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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

### March 1998

1. **Sun**  
   Saturn 1 deg. N of the moon
2. **Mon**  
   Vesta 0.1 deg. from moon
3. **Tue**  
4. **Wed**  
   Aldebaran 0.2 deg from moon  
   * Telescope Making Class, 7pm PandA building
5. **Thu**  
   * GNTO meeting  
   First quarter moon (1:41 am MST)
6. **Fri**  
   * UNM Observing

### April 1998

- **April 1998 calendar of events** (12K bytes)
- **April 1998 Solar Almanac** (64K bytes)
- **April 1998 Lunar Almanac** (55K bytes)
Sat  John Herschel Born 1792
Venus 4 deg N of Neptune

Sun

Mon

Tue  * Marie Hughes Elementary School
    Mercury 1.2 deg N of Mars
    * Telescope Making Class, 7pm PandA building

Wed  * Telescope Making Class, 7pm PandA building
    Full moon
    Lunar eclipse
    * Board meeting
    * Board meeting

Thu  Full moon
    * UNM Observing
    Venus 0.9 deg. from moon

Fri  * UNM Observing
    * Board meeting
    Full moon
    * Board meeting

Sat  * TAAS General Meeting - Regener Hall 7pm
    Einstein born 1879
    Moon at apogee (6 pm MST)

Sun

Mon

Tue  St. Patrick's Day

Wed  * Telescope Making Class, 7pm PandA building
    Juno at opposition
    Mercury at E. elongation
    Venus 3 deg N of Uranus

Thu  Juno at opposition
    Mercury at E. elongation
    Venus 3 deg N of Uranus

Fri  * UNM Observing
    * Newsletter Input Due
    Last quarter moon (12:38 am MST)

Sat  * GNTO Observing
    * Newsletter Input Due
    Last quarter moon (12:38 am MST)

Sun

Mon  Neptune 3 deg. S of moon

Tue  Uranus 3 deg S of moon
    Venus 0.09 deg S of moon
    * Onate Elementary School

Wed  * Telescope Making Class, 7pm PandA building

Thu  Jupiter 0.8 deg. S of moon

Fri  * UNM Observing
    New moon (8:14 pm MST)
    Venus at W elongation
    Mercury stationary

Sat  * Messier Marathon at GNTO
    Moon at perigee (12 midnight)

Sun

Mon  Mercury 4 deg N of Mars
    Vesta 1.2 deg N of moon

Tue  * San Felipe Elementary

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

3/01/98  6:36 / 18:02
3/15/98  6:17 / 18:14
3/31/98  5:55 / 18:27

April 1998
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<td>Wed</td>
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<td>Thu</td>
<td>SFCC</td>
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<td></td>
<td>GNTO meeting</td>
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<td></td>
<td>First photo of the Sun - 1845</td>
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<td>Fri</td>
<td>UNM</td>
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<td></td>
<td>First quarter moon (12:18 am)</td>
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<tr>
<td>Sat</td>
<td>Astronomy 101</td>
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<tr>
<td></td>
<td>Be sure to spring your clocks ahead when you go to bed</td>
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<tr>
<td>Sun</td>
<td>Daylight Savings begins at 2:00 am</td>
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<tr>
<td>Mon</td>
<td>Mercury in inferior conjunction</td>
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<tr>
<td>Tue</td>
<td>Asteroid Ceres in conjunction with Sun</td>
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<td>Wed</td>
<td>Board Meeting</td>
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<td>Thu</td>
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<tr>
<td>Fri</td>
<td>UNM</td>
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<td></td>
<td>Moon at apogee 8 pm</td>
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<td>Sat</td>
<td>TAAS General meeting (Regener Hall, 7 pm)</td>
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<td>Sun</td>
<td>Easter</td>
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<td>Yuri Gagarin first human in space</td>
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<td>Mon</td>
<td>Saturn in conjunction with Sun</td>
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<td></td>
<td>Juno 0.9 deg. from moon</td>
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<tr>
<td>Tue</td>
<td>1629: Christiaan Huygens born</td>
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<td>Wed</td>
<td>Acoma SCCS (school)</td>
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<td>Thu</td>
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<tr>
<td>Fri</td>
<td>UNM</td>
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<td>1946: First captured V2 rocket launched from White Sands, NM</td>
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<td>Sat</td>
<td>Carlsbad</td>
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<td></td>
<td>Mercury stationary</td>
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<td></td>
<td>Space Day @ National Atomic Museum</td>
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<tr>
<td>Sun</td>
<td>Last quarter Moon 1:53 pm</td>
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<td></td>
<td>Neptune 3 deg S of Moon</td>
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<tr>
<td>Mon</td>
<td>UNM Observing</td>
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<td></td>
<td>Uranus 3 deg S of Moon</td>
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<tr>
<td>Tue</td>
<td>Lyrid meteor shower</td>
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<td>Los Padillas Elem School</td>
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<tr>
<td>Wed</td>
<td>Lyrid meteor shower</td>
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<tr>
<td>Thu</td>
<td>Jupiter 0.2 deg S of Moon</td>
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<td></td>
<td>Venus 0.08 deg N of Moon</td>
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<tr>
<td>Fri</td>
<td>UNM</td>
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<tr>
<td></td>
<td>Mercury 0.9 deg N of moon</td>
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<tr>
<td>Sat</td>
<td>Placitas Star Party</td>
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<td></td>
<td>GNTO</td>
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<tr>
<td>Sun</td>
<td>New Moon (5:41 am)</td>
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<td>Mon</td>
<td>Matheson Park Elem School</td>
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<td>Tue</td>
<td>Aldebaran 0.4 deg. S of Moon</td>
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<tr>
<td>Wed</td>
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<tr>
<td>Thu</td>
<td>GNTO</td>
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</tbody>
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All times MST (before 4/5/98)
All times MDT (after 4/5/98)

Sunrise / Sunset
For Latitude 35.08, Longitude 106.65 (Albuquerque, NM)
Sunrise = upper limb on horizon
Sunset = upper limb on horizon
NOTES:
* = official TAAS Event
GNTO=General Nathan Twining Observatory. Call Bill Tondreau @263-5949 to confirm.
SFCC=Santa Fe Community College. Call Brock Parker @ 298-2792 to confirm.
UNM=UNM Observatory observing nights. Call Brad Hamlin @ 343-8943 to confirm.
ATM=Amateur Telescope Making. Call Michael Pendley for information @ 296-0549.

All times MST before 4/5/98, MDT after 4/5/98

The Messier Marathon
by Kevin McKeown

It's spring time and that means the Messier Marathon is upon us again! This year's event is
scheduled for Saturday night - Sunday morning, March 28-29, 1998, at General Nathan Twining
Observatory. This year's Marathon is particularly favorable because we have a better than usual
chance to observe all 110 Messiers! The moon will be only about 24 hours old—a wire thin
crescent.

Basically, the Messier Marathon consists of observing all—or as many Messier objects as you
can—in one night. You can do this any night of the year, but a date in March or April offers the
chance to get 108 to 110 Messiers. The Society recognizes those individuals who observe over
100 Messiers, and gives honorable mention to those participating in their first Marathon but who
don't get over 100. Everyone is invited, but see the advice I offer below.

For first time Marathon participants, I offer these comments. First—Courtesy. The Messier
Marathon is generally for 'hard core' observers—not for those who want to simply see Messier
objects for the first time. There is tremendous dedication and concentration on behalf of many
doing the Marathon. Please try not to bother these individuals by asking for directions to M
objects every few minutes. Practice before the event by observing as many Messiers as you can.
If you still feel uncomfortable observing on your own, join others that feel the same and have a
good time observing, and logging Messiers in a more casual manner.

Secondly, remember that any Messier Marathon has to begin by mid twilight, because of the
need to observe M 74 and M 77. These two galaxies are the toughest of the evening Messiers,
and they are very low in the west at nightfall. Because of this, I strongly recommend that you be
set up at your observing site, and (perhaps) have eaten dinner by sunset! If you wander into the
GNTO grounds after sunset, you've probably lost M 74 and M 77, and your car lights and
commotion will greatly bother others who are doing the Marathon. Note: this year, on March 28th, evening twilight ends at 7:49 pm. M 74 sets at 8:00 pm, and M 77 sets at 8:22 pm. M 30 rises at 4:30 am, and morning twilight begins at 4:32 pm. M 77 will be very challenging this year, with M 30 somewhat easier to recover.

Third prepare well for the Marathon! Try to observe the more difficult M objects a few days beforehand, and have a strategy in hand. Make sure you are mentally prepared. Observing 110 objects in one night is not easy!!! Remember that you'll be up all night long fighting cold, and, later, mental fatigue. When your body hits "the wall" at about 3 am, and you still have, say, 35 Messiers to do, the reality can be devastating. This happened to me in March 1996, and my brain could not help me locate even very easy Messiers like M 16 and 2!!!

Fourth, make sure you dress very warm, and have plenty to eat for an entire night! A clear sky in late March at GNTO is always going drop to near freezing, or below! With regards to dinner, you can eat before sunset, OR, eat a very late dinner, say around midnight, after you have acquired all of the early setting Messiers. I'm trying the late dinner approach this time. With regards to caffeinated drinks, avoid large caffeine doses in the early evening! By midnight, the caffeine rush has a weird way of quitting all at once, and you suffer a devastating crash. Further caffeine does nothing, except mess up your body. I'm going to avoid food and caffeine for the first half of night, if I can help it. But I've found that a regular sugary Coke has a remarkable way of picking you up in the early morning hours—if you haven't been drinking them all night to begin with.

Hopefully, those members who have been kind enough in the past to bring their trailers (and cooking facilities) will do so again, but this year, let's bring food and drink for them, to help them out. Carl Frisch plans to CCD image all 110 objects, so please, let's give him a break from the cooking chores this year!!!

I am preparing an observing program that describes the order in which to do the Marathon. We'll probably charge for just the copying costs. If you have any questions, contact Kevin McKeown at 254-9117. Good luck!

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Presidents Update

by Mike Pendley

March Meeting: We are fortunate to have Dr. Larry S. Crumpler of the New Mexico Museum of Natural History and Science as our guest speaker for March. Dr. Crumpler's talk will focus on the planet Venus and provide an update on possible landing sites for the Mars Surveyor 2001 lander/rover (see March 1998 Sidereal Times, page 9). This is shaping up to be a great meeting. I hope you will be able to make it. The meeting begins at 7 pm, on March 11 at Regener Hall (map on page 16). As always—don't forget the goodies.

TAAS in the news: I was surprised and pleased to see TAAS mentioned on page 4 of the February 1998 issue of Reflector—The Astronomical League newsletter. Gary Tomlinson, the
AL Astronomy Day coordinator, discusses details of the 1997 TAAS astronomy day: <TAAS> also used an indoor shopping mall and provided space for an impressive list of local astronomical organizations to set up and display information. Some of these were student "Science Fair" type of displays, including one student experiment selected to fly on a future mission of the Space Shuttle. According to Jerry Cross, advisor of the Young Astronauts Club at Tomasita Elementary school, this experiment was selected for a free Get Away special by NASA on the growing and photography of crystals in space. TAAS used a previous comet watch (Be-Bop with Hale-Bopp) serving 13,500 people to promote the upcoming Astronomy Day. Michael Pendley reports that TAAS added 15 new members as a result of Astronomy Day. Mall officials states that mall traffic on Astronomy Day increased by two to three thousand people over normal.

**Telescope Curator Needed:** As mentioned last month, we need someone local to serve as the TAAS Telescope Curator. This is a popular and important TAAS program. Duties include maintaining a queue of individuals wishing to borrow a telescope, keeping track of the location of the TAAS loaner telescopes, and coordinating the transfer of telescopes from one member to another. It is very rare that the curator needs to store equipment. If we do not receive a volunteer soon I will be forced to recommend to the board that the telescope loaner program be placed on hold and all equipment placed in storage.

**Events Policies and Procedures:** The 1998 version of the TAAS policy on events is published on page 9 as required by TAAS bylaws. This policy is intended to help the Board of Directors in scheduling official TAAS events—not to dictate how private star parties organized by TAAS members should be handled.

**WWW.TAAS.ORG:** As you may know, our Web Master, Elinor Gates, is about to graduate and will soon be leaving the Albuquerque area. She has been preparing for this transition for quite sometime now. Ellie recently completed work for an account on a web server the Physics and Astronomy Department is graciously providing. This new account is located at http://www.phys.unm.edu/~taas. I recently completed the paperwork to register the Internet domain name taas.org and Tom Hess (UNM) configured the PandA name servers to resolve this ID and set up a virtual server. What does all this mean?—It means that now the TAAS web site can be accessed at http://www.taas.org. The last of the glitches should be worked out by press time but if you have any trouble, the old address will work as well. Thanks to Ellie, Tom and UNM.

**Star Party in Malaysia:** I recently received an e-mail message from Sua Sin-Zang of The Star Hunter Astronomical Society, Malaysia (45, Jalan SS 1/22; 47300 Petaling Jaya; Selangor, Malaysia, szsua@tm.net.my.

Sua tells me that there will be a star party near Kuala Lumpur on March 14-17. While most of us will not be able to attend, we do have a few international gadflies who might be in the area. In any case, Sua is looking for club information he can set up at a static display. Does anyone have any interest putting something together? Let me know and I will forward Sua's e-mail message to you.
New Members

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

Beth & Elijah Esquivel  
Norman Orchant  
Joanne & Scott Schiabor  
Jaween Vilven-Doggett  
John Doggett  
Florian & Michael Walchak  
Don Jackson  
Idalee Vogel

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 395, up 8 from last month.

Random Acts of Kindness

Many thanks to Ron and Leah Gasser for their generous donation of books to the TAAS library. We now have an additional complete three volume set of Burnham's Celestial Handbooks, Norton's Star Atlas and Atlas of the Night Sky. Thank you! A special thanks to Bill Tondreau for funding the Grand Quiviera special use permit and to Sidney Stone for the donation of a VCR.

Board Meeting

by Robert Williams, Secretary

The February 5, 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, Bruce Levin, Carl Frisch, Dave Blair, David Sukow, Gordon Pegue, Lisa, Ruth Pendley, Kevin McKeown and Robert Ortega. Also in attendance were Barry Gordon and Brock Parker.

January Minutes: Robert Williams read the minutes of the January meeting to the Board of Directors. Kevin McKeown asked that the minutes be changed under Calendar to say that E. G. Ross Elementary would be on Wednesday, February 25, 1998, instead of Tuesday, February 24, 1998. Gordon Pegue moved to accept the minutes with the change, seconded by Bruce Levin, voted on and passed.
**Treasurer's Report:** Elinor Gates read the condition of the treasury to the board. Total funds on deposit were $9,293.36 a decrease of $195.70. Education funds on deposit were $2,634.53 an increase of $3.00. Observatory funds on deposit were $5,533.26 an increase of $90.00. General funds on deposit were $1,125.57 a decrease of $288.70.

**Observatory Committee:** Gordon Pegue said he had no report this month.

**Awards Committee:** George Pellegrino said that the plaques were done and that he had them in a safe place for the general meeting on Saturday. Mike Pendley said that he had received the list of docents from Robert Ortega for recognition but he would not have time to make all the awards by Saturday so he would hand them out at the March general meeting.

**Planetarium Committee:** Lisa had no report.

**Messier Marathon Committee:** The Committee has not met yet so had no report. On the committee are Kevin McKeown, Gordon Pegue and Robert Williams.

**LodeStar:** Carl Frisch had no report.

**EPPC:** Robert Williams handed out the revised Events Policies and Procedures to the board. Ruth Pendley moved to accept the revisions, seconded by Lisa, voted on and passed. The new Events Policies are printed in this newsletter.

**Calendar:** Carl Frisch listed new dates on the board; Algodones Elementary on Tuesday, February 17th, Matheson Park Elementary on Tuesday, April 28th, Hubert Humphry Elementary on Tuesday, May 5th, Mitchell Elementary on Tuesday, May 12th and Rio Rancho Library on Friday, June 19th. All dates are in 1998. Mike Pendley said that he did not know if Rio Rancho Library has sent a confirmation or if we have contacted them about the star party. Lisa said that she did send them a notice of what would be needed for the Planetarium as far as room arrangements.

Barry said that the public that showed up at the Placitas open space star party last year had a great time, despite the clouds, and would like to schedule another event this year. They gave him three dates—two of which conflicted with other TAAS events and one that would be possible if the board would accept. The date chosen was Saturday, April 25, 1998. Mike Pendley motioned to accept this date, seconded by Ruth Pendley, voted on and passed.

Elinor Gates said that she was asked by Albuquerque Open Space to do another talk at Elana Gallegos and maybe have some scopes for the public, but no date has been set as of now. It was decided to have Albuquerque Open Space contact PandA and organize the event with them.

Mike Pendley said that he was contacted by The Tablazon Neighborhood Association to do a star party for them. Tablazon is near Oak Flat. When Mike told them about our Oak Flat star parties they agreed to co-sponsor one or more of the events and help with the care and feeding of the astronomers that attended.
Mike said that Space Day is on Saturday, April 18, 1998 at the Atomic Museum and they would like TAAS to set up a display and maybe have someone there to answer questions. Lisa said she will try and get the display ready and Brock Parker said he will go.

Mike said that special judging for the 39th Annual Northwestern New Mexico Regional Science and Engineering Fair Science Fair is on Friday, March 20, 1998. Mike Pendley, George Pellegrino and Dave Blair volunteered to select this year’s Broline Award winners.

**Past Events:** Robert Williams said that Astronomy 101 was a big success and we need to set a date for another event. Everyone agreed on Saturday, April 4, 1998. Robert Williams, Brock Parker and Carl Frisch will get together to work out details on the agenda. Rio Rancho High School had about 200 people and everything went well. David Sukow had no report on UNM observatory. Mike Pendley said that his ATM class was quite full. The first session was a general overview. The first “real” class is on Wednesday, February 11, 1998.

**Future Events:** Mike said it was time to form a committee for "Astroblast". Mike Pendley, Brock Parker and Robert Williams are on the committee. Mike said that a group of Cub Scouts and Girl Scouts would be coming to UNM on Friday for some viewing. He will be there to work with them.

**Future Meetings:** Elinor Gates is set to talk at the Saturday meeting. The March meeting is still being worked out. Kevin McKeown said he will do the trivia contest question for the general meetings.

**Old Business:** Mike Pendley said that he had been talking to some people about the gift certificate that was given to us by Central Elementary in Los Lunas and that it will be difficult to organize everyone who helped out at the school and use the certificate. It was decided to save the gift certificate and auction it off at the next TAAS auction. Kevin McKeown said that he has done the "Sky Watch" articles through February. There was some talk on how we will use the special use permit for "Gran Q.", it was decided to table this discussion until a later date.

**New Business:** Mike Pendley handed out a budget for the year that he and Elinor Gates had worked out. Elinor Gates said that she will have to step down as Treasurer, Database Manager and Web Master at the end of February. Lisa said that she had some UFO books that were donated to the club and wanted to know what to do with them, it was decided after some discussion to auction them off at the next TAAS auction. Kevin McKeown said that he has been reworking the letter we send out to schools when they want to plan a star party. It was decided to put in the letter that we would like to have a guarantee of one hundred attendees at the party. This is not a set number but will be considered if a school wants to book additional parties. Carl Frisch said that he has gotten another group of the TAAS 200 on CCD images. Dee Friesen, president of the DaVinci Society (the volunteer side of Explora) said that they would be at Astroblast and Astronomy Day.

Newsletter assignments were made and the meeting was adjourned at 8:45pm.
Observatory Committee
by Gordon Pegue

No Report this month

February Recap
by George Pellegrino

I've often heard it said that it's a mark of true genius to be able to explain a very complex concept in such a way that everyone can understand and enjoy it. Such was the case of a lecture given by (the soon to be Doctor) Ellie Gates.

When I first read the title "Robust Relative Distances Between Elliptical Galaxies," I just shook my head and hoped for the best. Ellie began her talk by taking us through the most "elementary" methods of astronomical measurement to the one she is working on. She began by explaining the use of radar to determine the distances to solar systems objects. She then moved to the parallax angle method for determining distances to stars and the use of the intrinsic brightness of cepheid variables to measure the distances to galaxies. There is a problem, however, with distance measurements (robust or not) between elliptical galaxies in that these galaxies lack the inclusion of the time honored "mile marker" of the cosmos, the cepheid variables. Although the Doppler Effect or measuring the red shift of a galaxy can be used (these are names for a method of inspecting the shift to the red part of the spectrum for an object moving away. It's like the changes in sound when a jet is moving toward you and when it moves away). This method is based on something called the Hubble constant.

Since the Hubble constant is a key component and it is uncertain (or at best, not agreed upon) it leaves this method with a margin of error. Ellie's doctoral thesis is based on a method of determining distance beyond two hundred megaparsecs (a parsec is the distance light would travel at roughly a hundred eighty six thousand miles per second in 3.26 years). Ellie's method uses the "surface brightness fluctuations" of these distant objects as they appear in images she collected with HST (Hubble Space Telescope).

To understand surface brightness fluctuations, picture looking at a gravel parking lot close up and now from far away. At close range, the gravel looks lumpy—at a distance, the gravel looks much smoother. Likewise, close galaxies are "lumpier" than ones farther away. Ellie's slides of the campus observatory parking lot illustrated the changes in texture very nicely.

As Ellie's database grows, so does the prospect for determining the distance to wide flung galaxies with greater accuracy. This will ultimately contribute in no small way to the clarification of the Hubble Constant. Way to go, Ellie!

February is also the month the society awards its highest honor to a member for generosity to TAAS and its members and to someone who has shown a consistent effort in public education through astronomy. The recipient of the Lt. Col. Bill Isengard Award for generosity was Carl
Frisch for his help in making improvements possible at our observatory site, especially the level parking lot/observing field.

The John Dobson Award for public education was given to Mike Pendley who, among many other things, has begun and maintains telescope making classes for members and non-members. This passion began in 1994 after he met John Dobson.

Our February meeting ended with our usual social hour and drawings. This month we held our final Waldo drawing (winning was Beth Fernandez) and our usual trivia contest (winning was Brock Parker). Thanks for all those who bring the goodies. Everyone truly enjoys them.

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**Astrophotography**

by **Shane Hall** & Steve Beckwith

Part I

Images of the universe capture all of our imaginations. From the instant thrill of seeing a really dark sky to the everlasting impression it can have on you, visions of the night sky are truly inspiring.

For some of us, the desire to capture these images on film can be as inspiring as the image itself. Our passion is astrophotography, which unlike visual astronomy, can show details only film has the power to reveal. It is certainly a thrill to look up and view the heavens, but to us it is an even bigger thrill to capture it and take it home.

It is this thrill we seek, each and every new moon—to take shots that are good enough to frame and put on our wall. Our techniques range from using a simple camera and a tripod, to taking deep sky shots with Shane's 10" LX 200. Our strong desire to get great shots almost always involves driving hours out of Albuquerque to get away from its sky glow. From the dark sky desert flats of Corona to the mountainous regions of the Jemez, each month brings a weekend of total dedication to getting that ultimate shot.

Over the course of the next few months, we are going to take you through the process of astrophotography, as we have come to understand it. From taking a one-second snap shot of the Milky Way to tracking a 90-minute shot of The Horsehead Nebula, we will share with you our suggestions on how to tackle such a thrilling hobby.

We do not claim to be experts in the field of astrophotography. In fact, almost all of our shots are flawed in one way or another. We do however, claim to have an enormous passion for it. As a result of this passion, we have spent many years studying astronomy and learning our way around the night sky. Starting two years ago, we began to capture the night sky on film. During this time, we have experienced some of the most thrilling, as well as frustrating, moments of our lives.
The hobby of astrophotography involves dedication and perseverance. If you decide to participate you will experience the excitement of spending all night taking shots, and the nervous anticipation of waiting for the film to be developed. You will also experience either the joy of taking a really fine shot or the disappointment of nothing to show for your night's endeavors. However, when you do take a good shot, the rewards are, shall we say, out of this world! There will be nights of frustration and failure. However, as we are fond of saying about astrophotography, "If it was easy, everyone would do it!"

We hope to have you learn from our mistakes before making them yourself (and trust us, the mistakes have been many). We will try to guide those that have never tried astrophotography before, as well as those that may have tried it and given up on it due to the inherent complexity of astrophotography.

Next month, we will discuss how to make astrophotographs with the simplest of setups. Armed with just a camera, a cable release, and a tripod, you will find many wonders of the night sky are very much within your photographic reach. We will show you how to take very dramatic and colorful shots of the Milky Way, and how to photograph popular constellations such as Orion, Scorpio, and Ursa Major. We will also show you how to take some "gee whiz" star trail shots, a personal favorite of Astronomy magazine's "Hot Shots" section.

Subsequent articles will introduce more advanced techniques, and discuss how to cope with the increasing complexity involved in accomplishing shots. For example, one article will cover building a barn door tracking device—a simple, inexpensive homemade camera platform that lets you take long exposure, guided astrophotographs. This setup will allow you to take great detailed shots of such well-known objects as the Andromeda Galaxy and Orion's Nebula without the use of a telescope!

Next we'll go into what is possible with the aid of a telescope. From beginner telescopes using simple slow motion controls to the computer-enhanced, autoguided LX 200, we will cover the techniques of capturing deep sky objects on film. From piggyback shots of the Rosetta Nebula to prime focus shots of the Whirlpool galaxy, we'll make every attempt to get some great shots on your wall!

Our main goal in these articles is to make more TAAS members aware of just what is possible with minimal equipment. We believe that under the clear and dark skies New Mexico has to offer, stunning astrophotos are achievable by anyone.

Feel free to view some of our shots on the TAAS page as well as more shots at our web sight www.flash.net/~mhall1. If anyone has any initial questions before the next article, please feel free to contact us via our web sight, or E-mail us at mhall1@flash.net. Until then, clear skies!

February Trivia Question
TAAS holds a trivia contest each general meeting. The February winner was Brock Parker and he received an antique astronomy book.

When an asteroid is first discovered, it is given a designation that indicates the year of discovery. Two letters follow the discovery year, and these letters are used to determine the month, and the rank within that month the asteroid was discovered. For example, 1995 BA was the first asteroid ("A") discovered the second 2 week period of January ("B") 1995 (52 weeks / 26 letters = 2 weeks/letter). Later, the asteroid is formally named. In 1989, Brian Marsden named an asteroid after Elinor Gates (Our speaker tonight) "2650 Elinor." What was this asteroid's discovery designation?

(a) 1959 EL  (b) 1994 AE
(c) 1988 CL  (d) 1931 EG
(e) 1990 NC

Here is the answer

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February Preview

See President's Update

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Observer's Page

by Kevin McKeown

April Musings

When and where on earth can you see the greatest number of first (or brighter) magnitude stars in the night sky all at once? Well, at 10 hours 30 minutes of local sidereal time ("LST"), from the top of Mount Kilimanjaro, of course! (Note: LST is simply the present Right Ascension line that is on your local meridian.) Needed: a very clean, black sky right down to the horizon. Let me explain. There are, if we consider all the stars brighter than magnitude +1.5, twenty-one 1st magnitude stars. The brightest is Sirius, followed by Canopus, and then alpha Centauri. Deneb, beta Crucis, and Regulus, at magnitude +1.33, round out the list. Castor, at magnitude +1.58 rounds off to second magnitude, so it just misses.

I pondered the solution to this problem, and, without the use of a computer, found that on April 13th, at about 9 pm local time, (10h 30m LST) from an equatorial site, Aldebaran, Rigel, Capella, Betelgeuse, Canopus, Sirius, Procyon, Pollux, Regulus, Acrux, Mimosa, Spica, Hadar, Arcturus, Rigil Kentaurus, and Antares could all be seen at once! That's 16 out of the 21 first magnitude stars! Amazing! Only Vega, Deneb, Altair, Fomalhaut, and Achernar would not be
seen, (and these five miss out from being seen by quite a lot). However, the visibility of Aldebaran and Antares at the same time is a challenge! These are the two key stars. Actually, the visibility to these two stars at once led to the solution of this question. This was gotten from a simple list of all stars brighter than magnitude +1.5. First, I assumed I'd be observing from the equator. Then, I mentally determined how many of the stars I could fit into a 12-hour interval of RA. At the equator, this is one half of the celestial sphere. Aldebaran, at Right Ascension 4 hours 33 minutes, and Declination +16 degrees, 25 minutes, happens to lie in the sky very nearly opposite the star Antares. At 16 hours 26 minutes of RA, and -26 degrees 20 minutes declination, Antares could just barely fit into a sky along with Aldebaran, since if we add 12 hours of RA—one half of the night sky that is—to Aldebaran's RA, we get 16 hours 33 minutes. A wee bit bigger than Antares' RA. Seven arc minutes, to be exact. Actually, since Antares lies more south of the celestial equator than does Aldebaran to the north, a site just south of the equator on Earth might be needed. Kilimanjaro, at latitude -3 degrees, should do, as would a site in the Andes of Equador. Atmospheric refraction should also help lift the altitude of both Aldebaran and Antares at just the critical time. And the critical time is 10 hours 30 minutes of LST, or exactly midway between the RA's of Aldebaran and Antares!

So, at 10 hours 30 minutes LST, as your sherpa snoozes under a brilliant clean black sky hovering over the nineteen thousand foot tall Kilimanjaro, you eagerly await the rising of Antares in the east southeast, all the while as you watch the nose of Taurus the Bull—marked by the Hyades, and Aldebaran—touch the horizon in the west northwest. There—you've spotted Antares—just as it pops above the horizon! You quickly spot all of the "in between" first magnitude stars (14 total), and then hope the sky is clean enough to be able to see Aldebaran just on the horizon in the west. There it is—you've done it!

This is remarkable! There are several interesting pieces of fallout from this idea. First, that 16 of the 21 brightest stars can be seen at once from the equator in April implies that the February to April equatorial night sky is quite brilliant! Especially when you throw in those stars that just miss: e.g. Castor, gamma Crucis, gamma Velorum, epsilon Carina, etc. Most of these stars are associated with the brilliant winter to spring Milky Way.

The converse to this is that at around 22 hours 30 minutes of LST, that is, 12 hours (or half a year) later, say at 9 pm October 12th, the equatorial night sky is quite drab! Then, either 5, 6, or 7 first magnitude stars would be seen. Probably the stars of the Summer Triangle, Fomalhaut, Achernar, and Antares or Aldebaran would be seen, but conceivably Aldebaran and Antares could be seen both at once, or not at all depending on the efficacy of atmospheric refraction, and your time of observation.

Upon leaving an equatorial locale, the question of how many or how few first magnitude stars can be seen at once becomes a lot more difficult. One way to solve this problem (w/o a computer) is to have a series of planispheres for different latitudes. It so happens that from Twining, there seems to be two times of the year when 11 first maggers are seen—in the spring, and in the fall. During the Messier Marathon this March 28th, at 10:20 pm, try for these eleven! For anywhere in New Mexico, the greatest number of first magnitude stars you can see at once seems to be 12. This happens at 1 hour 36 minutes of local sidereal time. Can you say when and where this is in our state? If you find other solutions, please let us know!
Venus

Dave Blair made a remarkable observation of Venus last January 16th, when the planet was less than 9 hours after inferior conjunction. At 2:22pm MST, from Albuquerque, Dave found Venus less than 5.5 degrees away from the sun! He polar aligned his 4.5-inch reflector and cautiously swept up the very thin crescent of the planet in a clean blue sky! He said the crescent measured a whopping 62 arc seconds from cusp to cusp! Venus was only .267 astronomical units from the earth at the time.

Carl Frisch and I recovered Venus on January 20th from Big Bend National Park, in deep blue skies of mid day. The crescent was easy, and huge! I then recovered the planet with the naked eye by blocking the nearby sun with Carl's trailer!

Close Calls

Such observations of Venus, as described above, are remarkable, and lead into this idea of what I call "inner sanctum" observing. Namely, how close to the sun can you observe planets, or deep sky objects? Such observations are quite remarkable and quite dangerous. Kevin and Dave are both extremely skilled observers. Please don't take this as a challenge. Observing objects near the sun is an activity that is very unforgiving of mistakes. At most you get to make two! Editor. In a similar vein, how close to the southern horizon can you observe bright stars, or deep sky objects? Perhaps the need to observe that last Herschel 400 object from your list prompts you to drag out the scope for a twilight star hop effort. Take for example my recovery of NGC 3593 in western Leo on July 17th, 1996. The sun was some 35 degrees away, but NGC 3593 was only 15 degrees above the horizon at the end of twilight. The galaxy was easily recovered in my 10 inch, but zodiacal light hampered the view. On the other hand, I couldn't recover M 88 on September 11th, 1995, with the sun only some 22 degrees distant. The sky was very clean. At the end of twilight, M 88 stood only 2 degrees high above the horizon, and was hopelessly lost in horizon murk, and zodiacal light.

On the other hand, Carl Frisch and I watched —with the naked eye— alpha Centauri rise out of the exact horizon on the morning of January 27th, from Big Bend NP. And I recovered the 8th magnitude globular NGC 1261 on January 18th, 1996 from near Hillsboro, NM, as it lay only 2 degrees above the horizon. But twilight and zodiacal light did not compete with these observations. However, I should say that Carl and I held alpha Centauri with the naked eye until only 20 minutes to go till sunrise!!! This was from Big Bend, and alpha stood a degree high!

Other close calls are the observations of new moons less than 24 hours old, M 74 and M 30 at Messier Marathons, and of course, comet discoveries. Howard Brewington knows all about these close calls!

Big Bend National Park

Carl Frisch and I ventured far south to Big Bend in late January, and from the southern end of the Park we observed a wealth of far southern objects! Among that seen was the entire False Cross, the eta Carinae nebula, NGC 3532 (WOW!), the top 3 stars of Crux, the Jewel Box (WOW!),
and alpha and beta Centauri! A full discussion of the trip—and the choicest observing sites—will appear in the next Sidereal Times.

**Meteor Report**

Elizabeth Fernandez related to me her observation of a full moon bright fireball on the morning of January 26th, 1998. At 5:55 am, looking east over the Sandias, she spied a large white, swift meteor just above the crest. The meteor was apparently streaking, and gave the effect of Comet Hale-Bopp. Did anyone else see, or hear about this object?

**GNTO, January 24-25, 1998**

Gordon Pegue reports that this was a fine night of viewing at GNTO. Also attending were Bill Tondreau, Alejandra Valderrama, Dave Blair, Rick Hudson, Lisa and Lindsey Wood, and several new members and visitors. Bill Tondreau had his 22-inch reflector, and this gave great views of M 42, M 43, NGC 2903, and the distant globular NGC 2419 in Lynx. Gordon says this remote globular was just starting to show resolution in the 22 inch, apparently helped on by some very steady skies. Dave Blair observed asteroids, and recorded his 78th! Lisa also found her first two asteroids—objects fainter than 11th magnitude. The night was only cool, with no wind, and everyone left by 11:30 pm.

**TAAS 200**

Since the TAAS 200 is stocked with spring galaxies, let's concentrate on these gems. First, NGC 3115 in Sextans is the famous "Spindle" galaxy. This might be the best lenticular galaxy in the sky. Located about eight degrees due east of bright alpha Hydra, the Spindle shows as an elongated . . . spindle with a bright, elongate core. This ninth magnitude galaxy needs dark skies to see the faint spindle extensions. Next, since you're in the area, sweep up one of the most exquisite and bright planetaries in the sky: NGC 3242 in Hydra, located about 2 degrees south of mu Hydra. Called the "Ghost of Jupiter", it has nearly the same dimensions as Jupiter. With a striking blue green color, NGC 3242 is of 7th magnitude, and can even be seen in finders. With large scopes, this planetary shows an inner ring plus central star, set in a larger disc.

Next, head further south and east into Hydra and recover the fine, bright galaxy NGC 3621. This galaxy lies in a remote, star poor region of Hydra, and there are few guide stars, but that's the way it is. NGC 3621 is a very conspicuous oval nebula that shows mottling, and graininess, but it has no core or nucleus. Now, let's move back north into Leo and sweep up a small group of four galaxies located only two degrees north of gamma Leonis. The brightest of these four is NGC 3190, a nearly edgewise spiral that shows perturbations from its neighbors. This galaxy is of tenth magnitude, and is seen as an elongated nebula. See Burnham's, Vol. II for a good photo of this cluster.

Next, in far southern Leo sweep up the bright galaxy NGC 3521. At magnitude 8.9, this is a slightly oval nebula that rises to an intense core. It is a fine multi arm spiral. Visually, it's impressive. Now, move to western Leo, and recover NGC 3628. This galaxy is part of the small M 65 - M 66 group, but why Messier missed it is unclear, because it is bright! NGC 3628 is the
famous "Wobbly Edge-on": this is a large nearly edge-on spiral galaxy that has been perturbed by its neighbors. Moderate scopes reveal NGC 3628 as a long tapered nebula with a dust lane.

Next, star hop into the barren wastes of Leo Minor, and sweep up NGC 3344. This is a beautiful face on Sc spiral in a lovely field. Visually, it is a round glow that rises to a small, bright core. Next, in northern Leo Minor, lies NGC 3432, one of the most beautiful of the edge on galaxies. NGC 3432 is a uniformly long, thin, but faintish glow. Observe under a dark sky. Farther to the north into Ursa Major, near beta UMa, lies NGC 3310. This is an active galaxy with a small, bright core rich in detail in large scopes. Visually, it looks like a planetary nebula.

Last for this month, NGC 4605 is a curious, mottled edge-on galaxy that lies about 6 degrees above the handle of the Big Dipper. Visually, it is a bright lozenge shaped nebula that shows exquisite irregular patches of dark dust. It was gorgeous in Bill Tondreau's 30-inch down at GNTO one night!

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**What's Up for April**

*by Kevin McKeown*

In early April, there is always the chance to retry the Messier Marathon, if you've missed the March 28th GNTO event. However, the moon is advancing rapidly, and by April 2nd, M 74 may all be gone. The next interesting event in April is the Lyrid meteor shower which peaks around April 21st. There will be a 17 or 18 day old moon to have to put up with, so I recommend limiting your meteor watching to the three hours before moonrise (about 4 pm) on the mornings of April 21 and 22. Lyrids are moderately swift, yellow streaking meteors that can be bright. Activity is low (10 to 15 per hour per individual), but on occasion, the shower can flare up to rival the Perseids. Do monitor the Lyrids! On the morning of April 23, the planets Jupiter and Venus will form a very close pair, with the moon close by! Don't miss this event: it could be spectacular! On the morning of April 24th, look for Mercury located just to the left of a thin crescent moon.

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**Ask the Experts**

*by Bruce Levin*
Polar Alignment is a condition where the axis of rotation of a telescope is aligned parallel to the earth's axis of rotation. In the case of us folks that live in the northern hemisphere at this time in astronomical history, our earth's axis points very close to Polaris, also known as the pole star in the little dipper asterism. This second magnitude star is the end star of the handle and is approximately 0.7 deg away from true north.

Polar alignment is useful for telescopes that are on equatorial mounts. Once polar aligned, the telescope can track celestial objects with a clock drive or manually moved in what is called Right Ascension (RA). The RA setting circle is marked off in 24 hour sections with minute marks (typically 5 or 10 minute divisions) between the hour marks. An adjustable wedge is set for the latitude at which the telescope is located. Albuquerque is at 35 degrees north latitude. The wedge is adjusted with respect to the mount base (see figure 1). The base is level with respect to the ground with the RA axis oriented in the north-south direction and the clock drive motor is at the south (or bottom of the axis) for observers in the northern hemisphere (see figure 2).

The earth makes one complete rotation (360 deg) about its axis in approximately 4 minutes less than 24 hours in a clockwise direction when facing north. In order to compensate for the earth's rotation rate, a telescope with a clock drive rotates the telescope about its axis in the opposite direction (or counter-clockwise) as the earth's rotation at that same rate. In this way, the telescope is able to track a celestial object and keep it in the eyepiece field of view. This rotation rate of 23 hours 56 minutes and 4 seconds is known as sidereal time.

A compass can be used to align the telescope during the day. However, one must remember that magnetic north at most locations on earth is different than true north. For Albuquerque, magnetic north is approximately 11 degrees east of true north.

The purpose of the information provided here is to understand the geometry of polar alignment for equatorially mounted telescopes. An actual polar alignment procedure will be the topic of a future article.

**Figure 1**

**Figure 2**
The Kids' Corner

by Lindsay

This Month's Dumb Joke
Q: What do you call bugs on the Moon?
A: Luna-tics

**Atmospheres are a Gas!**

Do you know what is the main gas found in Earth's atmosphere? A lot of kids think it is oxygen, but there is really much more nitrogen in our air than oxygen. See if you can match the gas with the planet or moon it is found in most abundance.

<table>
<thead>
<tr>
<th>Planet</th>
<th>Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercury*</td>
<td>methane</td>
</tr>
<tr>
<td>Venus</td>
<td>hydrogen</td>
</tr>
<tr>
<td>Moon*</td>
<td>hydrogen</td>
</tr>
<tr>
<td>Mars*</td>
<td>hydrogen</td>
</tr>
<tr>
<td>Jupiter</td>
<td>carbon dioxide</td>
</tr>
<tr>
<td>Saturn</td>
<td>carbon dioxide</td>
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<tr>
<td>Titan</td>
<td>sodium</td>
</tr>
<tr>
<td>Uranus</td>
<td>helium</td>
</tr>
<tr>
<td>Neptune</td>
<td>nitrogen</td>
</tr>
<tr>
<td>Pluto*</td>
<td>hydrogen</td>
</tr>
</tbody>
</table>

*Only very thin atmospheres are found here

Here are the answers:

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**TAAS STAR PEOPLE**

by Gordon Pegue

No report this month

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**Internet Info**

by *Michael Pendley*

No Report this month
UNM Campus Observatory Report
by David Sukow

At five o’clock, it was cloudy, windy, and the UNM Hotline was calling the observatory closed. We decided to officially call off TAAS activities at the observatory as well. Naturally, within half an hour of this decision, fickle Mother Nature cleared the skies! Despite our "official" closing, several docents and visitors were lured by the improved conditions, and we had a pleasant evening with about forty visitors attending. We observed the usual array of winter objects, between breaks in the infamous "Cloud Nebula."

At five o’clock this evening, the weather was again very cloudy. Having learned the lesson of the previous week, however, we remained open, and the sky was completely clear by about 7:30. Approximately forty visitors came out, and Mike Pendley provided two slide shows of celestial objects to eager groups of Boy and Girl Scouts. The highlight of the evening was a bright bolide that streaked low across the sky, from the southwest to the southeast about twenty degrees above the horizon. It appeared bright orange to my eye, and displayed a fine tail. Finally, a special word of thanks to Gordon Pegue for doing a quick and effective field repair on the clock drive of the 10" Cave reflector.

2/13 Unequivocally clouded out. TAAS: 2, El Nino: 1.
2/20 Unequivocally clouded out. TAAS: 2, El Nino: 2.
2/28 Approximately 60 people came out to enjoy the sky with TAAS docents. TAAS: 3, El Nino: 2

Docents assisting this month, in no particular order, were Robbin Pimbley, Mike and Jon Pendley, Carl Frisch, Kevin McKeown, Robert Ortega, Jay Harden, Ellie Gates, Jay Rowse, Gordon Pegue, and Brock Parker. Please let me know if your name should be on this list!

School Star Party Update
by Mike Pendley

Algodones Elementary, Feb. 17. Skies were cloudy so no observing was possible. Robert Williams, Wade Douglas and Lisa, and Jon Pendley gave 5 planetarium shows to 100 people while Mike Pendley gave two slide shows to approximately 50 people. Carl Frisch, Robert Ortega, Ruth Pendley, and Brock Parker, staffed a telescope display area. In spite of the bad weather, a very large fraction of the school attended.

E. G. Ross, February 25. This event was combined with a science fair so attendance was quite good—350+. Projects in the gym prevented us from setting up the planetarium so, while Kevin McKeown provided two slide shows, docents outside provided views of the sky through holes in the clouds. Attending were Carl Frisch, Brock Parker, Robert Ortega, Robert Williams, and Jon Pendley.
Rio Rancho High School Star Party
by Kevin Jarigese

Not only was Punxatawny Phil out the night of February 2nd but so was Ellie Gates—dazzling the Rio Rancho High School students and community with a great keynote speech on the lifecycles of stars and the latest on various galaxies.

After her shadow appeared, we all knew we would have a great viewing as the clouds cleared and celestial light was exposed.

Prior to the viewing, recognition was given to those who had donated to the future Rio Rancho Observatory. Those honored were John Sefick, Gordon Hawley, Carl Frisch, Brock Parker, and Don Chalmers.

Later in the evening, Robert Williams and Lisa put on a spectacular comet demonstration and continued to please the crowd with the Planetarium.

The evening was a great success and Rio Rancho thanks all of the TAAS members who participated in our Ground Hog’s Day Viewing!

Docents that attended were David De La Rue; Wes and Carol Baker; Brock Parker; Ellie Gates; Mike Ruth, and Jon Pendley; Lisa, Lindsay, and Barry; Tamara Hennig; Bill Tondreau; Carl Frisch; Kevin Jarigese; Robert Ortega; Robert Williams; and John Sefick. Attendance was set at about 200. Skies were mostly clear but seeing was poor.

Lisa and her son Barry make a comet
Photo by Mike Pendley

Astronomy 101—The Sequel
by Robert Williams

Due to the success of the first “Astronomy 101 Night” a second one has now been scheduled. The second installment of our beginner night will be on Saturday, April 4th, 1998. It will be held at UNM again, but we are not sure exactly where yet. If you have any suggestions or comments please call and let me know. We will be getting together soon to work out details and work out
an agenda for the night. More details on this matter will be coming soon, and again even though it is not required please RSVP so we can have an idea of how many people to expect. My phone number is (505) 323-0172, my e-mail is rawilliams1@compuserve.com, please leave your name and phone number so we can inform you of any changes.

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**The Best Way to Learn is to Teach**

by Lisa

If you would like to learn more about the night sky with its attendant mystery, magic and wonder, how about learning to use the Starlab? If you can teach in the Starlab only one night per month, we can guarantee you a fun-filled astronomical adventure! You need only have good knees and a love for children and the stars to qualify for what we think is one of the liveliest programs sponsored by TAAS. Santa Fe Community College's planetarium director and TAAS member, Suzy Chippindale, has graciously opened the Santa Fe Planetarium for an evening of exclusive "sky-learning" for interested docents, and you will also receive all the on-the-job training you need in the use of our portable planetarium. TAAS typically sponsors 20 school star parties per year, and we request your assistance at only 9 of them. If you are interested please contact Lisa or Robert Williams. Thanks!

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**Star Party to Support Open Space**

by Barry Gordon

Las Placitas Association is a non-profit volunteer group dedicated to the preservation of open space in the Placitas area—and to public education on the value and varied uses of this space. In support of that—and despite El Nino, the poor skies at our first attempt, and whatever-all-else—TAAS will be putting on a second public star party for the group, starting at 8pm, on Saturday evening, April 25, in the village of Placitas.

TAAS members interested in participating should call Barry Gordon at 867-6424 or else send an e-mail to BarryGordon@compuserve.com.

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**Science Fair Judges Needed**

by Pat Appel

The Northwest NM Regional Science Fair will be held March 20, 1998. (NW region includes Albuquerque and surrounding area for mid-school and high school students). The volunteer commitment would be for that Friday morning (7:45 AM-12:45 PM) at UNM (Johnson Gym).
We are especially in need of mid-school (grades 6-8) "team" project judges. Generally these are students that have entered a science fair project for the first time (general science). The team category is the newest (and largest) category.

Individuals interested in volunteering may contact Randi Buck (Director of NWNM Regional Science & Engineering Fair Director @ UNM) by calling 277-4916 or myself, Pat Appel, Team Judge Chair at 844-7525 (work), 292-0463 (home), or by e-mail (work address, peappel@sandia.gov or home address, dbappel@aol.com). Detailed information will be mailed or faxed to volunteers.

It's a great opportunity to help young students and is a very rewarding experience.

Thank you for your assistance,

Pat Appel

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**TAAS Top 10 Cool Things About a Car That Goes Faster Than the Speed of Light**

10. You'll be so thin while driving it you can even wear horizontal stripes.


8. Kid from Mentos commercial almost guaranteed to loose a limb if he tries to duck through your back seat.

7. Bugs never see you coming'.

6. Can make a fortune delivering pizza with the slogan "It's there before you order it or it's free!"

5. Traffic enforcement limited to cops with Ph.D.'s in Quantum Physics.

4. That deer in your headlights is actually behind you.

3. Breaking laws of physics is only a misdemeanor in most states.

2. Doppler shift makes red traffic lights look green.

   **And the number 1 cool thing . . .**

1. Sleep till noon. Still get to work by 8:00 am!
Winter / Spring 1998 ATM Class
by Michael Pendley

The Winter / Spring ATM class started off in a big way—with well over 20 people in attendance. Some were just interested in the finding out what telescope making is all about. Some were from past classes that still have some work to do. Still others started their first telescope. Here is a picture of those that were able to attend the February 17 class.

Left to Right: Victor Romanelli, Peter Eschman, Ron Marr, Ann Murphy, Mark Jarner, Andrew Griego, Mike Pendley, Tim Meeks, Charles Lewis, Robert Williams. Not shown are Dave Blair, Marie Garcia, Tom Quinten, Dave De La Rue, Mike Wiedenbeck, Art Jones, Elizabeth and Dale Hetherington, Bill Doleman, Pat and Dan Appel, and Bill Balassi. Photo by Ellie Gates.

1998 TAAS Events Policies and Procedures

I. Definitions

1. Event Types:
   a. Education
   b. Standing (Public and Private)
   c. Special (Public and Private)

   Any of these events may be considered LARGE and are subject to the restrictions below.
   The Board of Directors may add or remove any event at their discretion.

2. EDUCATION EVENT: School star parties.

3. PUBLIC STANDING EVENT: The scheduled Standing Events at the present are;
   Astronomy Day,
   UNM Campus Observing nights, Oak Flat, and General Meeting nights.

4. SPECIAL EVENTS: Any event that is not an Education or Standing Event.
   A Special Event requires a Coordinator and/or a committee as deemed by the Board.
5. PRIVATE STANDING EVENT: Although not restricted to only TAAS membership, in general, Private Events are for the members of TAAS. Presently the TAAS Private Events are as follows; Messier Marathon, Board of Director Meetings, the December Potluck, GNTO nights, and the TAAS picnic.

6. LARGE EVENT: Any public event that requires an Coordinator and/or a committee as deemed by the Board of Directors. Standing, Educational, Special, and Private Events may also be a Large Event.

7. COORDINATOR OF AN EVENT: A Coordinator of an event must be a member of TAAS. The Coordinator has the responsibility of acquiring Board approval for the event, establishing a committee to coordinate the event if the Board deems necessary, advertising the event to the general TAAS membership and/or the public, overseeing the logistics of the event, and providing for the newsletter articles.

8. DOCENT: A Docent is a TAAS member who volunteers his or her time and efforts providing the members of the public access to his or her knowledge and/or equipment at TAAS sponsored events.

II. EPP Committee
1. The Events Policies and Procedures Committee will implement Article 23 of the TAAS by-laws.
2. The Events Policies and Procedures Committee shall meet as the board deems necessary.
3. The Events Policies and Procedures Committee shall create an Official TAAS Docent list.

III. Scheduling Committee
1. The Board of Directors shall form a scheduling committee.
   a. Members of the Scheduling Committee shall include the Events Coordinator, the Education Liaison, and at least one other member. All members of the Scheduling Committee must also be members of TAAS.
   b. The meeting time and place shall be determined by the Scheduling Committee. The minimum number of times the committee must meet will be once per calendar quarter.
   c. All operating procedures developed by the scheduling committee are subject to Board approval.
   d. The Events Coordinator, through the Scheduling Committee will produce a calendar of all known events for the current year and present the calendar to the Board of Directors no later than the February Board of Directors meeting for amendment and approval. Approval shall be by a simple majority vote by the Board of Directors. Upon approval the calendar shall be published in the next edition of the Society newsletter.
   e. The Events Coordinator, through the Scheduling Committee will produce a calendar of events for the first quarter of the next administration and present the calendar at the November Board of Directors meeting for amendment
and approval. Approval shall be by a simple majority vote by the Board of Directors. This calendar shall serve as the interim official TAAS events calendar until the new administration deems otherwise.

IV. General Scheduling Policies

The Coordinators of Standing Events and the Coordinators of Special Events will provide
the Board with a list of those Docents to be acknowledged at the January meeting,
no later than the proceeding December board meeting.

V. Education Events Scheduling

1. The monthly maximums for school star parties are as follows:

<table>
<thead>
<tr>
<th>Month</th>
<th>Max Allowed</th>
</tr>
</thead>
<tbody>
<tr>
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Dates may be added upon Board Approval.

2. In addition to the monthly maximums above, there is to be a maximum of 20 school star parties scheduled per calendar year. This number is not to be exceeded except with Board approval.

3. The maximums of this section may be exceeded only by a majority vote of the Board of Directors--which, as a matter of policy, will enforce them unless provided with a strong case to do otherwise.

4. School star parties will be within 45 minutes from the "Big I" (I25 and I40).
Or if deemed feasible by the Education Liaison and approved by the Board of Directors.

5. Any school requesting a star party must contact the Education Liaison directly and follow the guidelines set forth by the EPPC.

VI. Special Events Scheduling

1. Each request for an event will be presented to the Board for approval.
   a. Events will be documented by a Letter of Confirmation, excluding standing events.
      The Letter of Confirmation will include the date of the event, and the place the event will be held.
   b. Each event will be managed by a committee of a size to be determined by the Board.
      i. If the appropriate committee cannot be formed then the special event will not be added to the official TAAS calendar.
ii. It will not be necessary for board members to sit on the committees.

iii. Membership in TAAS is required to sit on the committees.

c. The Events Coordinator is to be kept informed of all event dates.

d. When requesting an event date the person requesting said date shall inform the
Board of the proposed Coordinator of the event and who has volunteered
to sit on
that particular committee. If the request is put before the board by
someone not
interested in coordinating the event but only presenting the request
for some other
entity inside or outside of TAAS an no one claims responsibility, then
the event
will not be added to the official TAAS calendar.

e. All efforts shall be made to schedule events so as not to conflict
with Standing
Events. If an event is scheduled that conflicts with a Standing Event
then adequate
manpower must be assured for both events.

f. The Coordinator of an event shall attend that event. In case of an
emergency,
the Coordinator of the event shall arrange for another TAAS member to
represent
them at that event.

VII. Violations:
Any attempt to arrange an event outside of these guidelines while
representing oneself
as an agent or director of TAAS and using TAAS Docents for arranging an
unofficial
public event, will constitute a violation and will be subject to
appropriate action by
the Board of Directors.

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Kid's Corner Answers

Mercury-sodium
Venus-carbon dioxide
Moon-helium
Mars-carbon dioxide
Jupiter-hydrogen
Saturn-hydrogen
Titan-nitrogen
Uranus-hydrogen
Neptune-hydrogen
Pluto-methane

Back to Kids' Corner
Trivia Answer

Answer to the February Trivia Question

(d) 1931 EG

Back to trivia

Classified Ads

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


Lost: A gray-brown folding chair. Samsonite. Seat and back padded, metal frame. Probably left at a TAAS event last Summer or Fall. Call 296-0549.

Wanted: One each telescope curator. Effort required is only a few hours a month coordinating the transfer of telescopes from one TAAS member to another. Interested? Call the Hot Line.

Non-commercial ads for astronomy related products listed at no charge for members. To place an ad, send a message to the editor at the society PO box or send a message to mycall@rt66.com.