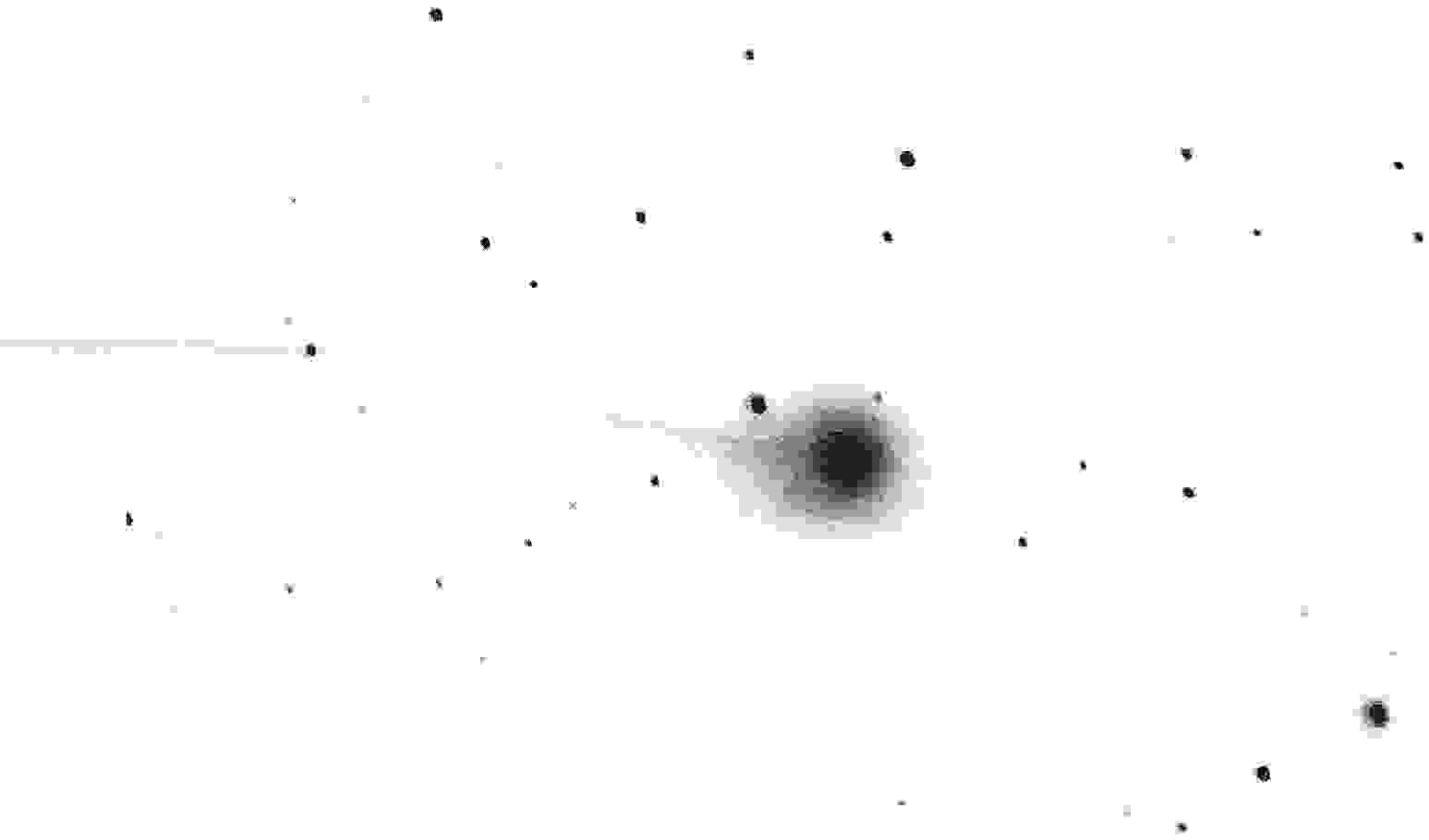
Desert Skies

Tucson Amateur Astronomy Association

Volume XLVIII, Number 3 March, 2002



Comet C/2002 C1 Ikeya/Zhang

Calendar of Events

BEGINNERS LECTURE: Mar 1, 6:30 pm at the Steward Observatory Auditorium - Room N210. Topic is *Auroras* by David Watson.
GENERAL MEETING: Mar 1, 7:30 pm at the Steward Observatory Auditorium - Room N210. Topic is *The Robotic Exploration of Mars; Great Geologic Controversies* by Dr. Alfred McEwen.
BOARD OF DIRECTORS MEETING: Tuesday, Mar 5, 7:00 pm at Steward Observatory Conference room N305.
STAR PARTIES AND EVENTS:

- 28 Feb - Astrophoto SIG
- 02 Mar - TAAA Star Party at TIMPA
- 04 Mar - Desert View High School Star Party
- 07 Mar - Roadrunner Elementary School Star Party
- 09 Mar - Whipple Observatory FLWO Visitors Center
- 09 Mar - TAAA Star Party at Las Cienegas (Empire Ranch)
- 12 Mar - Cross Middle School Star Party
- 16 Mar - Desert Museum Public Star Party
- 18 Mar - Ironwood Elementary School Star Party
- 19 Mar - Saguaro Council Brownie Troop #22 Star Party
- 22 Mar - Our Mother of Sorrows School Star Party

Newsletter Schedule Deadline for articles: Mon, Mar 18. Printing: Mon, Mar 25. Folding Party: Tues, Mar 26. Mailing: Wed, Mar 27. The newsletter is mailed at least one week prior to the following month's General Meeting.
Cover: Comet C/2002 C1 Ikeya Zhang discovered Feb 1st by two Asian amateur comet hunters. Imaged by Andrew Cooper on Feb 8th at TIMPA with a 10" (25cm) SCT operating at f/6.4. Ten 30sec CCD images stacked and processed.

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

When I took the job of president I didn't fully realize what one of my most important roles would be... as club president I serve as a primary contact point for advice. Deborah, my very tolerant wife, can tell you how often I get phone calls from someone who needs help on something. I may not know the answer, but I know someone who does.

One of the other parts of the job is to put people in contact with someone else who is pursing similar goals or has done the same thing. This is what the club exists for... to allow us a place to meet and exchange ideas with others with the same pursuits.

When new members or members who are taking on new challenges are looking for someone with similar interests it is to me they often come. In a club of almost 400 members it can be difficult to find someone with the same area of interest or level of accomplishment. And of course when I do go to a star party everyone comes to me; "You gotta look at this..." or "See what we came up with..." and I learn.

In trying to fulfill this role I try to get a little info as to what everyone is doing. Who are the serious deep sky observers? Telescope making? Who is hunting asteroids or comets? Or who does CCD astrophotography? I make a point to ask people what they are up to, at the risk of seeming nosy. I am a naturally curious person, with wide interests, so this is usually what I would do anyway. But I now use this information to benefit the members of the club.

The downside is that I can seldom spend much time with any one person at club events, too many people requesting my attention. I try to be polite, but I get dragged off to something else just when the conversation gets interesting. So my apologies if I couldn't spend as much time listening as I would like.

What I do see when I look across the crowd at a meeting, or down the line of telescopes at a star party is a rich community of people, enjoying each other's company and learning from each other. And that is why the Tucson Amateur Astronomy Association exists!

Andrew

Meeting Information

Beginner's Lecture

Title: Auroras
Speaker: David Watson

The Science and folklore of these spectacular shows of nature including a brief explanation of how they are generated.

Main Lecture

Title: The Robotic Exploration of Mars; Great Geologic Controversies
Speaker: Dr Alfred McEwen

Both NASA and the European Space Agency (ESA) have ambitious programs for the robotic exploration of Mars. The focus of this exploration is to search for evidence of past or present life on Mars, with a more immediate goal of understanding the history of water. Mars Global Surveyor (MGS) has been in Mars orbit for more than 4 years and has begun to revolutionize our understanding of Mars, but there are many unresolved questions and interesting debates. Were there ever long-lived bodies of water on the Martian surface? Does Mars have a deep groundwater table? Has the climate ever been significantly warmer or wetter? Was early mars shaped by plate tectonics? How recently have floods of lava and/or water erupted on Mars? What are the origins of layered terrains? Are there active springs at the present time?

In an effort to answer these questions several spacecraft and landers are planned for Mars exploration. In 2004, the twin Mars Exploration Rovers and the ESA Mars Express spacecraft and Beagle lander will arrive at Mars. The Mars Reconnaissance Orbiter (MRO) will arrive in 2006. The Mars Scout will launch in 2007. Instruments onboard the Mars Odyssey (already at Mars) and the MRO will be operated from the University of Arizona Lunar and Planetary Lab. The 2009 launch opportunity is planned to include a "smart lander" and a long-lived nuclear-powered mobile science platform. Sample return from Mars, consistently rated the top science priority, will not occur before 2011. Its impossible to predict when the human exploration of Mars might commence, but the robotic exploration program will surely lead to a renaissance of Mars science.

Dr Alfred McEwen will discuss the robotic exploration of Mars at our March meeting. He is a member of science teams for the Galileo, Cassini, MGS, and Mars Odyssey missions, and is the Principle Investigator for HiRISE. High Resolution Imaging Science Experiment (HiRISE) will be one of several remote sensing experiments onboard the Mars Reconnaissance Orbiter. HiRISE will include opportunities for the general public to participate in the exploration and discovery of Mars. Dr McEwen is an Associate Professor in the Department of Planetary Sciences, and director of the Planetary Image Research Lab in LPL.

Club News

Member News

We welcome the most recent members who have joined the TAAA: James Brown, Valerie Dorr, Kurt Fenstermacher, Upendra Gadgil, Charles Grier, Gerald and Constance Gutt, Roy A Johnson, Gary O Meckler, James A Smith, and Kae Spradlin. Glad to have you join! If you haven't already, be sure to pick up a new members pack at a meeting. Hope you'll make it to our star parties or meetings so we can all get to know you. (Updated membership lists are available at the regular meetings, so pick one up if you need it.)

Lost and Found

Observing stool left at TIMPA after the Feb. 9th Star Party. Contact Andrew Cooper.

Astrophoto SIG

28 February, 7pm
China Rose, NE corner Speedway/Rosemont

The astrophoto Special Interest Group is an informal place to exchange information on astronomical photography. China Rose has a special "Sky Room" where you can see sky pictures on the walls as well as on the slide screen. This month, Steve Peterson and/or Roger Tanner will give a presentation on processing CCD images, from the raw images to the finished calibrated product. There are usually other images shown from beginning star trails to long autoguided images, so come join us and catch the astrophoto fever!

Comet Help Needed

March 16th will be a big day for the IAU Central Bureau for Astronomical Telegrams! On that day, Tucson Girl Scouts will "discover" 16 comets (is this a record?). Guess an explanation is needed...the comets will be made by Terri Lappin during the 2002 Girl Scout SMART (Science-Math And Related Technologies) Program. During the day, we will "discover" a new comet every 30 minutes. Terri could use some help with this overwhelming task! The work required will be measuring out the ingredients for the comet recipe and helping with cleanup between each comet making session. If you can help, please contact Terri at 579-0185. The program will take place at the Desert Vista campus, located near Irvington and I-19. There are two sessions, from 9am to noon and from 1pm to 4pm. Any help (full day or couple hours) is welcome. In addition to the comet making, John Kalas will be conducting a solar observing station at the front entrance. The girls should get a good dose of astronomy for the day!

Items of Interest

Steward Observatory Public Evening Lecture

Since 1924 Steward Observatory has hosted public evening lectures in astronomy. The Steward Public Evening Lectures are held twice a month at 7:30pm 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. The entire schedule is available at http://viking.as.arizona.edu/~taf/pubeve/pub_lect.html. The next few lectures are listed below.

Mar.4 Dr. Christopher Impey
Truth and Beauty in Cosmology: Does the Universe Have an Aesthetic?

Mar.18 Dr. Robert Jedicke
Target Earth: The Inevitability of Asteroid Impacts

Apr.1 Dr. Jeffrey Bennett
On the Cosmic Horizon: Ten Great Mysteries for Third Millennium Astronomy

Camera Show

Saturday 30 March

It happened again last weekend at TIMPA, a club member taking astrophotos had his evening stopped when the camera battery died of cold and long exposures. But in this age of automatic, feature loaded cameras, where do you find a good, all mechanical, uses no battery camera? The Arizona Photographic Collectors club holds two sales each year; the next is March 30th at the Holiday Inn on South Palo Verde starting at 10am, admission is $10. Lots of vendors selling used equipment. What modern photographers often overlook is just what we need for astrophotography. Several years ago I bought an old, all mechanical Canon F-body and several lenses for next to nothing. Who cares if the light meter doesn't work, the battery can't die!

Joining the Arizona Photographic Collectors for $20 a year gets you free into both spring and fall
shows, and they also have monthly meetings on the first Thursday at the Jr. Chamber of Commerce on Ft. Lowell near Mountain. Their newsletter is no Desert Skies, but the $20 membership is well worth it if you normally spend the $10 to attend both shows during the year...

Items of Interest (cont.)

Grand Canyon Star Party
8-15 June 2002

With March here, the big item if you are attending is the campsite grab bag on March 1st. The park service provides a few spots (down to 12 this year) for those staying the entire week. To be fair, I always take names on March 1, first come first served. To prevent from waking the wife, or me I prefer e-mail sent to ketelsen@as.arizona.edu to reserve your spot With the limited number of sites, please indicate if you are willing to split the site with another attendee. If you can only join us for a few days, please make your own campsite reservations - the freebies are for those staying the entire week, though if you have to miss the first or last day, I may let you sneak by, depending on demand. You can also call me on the 1st, just not before 9am at 520-293-2855. There is a meeting on March 1, but you should e-mail me anyway, as lately they've been going so fast that I may be out by meeting time. Otherwise, make your plans and you own lodging if you don't camp. Check out the TAAA website page at www.tucsonastronomy.org/gcsp.html. Andrew put in a link to AMFAC so you can make your lodging plans on line this year.

We got a note from last year attendee James Burnham: "I sure don't want to miss this year's event. The Grand Canyon is all I can think about. I've looked at my pictures and books at least every weekend. Words cannot possibly describe the awesome beauty of the state of Arizona and the Grand Canyon. I really miss it." Thanks James - my sentiments too. Take a hint and think about joining us this year. Give a call if you have any questions.

Dean Ketelsen 293-2855

Dark Skies for March 2002

DARK SKIES (no twilight, no moonlight) for Tucson in 24-hour MST:18=6pm, 20=8pm, 22=10pm, 0=12am
RISE, SET, VISIBILITY for sun and bright planets: rise for morningobject, set for evening object

Th/Fr	28/ 1	19:42 - 20:11	Su/Mo	10/11	19:50 - 5:18	Th/Fr	21/22	1:52 - 5:04
Fr/Sa	1/ 2	19:43 - 21:21	Mo/Tu	11/12	19:51 - 5:17	Fr/Sa	22/23	2:50 - 5:02
Sa/Su	2/ 3	19:44 - 22:29	Tu/We	12/13	19:51 - 5:16	Sa/Su	23/24	3:43 - 5:01
			We/Th	13/14	19:52 - 5:14			
Su/Mo	3/ 4	19:45 - 23:36	Th/Fr	14/15	19:53 - 5:13	Su/Mo	24/25	4:31 - 5:00
Mo/Tu	4/ 5	19:45 - 0:41	Fr/Sa	15/16	20:08 - 5:12	Mo/Tu	25/26	- - -
Tu/We	5/ 6	19:46 - 1:43	Sa/Su	16/17	21:02 - 5:10	Tu/We	26/27	- - -
We/Th	6/ 7	19:47 - 2:42				We/Th	27/28	FULL MOON
Th/Fr	7/ 8	19:48 - 3:36	Su/Mo	17/18	21:58 - 5:09	Th/Fr	28/29	- - -
Fr/Sa	8/ 9	19:48 - 4:23	Mo/Tu	18/19	22:55 - 5:08	Fr/Sa	29/30	20:05 - 20:06
Sa/Su	9/10	19:49 - 5:05	Tu/We	19/20	23:53 - 5:06	Sa/Su	30/31	20:05 - 21:16
			We/Th	20/21	0:53 - 5:05			

Weekend	Sun	Sun	Mercury		Venus		Mars		Jupiter		Saturn		
Sa/Su	Set	Rise	Rise	Vi	Set	Vi	Set	Vi	Set	Vi	Set	Vi	Vi=Visibility
2/ 3	18:20	6:47	5:41	5	19:12	3	22:08	2	3:09	-2	1:03	0	-3 brilliant
9/10	18:26	6:39	5:46	6	19:25	2	22:04	2	2:42	-2	0:37	0	0 conspicuous
16/17	18:31	6:30	5:51	8	19:39	1	22:00	2	2:16	-2	0:12	0	3 moderate
23/24	18:36	6:21	5:56	-	19:52	0	21:56	2	1:50	-2	23:47	0	6 naked eye limit
30/31	18:40	6:12	6:01	-	20:05	0	21:52	2	1:25	-2	23:22	0	9 binoculars limit

By Erich Karkoschka

Star Parties & Events

TAAA Star Party at TIMPA
March 2 (Saturday)

Come out and enjoy the winter skies! What makes this event special is that our novice members can get help with observing issues or equipment problems. There will be experienced members present who would be more than happy to help. If you don't own a telescope, don't worry. There will be lots of scopes set up and everyone is invited to look through them. This is a great way to check out the different telescope designs before you make that all-important decision to buy. There is no scheduled talk for this activity. Just come out with lots of questions and we'll do our best to get you the answers you need. If you have friends who might be interest in amateur astronomy, bring them along. Be prepared for cold weather and dress warmly. Directions to the TIMPA site are located on the outside flap of this newsletter.

Desert View High School Star Party South-Central
March 4, Monday No. of Scopes: 3

The school is located at 4101 E. Valencia Road (on the north side of Valencia, east of Alvernon and
West of I-10). Set-up will be at 6:30 pm in the faculty parking lot's southeast corner. Observing will run from 7:00 pm to about 9:00 pm. A star Party leader is needed for this event. A sign up sheet will be available at the March meeting.

Roadrunner Elementary School Star Party [Northwest-Marana Area]
March 7 (Thursday) No. of Scopes: 5-7

This is a make-up event due to inclement weather in January. The school is located at 16651 W. Calle Carmela. Take I-10 west to the Avra Valley Rd exit and proceed west for approximately 11-12 miles until you arrive at Anway Rd (there will be a Valley Mart gas station at this intersection). Turn right and proceed north for approximately 3 miles to Calle Carmela. Turn left here. The school will be on your left just after you turn. The set up area will be in a courtyard area south of the amphitheatre. Set-up will start at 6:30.with observing from 7:00pm to about 8:30pm. A Star Party leader is needed for this event. A sign up sheet will be available at the March meeting. Hot chocolate and cookies will be provided.

Whipple Observatory FLWO Visitors Center
Saturday, March 9

Observing will begin after 7 p.m. courtesy of telescopes provided by the Tucson Amateur Astronomy Association and Sonora Astronomical Society.

3:30 p.m. Visitors Center opens
6 p.m. Informal lecture by Observatory staff
7 p.m. Observing begins (in parking area next to Visitors Center).

On view: Mars, Jupiter, Saturn, star clusters, double stars, and galaxies.
Dress for cool evening temperatures. Small flashlights and binoculars are useful to bring. Please cooperate with staff directing parking when you arrive. The parking spaces nearest the building are reserved for TAAA and SAS members and their telescopes. Visitors should park along the driveway or in the parking area outside the gate or along the road as directed. (Please note: Visitors will be allowed to park cars next to the building in the space usually reserved for telescopes until 5 p.m. At that time, visitors will have to move their cars to other parking spaces so that telescopes may be set up.)

For more information call 670-5707. In case of threatening weather, call 670-5707 after 4 p.m. on the 9th for information about star party cancellation.

The Fred Lawrence Whipple Observatory, Tucson Amateur Astronomy Association, and Sonora Astronomical Society present this opportunity to see the stars under dark Southern Arizona skies. (See website http://linmax.sao.arizona.edu/help/FLWO/whipple.html for location and background information.)

How to reach the Whipple Observatory Offices and Visitors Center:
From Tucson: Take Interstate 19 south, past Green Valley to exit 56 (Canoa). At the bottom of the exit ramp, turn left and drive east to the eastside frontage road. Turn right on the frontage road and drive 3 miles to Elephant Head Road. Turn left and drive east, crossing the bridge. One mile past the railroad tracks, turn right on Mount Hopkins Road. Drive southeast about 7 miles to the Administrative offices and Visitors Center.
From Nogales: Taken Interstate 19 north to exit 48, (Arivaca Road/Amado.) Drive north on the eastside frontage road to Elephant Head Road. Turn right and drive east, crossing the bridge. One mile past the railroad tracks, turn right on Mount Hopkins Road. Drive southeast about 7 miles to the Administrative offices and Visitors Center.

TAAA Star Party at Las Cienegas (Empire Ranch)
March 9 (Saturday)

Las Cienegas (formerly Empire Ranch) has been our normal dark-sky observing site for quite a number of years. Las Cienegas is about 4000 feet in elevation, so be prepared for cold temperatures, and 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. Attendees should park their vehicles either perpendicular to the airstrip facing toward the center of the strip or parallel to

Star Parties & Events (cont.)

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. One nice advantage to belonging to the TAAA is the opportunity to observe among friends. Help in finding an object or the sharing of equipment always goes on at our star parties. If you haven't attended a star party yet, you're missing the best part of belonging to the TAAA. See the directions to Las Clenegas on the outside flap of this newsletter

Cross Middle School Star Party Northwest

March 12, Tuesday No. of Scopes: 3

The 6th grade class will be observing with our support. Set up will be approximately at 6:45 pm
with observing starting at 7:15 pm and ending at 8:30 pm. The school is located at 1000 W. Chapala Drive. Take Ina west from Oracle Road and proceed approximately 1/3 mile to Paseo Del Norte and turn right (north). There is a stoplight here. Chapala Drive is approximately ½ mile north. Turn left (west) on Chapala Dr. NOTE: As you turn onto Chapala, there is a school on your right. This is Harelson Elementary School. Pass this school up. The next school on your right is Cross Middle School. The set up area is in front of the school in the parking lot between some orange cones. There will be a potluck dinner provided to TAAA volunteers! A star party leader is needed for this event and a sign up sheet will be available at the March meeting.

Arizona-Sonora Desert Museum Public Star Party

March 16, Saturday

We again invite the public to the desert museum for a evening under the stars. As usual we set up around 6:00 in the lowest rows of the parking lot near the museum entrance, security should have them coned off for us when you arrive. Before full dark Jupiter and Saturn will be available and early in the evening a slim crescent Moon will grace the sunset and provide a beautiful sight in the telescopes while we wait for the real show. Bring a jacket a this early spring evening is likely to be cool. The museum will be closed but the bathrooms will be open. Events will wrap-up around 11:00pm.

This is the first of three big public events this year, we will have T4T in April, then another desert museum event in the fall. For March, all of the media outlets, newspaper, TV and radio, have been contacted to invite the public, so we need every telescope and operator we can come up with. You don't have to be an expert to come out and enjoy the evening

Ironwood Elementary School Star Party Northwest

March 18, Monday No. of Scopes: 7-8

The 3rd grade classes (120 maximum plus families) will be partaking of the evening of observing after their music program. Set up will be approximately at 6:30 pm with observing starting at 7:00 pm and ending at 8:30 pm. The school is located at 3300 W. Freer Drive. To get to the school from Ina and Thornydale Road, head north on Thornydale for 2.5 miles. Take a right onto Overton Heights Drive (across from Arthur Pack Park). Proceed east for just under 0.5 mile. Turn north (left) on Camino De La Tierra to the end (about 0.25 mile). The school is located on the north side of Freer Drive. On the west side of the school there is a gate. Enter and head north along the driveway. The playground will be on the left. A star party leader is needed for this event and a sign up sheet will be available at the March meeting.

Saguaro Council Brownie Troop #22 North

March 19, (Tuesday) No. of Scopes: 3

This star party will be help in the northeast parking lot of Manzanita Elementary School and is located at 3000 E. Manzanita Avenue. Take Campbell Ave north past Skyline Drive. Continue north approximately 1/3 mile. You will pass some apartments on the left and then you will see the school, also on the left. Manzanita Ave will be north of the school. Turn left and proceed into the staff parking lot located on the south side of the road. Set up is at 6:30 with observing from 7:00 to 8:00 or so. A star party leader is needed for this event and a sign up sheet will be available at the March meeting.

Our Mother of Sorrows School Southeast

March 22, (Friday) No. of Scopes: 4-5

The school is located at 1800 S. Kolb Road. Take Kolb Road south past22nd Street. The school is located on the west side of Kolb at the first street light south of 22nd Street. The set up area is to be on the basket ball courts located on the school grounds. Set up is at 6:30pm with observing from 7:00pm to approximately 8:30pm. A star party leader is needed for this event and a sign up sheet will be available at the March meeting.

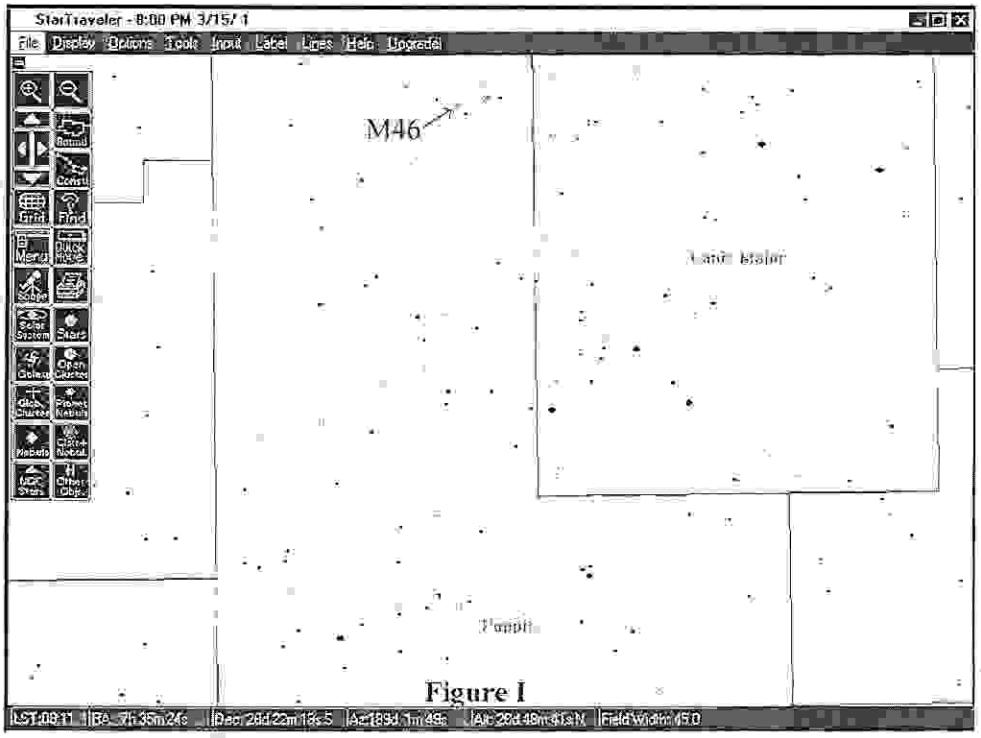
Object of the Month by Alfredo Garcia, Jr.

Well, I hope you enjoyed some of the clear skies we had last month and were able to get out and do some observing. There were some cold, but clear nights for sure! The warmer nights are coming soon, so hang in there.

This month, the OTM is a wondrous member of our Milky Way Galaxy. It was discovered in 1771. This OTM belongs to the class of objects known as open star clusters. There are many fine examples of open star clusters in our galaxy, but March's OTM is certainly one of the best of its class to observe with telescopes and/or binoculars.

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

Without any further introduction, I present to you the March 2002 OTM: Messier 46. For those of you who have seen M46 before, you will most certainly agree with me that it is one of the best stellar jewels in the sky. If you have never observed it, then you are in for a nice treat!



M46 has no proper name, but you may come up with your name for what it looks like to you. It's fun to do that sometimes while observing objects. Charles Messier discovered M46 on 19 February 1771 and described it as follows: "A cluster of very small stars, between the head of the Great Dog and the two hind feet of the Unicorn, [its position] determined by comparing this cluster with the star 2 Navis, of 6th-magnitude, according to Flamsteed; one cannot see these stars but with a good refractor; the cluster contains a bit of nebulosity." In addition, M46 was the first object Messier discovered after he had published the first edition (M1-M45) of his list of celestial objects.

Modern observing methods show M46 to be a cluster composed of probably 500 stars with about 150 of them in the magnitude 10 to 13 range. The cluster's stars spread under just under a 1/2 degree field (or about the size of the Full Moon). The brightest of these stars are of spectral type A0 and each is about 100 times more luminous than the Sun. The age of M46 is approximately 300 million years. It measures about 30 light-years across and is 5,400 light-years from Earth. The cluster's members are receding from us at about 41 4 km/sec according to astronomers.

M46 is well placed for observation in mid-March. Look for the cluster in the constellations of Puppis, the Stern. As a side note, Puppis is the Stern of the Ship Argo, which was once represented in the sky by the very large constellation Argo Navis. On his sky chart published in 1763, Abbey Nicholas Louis de Lacaille divided Argo Navis into the three separate constellations of Carina, Puppis, and Vela representing the Keel, Stern, and Sail of the Argo.

For those with setting circles and automated go to scopes, you can find M46 at RA: 07h 41m 48s and DEC: -14° 49' 00". If you don't have either, you can find M46 by using the map at Figure I. It shows the cluster's location in the sky on 15 Mar 2002 at 2000 MST. It is easy to find and a finderscope will aid in your search if you have a telescope.

Though M46 presents itself as a great view in a telescopic field, it is an even greater view in a wide field astrophotograph

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

or CCD image. This author took the astrophotograph (Figure II) through a 127mm f/6 refractor piggybacked on a 10" f/6.3 Meade LX 200 on ASA 200 speed film exposed for 35 minutes. Due to its brightness and ease to locate, this is an excellent target for beginning and advanced astrophotographers and CCDers alike. You can achieve amazing results with this cluster.

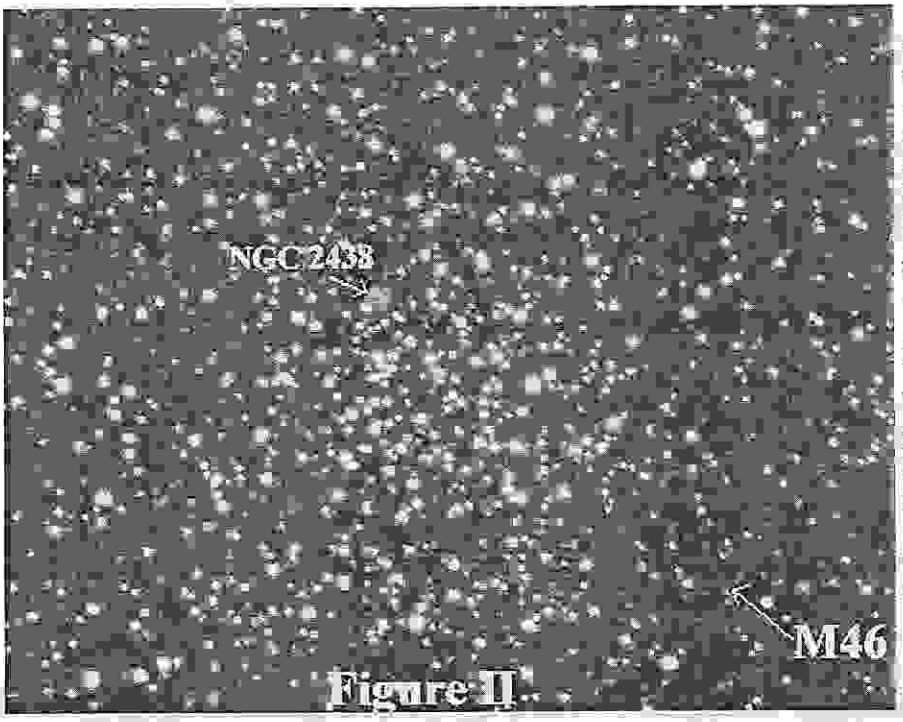


Figure II.

And now, one final note on this cluster that makes it unique and an added pleasure to observe! It has in the same field of view with it, a planetary nebula by the name of NGC 2438. It is the "gray ring-shaped object" just up and to the left of the center of the image in Figure II. NGC 2438 is about one arc minute in diameter and contains a central star with a magnitude of 17.7, so the star visible inside of the ring is most likely a member of M46. The nebula is not part of the cluster and lies in front of M46. It is closer to our solar system at a distance of about 2,900 light-years. This makes for a very nice "line of sight coincidence" for us to enjoy!

Clear Skies,
Alfredo

TAAA Board of Directors Meeting - 12 February 2002

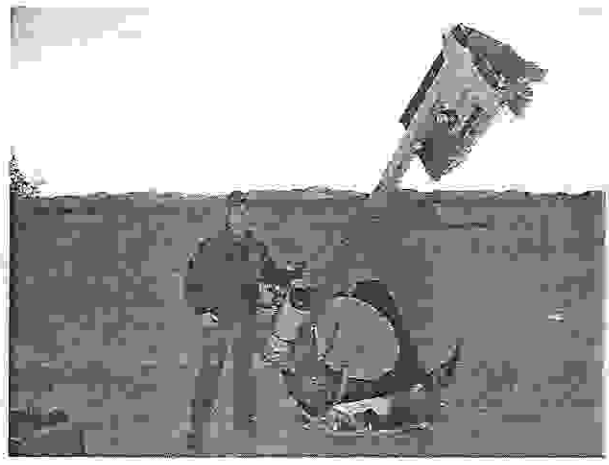
Present: Andrew Cooper, Thom Peck, Terri Lappin, Steve Petersen, John Kalas

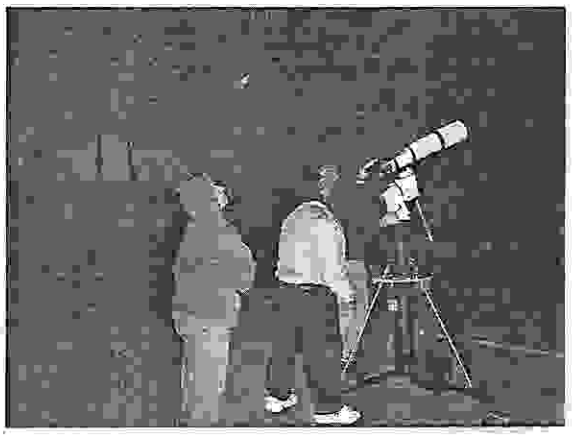
Call to order 7:15pm

1. Changes to agenda: added Holiday Party (7) and TIMPA (8).
2. Events: The schedule for February and March were discussed, the schedule is very full, particularly school star parties. Immaculate Heart is short a couple scopes on the sign-up. Arrangements all in place for supporting Flandrau on the UofA mall on the 22nd.
3. Treasurer's Report: Presented and accepted. No major issues.
4. Investment Representative: Bob Schwartz has served in this capacity but is not longer wishing to continue. Andrew Cooper will perform in this capacity as a temporary solution. Robert Callanan has volunteered for this duty but was not present at the meeting to confirm.
5. Elections: All primary board members indicated their willingness to continue in their current capacities so we have no major positions without a candidate. The desire to see more qualified candidates was expressed. Dedicated volunteers are hard to come by.
6. ASDM Event: Publicity is well in hand, all radio/TV stations that have community calendars have been contacted, conformation from the editor of the Outdoors section of the Citizen has confirmed publicity for the event. Terri has submitted the event to the online community calendars.
7. Holiday Party: The question was asked about the club putting up a few door prizes, e.g.: a membership or a year subscription to a magazine (S&T or Astronomy). The concern was that not all members attend the holiday party. No approval was given, but the question left open.
8. TIMPA: Some members (specifically female members) requested that hooks be installed in the bathrooms for jackets and for use while changing into warmer clothing. The board approved a small expenditure as long as the TIMPA folks do not disagree. The design and installation of a red filter assembly for the light were also discussed, something that would swing into position easily is preferred.

Adjourned 8:32pm

TIMPA Star Party, February 9. Photos by Phil Hollis





Desert Skies Classified

FOR SALE: Meade 10" SCT LX5 with Lumicon Sky Vector II (3500 objects), 3 eyepieces, many accessories, e-mail or call for more details, Pete in Wickenburg, 928-684-3635, peteb@w3az.net (04/02)

FOR SALE: Mead 4" Schmidt-Cassegrain Model 2045. Clock drive with tripod table-top legs. Asking $375. Please contact Mike Saganich at 881-3919. (05/02)

FOR SALE: Celestron 80mm f/5 "Short Tube" wide view spotting scope (no mount). With mounting rings, tripod plate, and 6x30 wide field finder; no eyepieces or diagonal. Telescope can be easily mounted on a lightweight tripod for nice wide field views. $100.00. Howard Lester 621-3451(work) or 885-5479(home). (06/02)

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

Lynx

The Lynx

The American Heritage Dictionary defines a lynx as "a wildcat with thick, soft fur, a short tail, and tufted ears," and this is the animal Johannes Hevelius chose in 1687 for a constellation to fill in an area between the front of Ursa Major and the adjacent constellations of Gemini and Auriga farther west. It's not so much the pattern of stars that brought a lynx to his thoughts, but their dimness. The brightest star of Lynx is magnitude 3.1, and most others are dimmer than 4. Mr. Hevelius remarked that to observe this constellation, one would need the visual sensitivity of this nocturnal cat.

To find Lynx, you can start at the Big Dipper. Follow the body of Ursa Major to its snout, then look within the triangle formed by the bear's nose and the bright stars of Capella in Auriga and the twin stars of Castor and Pollux in Gemini. The stars of Lynx are sprinkled here in a line going toward the southeast to just above the head of Leo the Lion.

There are few deep sky objects in Lynx which could be called comparatively bright, and without any conspicuous guideposts to point the way, some can be difficult to hunt down. However, the best ones are well worth the effort.

All by itself (both in terms of its place in our celestial sky and also its actual location in space) is NGC2419. This globular cluster has been nicknamed the "Intergalactic Wanderer" since it is far removed from the group of other globulars which huddle in the Milky Way's halo. While a typical globular might be between 20,000 and 50,000 light-years away, this recluse keeps its distance at approximately 290,000 light-years. Despite its remoteness, it can be viewed fairly easily in amateur telescopes. It glows at magnitude 10.4 and measures 4.1' in diameter. A 5 inch scope will just bring out the round smudge, and while 8 to 10 inch instruments will make it more obvious, don't expect to see any individual stars. The brightest ones can't manage more than a 17th magnitude glow. But, to be seen this well overall must mean that it is quite a large and bright cluster, and would be quite an impressive sight if it were at a closer distance. NGC2419 is at RA 7h 38m 6s Dec +38d 53' 00".

Lynx's brightest galaxy, NGC2683, is an edge-on spiral of magnitude 10.4 and a size of 9.3'x 2.2'. It has a bright core and very dim, hazy outskirts. You'll see a sharp, thin oval contrasting very well with the background space. Point to RA 8h 52m 41s Dec +33d 25' 03", or start at Alpha (α) Lyncis, move 1.2 degrees southwest to a 7th magnitude star, then just over 5 degrees due west of here to this fine galaxy.

NGC2537 is a different kind of galaxy. At first glance it may look like a globular cluster. It's round shape of magnitude 12.1 is 1.7'x 1.5' across, and various toe-like extensions on one side has led to the nickname of the "bear claw galaxy." Look to RA 8h 13m 15.1s Dec +45d 59' 29", or 3.3 degrees NNW of 31 Lyncis.

A great double star is found in 19 Lyncis. It's in the northern half of the constellation at RA 7h 22m 52s Dec +55º 16' 53". Here is a primary star of magnitude 5.6 with a secondary of magnitude 6.5. They have a separation of 14.8" and a p.a. of 315º. Any telescope can find and separate this double, but if you have the aperture and dark skies, you can see two other stars which are a part of the same system. Turning to a p.a. of 3º and 4' away is a magnitude 8.9 star, and 72" from the primary at a pa of 287º is a faint 11th magnitude star completing this quadruple system.