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Please note: TAAS offers a Safety Escort Service to those attending monthly meetings on the UNM campus. Please contact the President or any board member during social hour after the meeting if you wish assistance, and a club member will happily accompany you to your car.

Events

April 1998 calendar of events (14K bytes)

May 1998 calendar of events (13K bytes)

May 1998 Solar Almanac (69K bytes)

May 1998 Lunar Almanac (59K bytes)

April 1998

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tr>
<td>1</td>
<td>Wed</td>
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<td>2</td>
<td>Thu * SFCC</td>
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<td></td>
<td>* GNTO meeting</td>
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<tr>
<td></td>
<td>First photo of the Sun - 1845</td>
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<tr>
<td>3</td>
<td>Fri * UNM</td>
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<td>First quarter moon (12:18 am)</td>
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<td>4</td>
<td>Sat * Astronomy 101</td>
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<td>Be sure to spring your clocks ahead when</td>
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<td>you go to bed</td>
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<tr>
<td>5</td>
<td>Sun Daylight Savings begins at 2:00 am</td>
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<td>6</td>
<td>Mon Mercury in inferior conjunction</td>
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<td>7</td>
<td>Tue</td>
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<td>8</td>
<td>Wed Asteroid Ceres in conjunction with Sun</td>
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<td>9</td>
<td>Thu * Board Meeting</td>
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<tr>
<td>10</td>
<td>Fri * UNM</td>
</tr>
<tr>
<td></td>
<td>Moon at apogee 8 pm</td>
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<tr>
<td>11</td>
<td>Sat Full Moon 4:23 pm</td>
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<td></td>
<td>* TAAS General meeting (Regener Hall, 7 pm)</td>
</tr>
<tr>
<td>12</td>
<td>Sun Easter</td>
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<tr>
<td></td>
<td>Yuri Gagarin first human in space</td>
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</tbody>
</table>
13  Mon    Saturn in conjunction with Sun
14  Tue    1629: Christiaan Huygens born
* Acoma SCCS (school)
15  Wed
16  Thu    1946: First captured V2 rocket launched from White Sands, NM
17  Fri    * UNM
18  Sat    * Carlsbad
Mercury stationary
Space Day @ National Atomic Museum
19  Sun    Last quarter Moon 1:53 pm
Neptune 3 deg S of Moon
20  Mon    Uranus 3 deg S of Moon
21  Tue    Lyrid meteor shower
* Los Padillas Elem School
22  Wed    Lyrid meteor shower
23  Thu    Jupiter 0.2 deg S of Moon
Venus 0.08 deg N of Moon
24  Fri    * UNM
Mercury 0.9 deg N of moon
25  Sat    * Placitas Star Party (See April Sidereal Times)
* GNTO
26  Sun    New Moon (5:41 am)
27  Mon
28  Tue    * Matheson Park Elem School
Aldebaran 0.4 deg. S of Moon
29  Wed
30  Thu    * GNTO Meeting

Sunrise / Sunset
For Latitude 35.08, Longitude 106.65 (Albuquerque, NM)
Sunrise = upper limb on horizon
Sunset = upper limb on horizon

4/01/98   5:53 / 18:28 (MST)
4/15/98   6:35 / 19:39 (MDT)
4/30/98   6:17 / 19:51 (MDT)

May 1998

1  Fri    * UNM
2  Sat    * Astronomy Day
3  Sun    First quarter Moon (4:03 am)
4  Mon    Mercury at west elongation
Neptune Stationary
5  Tue    * Hubert Humphry Elementary
Eta Aquarid meteor shower
6  Wed
7  Thu    * Board Meeting
* SFCC
8  Fri    * UNM
Juno stationary
Moon at apogee 3 am
9  Sat    * TAAS General meeting (Regener Hall, 7 pm)
10  Sun
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<tr>
<th>Date</th>
<th>Day</th>
<th>Event</th>
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<tbody>
<tr>
<td>11</td>
<td>Mon</td>
<td>Full Moon (8:30 am)</td>
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</table>
| 12   | Tue  | * Mitchell Elementary  
Mercury 0.8 deg from Saturn |
| 13   | Wed  |       |
| 14   | Thu  |       |
| 15   | Fri  | * UNM |
| 16   | Sat  | * GNTO |
| 17   | Sun  | Uranus & Neptune 3 deg. from moon |
| 18   | Mon  | Last quarter Moon (10:35 pm) |
| 19   | Tue  |       |
| 20   | Wed  | Moon 0.34 deg SSE of Jupiter |
| 21   | Thu  |       |
| 22   | Fri  | * UNM  
Venus 1.7 deg from Moon |
| 23   | Sat  | * Oak Flat  
Saturn 1.7 deg from Moon |
| 24   | Sun  | * GNTO  
Mercury 3 deg. from Moon  
Moon at perigee (6 pm) |
| 25   | Mon  | New Moon (1:33 pm)  
Memorial Day |
| 26   | Tue  |       |
| 27   | Wed  |       |
| 28   | Thu  | * GNTO Meeting  
Pluto at opposition |
| 29   | Fri  | * UNM |
| 30   | Sat  | * Chaco |
| 31   | Sun  |       |

Sunrise / Sunset  
For Latitude 35.08, Longitude 106.65 (Albuquerque, NM)  
Sunrise = upper limb on horizon  
Sunset = upper limb on horizon

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<td>5/31/98</td>
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NOTES:
* = official TAAS Event  
GNTO=General Nathan Twining Observatory. Call Robert Ortega @891-7847 to confirm.  
SFCC=Santa Fe Community College. Call Brock Parker @ 298-2792 to confirm.  
UNM=UNM Observatory observing nights. Call the TAAS Hot Line to confirm @ 296-0549  
ATM=Amateur Telescope Making. Call Michael Pendley for information @ 296-0549.

All times MST before 4/5/98, MDT after 4/5/98
Astronomy Day  
*by Brock Parker*  
*Astronomy Day Committee Chair*

As you may know, TAAS will celebrate Astronomy Day on Saturday, May 2nd at Coronado Shopping Mall, here in Albuquerque. The event last year was a huge success, and this year's version will be even better. We mailed out 26 invitations this year. Organizations we expect to attend include Phillips Laboratories; The UNM Meteoritics Museum; The Museum of Natural History; The National Radio astronomy Observatory (VLA); The National Atomic Museum; ¡Explora!; the Planetarium at SFCC; NMSU; New Mexico Tech. Astronomy Club; Sunspot Solar Observatory; Apache Peak Observatory; and the Lodestar project from the Institute of Astrophysics at UNM. There will also be a group from Rio Rancho High School who will be involved with interactive displays, telescope making and will assist the folks from ¡Explora!. Thomasita Elementary School will also display their Space Shuttle experiment—scheduled to go into orbit near the end of May, 1998.

In addition to the exhibits and telescopes displayed in the Mall, there will be solar observing on the south patio mall entrance with Bruce Levin; an expanded hands on mirror grinding exhibit; the Mercury capsule and Starlab from The Space Center in Alamogordo; and a major star party at the UNM Campus Observatory in the evening, run by TAAS (David Sukow, Observatory Coordinator) and the UNM Physics and Astronomy department. The hands on physics display provided by ¡Explora! promises to be one of the highlights of the event.

There is a no "Midnight Madness" sale at the mall this year, which means that we can start our set up as soon as the mall closes (9:00pm). The display panels can, however, be placed in the service halls earlier in the evening along with the rental tables and chairs. This "late" crew will be responsible for "roughing in" display panels, and to insure that all the tables and chairs either rented or supplied by the mall are placed at least close to the areas where they will be used.

The proposed schedule for Astronomy Day is as follows:

**Friday, May 1, 1998**

*9:00pm - 10:30pm:* Move panels and furniture into the mall.

**Saturday, May 2, 1998**

*8:00am - 9:30am:* Continue the setup process, and direct/assist those people from the museums, labs, etc. who will be setting up displays. Set up the mirror grinding area with its pavilion as well as the solar viewing area. Deal with any last minute "adjustments" that may have to be made.

*8:30am - 9:00am:* Set up the solar viewing area

*9:30am:* Those people who have volunteered for the first shift should be in place

*10:00am:* Mall opens.
6:30pm - 10:00pm: Set up and conduct the Star party at UNM Observatory

9:00pm - DONE: Break down mall exhibits

TAAS has already invested a lot of effort into Astronomy Day '98 through the efforts of the Astronomy Day Committee, the Board of Directors, and especially Lisa Wood. Lisa has undertaken the complete renovation of our display panels, both for Astronomy Day and our presence at the Hyatt hotel in June for the ASP meeting. Mike Pendley has obtained several donated mirror blanks and will set up a mirror grinding demonstration and hands on area on the patio of the south Mall entrance. Robert Williams will put together our volunteer schedule, and insure crews are in place for setup, tear down and exhibit staffing through the day.

HELP !!

Volunteers are needed! An event of this size and complexity has to have the complete support of the membership in order to be successful. The problem of set up and transport of the display panels is of particular concern, involving two coordinated crews to complete. The biggest headache we have is getting the rather delicate completed panels from Lisa's house to and from the mall. If anyone has a cargo van or a covered, full-size pickup that will carry a 4'x8' panel a call would be much appreciated. We also need people to help with the telescopes and displays inside the mall. If you can help, even for a couple of hours during the day or evening, please contact one of the Astronomy Day committee members: Brock Parker at 298-2792, Robert Williams at 323-0172, or Mike Pendley on the TAAS hot line.

Also, as a final note, Mike will be "shooting" the Event for possible publication in one of the national Astronomy magazines. Our event is large and unique enough to qualify for national coverage. We have also contacted the local media and expect that they will have coverage of Astronomy Day as well.

All in all, this promises to be our largest Astronomy Day ever, and well worth the effort of everyone who has (and will !) give up both time and considerable energy to the project. For all the work so far, thanks!

Presidents Update
by Mike Pendley

April Meeting:

Our April meeting will feature TAAS' own. Barry Gordon et. al. will discuss the trip they took on the Dawn Princess to the Caribbean last February to view the total solar eclipse (see page 1). This should be a really fun meeting. Things get underway on April 11 at 7 pm at Regener Hall (see map on last page). We will have the usual social hour after the formal presentation so be sure to bring the goodies.
Changes in Leadership:

After four + years as GNTO Director, Gordon Pegue is retiring and looking forward to a well deserved rest. Those of you that have been involved with TAAS for those years know what a great job Gordon has done. He has had to deal with the depression of break-ins and the joy of completing major site upgrades. Everyone that uses GNTO owes a thanks to Gordon.

Fortunately, this very important position will not go vacant. Effective the February Board of Directors meeting, Robert Ortega has agreed to resign as Membership Committee Chair and take over as GNTO Director and carry on with the work to make our observatory and even more user friendly facility.

Still More Changes:

As reported last month, Ellie Gates, our Treasurer, Database Manager, and Web Master will be taking a job in California and leaving us. In addition to her formal TAAS duties, Ellie also helped TAAS interface with UNM and Lodestar, provided several presentations at TAAS general meetings, and generally did anything else she could to help make TAAS a great organization. She truly leaves a big hole to fill.

Robert Williams has agreed to resign as Secretary and take over responsibilities as Treasurer and Database Manager. I have agreed to take on the responsibility as Web Master—not because I have lots of free time but because this is one of the ways I would like to continue being of service to TAAS when I retire as President at the end of the year.

Once the dust settles, The Board of Directors will need to fill the positions of Secretary and Membership Committee Chair. Let us know if you have any ideas.

Telescope Curator:

Last month I asked TAAS members to consider volunteering for the position of Telescope Curator. You don't know how good I felt getting calls from four members willing to serve. Thanks Anna, Roger, Dee and Jason. It was hard to tell some of you that the job was filled. Dee Friesen and Jason Vargas will co-chair this position. They are working out details now and we will run an article next month on the improved telescope loaner program.

Astronomy Day Help:

We only have two events this year that really-really-really need help from the general membership—Astronomy Day (see page 1) and Astroblast (June). Brock Parker, Robert Williams and I are on the committee responsible for Astronomy day this year. Given the changes announced above and Robert's decision to also serve as the planetarium committee chair and manage the new Astronomy 101 classes, I am afraid that we are all "running on fumes" and will not do as good a job as Astronomy Day deserves.
Things are not too bad though. If we can get a few people to volunteer a few hours we can put on another stellar Astronomy Day.

I need someone to help organize the mirror grinding demonstration. Kevin Ferguson has done this for me two years in a row and I hate to ask again—but Kevin . . . if you wanted to volunteer ;). I can provide materials and a long list of individuals that would probably be willing to put in an hour or two shift at the display. You would only need to coordinate who does what when and manage the display. I am thinking a half day display this year would be appropriate.

Robert needs at least 4 people to help inside during the day (two shifts of two people). These individuals would be responsible for making sure our visitors are greeted in the morning, provide coverage at visitor displays when they need to take a break, and help solve the little fires that always pop up.

Give me or Robert a call if you can help.

Science Fair:

Projects at this year’s regional science fair were excellent. George Pellegrino, Dave Blair, and I had the pleasant but difficult job of considering all the great astronomy related projects and deciding which would be the recipients of this year's Broline award. I have not yet received official winner information from the fair so I will announce the winners in the next newsletter.

TAAS BBS:

Steve Snider has provided TAAS with a free Bulletin Board System (BBS) for 5 years now. This system was very instrumental in providing information, software, images, etc. to members as well as a way to send newsletter information to the Sidereal Times editor.

Steve will be moving from the area soon and will no longer be able to provide BBS service. We had originally planned to shut down the BBS in April but a hardware failure caused it to go down in mid-March and it did not make sense to put the system on life support. Thank you Steve for your years of support and good luck.

Random Acts of Kindness:

Many thanks to Carl Frisch for servicing our beleaguered starlab projector.

Thanks to Steve Snyder for donating to our library three terrific books: The Milky Way, Life of the Cosmos, and The Comet is Coming! We'll miss Steve as he leaves New Mexico for greener pastures this summer.

New Members:
On behalf of the Board of Directors and the general membership, I would like to welcome the following new members to TAAS:

Elizabeth Barnes
Charles and Ellen Brearley
James Cutler
Amy Estelle
David Haugh
John Mlcoch
Diane and Milton Mueller
Dr. Anjali Singh
Don Griggs
Thomas Lea, Jr.
Edwin Lewis

We hope your membership in TAAS is pleasant and rewarding. Please contact any board member if you have any suggestions or if you would like to become more involved in Society activities.

Total membership is now 402, up 7 from last month.

Board Meeting
by Robert Williams, Secretary

The March 12, 1998 Board of Directors meeting was called to order by President Mike Pendley at 7:00pm. In attendance were George Pellegrino, Robert Williams, Elinor Gates, Alan Green, Bruce Levin, Carl Frisch, Dave Blair, David Sukow, Gordon Pegue, Lisa Wood, Ruth Pendley and Robert Ortega. Also in attendance were Barry Gordon and Tom Pannuti.

February Minutes: Robert Williams read the minutes of the February meeting to the board. Ruth Pendley moved to amend the Calendar section of the minutes by changing Edgewood open space star party to Placitas open space.

Treasurer's Report: Elinor Gates read the condition of the Treasury to the board. Total funds on deposit were $9,785.09—an increase of $491.73. Education funds $2,801.20 (+$166.67); observatory funds $5,831.15 (+$297.89); general funds $1,152.74 (+$27.17). Elinor also announced that because of her accepting a job out of town, she was resigning from the Board of Directors. Robert Williams will serve as Treasurer and Data Base Manager and step down as Secretary. Mike will become the web master.

Observatory Committee: Gordon Pegue stepped down as Observatory Committee Chair and Robert Ortega has moved into the position. Robert said that the Observatory Committee met on Thursday, March 5, 1998. In attendance were Gordon Pegue, Robert Ortega, Mike Pendley, Dave Blair, Carl Frisch, Jon Pendley and Robert Williams. Robert O. said that PNM has a
$100,000 grant to showcase alternative forms of power (e.g., solar or wind) and we have received the forms to apply. If we are awarded a grant we will have to organize some sort of public activity at the site to show how the power is produced and used. Some discussion on the matter was held and it was decided to add a special public night at GNTO once per quarter if we are successful at getting the grant. Mike will write the proposal.

Robert O. also said that the committee discussed upgrading the telescope at GNTO to make it more user friendly and decided to build a truss type Dobsonian telescope and use the mirror out of the Isengard scope until enough money can be raised to rebuild the equatorial mount.

Robert Ortega made a motion to use $1,000.00 of the Observatory fund to purchase material to build the truss type Dobsonian for GNTO and make modifications to the telescope pillar. The motion was seconded by Robert Williams voted on and passed.

**Planetarium Committee:** Lisa Wood said that she would be stepping down as Starlab Chair and that Robert Williams will be taking over the position. Robert Williams is going to organize a work party to do some needed repairs on the dome and Mike Pendley and Carl Frisch are looking at the projector to see if they can make some minor repairs. Elinor Gates has made arrangements with the UNM Electronics department to look at the star projector if we can not get it working well. Lisa said that the cost for UNM to work on the projector would be around $100.00, Carl Frisch moved to allow the Starlab to have $125.00 for UNM to repair as needed, seconded by Ruth Pendley, voted on and passed. (It looks like Carl was able to fix the projector - ed.)

**LodeStar:** Carl Frisch said that arrangements have been made with the Museum of Natural History and UNM to build a planetarium and observing area at the Museum. Along with the building and observing area there will be one acre viewing area on the north east corner of Mountain and 18th St. Carl also said that the Lodestar committee had given Lodestar a proposal for some telescopes and equipment for use at public events, they proposed a 8”, 10”, 12” and 24” Dobsonian style scopes with eye pieces and finder scopes. LodeStar is looking into the request.

**Calendar:** Carl Frisch said there are no new dates as of now for the calendar. Elinor Gates said that there is some confusion for the Sky City Community School on Tuesday, April 14, 1998 between the date we have and the date LodeStar has. She is looking into it and will notify us as soon as she has an answer.

**Past Events:** Everyone who was at Marie Hughes said that the night was good. There was not much help from the school at the telescopes but Mike Pendley had help with the slide show and Robert Williams, Wade Douglas and Lisa Wood had plenty of help with the planetarium. The turnout was about 250 people.

**Future Events:** Mike Pendley said that all the Astronomy Day letters are out and we are just waiting for replies. Preparations for the Messier Marathon are going well and "Astroblast" is still a go (but there was no new news from Astronomy Magazine).

**Future Meeting:** Dr. Crumpler has confirmed to speak at the March Meeting on Saturday. He will talk mostly about Venus. George Pellegrino said that several TAAS members went to see
the solar eclipse last month and he is going to try and get them together to talk at the April meeting about the event. Elinor Gates said that she will do the trivia question for the March meeting.

**Old Business:** www.taas.org is up and running and seems to be working well, we have only had a few problems and they are getting worked out. Space Day is still set for Saturday, April 18, Brock Parker is still scheduled to attend and Lisa Wood said the panel should be ready. Gordon Pegue said that he did send the letter of request for the special use permit at Grand 'Q' and is still waiting for a reply.

**New Business:** Mike said that he had four calls for the Telescope Curator position. One person lives out of town and three in town Mike will work with two of the three in town to see if they can share the responsibility.

Carl Frisch said the dome is up at the observatory at Chaco Canyon and they will be moving the telescope in soon. Carl will be going out there later this week. Alan Green said that Starfire has given him the date of Saturday, June 27, 1998 for a tour of the facility, he has not confirmed the date and would like to discuss it at a later board meeting.

Newsletter assignments were made and the meeting was adjourned at 8:40pm.

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**Observatory Committee**

*by Robert Ortega*


Gordon Pegue opened the meeting by reading the following open letter:

**To:** The incoming Observatory Director, Robert Ortega  
**From:** The outgoing Observatory Director, Gordon Pegue  
**Subject:** List of Priorities

The list of priorities may be broadly separated into 3 classifications. Short term, mid term and long term priorities. The following list comprises items that I feel should be given careful attention by the new Director.

Short-term priorities (complete by end of 1998)

1. Building maintenance (paint, trim, cleaning).  
2. Site maintenance (larger observing field, reflector posts).  
3. Initiating some kind of fund raising drive to generate money for replacing the Isengard telescope mount.  
4. Stimulating membership involvement with GNTO.
5. Completing the design, construction and installation of a truss tube telescope structure that uses just the primary mirror from the Isengard telescope (the remainder of the Isengard Telescope would be kept in storage onsite at the observatory for future use).

Mid term priorities (complete by end of 1999)

1. Building maintenance (sealing the dome, improving its rotational characteristics, providing easy to use power.
2. Providing additional SECURE storage space for the Generator etc.
3. Procuring an equatorial table, laptop PC and CCD camera to be used with the truss tube and/or Isengard Telescope.
4. Continuing the fundraiser for the replacement of the Isengard Telescope mount.
5. Preparing to either purchase outright or have a consultant recommend an appropriate replacement German Equatorial mount for the Isengard Telescope.

Long term priorities (complete by end of 2002)

1. Fence the entire site.
2. Begin preparation of plans for a residence structure onsite.
3. Investigate feasibility of paving the observing field.

It is my opinion that the direction the Society should take with regard to GNTO is that the facility should PRIMARILY be EASY TO USE for ALL members and emphasis to this effect should be made clear to all. Of secondary importance in my mind is that our facility COULD be used to conduct serious amateur research and to this end, QUALITY equipment is vital. In the long term, the ability to conduct research would justify the need for an onsite residence structure.

I wish the incoming Observatory Director success in his efforts and I hereby offer my assistance in whatever way I may help.

--Gordon 'DEEPSKY' Pegue--

The meeting continued as follows:

1. Discussed the proposed alternative energy offer by PNM for possible solar (wind) electric power for the GNTO site. Consensus of members present was to go for it and see if we can qualify.

2. Discussion followed on the GNTO telescope. It was agreed that we would build a truss type Dobsonian mount and install the Isengard mirror and then store the balance of the existing telescope at the GNTO site. The consensus of the members present was that we need ~$1000.00 from the observatory fund to build it and also extend the pier. When the Isengard upgrade is complete, we will sell the truss mount to recoup construction costs.

3. We discussed fund raising ideas for future upgrades and we are open to all ideas and we invite ideas from all members.
4. April 25 was set for a general clean up and dome painting party along with a possible pot luck barbecue.

5. Meeting adjourned and we all left.

Respectfully submitted, Robert Ortega.

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**March Recap**  
*by George Pellegrino*

Not available

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**Astrophotography**  
*by Shane Hall & Steve Beckwith*

**Part II: Fixed Camera**

This month we will cover a form of astrophotography that is the ideal starting point for beginners. The fixed camera technique is by far the most basic form of astrophotography, yet it still gives you the ability to take stunning photographs. Fixed camera, as the name implies, involves no tracking or guiding what so ever. You simply open the shutter of the camera, wait a certain amount of time (from seconds to minutes) then close the shutter. It's that easy. The simplicity of this method doesn't mean it's not effective. You will be amazed at how much can be captured on film using the simplest of set-ups.

The equipment needed for the fixed camera technique is very basic. You will need a camera, a tripod, and a cable release. The camera must be of the type that allows you to lock the shutter open. A 35mm SLR (Single Lens Reflex) camera is the type most often used. Most cameras like this have a shutter speed setting of "B", which will hold the shutter open for as long as you hold down the shutter release button. It is best to use a camera that doesn't require battery power to hold the shutter open. We use a 35mm Pentax K1000. Any lens from 28mm to around 100mm will work fine. The shorter focal lengths are probably best because they will see more sky and you can take longer exposures before the stars start to show trailing. Next you will need a tripod. It doesn't have to be anything fancy though you would ideally want it adjustable in two axises, allowing you to easily frame your shot. Last but not least you need a cable release. This item is essential for astrophotography for it allows you to lock the shutter open to take timed exposure photographs. It also minimizes the vibrations of the camera caused by opening the shutter.

In fixed camera astrophotography, as in all astrophotography, the less light pollution you are shooting through the better. The positive effect dark skies will have on your photos can not be over emphasized. A 30-second shot of Orion taken under dark skies will show significantly more
There are allot of different films available for photography, but because of the unique requirements of astrophotography we have to give our film choice a little thought. The speed of the film is a measure of how quickly it will record a given object, or more to the point how long the shutter must be open. In astrophotography we have to leave the shutter open for long periods of time because we are shooting very dim objects compared to normal photography. A fast film, such as 1600 ASA, will let you record more details in a given amount of time than a slower film, such as 400 ASA. However, this increased speed of the film has its drawbacks. The faster the film, the grainier it is. This means that if you use 1600 ASA film you can record faint objects in less time than slower films, but if you blow them up they will not look as good as an enlargement of a shot taken with slower film. This is because when you enlarge the object in your shot, you are also enlarging the grain, which is already bigger in faster films. Try different speed films and compare the results.

Once you have chosen a film and a site to shoot from, you are ready. We will start with the easiest fixed camera shot possible. We have all seen pictures that show some foreground object at the bottom of the picture and the stars overhead as long arcs or circles. To take this shot, set up your tripod, put the cable release on the camera, and mount the camera to the tripod. Point your setup north and put Polaris in the center of the frame. If you have a ground object that you can get in the picture as well, like a tree or a mesa, put this at the bottom of the frame. Set the aperture to the lowest number, which will let the most light get to the film. Set the focus to infinity and your ready. Open the shutter with the cable release and lock it open. This shot can be left open for a wide range of times, but it will look best if the exposure is at least 30 to 45-minutes. This shot will record the skies apparent motion caused by the rotation of the earth. When the time you have chosen to expose this shot has past, release the shutter and advance the film for the next shot. This exposure assumes a dark sky. If you try this shot from the city the light pollution will washout most of your detail.

We took a star trail shot one weekend just for fun. The shot turned out pretty good so we put it in our photo album. We have been amazed at people's reactions to this shot. Our non-astronomy buff friends will page though our album seeing shots of the Great Nebulae in Orion, the Whirlpool galaxy and so on. It never fails though; they always stop at the simple star trail shot and exclaim "Wow"!

Next we will shoot a constellation. Just look through the camera's viewfinder and put the object your shooting where you want it to be on your finished print. The length of the exposure is up to you, but there are limits to consider in order to avoid the star trails we got in the last shot. With a 50mm lens, shooting an object at around 45 degrees declination, the maximum exposure without trailing is around 28 seconds. The maximum exposure can be found for any combination of lens focal length and object declination with the formula: time (in seconds) = 1000/(F cos d). Where F = the focal length of the lens, and d = the declination of the object. There are many constellations that lend themselves to the fixed camera method: Orion, Cassiopeia, and Scorpius just to name a few.
Let's say we want to take a shot of Orion. Orion is roughly centered on the celestial equator, which means a declination of 0°. If we are shooting with a 50mm lens our maximum exposure would be 20 seconds, because $1000/(50\text{mm} \cos 0°) = 20$. If we decide to shoot with a 135mm lens for a closer shot of the great nebula in Orion, our maximum exposure is only 7.5 seconds! A table of various combinations can be found on our web site at [http://www.flash.net/~mhall1](http://www.flash.net/~mhall1).

With a timer of some sort handy, push the cable release to open the shutter and release it at the time determined with the above formula. Don't be afraid to experiment with different exposures. We did a series of shots from 5 seconds to 30 seconds of Orion from a very dark site and they all turned out very nice. Even the 30 second shot showed very little trailing and is our favorite of the batch! In all the shots over 15 seconds, Banard's Loop is clearly visible. You can see this series of photos on our web page. To illustrate the importance of a dark site, we also took a 5-minute exposure of Orion from Shane's back yard in Albuquerque. In this shot there is a hint of the Horse Head region, but no trace of Banard's Loop, even though the shot is 15 times longer than our 20-second shot! Remember: light pollution = bad!

When you take your film in to be developed, be sure to tell them the film has shots of stars. It is also helpful to take a normal, fully lighted shot of something as your first shot on each roll of film. This helps the developing machine determine where your shots begin. We have taken many rolls of film to a one-hour photo shop with good results. They are usually willing to work with a shot to get the best print.

When you get your prints back look at them closely. Pull out a star atlas and compare your print to it. You will find in many cases that you have recorded on film objects you didn't realize where even there! For instance, a 30-second shot of Orion can show M78 as long as you are shooting from a dark site. It won't be very big, or impressive because it has such a small angular size, but it is there. The Rosetta Nebula will be there too if you framed the shot to include that part of the sky.

Be sure to write down the parameters of each shot such as object, focal length (if your using more than one focal length), exposure time, and sky conditions. We have found this information to be invaluable when examining our shots. It's very easy to forget all the parameters of a night's shooting. Having this information will allow you to learn from each of your shots. You can repeat what worked and correct for what didn't work.

This technique is the simplest form of astrophotography, but you will be amazed at the shots you can take! Even though the fixed camera method is limited to short exposures when compared to other methods, it can be very rewarding and can put some fine astrophotographs on your wall! Feel free to e-mail any questions to us at [mhall1@flash.net](mailto:mhall1@flash.net).

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March Trivia Question

by Ellie Gates

Each month, TAAS holds a trivia contest at the general meeting. This month's winner was John Buting. John's prize was an excellent Messier Marathon Book donated to TAAS by Dan Ditmer.

Venus, the second planet from the Sun, is often called Earth's sister planet because it is approximately the same size as Earth and has a thick atmosphere. That is where the similarities end. The clouds on Earth are made of water, while the clouds on Venus are a solution of 90% sulfuric acid mixed with water. If all the water on Earth (both on the surface and in the atmosphere) were spread out into an even layer over the Earth's surface, it would be about 2 miles thick. How thick a layer would all of Venus' water make?

a) 1 inch   b) 1 foot

Venus' water: c) 10 feet   d) 1 mile

e) 10 miles

Here is the answer

April Preview

See President's Update

Observer's Page

Yes, but just HOW spectacular?

by Barry Gordon

Having just seen my eleventh Total Solar Eclipse, I may have been "the senior TSE observer" aboard the Dawn Princess on her trip to the path of totality in February 1998; if not actually in first place, I was certainly well up there among the leaders. As a result, I was asked by a number of people how I rated that TSE compared to the others I'd seen. Being very bad at lying, I
declined to attempt it, so my answer was that I had to keep Baja '91 in first place, but this was certainly one of the better ones. Which is not really an answer, but more of a hedge.

It is my considered opinion that there are just four adjectives that might properly be used to describe a Total Solar Eclipse—Disappointing . . . Glorious . . . Spectacular . . . Awesome—the first applies to any TSE that is clouded out; the other three apply to all the rest. However . . .

When we got home, Jessica and I discussed the question of how one might actually rate TSE to see how they compared with one another. We came up with ten attributes, as follows (in a sort of quasi-logical order):

1. Duration of Totality
2. Diamond Rings
3. Prominence Activity
4. Corona Detail
5. Other Bodies Visible in the Sky
6. Clarity of the Sky
7. Moon Shadow Visibility
8. Sky Color at Horizon
9. Occurrence of Shadow Bands
10. Activity of Local People, Animals, etc

We then discussed the relative importance of these things and assigned weights to them, on a scale of one to ten. We initially had Duration of Totality as a ten, but then decided that shorter eclipses also had a thing or two in their favor—like prominences simultaneously visible all around the solar limb, tough to get with those six-minute jobs—so we tempered that weight a bit. We agreed that the real show was the Prominence and Corona activity, with Diamond Rings not too far behind; Sky Clarity is right up there because it affects so many other things. And so on.

Our next step was to review the eleven eclipses we've seen (actually ten for Jessica, the asterisk for Thailand '95 indicating that she wisely chose not to join me on my 48 hours of travel for 1:44 of totality). We rated each of them, on a scale of zero to ten, on each of the ten attributes, with the exception of Duration of Totality, which is simply scaled up to give ten for the longest. Some of the ratings came from reviewing our slides of the events; for the rest, we relied (heaven help us) on our memories. Several of the attributes were left blank because we just couldn't remember; these were not treated as zeros, but were simply omitted altogether from the scores.

The Table of Total Solar Eclipses Observed, ranked by Total Score, is what we came up with. (Our weight values are shown in parentheses in their appropriate columns.)

It certainly doesn't qualify as an exact science, but I think it does give a bit of a handle on the comparison problem. If anyone asks me now how I rate February '98 compared to the other TSE I've seen, I have some degree of confidence in saying that I rank it number three out of eleven. And I can offer some reasons for saying it.
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<th>Moon Shadow (4)</th>
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**GNTO Report**  
by Gordon Pegue
Weather: Beautiful, balmy temperatures until midnight, slightly cooler thereafter. Very slight breeze that was intermittent.

Skies: Moderately steady and transparent. Overall, about a 7.

Attendees: Gordon, Jeff Bender, Pete Eschman, Van Sutherland, Robert Ortega, Mark Nagrotsky, Granvil Morgan, A couple of patients of Dr. Bender and maybe one or two others whose names escape me.

A Messier Marathon tune-up. GP observed 76 Messiers before the moon arose at 2 AM. Dr. Bender observed both Messiers and TAAS 200 objects. A good time was had by all due to warm temperatures and lack of wind. Hopefully, Messier Marathon will be blessed with weather just as fine!

What's Up for May
by Kevin McKeown

May 1998 opens with the planet Mercury still near greatest western elongation, but this apparition of Mercury is very unfavorable. Mercury is essentially unobservable in May. On the morning of May 5th, you might try to observe the eta Aquarid meteors. This meteor shower is a product of Halley's comet, and is the May equivalent of the October Orionids. The meteors are physically like the Orionids, and are also very swift. The shower extends for a day or so before and after maximum. Best rates occur just before dawn. The eta Aquarids are best observed in the southern hemisphere, where they actually show strong rates (40+ per hour at times). By the way, in my experience, there is some good sporadic meteor activity in early May. Check it out. Jupiter and Venus remain fairly close through May, and are "morning stars". Also, on the morning of May 28th, Venus and Saturn reach a close conjunction. It should be spectacular! Note: Mars is unobserved as it reaches conjunction with the sun. New moon in May is the 25th.

Ask the Experts
by Bruce Levin

Have a question? Send it to the TAAS P.O. box, call the hotline, or send the editor some e-mail.
Question: Is it possible to balance an egg on the vernal equinox?

Answer: While Mike Pendley, George Pellegrino, and David Blair were judging the Northwestern New Mexico Regional Science and Engineering Fair, I was home doing chores and was taking a break from strenuous yard work. It was March 20th and the day of the Vernal or Spring Equinox this year. According to Guy Ottewell's Astronomical Calendar 1998, the precise moment of the equinox was scheduled to occur at 19:55 UT (12:55 MST). I had balanced raw eggs in the past on numerous equinoxes, and decided at the last minute to try this science experiment again.

The object of this experiment is to take a raw egg and balance it on the broad end (pointy end up) on a smooth and clean surface without deforming or cracking the shell or using any other balancing aid like sprinkled salt or sand, or sticky or other substance. Just before the moment of the equinox, I let the egg teeter upright between my index and middle fingers and my thumb. At approximately 12:55 pm the egg balanced in the upright position and I carefully moved my hand away. The egg remained in this precariously balanced position in spite of opening and closing the cooking utensil drawer directly below the counter surface. Prior to the moment of the equinox, I was unable to balance the egg. The following day, the egg was still balanced on the counter. I decided to carefully lift the egg up without disturbing its vertical orientation. I carefully set the egg back down on the counter and it still remained balanced. I then purposely tipped the egg over on its side and then tried to balance the egg in its vertical position again. I was unable to rebalance the egg! I had my doubts that this particular egg would balance in the first place, since the broad end of this particular egg was not as broad as other eggs that I had used in the past.

On Saturday morning, Martha Stewart had an article in section B of the Albuquerque Journal. One of her readers asked her the question, "Is it true that you can balance an egg on end on this day (vernal equinox)?" The title of her article this day was "Equinox egg myth is charming, untrue". The answer that she gave was "You may be able to, but if so, you could probably balance that egg on end on any other day of the year. This old myth is rather charming, but not based on fact." Martha goes on to say "Though the origin of the egg-balancing myth is unknown, the explanations usually involve gravity (it has been suggested that gravity is stronger, weaker or "balanced" at this time), but they do not make scientific sense. Instead, it seems that some eggs balance, while others do not. It has to do with the smoothness and shape of the shell, the surface it's balancing on—and the amount of time you're willing to spend trying."

Approximately one year ago Marilyn Vos Savant addressed the same or similar question in her Sunday newspaper syndicated column, "Ask Marilyn," in Parade Magazine. Marilyn's answer basically stated that a raw egg can be balanced at the moment of the equinoxes and at other times as well. From my personal experiences I have been able to balance a raw egg at a time other than the equinoxes and on a smooth glass table top, however I have not been able to balance an egg at an arbitrary time. My personal experience suggests that a change or increase in gravitational force at a given instant is enough to cause the center of mass of the yoke and/or albumen to pull down low enough in the vertically oriented eggshell to cause the egg to balance. Several years ago, I wrote a similar article in the Sidereal times where an egg literally pulled up to the vertical
position from a slightly off-vertical axis while teetering between my fingers and thumb at the precise instant of the equinox. This force was awesome to witness.

In the case of the vernal and autumnal equinoxes, the sun crosses the equator along the ecliptic plane at the very beginning instant of Spring and Fall. Perhaps a raw egg will also balance at the instant when the moon also crosses the celestial equator along its path near the ecliptic?

It is said that magic is undiscovered science. If you have tried this experiment or have any ideas, hypothesis, or explanations as to why the egg balances under these or other situations, let me hear from you!

Clear Skies!—Bruce

Any comments on this one? If so, send them to the editor - ed.

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The Kids' Corner

by Lindsay

This Month's Dumb Joke

Kirk: Did you know there is a star called the "Dog Star"?

Spock: Are you Sirius?

Talk with an Asteroid Hunter

It's a bird . . . it's a plane . . . No! It's an asteroid and it's coming right this way! On Wednesday March 11, 1998 it was reported by Dr. Brian Marsden of the Harvard Smithsonian Center for Astrophysics that a mile wide asteroid will conceivably hit us in the year 2028. "Chances are it will miss us," said Dr. Marsden. The asteroid was discovered by the Spacewatch Telescope. Dr. Tom Gehrels and his colleagues operate the 0.9 meter Spacewatch Telescope on Kitt Peak which finds thousands of moving objects per year. The team also finds about 30 near-earth asteroids per year. In February Dr. Gehrels was in Santa Fe talking about asteroid hunting. I submitted these questions to him. Here are his answers.

Many thanks to Dr. Gehrels for taking the time to answer these questions!
What got you interested in astronomy?

I was forced in church to believe in creationism. That did not make sense. So I decided to find out for myself.

What has been the most exciting astronomical experience for you?

To learn in the past year how evolution works from the Big Bang to life on planets.

What is a typical day like for you?

5:30 On the bike to the office- studying and writing
12:40 Lunch in the union.
1:10-5:00 More administrative chores
5:00-8:00 Hike and climb with dog, dinner
8:00 -10:00 Light reading

Observing days are different:

If it is clear the observer gets into the dome at sunset and operates the telescope and computers til sunrise, sleeps a few hours, studies the observations that are now somewhat processed. Sleeps a few hours in the afternoon, has dinner, (lunch too) in the Kitt Peak cafeteria, etc. If it is cloudy we are bored and seem to have no zip to do anything at all on that mountain. Come and see it sometime.

How many telescopes does Spacewatch use and what are they used for?

Two. Scanning the sky for the discovery of some 100,000 asteroids per year.

What is the closest near-earth asteroid that Spacewatch has ever found? (This interview occurred before the 3/11 announcement so, of course, no mention of this event was made)

A 6 meter object 105,000 km from the surface (of earth)

This month’s guest is Elinor Gates. Eli, as she prefers to be called, is a graduate student of astrophysics at UNM and is about to receive her Ph.D.

TAAS Eli, how old are you and where did you grow up?
ELI Well, I'm 29 now, and I'm trying to complete my thesis before I turn 30 – it's going to be pretty close! I'm originally from Connecticut and spent all of my childhood and adolescence there and in Massachusetts visiting family members. It was after I graduated from college that I came out to New Mexico.

TAAS How did you get started in amateur astronomy and what made you decide to become a professional astronomer?

ELI I actually decided to be a professional astronomer first. That seems kind of odd but I got interested in astronomy mostly through TV science shows like Nova and black holes and galaxies and all that exciting stuff and decided that when I got to college, astronomy would be a fun major. I was always interested in math and science and it seemed that astronomy would be a good way to apply them. I looked through a telescope for the first time when I was a sophomore in college. I had already had a year of astronomy courses by then and knew the science but had not experienced looking through a telescope.

TAAS How old were you when you caught the astronomy bug? Was it before your college days or high school?

ELI Oh, it was probably even earlier than high school. I always liked astronomy, I thought it was fascinating. Ever since I was a little kid, I can remember wanting to be the first female astronaut. Of course many women have beat me to it at this point but I still aspire to be an astronaut someday. As far as astronomy though, I can't remember a time where I wasn't interested – I've always been interested!

TAAS Can you briefly summarize the education you've received?

ELI Well, lets see. I went to Mount Holyoke College in Massachusetts where I majored in mathematics and astrophysics. When I graduated, I came to UNM to do my Masters and Ph.D. in physics. Technically, my Ph.D. is in physics but I'm concentrating on astrophysics.

TAAS How did you find out about the Society or why did you join?

ELI When I got to graduate school, I was running the campus observatory for the Friday night public observing session and I met the members of TAAS, John Hockemeier, Roger Flegel and a bunch of others who volunteered their time to help. It was during this time that I started learning about the joy of star hopping and observing the sky just for the fun of it instead of science. So I did it backwards compared to how most people get started!

TAAS Describe your involvement with TAAS.

ELI Lots of involvement! The day I joined TAAS was also the day I became a board member of TAAS, even though I had been sort of involved with TAAS for a while before that with the campus observatory. After spending 2 years as a board member, I became treasurer, data base manager and web master of the Society. I sort of took the big plunge and got involved right away and I've really enjoyed every minute of it.
TAAS: What do you feel is the most important job for TAAS?

ELI: Probably the most important job for TAAS is to keep going strong and to get new people involved and to have FUN. We have lofty goals of doing all this public education and we have an observatory to maintain. That's a lot of work and it takes a lot of people. So I think that the thing to do is to keep going and get people involved and excited and keep them that way.

TAAS: Have you been a member of any other astronomical clubs?

ELI: Nope, not amateur clubs. I am a member of the American Astronomical Society and the Astronomical Society of the Pacific, which are more or less professional societies. TAAS is the only amateur society I belong to and I feel that if I move some place else, any other amateur society just isn't going to measure up to TAAS, it's such a wonderful group!

TAAS: Besides the professional and scientific aspects, what keeps your interest in astronomy going?

ELI: That's really a tough question. I really love doing astronomy, love it with my whole being and I am very fortunate in that I have been able to take my favorite hobby and make it my career. I am also very lucky because as an astronomer, I actually have job offers to do astronomy, something that is becoming rarer and rarer these days because there is just not that many astronomy jobs out there. The constant new discoveries that are made, even though not all discoveries are made by professionals. Amateur astronomers discover most of the asteroids, comets and supernovae, things that the professionals are not able to do because instrument time is so valuable. Every thing is new in astronomy, just when we think we know something, a discovery is made that turns everyone on their heads and we realize that we really don't understand the universe as well as we thought!

TAAS: Do you think your involvement with an amateur group will be of benefit to you in your professional career?

ELI: Oh definitely! There is always a need, when there are interested people, to get them involved. It doesn't have to be in major ways, just sharing their enthusiasm. So many professionals look down on amateurs and think that they don't really contribute anything even though they obviously do. The other aspect is that most of the ways we touch school children with astronomy is through amateur groups, and a public that knows and appreciates science is more likely to fund professional science. So it is in our vested interest to make sure that the public and the amateurs understand what's going on and stay interested as well, otherwise we won't get the funding to build our telescopes!

TAAS: I understand that you are considering a position at Lick Observatory which was recently offered to you. Do you plan to continue your involvement with whatever amateur group may exist in the area?

ELI: Yes, definitely, in fact Lick Observatory already works to some extent with the amateur organizations in the area doing observing nights at the observatory. They have this wonderful
36" refractor and if I get the job, I'll be in charge of getting the amateurs up there to help out with the public observing nights. I'm going to keep going with my amateur involvement because I just love it so much!

**TAAS** Besides the subject of your thesis (see the April issue of The Sidereal Times Ed.), what are some of your astronomical interests?

**ELI** EVERYTHING! I am easy to please when it comes to my astronomical interests. Probably the biggest interest of mine are galaxies – how do galaxies form, how far away they are, how big is the universe, how old is the universe – these questions are all related to the research that I do. I am also interested in how stars evolve and how old they are. Planets and asteroids are interesting but they are not my main interest.

**TAAS** What's the funniest/craziest/scariest thing that's ever happened to you while observing?

**ELI** I was at McDonald Observatory in Texas one night helping a colleague, Jim Kunkle, collect data using the 82" telescope. The observing platform there tracks up and down to follow the telescope and it also has a railing but the platform is in two halves so you can only bring half of it up and so there is railing on just one side. So Jim had raised the platform and was up there and at about 4am, he was mad at the telescope for not doing something properly, he walked right off the edge of that platform in the dark, fell and broke his arm. It was just terrifying to me to hear the thud in the computer room. That was definitely the scariest thing that's ever happened while observing. You know, astronomy is one of the more hazardous professions because we spend so much time at night, in the dark, awake when regular people are sleeping.

Well folks, that's all for now.

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**Internet Info**

*by Michael Pendley*

No Report this month

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**UNM Campus Observatory Report**

*by David Sukow*

The weather did not cooperate much this month:

<table>
<thead>
<tr>
<th>Date</th>
<th>Condition</th>
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<tbody>
<tr>
<td>3/6</td>
<td>Clouded out</td>
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<tr>
<td>3/13</td>
<td>Clouded out</td>
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Cloudy, UNM officially closed the observatory but we thought we would give it a try. The skies cleared a bit around 7:30 so the 30 people that attended the event had a chance to view a few objects.

Clouded out. Things looked good late afternoon but the clouds rolled in at dusk. About 20 people showed up (including 12 Girl Scouts) hoping the skies would clear—but they did not.

Docents this month were Carl Frisch, Brock Parker, Mike and Jon Pendley, David Sukow. Please let me know if your name should be on this list!

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**School Star Party Update**

*by Mike Pendley*

**Marie Hughes Elem., March 10.**

We always have good attendance at Marie Hughes and this party was no exception. Total attendance was placed just over 300. Robert Williams, Wade Douglas, and Lisa Wood gave 6 planetarium shows to 135 people. Mike Pendley gave 2.5 slide shows to about 120 people (half way through the third show the projector self destructed). Skies outside were good and there were plenty of telescopes to go around.

**Onate, Elementary, March 24.**

About 275 people attended the TAAS star party under good skies. Seeing was good and the temperature warm. Its almost time for short sleeve star parties again!

Robert Williams gave 7 planetarium shows to about 140 people while Mike Pendley provided two slide shows to 120 people.

Equipment problems have plagued us this month. The planetarium projector has had an intermittent bad connection which causes the stars to dim down and our slide projector self destructed midway through the Marie Hughes show. Carl was able to repair the star projector and Mike Pendley was able to get the slide projector back into good shape.

Docents this month were (in no particular order): Carl Frisch; Robert Ortega; Jay Harden; Brock Parker; Robert Williams; Mike, Ruth, and Jon Pendley; Lisa Wood, Wade Douglas, Dave Blair, Alexander Comportie, and his friend Dave (sorry I did not get your last name Dave) and someone named Hunter? (again, I apologize for my incomplete notes).

We have 3 schools lined up in April and 2 in May. Try to attend one if you can. They really are lots of fun.
**Directions to Sky City Community School**  
*(April 14 School Star party)*

**From Albuquerque:** Take I-40 west to Exit 102 (where the casino is) and go left (south) 5-5.5 miles. Take the 2nd paved road to the left. The school will be on the left.

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**Total Solar Eclipse '98**  
*by Barry Gordon*

At about midnight of February 21/22, 1998, the Dawn Princess set sail from San Juan, Puerto Rico and headed south into the Caribbean. While she made stops at a few islands along the way, her primary destination was the open sea in the vicinity of Aruba and Curacao — the center line of the Total Solar Eclipse of February 26, 1998. On board were TAAS members Jeff Bender, Barry Gordon, Bruce Levin, Lyman Sandy, his wife Alison Schuler and their son Ted Schuler-Sandy. Rounding out the nine person Albuquerque group, were Barry's wife Jessica Gordon, and Alison's parents Richard and Irma Schuler. Ted did us all proud, receiving a certificate signed by former Astronomer Royal Sir Arnold Wolfendale, as one of the winners in an eclipse essay contest that was held on board.

I, personally, was surprised (and not pleasantly) at the amount of cloud cover we encountered in the Caribbean — particularly over the various islands we visited. As the trip progressed, the mobility provided by the ship became more and more appealing, despite the obvious drawbacks of observing from a moving deck. In fact, leaving Aruba on Eclipse Day, we actually sailed through a rain squall for a while, causing many of us to scurry for things to cover the equipment we'd already set up on deck. However, our Captain and Navigator — both of whom did an outstanding job — had done their homework, and had us in a completely cloud-free area for the eclipse.

To minimize on-deck wind, we headed roughly south-west — almost exactly opposite the direction in which the moon's shadow was moving — thus reducing somewhat our time of totality. However, with the ship probably making somewhere around 10 knots and the moon shadow's ground speed being roughly 1150 mph, it was not a very serious loss — I figure it at around 2 seconds. Our duration of totality was clocked at 3 minutes, 42 seconds — with the sun about 60 degrees high.

Further, as a result of the seas in the area, the performance of the ship's stabilizers, and the skill of the ship's crew, the motion of the deck was reduced to a minimum that was just incredible. We had a great many people observing with telescopes — focal lengths upward of 1000 mm — and the solar/lunar disk never touched the edge of the field of view.

As mentioned, we had no clouds. However, at sea level (where most ships tend to operate), you rarely find the clear air we've grown accustomed to at the dry 5000' elevations here in the Albuquerque area. As a result of the atmospheric haze, the sky stayed comparatively bright all through totality; frequently, one gets to see several of the brighter stars, but this time the
brightness of the sky prevented that. Venus, as always, was quite visible all through totality and for some time before and after. In addition, Mercury and Jupiter were quite close to the sun, one on either side, making a very striking "honor guard" for the main event.

Another result of the haze was that the corona could not be seen as far out as a clearer sky would have allowed. The "360 degree sunset" effect — the orange sky coloration all around the horizon — was also less pronounced than usual. However . . .

As third contact approached, there was a great chromosphere display along the lower limb, highlighted at the 6 o'clock position by an unusually brilliant prominence. In addition, both "Diamond Rings" were quite striking and seemed to persist rather longer than usual.

This having been my eleventh Total Solar Eclipse, I was asked a number of times how I rated it relative to others. Since I do very badly at lying, I gave it up long ago—thus I had to say that this TSE was not the best that I've seen.

It was merely spectacular.

Photos by Barry Gordon. Scanned by Bill Tondreau. Click an image to get a high-res version

This trip was not without its problems. Barry Gordon sent me a copy of the following letter he sent to Princess Cruises. The Sidereal Times does not wish to take sides on this matter. We publish this letter as a service to our members. The Sidereal Times would be more than happy to also publish a reply by Princess Cruises.

- editor -

March 2, 1998

Ms Penny Kankovski
Passenger Relations
Princess Cruises

101 Santa Monica Boulevard
Los Angeles, CA 90067

Dear Ms Kankovski,

I was a passenger on Dawn Princess, Stateroom B633, on her Voyage D809, February 21-28, 1998, to observe the February 26 Total Solar Eclipse. The experience was a memorable one in
many ways; some of the things about it were very positive, but others were quite negative. The net of it is: you have some pretty outstanding people in your organization, but on the whole you did a truly terrible job on this event; it is the opinion of a great many of my fellow passengers, and myself, that Princess Cruises didn't have the vaguest idea of what this cruise was about.

On September 17, 1997, I attended a reception for Princess Cruises passengers, held at Classic Travel in Albuquerque NM. At that reception, I was informed by a Princess Cruises representative that arrangements had been made to observe the eclipse from Baby Beach on Aruba, for those of us who wanted a land site; it was quite clear that those arrangements were for all of us who wanted a land site, as nothing was ever mentioned about additional cost -- much less a very limited availability requiring reservations. I later learned from other passengers that a great many of them had also been given the very same impression. We were all (to put it mildly) dismayed to learn that the fifty-odd openings for the Baby Beach land excursion had already been "sold out" well before most of the 2,000 passengers had ever reached the ship. At that point, things had already got off to a very (repeat: very!) bad start.

This was supposed to be an Eclipse Cruise. Didn't you people realize that? You had hundreds of people -- not just a few dozen, but several hundred -- who had signed on for the express purpose of getting the best possible view of a Total Solar Eclipse. But more on that later.

Faced with this major betrayal, I sought an interview with the Purser. I was told he was not available until 9:00 AM (it was then about 7:00 AM) but I was given an appointment for that time. I returned a few minutes before the appointed 9:00 AM, and was told I would have to wait, as he was speaking with another passenger; I leave the effect of this bit of public relations to your imagination. Eventually, Purser Manfredi presumably looked into the matter and informed me that nothing could be done -- Princess Cruises' Aruba land facilities had been filled. However, he assured me that shipboard observing would be just fine, as it was a very stable ship. At this point, the subject having changed from Purser business to ship business, I said I wished to see the Captain. Despite his initial reluctance, he soon realized I really meant it and said he would arrange it.

At this point, things begin to improve.

I soon found that I was not the only knowledgeable veteran eclipse-chaser concerned about the way the cruise was going, and I became a member of a committee that met with Captain Warner and Navigator Andrew to advise them of our concerns. For example, I pointed out that, since so many of us were being denied the land site we'd been promised, the most stable deck possible was extremely important to us. I also pointed out the need to refrain from having the numerous deck lights turned on during the eclipse. For their part, Captain Warner and Navigator Andrew were up front in admitting their lack of eclipse knowledge, and said they welcomed our participation. I've said it many times before, and I'll say it again right here: the commitment and responsiveness of both Captain Warner and Navigator Andrew were considerably beyond outstanding and just short of unbelievable. For example, not only were deck lights kept off, but the string of prow-to-stern lights down the middle of the ship was removed entirely -- support cables and all -- eliminating every possible obstruction between deck and sky. By the time of the eclipse, they had juggled such considerations as clear sky, deck stability, engine vibration, deck
wind, and smoke direction, to provide a truly spectacular platform from which to observe and photograph the eclipse. I am totally unable to think of a single thing that they could have done, beyond what they actually did, to improve it in any way at all.

But our problems were not completely over.

Since you were pretending to recognize the unusual nature of this cruise, you included a lecture staff who were introduced as "eminent authorities" or something of that sort, to give lectures on the eclipse. Both of them were utterly charming and delightful gentlemen, and it was a real pleasure to get to know them. But what in heaven's name could you have had in mind in selecting two gentlemen neither of whom had never seen a Total Solar Eclipse? Not a single one! It wasn't too bad in the case of Arnold Wolfendale, a rather distinguished astronomer who discussed astronomy in general; but Bill Atkins, while an absolute sweet-heart of a human being, was in no way qualified to lecture on Total Solar Eclipses. His ignorance of the subject was made quite obvious to hundreds of us during his Monday lecture when he told us that the three phases of the eclipse -- totality and the two partial phases -- would each last for 3 minutes and 44 seconds, when in fact the two partial phases took about an hour and a half each. Unable to let this pass, I apologized for interrupting and pointed out that his times were grossly in error. I was later informed by several other passengers that they were very glad that I had done that. One of them went so far as to tell me that he'd been on the verge of standing up and saying, "Mister, I don't know who you are, but you're full of ----!". I am glad that didn't happen. As I've said, Bill Atkins is an extremely nice person; it's your fault, not his, that you put him in a position he had no business being in. To his everlasting credit, once he realized his impossible situation, he asked me if I would do his Wednesday lecture in his place. For the sake of the hundreds of eclipse-chasers on board -- many of them first-timers who needed accurate information -- I (although myself a paying passenger) gave up my planned pool-time for the next day and a half, and prepared a lecture on how to safely observe and photograph the coming Total Solar Eclipse.

The "Atkins/Gordon lecture" was scheduled for Wednesday at 5:15 PM in the Vista Lounge. On Wednesday at 5:15 PM in the Vista Lounge, there was a bingo game in progress. At about 5:30 or so, when a fair number of people had arrived for the lecture, and Ted something-or-other who was calling the numbers seemed not at all concerned about running over his scheduled time, I went up to him and pointed out that the room had been scheduled for another activity. His response, in effect, was that the bingo game was more important, and if we interfered he would just take longer to finish it. He then proceeded to exacerbate the situation, making remarks that were calculated to aggravate the tension between the groups. At that point, unfortunately, one of the eclipse people lost his temper, knocking over a chair in his frustration -- which I'm sure all the rest of us regretted, as it was certainly not appropriate behavior. But, be that as it may, it in no way excuses this Ted person's arrogant disregard for the commitment made to all of the eclipse passengers, and what appeared to be a deliberate attempt on his part to trigger a real conflict.

Had you done your homework, you should have realized that eclipse chasers are, as a group, quite different from your traditional cruise passengers: we do not tend to regard bingo as a vitally important activity; nor are we entertained by pathetic stand-up comics whose stock in trade is one-liners about the ship's toilets. On the other hand, we do take Total Solar Eclipses --
preparation, safety, observing, and photography -- quite seriously. If you want to get into eclipse cruises, then you, too, should be serious about it. You do not make an eclipse cruise simply by taking one of your standard cruises and adding two lecturers who've never seen an eclipse. Aside from the superb performance of Captain Warner and Navigator Andrew, Princess Cruises as a company did a truly awful job on this cruise. You should really make up your minds about eclipse cruises: if you're going to do them, then do them properly; otherwise, don't do them at all.

Truly,

<Barry Gordon>

copy:

Mr Rick James
Senior Vice President
Princess Cruises
101 Santa Monica Boulevard
Los Angeles CA 90067

Astronomy Mentor Needed
by Lisa

An eleven year old boy needs an experienced amateur astronomer to guide him in an astronomy project that he will present at the annual festival sponsored by the nonprofit organization, Celebrate Youth!. Please call the hotline at 296-0549 for details.

Carlsbad Caverns Star Party Scheduled For The Third Weekend In April
by Bruce Levin

TAAS Society members have been given permission to stay at the residence cabin at Carlsbad Caverns National Park on the weekend of April 18th and 19th with the option to stay longer, provided that arrangements are made ahead of time. This will be another great opportunity to share an evening or more of astronomy with the general public and park service staff.

The skies are quite dark at the visitor's center. The nearest sign of civilization outside of the park is Whites City located about six miles away. Any light from the small strip of hotels and businesses is completely blocked from the park.

Those people wishing to go on this fun trip will have an opportunity to do some off trail caving or go to Slaughter Canyon Cave—not the standard general public cave tours. Just before dusk on Saturday (and Sunday for those staying longer), we will set up our telescopes and I will give an astronomy slide presentation for the visitors and staff.
It is best if we can get settled at the park by mid to not so late afternoon (4 to 6 pm or earlier) on Saturday. The cabin has a kitchen with two refrigerators, a living room/dining area, a rest room with a shower, and two bunk rooms with numerous bunks. Barbecue grilles are available for cooking steaks, chicken, and other juicy food.

If you would like to take advantage of this trip, give me a call right away at 299-0891, so I can fill you in on any additional details or modified or extended arrangements you may have.

Thanks for your participation!

—Bruce

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Asteroid 1997 XF11 (The "Killer Asteroid")

Go to [http://www.astro.washington.edu/deutsch/misc/asteroid](http://www.astro.washington.edu/deutsch/misc/asteroid) for an image of Asteroid1997 XF11 and a movie showing its motion over a 30 minute period. The images were obtained at Apache Point Observatory by Univ. of Washington astronomers. There is also some additional info there and a link to the IAU.

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Trivia Answer

Answer to the March Trivia Question

b) - 1 foot

[Back to trivia](#)

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Classified Ads

For Sale: 2-meter Observa-Dome. This dome was the prototype of the whole 2-meter line and is different from the stock domes in that it's completely welded together —not bolted. The shutter tracks have been replaced and all seams have been caulked. $1500. Call Steve Snider at 867-4199 or by e-mail at slsnider@flash.net.

For Sale: 1988 Meade 826-C Newtonian reflector, German equatorial mount with clock drive. Excellent 8" f/6 mirror. 8x50 finder scope. 2" rack and pinion focuser with 1.25" adapter. Asking $595. Call Jeff Bender at 293-4868

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