend of an elbow and produce a distorted diamond shape for the galaxy.

Constellation Report by Chris Lancaster (cont.)



As we get closer to the core of the Virgo galaxy cluster we see M49 4 degrees NNE of M61. Here is a bright (mag 9.1) elliptical system. Its center fades to its edges forming an oval measuring 10.3'x 8.4' at RA 12h 29.8' Dec +7d 59.96'.

The best sights in Virgo await us in the galaxy cluster, which spills into the neighboring constellation of Coma Berenices to the north. There are actually some members of the cluster that extend as far north as Canes Venatici and south into Corvus. The most concentrated section of the cluster, which also contains the largest, brightest galaxies, is about 9 degrees west of Vindemiatrix, Epsilon Virginis. For casual observing, it's not even necessary to know which galaxy is which (because that can even be quite a challenge!). Simply sweep your telescope through the cluster and admire galaxy after galaxy that come into view.

We can summarize Virgo's Messier galaxies as follows:

M86: This is a bright elliptical at RA 12h 26.2m Dec +12d 56.8', shining at magnitude 9.8.

M84: 17 arc minutes southwest of M86 at RA 12h 25.1m Dec +12d 53.3'. A similar elliptical of magnitude 10.

NGC4388 is a magnitude 11.9 edge-on spiral to the south forming an equilateral triangle with M86 and M84.

M87: Another elliptical, magnitude 9.6, at RA 12h 30.8m Dec +12d 23.4'. Two very small galaxies to the southwest can be seen in the same field.

M90: RA 12h 36.8m Dec +13d 9.8', magnitude 9.5. An elongated spiral with dusty mottling.

M89: RA 12h 35.7m Dec +12d 33', magnitude 9.8 elliptical.

M58: RA 12h 37.7m Dec +11d 49.2', magnitude 10.6. A spiral not quite turned face-on to us.

M59: RA 12h 42.1m Dec +11d 38.8', magnitude 10.6. An elliptical galaxy elongated north-south.

M60: RA 12h 43.7' Dec +11d 33'. Bright elliptical of magnitude 9.6. A 12th magnitude spiral, NGC4647, borders M60 3' to the northwest.