JUMPIN’ JUPITER IS BIG HIT

crowd of 3500 turns out despite the clouds

The Albuquerque Astronomical Society has done it again. Despite a desperate battle with clouds and our slide projector, we managed an excellent event. The “official” attendance was 3486 people, ranking the event up with the largest star parties in the United States. Many thanks are in order for those who worked so hard to make this a success.

Of special note is the job Karina Runninghorse did with the slide show. During the setup, our slide projector abruptly expired, so Karina and Joe Pannuti drove all the way back to the Physics and Astronomy department at UNM for a replacement. Clearly this falls in the “over-and-above-the-call-of-duty” category, and deserves much thanks.

Jose Gusman, the director of Coronado State Monument, was elated at the turnout, and his active participation and coordination with the Sandoval County Sheriffs department went a long way toward smoothing the flow of traffic. Speaking of which, thanks to Pat and her son David (??) for their efforts in parking cars. It’s very gratifying that we have members who can jump in and fix a potential problem without being asked.

Jumping Jupiter’s Patience Award must go to Bill Tondreau, who was the lone representative of our “Big Glass” department. He dealt with more of the public than any other, with long lines and intermittent clouds, with a smile and characteristic good humor that make these events a pleasure to setup and attend.

GOOD JOB everybody!! We could do it again!!

—Brock Parker

GNTO BREAK-IN
BAD NEWS FOR SOCIETY

Thieves have struck again! Sometime between midnight Sunday, August 11, 1996, and 6 PM Monday, August 12, 1996, the facilities of the General Nathan Twinning Observatory were burglarized according to the Societys unofficial security agent, a man known as “Cowboy.” Member Brad Hamlin received notification from Cowboy about the break-in at about 6:15 PM. Within minutes, a core group of Society members had been notified and were already in transit to the observatory. I received a phone call at a friends house at about 6:20 PM and immediately called Bill Tondreau. Bill told me that Brad had told him that according to Cowboy, the door to the observatory had been cut off. Bill and I decided to gather up tools and equipment necessary to perform any metal cutting and welding that might be required.

Upon arrival at the observatory, Bill and I found President Mike Pendley and Brad in conversation with a State Police officer (whose name I cannot remember). My first concern was the condition of the 16” telescope, so I hastily made my way up to the observing floor. What I found was evidence that someone had taken a close look at the equipment, but nothing was apparently damaged. Satisfied on that count, I proceeded down stairs to look at the observatory door. The door hinges had been cut with a grinder or similar tool. Some kind of rope or chain was apparently attached to a vehicle and the door

Continued on Page 2
PRESIDENT’S UPDATE

“Bad News [MIKE] . . . Cowboy Just Called and Said GNTO Has Been Broken Into AGAIN!”

I had just finished my column this month when the hot line rang. The recorded message played and then Brad Hamlin began to speak: “Mike . . . this is Brad. Bad news. Cowboy just called and said GNTO has been broken into again.” This began a long night of dealing with the state police and helping to repair the damage at our observatory. Fortunately the break-in was not as bad as past ones have been. With the exception of major damage to the door, nothing of great value was taken and there was no vandalism. The next few board meetings and Observatory Committee meetings will need to struggle with what we do next. More information on what happened appears elsewhere in this issue.

Activities and information provided to TAAS members continues to expand. This month we introduce a new regular column in the Sidereal Times that deals with amateur telescope making, and we announce the formation of an observing program special interest group that will meet once a month before the general meeting (see details in this issue).

We also continue to review decisions made earlier in the year. When the Sidereal Times format was updated in May, we decided to eliminate the Lunar and Solar Almanacs. This section consumed a complete page of the newsletter and it was felt that the membership would be better served if we used this space to enlarge the event calendar. In the last three months a few members have told me that they miss this page and have asked where we obtained the almanac data. The number of requests has been so small that I still believe we made the right decision in eliminating the page in the newsletter, but I also want to insure that the membership has access to as much astronomical information as possible. Therefore, anyone who would like the next several years worth of almanac data can contact me, and I will make sure they receive a copy by mail. I can be reached in a number of ways: by calling the TAAS Hot Line (296-0549), by e-mail (mycall@rt66.com) or by regular mail (1424 Pinnacle View, Albuquerque, NM 87112). I also encourage anyone with a suggestion on how TAAS could better serve its membership to leave a message on the hot line.

Finally, while making a few updates to the Official Membership Packet I reread Appendix F, History of The Albuquerque Astronomical Society. This history covers the period from 1959 to 1988. It is time to update this portion of the packet, and I would like to ask the general membership to help. I am interested in reading documents, looking at pictures, and hearing stories of how it “used to be.” If you have any information you think might be remotely useful I would very much like to hear from you.

—Mike Pendley
Pres. TAAS

GNTO Break-in (continued from front page)
pulled right out of its frame. The security plates that were installed on the inside of the door on the hinge side failed completely, they were popped off and lying on the ground. A cursory examination of any missing items was done while the State Police officer was still present. Missing are 2 quality lawn chairs which I believe belonged to vice-president Lisa Wood and 3 extension cords. The downstairs-area was trashed like it was the last time we were burglarized, i.e.—all the stuff we had stored on shelves was strewn all over the floor.

After the State Police officer left, we brain-stormed about the door and what to do with it. The overriding concern was the security of the telescope. It was decided that the only reasonable course of action was to attempt to get the door back into its frame and weld it closed with provi-
July 27th Meeting Review—
NRAO’s Dale Frail Gives Terrific Talk on GRBs—abbreviated mention also made of GRO, BATSE, UV, BACODINE, VLA and HETE’ (Whew!)

Lisa Wood called the meeting to order at 7:00 pm, and we got underway with our special guest speaker Dr. Dale Frail of NRAO at Socorro, NM. Dale presented a talk titled “Where’s Waldo: the Search For the Counterparts of Gamma Ray Bursters.” Dale first began with a discussion of what is known about these mysterious objects. Gamma Ray Bursters (“GRB’s”) are brief, intense flashes of X and gamma radiation, that occur once per day apparently randomly and uniformly over the entire sky. They last for about 10 seconds, and are gone. Counterparts for GRB’s in other regions of the electromagnetic spectrum have not been found. Since gamma ray satellites to date have poor resolution, the positions of GRB’s are very poorly constrained, with error boxes of 3 to 10 degrees on edge (this is terrible!). Thus, if counterparts for GRB’s do exist, they can’t be correlated with known GRB’s because of the position errors. So searching for GRB’s is like searching for Waldo, only his picture is missing from the jumble of impostors! Astronomers don’t even know what the counterparts (“Waldos”) look like yet.

Recent satellite observations are expanding the knowledge, and database however. Since April 1991, the Compton Gamma Ray Observatory (“GRO”) has been making very sensitive observations with the Burst and Transient Source Experiment, (“BATSE”). A simple plot of the number of observed bursts versus the brightness of each burst reveals a deficiency of faint bursts. This implies that the GRB's are Galactic (or nearby) objects, and there is the other camp that favors a cosmological distribution. Thus, “cosmic” GRB’s would then be much more energetic, and farther away than Milky Way related GRB’s. Dale reviewed some of the pro’s and con’s of each possibility. If a Galactic model is the case, GRB’s are probably associated with neutron stars. Since a galactic distribution is synonymous with an extended galactic halo, then just how do you get enough star formation out beyond the disc of our galaxy to produce enough neutron stars? Star formation in the halo is essentially nil! Dale cited a recent observation of a supernovae remnant associated with a GRB. Furthermore, galactic GRB’s would be expected to burst repeatedly, and show spectral lines.

Dale then presented his ideas on how the GRB puzzle should be approached: he feels gamma ray astronomers won’t solve the problem by themselves. Basically, Dale hypothesizes a GRB behaves like a supernova event. There is a brief flash of gamma radiation that comes to order at 7:00 pm, and we got underway with our special guest speaker Dr. Dale Frail of NRAO at Socorro, NM. Dale presented a talk titled “Where’s Waldo: the Search For the Counterparts of Gamma Ray Bursters.” Dale first began with a discussion of what is known about these mysterious objects. Gamma Ray Bursters (“GRB’s”) are brief, intense flashes of X and gamma radiation, that occur once per day apparently randomly and uniformly over the entire sky. They last for about 10 seconds, and are gone. Counterparts for GRB’s in other regions of the electromagnetic spectrum have not been found. Since gamma ray satellites to date have poor resolution, the positions of GRB’s are very poorly constrained, with error boxes of 3 to 10 degrees on edge (this is terrible!). Thus, if counterparts for GRB’s do exist, they can’t be correlated with known GRB’s because of the position errors. So searching for GRB’s is like searching for Waldo, only his picture is missing from the jumble of impostors! Astronomers don’t even know what the counterparts (“Waldos”) look like yet.

Recent satellite observations are expanding the knowledge, and database however. Since April 1991, the Compton Gamma Ray Observatory (“GRO”) has been making very sensitive observations with the Burst and Transient Source Experiment, (“BATSE”). A simple plot of the number of observed bursts versus the brightness of each burst reveals a deficiency of faint bursts. This implies that the GRB's are Galactic (or nearby) objects, and there is the other camp that favors a cosmological distribution. Thus, “cosmic” GRB’s would then be much more energetic, and farther away than Milky Way related GRB’s. Dale reviewed some of the pro’s and con’s of each possibility. If a Galactic model is the case, GRB’s are probably associated with neutron stars. Since a galactic distribution is synonymous with an extended galactic halo, then just how do you get enough star formation out beyond the disc of our galaxy to produce enough neutron stars? Star formation in the halo is essentially nil! Dale cited a recent observation of a supernovae remnant associated with a GRB. Furthermore, galactic GRB’s would be expected to burst repeatedly, and show spectral lines.

Dale then presented his ideas on how the GRB puzzle should be approached: he feels gamma ray astronomers won’t solve the problem by themselves. Basically, Dale hypothesizes a GRB behaves like a supernova event. There is a brief flash of gamma radiation that comes...
# SEPTEMBER’96

<table>
<thead>
<tr>
<th>SUN</th>
<th>MON</th>
<th>TUE</th>
<th>WED</th>
<th>THU</th>
<th>FRI</th>
<th>SAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>• Asteroid Juno stationary</td>
<td>• Jupiter is stationary (8:00 am)</td>
<td>• LAST QUARTER MOON (1:06 pm)</td>
<td>• SFCC Observing</td>
<td>• UNM Observing</td>
<td>• GNTO Training (see article on facing page) • Asteroid Thyra @ opposition</td>
</tr>
<tr>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>• Mercury is at inferior conjunction (7:00 am)</td>
<td>• NEW MOON (5:07 pm)</td>
<td>• TAAS Observatory Committee Mtg</td>
<td>• FIRST QUARTER MOON (5:23 am) • UNM Observing</td>
<td>• TAAS General Mtg @ Regener Hall (7:00 pm)</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
</tr>
<tr>
<td>29</td>
<td>30</td>
<td></td>
<td></td>
<td>• Collet Park E.S. Star Party</td>
<td>• FULL MOON (8:51 pm) Total Lunar Eclipse (8:19 pm) • TAAS Board Mtg (7:00 pm)</td>
<td>• UNM Observing</td>
</tr>
</tbody>
</table>

## Chaco Canyon Star Party Reminder

Just a reminder that the second Chaco Canyon extravaganza is scheduled for Friday, September 13, through Sunday, September 15. If you want to come only for the Saturday evening viewing, that’s fine, but there will be TAAS members observing with the Public on Friday night as well. I understand that Brock Parker will be at the Monument all week long (Sept. 9 through 15), and you can join him if you have that week off. We will have use of the Forest Service trailer again!!! Meet here, or at the Visitor’s Center, if late. Bring plenty to eat, as usual.

Contact Brock Parker at 298-2792 or Mike Pendley at 296-0549 for details.

The best way to get to Chaco is to take I-25 to Bernalillo, head west northwest on NM 44 to Cuba, then west towards Nageezi. Just before Nageezi, watch for the signs heading south to Chaco. You have two chances to head south, so be on the lookout! Do not take I-40 to Thoreau and the southerly entry into the Monument; the last 20-mile stretch is horrible!

—Kevin McKeown
## OCTOBER’96

### NOTES:

- **TAAS** = The Albuquerque Astronomical Society
- **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.

---

### 1998 Solar Eclipse Trip in the Works

On February 26, 1998 there will be a total eclipse of the sun, visible across parts of the Pacific and South America and much of the Caribbean. If you are interested in seeing this incomparable spectacle, the time to start planning for it is right now. I am planning to join an east coast amateur astronomers group (experienced in running such trips) that has arranged for hotel rooms and a viewing site on Aruba. If anyone is interested in joining me in forming a sub-group from the Albuquerque area, please get in touch.

**Barry Gordon**, Phone 867-6424  
104073.3537@CompuServe.com  
16 Placitas Trails Road  
Placitas NM 87043

---

### STARFIRE TOUR OCTOBER 19TH

MARK SATURDAY NIGHT, OCTOBER 19TH FOR THE TAAS VISIT TO THE STARFIRE OPTICAL RANGE AT KIRTLAND AFB.

ARRANGEMENTS HAVE BEEN MADE TO TOUR THE FACILITY, EXPERIENCE THE LAZER OPERATIONS AND BECOME ACQUAINTED WITH THE ADAPTIVE OPTICS TELESCOPES.

ATTENDANCE IS SEVERELY LIMITED . . . SO FIRST COME . . . YOU KNOW THE REST.

**PLEASE CONTACT ALLAN GREEN AT 281-6651 FOR UPDATES AND RESERVATIONS.**

---

### SEPTEMBER Issue 1996

<table>
<thead>
<tr>
<th>SUN</th>
<th>MON</th>
<th>TUE</th>
<th>WED</th>
<th>THU</th>
<th>FRI</th>
<th>SAT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>•SFCC Observing</td>
<td>•LAST QUARTER MOON (6:04 am)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>•Mercury @ greatest elongation West 18° (midnight)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>•Moon at apogee (404,791 km) @ noon</td>
<td>•South Mt. Elementary Sch. Star Party Call TAAS Hot Line for Information</td>
<td>•Venus 4° North of Moon</td>
<td></td>
<td>•UNM Observing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>•TAAS Observatory Committee Mtg</td>
<td></td>
<td>•UNM Observing</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>•Orionid Meteor Shower (1:00pm)</td>
<td>•Moon at perigee (568,349 km) @ 3:00 am</td>
<td>•UNM Observing</td>
<td>•TAAS Board Mtg (7:00 pm)</td>
<td>•UNM Observing</td>
<td>•TAAS General Mtg @ Regener Hall (7:00pm)</td>
<td>•FULL MOON (8:11 am)</td>
</tr>
<tr>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
<td>31</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>•NEW MOON (8:14 am)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Partial Solar Eclipse</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>STARFIRE TOUR</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>See Details Below</td>
</tr>
</tbody>
</table>

HUNTERS’ MOON

---

### 1998 Solar Eclipse

- **FIRST QUARTER MOON** (12:09 pm)
- **Orionid Meteor Shower** (1:00pm)
- **Moon at perigee (568,349 km)** @ 3:00 am
- **San Felipe Elem. Sch. Star Party Call Hot Line for More Info**
- **Moon at apogee (404,791 km)** @ noon
- **South Mnt. Elementary Sch. Star Party Call TAAS Hot Line for Information**
- **Venus 4° North of Moon**
- **FULL MOON (8:11 am)**

---

**STARFIRE TOUR OCTOBER 19TH**

Call TAAS Hot Line for Confirmation; May Be Cancelled

---

**MARK SATURDAY NIGHT, OCTOBER 19TH FOR THE TAAS VISIT TO THE STARFIRE OPTICAL RANGE AT KIRTLAND AFB.**

**ARRANGEMENTS HAVE BEEN MADE TO TOUR THE FACILITY, EXPERIENCE THE LAZER OPERATIONS AND BECOME ACQUAINTED WITH THE ADAPTIVE OPTICS TELESCOPES.**

**ATTENDANCE IS SEVERELY LIMITED . . . SO FIRST COME . . . YOU KNOW THE REST.**

**PLEASE CONTACT ALLAN GREEN AT 281-6651 FOR UPDATES AND RESERVATIONS.**
Continued from Page 3

July 27th Mtg. Review —

The meeting was called to order at 7:03 by president Mike Pendley. Bruce Levin read the minutes from the June meeting. Gordon Pegue moved to have the minutes accepted as read. Ruth Pendley seconded. The minutes were accepted without modification.

Treasurer Gordon Pegue provided the treasurers report. He reported: Education fund—$2736.95, Observatory fund—$4022.95. General fund—$1658.71. There was a discussion of the break-in fund—the questions was: “How long will the Break-in Fund be kept as a separate line item?” The discussion that followed pointed out that a significant portion of the money came from the telescope raffle. We did not reach closure on this item.

Observatory Director Gordon Pegue provided the observatory committee report. Main topics were: (1) need to fix or upgrade the Isengard Telescope mount if we engage in serious observing programs like comet hunting or supernova hunting, (2) Upgrade work to GNTO including exterior painting and metal trim, Interior cleaning and painting, improved dome seal system, (3) need to protect building foundation from further erosion. Committee will develop specific recommendations to present to the board at the next meeting. A work party date has been set for November 2, 1996 (Editor’s Note: Cancelled due to break-in.).

Brad Hamlin provided miscellaneous comments: (1) The recent attempts to take CCD images with the Isengard telescope and equipment owned by John Sefick had some success. John wants to come back later this year to try again. John’s comments on the telescope were that the optics were in very good shape, the polar alignment needs a little tweaking, and the mount could use some work; (2) Brad would get UNM observing dates to Car; (3) Brad distributed handouts for an upcoming occultation event. Brad will also say something about the event at the general meeting.

Membership committee report was given by Jay Harden. Carl provided the event report and discussion of upcoming events followed. No new dates were added. August 16 and 30 UNM observing nights were canceled.

Lisa Wood provided a report on a proposed scientific observing program. This idea is still developing but includes an organized effort to discover comets and/or asteroids. Lisa proposed to form an informal special interest group that would meet 45 minutes before the general meeting. Lisa will advertise in next newsletter. First meeting will precede the August meeting. Lisa emphasized that this would be a team effort, not individual efforts. A motion was made by Gordon (and passed) to allow Karina Running Horse to work with a grant writer to help prepare a grant for equipment needed by the observing program. The grant would be reviewed by the board before submitting it to any funding source. Kevin discussed options for improving the telescope mount. Options included an eyepiece driver for 1 to 2 minute exposures.

Elinor gave information on off-the-shelf CCD cameras to Lisa. Lisa will review and pass on to Gordon. Gordon mentioned the option of obtaining used CCD equipment.

Next there was a discussion of newsletter quality. Sample copies from Kinkos were passed around. Current Kinkos price is too high. Wade Douglas will meet with district representative to see if we can get a special price. Mike asked and received permission from the board to allow Wade to offer Kinkos ad space in the newsletter in return for a special price.

Continued on Page 9

—Kevin McKeown
AUGUST 28TH MEETING PREVIEW

TAAS’ Own Elinor Gates Will Take Us on a Tour of the Solar System

The August regular meeting will be Saturday evening, the 24th, at 7:00 pm in Regener Hall on the UNM campus (see map on the back page of this Newsletter). Our guest speaker will be Elinor Gates, one of our own members. Elinor will present a slide show on the solar system, and she’ll also update us on, and fill in some of the details about current solar system news, especially the new Martian fossils. This will be a non-technical, “fun for everyone,” end-of-the-summer presentation.

You may recall Elinor’s last presentation to the club back in July 1995 on adaptive optics. She is a PHD student at the University of New Mexico, and received a Master’s in Astrophysics in 1991 from Mt. Holyoke College, Massachusetts. Elinor is an expert on asteroids, a confessed math freak, and a fellow skeptic. Asteroid 2650 was even named “Elinor” in appreciation of her work at the Minor Planet Center, Smithsonian Astrophysical Observatory, Cambridge, MA. You’ll enjoy Elinor’s enthusiasm! We’ll have the usual trivia quiz, club announcements, and a “show and tell” item. The meeting will wrap up with our usual social hour with cookies and coffee (don’t forget to bring some goodies!).

—Kevin McKeown

A TELESCOPE MAKER’S LIBRARY

“Amateurs in the sciences are probably no less numerous than in the arts. Music may have more devotees than botany, but surely there are more amateur astronomers than Sunday painters. One is impelled to ask: what are these amateurs all seeking? It is this: an expansion of their understanding and of their capacities, and the pleasure that derives from their effort. One can appreciate the arts without ever having touched a brush or a musician’s bow; similarly, one may keep abreast of progress in science merely by reading. But the purely receptive role is not the one that yields the richest fruit. If that which we acquire is to penetrate deeply, we must in some degree be participants: we must use our eyes to observe, we must experiment, we must build with our own hands.”

So starts How to make a Telescope by Jean Texereau, the book many hold as the Amateur Telescope Maker’s bible.

This month is the first in a series of ATM columns in the Sidereal Times. I thought a good way to start would be to publish a list of resources available to the telescope maker.

See BOX in Right Column

Future ATM Corners will cover construction of tools used to build mirrors, testing techniques, telescope making experiences, etc. Readers wishing to contribute can e-mail me at mycall@rt66.com, or send me regular mail at TAAS, PO Box 54072, Albuquerque NM 87153, or e-mail the newsletter editor directly at Skygazer@rt66.com. As always, you can also call the hot line (296-0549) and leave a message.

It is also time to start thinking about another ATM class. We need to get through the messy steps before it gets too cold outside so the class needs to start by mid-October. Call the hot line if you would like to sign up. Total cost depends on the telescope size and how fancy you get. Typical costs range from $200-$600 and a major portion of 4-6 weekends.

—Mike Pendley

ATM References

BOOKS (available from Willmann-Bell (804) 320-7016):

• How to Make a Telescope—Jean Texereau. $20. The ATM’s bible. All serious telescope makers have this one. If you can only afford one book, this is the one to get (IMHO).

• All About Telescopes—Sam Brown, $15. A great general reference on telescope making, telescope operation, and general astronomy. Probably number two on my list of books to recommend (right after Texereau).

• Build Your Own Telescope—Richard Berry, $25. This is also a very popular book. Deals more on mechanical aspects of 5 different telescopes. Also has description on mirror grinding/testing, mirror cells, eye pieces, etc.

• Telescope Optics—Rutten and van Venrooij, $25. Optional software $25. Good book if you want to make a refractor. Lots of info on designing lens systems, testing, ray tracing, etc.

• Optical Shop Testing—Daniel Malacara, $95.00. This book has all the theory you would ever want on various mirror testing techniques. Don’t get this book unless you really like math.

• Advanced Telescope Making—Mackintosh, Volumes 1 and 2 are $25 each. These are good books but not needed unless you plan to get serious about telescope making. Books are a composition of Maksutov Club Circulars from 1957 on. Great source for ideas on how to build grinding machines, testers, etc.


• Amateur Telescope Making—Albert Ingalls, Books I, II, III. The original series of books has been out of print for quite a while but Willmann-Bell has just started offering a re-edited versions for $25 each, ($50 for all three until August 31). The books are a collection of papers on all aspects of telescope making. Some information is dated but lots of good ideas framed in the context of technology available to amateurs in the 1930s to the 1960s.

• A few good WWW sites—
http://www.system.missouri.edu/atm/
http://www.webspace.com/markv/
http://www.webcom.com/~atm/
http://www.polaris.net/~tas/atm.html
• e-mail list for ATM—Send a message to majordomo@shore.net. Make the subject be the word “subscribe” (no quotes). Make the body of the message say “subscribe” (no quotes). Lots of questions and answers posted by ATM-ers all over the world. About 300-400 posts per month.
The Sidereal Times

THE OBSERVER’S PAGE

THE DESERT NIGHT SKIES HAVE THEIR OWN NIGHT DESERT—REALM OF THE MULTIPLES

Late Summer-Fall Musings

Besides spring, the other good time of the year to stargaze in central New Mexico is the fall. Although it is still summer, the autumn- and even winter- constellations are availing themselves by midnight local time, so why not get a head start during the prime of the night? “Autumn” stargazing seems to begin as soon as the monsoon fades, and includes September, October, and only part of November, as by then, clear nights are simply too cold to enjoy. By September, our weather becomes more and more influenced by deep high pressure systems. These highs are notable for their very high barometric pressures, to nearly 30.60, and provide us with cool, still nights. Since they effectively divert jet stream and other high level winds away from New Mexico, the seeing, or steadiness of the atmosphere, is superb! The best seeing corresponds with the peak high pressure, more or less. Without a doubt, the best planetary and double star observation of the year occurs in early to mid autumn, and strangely enough, for the same reasons why it is so good to launch a hot air balloon at this time of the year. I remember my finest views of Mars came during Balloon Fiesta 1994!

The September midnight sky is pretty strange. Unlike March, when you can stargaze in a sky essentially free of the Milky Way, a night in September will always have some part of the Milky Way high up! Also in September, at about midnight, our local starry sky presents for us what I call the Great Night Desert, a huge region poor in bright stars (and even deep sky objects, curiously). The Desert Night includes the constellations Pisces, Aquarius, Cetus, Eridanus, Sculptor, to name a few, and covers almost the same area the ancient stargazers called the “Watery” part of the night sky. When we face south and gaze onto the Night Desert, only Femalhaut (a good “spring star for the Aussies”) and beta Ceti are prominent stars—isolated oases in the desert. The constellation of Grus, the crane, strides along on the southern horizon towards the west on autumn evenings, and is one of the few familiar bright patterns in the Desert. It is not too difficult at all to imagine Grus as a camel. Eridanus, the river, is indeed a trickle of faint stars flowing through the desert. Also, the southwestern part of the Night Desert includes one of the really bizarre parts of the night sky. This is the “Realm of the Multiples,” as I call it, and it includes parts of eastern Capricornus, Aquarius, and southwest Pisces. The next time you are out under a clean, black sky, scan this area with the naked eye, and many faint double, triple, and even quadruple stars become apparent. These are certainly optical multiple stars. And if this isn’t weird enough, most of these naked eye multiple stars are aligned! I wonder how did the ancient stargazers interpret this field? A school of minnows in the sea? We know they did observe this area. Let us hear about an ancient interpretation if you know of one, and also your observations of this intriguing region.

The Oak Flat Star Party, August 10

We had pretty good conditions for this TAAS-Public star party. Mike Pendley and Ruth Pendley, Jeff Bender, Carl Frisch, Robbin Pimbley, Gordon Pegue, Bill Tondreau, and some new members attended for TAAS. Skies were variably cloudy, but some decent views of the Veil Nebula, the Trifid, M-13, comet Hale-Bopp, and Jupiter were had. I had a memorable view of the Veil through Jeff Bender’s new 18 inch Dob. This was the part that ran through the star 52 Cygni, and it looked just like a Martian! tube worm. I promise never to bring up the subject of extra terrestrial life, again.

Neighbors

Curiously, the night skyes of late summer and autumn offer up nearly all of the known galaxies of the Local group that are within reach visually! Besides the familiar brighter Local’s—M-31, M-32, M-110, and M-33—the autumn sky can claim the less well known NGC-6822 (Barnard’s Galaxy) in NE Sagittarius, NGC-147, NGC-185, and IC-10, all in Cassiopeia, IC-1613 in Cetus, and the Fornax dwarf in Fornax. Also, both the Large and Small Megellanic clouds—our Milky Way’s primary companions—culminate in autumn-winter for those individuals located south of Mexico City. Lastly, the Sculptor System, a companion dwarf elliptical to our galaxy, lies almost due south of beta Ceti (see Tirion). It may be just below the visual detection limit, however. Burnham’s Celestial Handbook gives good information on these galaxies.

I’ll briefly describe these objects—you can fill in the specifics this fall. NGC-6822 is a huge, faint, rectangular glow which fills an entire very low power field in the 10-inch Newtonian. It resembles a small Milky Way star cloud, and shows much detail such as star clouds and H II regions. NGC’s 147 and 189 (dwarf elliptical satellite galaxies of Andromeda, M-31) are very large, nearly round, broadly condensed smudges, with NGC-147 very challenging! The dwarf irregular IC-1613, in the 10-inch, is a large, irregularly round, very challenging smudge lying next to an approximately 7th magnitude star. Use a low-power, wide field eyepiece, plus averted vision! Dwarf irregular IC-10 is a large, very faint smudge which lies smack dab in the rich Cassiopeia Milky Way. IC-10 suggests a diffuse nebula rather than a galaxy, and it’s amazing we can see it at all considering its location in the Milky Way, with all the heavy dust obscuration! The Fornax Dwarf Elliptical is visible in 10 x 50 binoculars as a huge, very low surface brightness smudge, just at the limit of visibility. An approximately 9th magnitude star lies just off the center of this oval smudge. Actually, in large telescopes, some of the globular clusters (e. g. NGC-1049) of the Fornax Dwarf are visible. I’ve never detected the famous Sculptor system, even with the blackest skies. You’re surely welcome to try, but document everything carefully, because if you succeed in seeing this strange object, I believe you might be the first! It is enormous—perhaps two full moons in diameter!

Perseid Max, 1996

I observed Perseid meteors from La Joya, NM on the night of August 11-12, 1996, and had hourly rates typical of past returns on the peak night. From 3:22 am to 4:22 am MDT August 12, I counted 44 Perseids and 5 sporadics. The brightest meteor this hour was a -7 magnitude, bursting fireball at 3:26 am, which likely was a Perseid. It easily cast shadows. However, I did not have a good view, and because this fireball projected back through the kappa Cygnid radiant, it could have been a Cygnid fireball. The brightest Perseid of the night occurred at 4:52 am MDT. I did not observe the actual meteor, rather, as I was looking at the ground while walking towards my telescope, a bright flash from directly overhead lit the entire landscape. I looked up and saw a brilliant, glowing, beaded train from the fireball just beginning to dissipate. It lasted perhaps two minutes, visually. From these observations, I estimate this Perseid was about -10 magnitude! Did anyone else see it?
Board Meeting
Continued from Page 6

Mike talked to Bob Stets about TAAS “stuff” stored in a backyard shed. Mike picked up the stuff and is sorting it out. Some of the items include some sort of IR viewer, a small HP pen plotter, laminated news articles on the opening of GNTO and a proclamation by Bruce King on GNTO day, and a Commodore 64 computer.

Mike made a motion to give Gordon a $100 a month budget to pay for operating supplies at his discretion. The motion was seconded by Lisa and passed.

Mike mentioned that the Grand Quivera trip was approaching and a special use permit would be needed. Art Jacobs expressed interest in working this issue. TAAS will reimburse Art for any fee involved.

Elinor still has mugs. Some are good but 14 broken (in shipping). Broken ones will go to board members to do with as they see fit.

Elinor is still working on determining if the Regener Telescope will be donated to TAAS. More info at the next board meeting.

Elinor is waiting for info from a T-shirt company. She should have samples and prices at the next board meeting.

Brad suggested a complementary membership to “Cowboy,” the gentleman who keeps an eye on GNTO for us. Formal motion was made by Gordon and seconded by Ruth. Passed unanimously. Lisa will write a thank you and a newsletter article.

Mike has completed work on the new member info packet. He will print a new master and get it to Bill Tondreau. Jay is working on a new membership application (to reflect the new S&T price).

Kevin McKeown mentioned that we did not have a firm August speaker. There was some discussion on Karina presenting her work. Gordon will ask her. Astronomers that live in town might also be a possibility.

Lisa will run general meeting since Mike will be out of town. Elinor received e-mail about the Des Moines Astronomical Society observatory being robbed. Notice of theft and items lost was posted on our WWW page that lists items for sale.

Newsletter assignments were made and the meeting was adjourned at 8:42pm.

—Steve Snider
Secretary, TAAS

The Kids Corner
CLEAN YOUR ROOM!
Awh . . . Mom!

(This month’s guest columnist is Lindsay Wood’s mom. Lindsay is in Connecticut, but will return in time for next month’s column.)

Today my five year old son, Barry, had a “Gravity Experiment” to show me: “See, I take this napkin, and drop it.” (He demonstrates.) “The napkin falls on the floor.” (It did.) “Do you know what this means?” “What?” I say. “It means that gravity can get in your house.” It’s true. Our house is chock full of gravity and I’ll bet yours is too. This got me to thinking about all the other weird cosmic stuff you kids probably have lying around your rooms and how messy those rooms must be. So I’m here to help you identify your Cosmic Junk and tell you how to get rid of it.

1. Starlight. Close your blinds at night. Those photons of light are really odd stuff. Light from the nearest star system is only about 4 years old (it took four years for the light from the Alpha Centauri system to make its way through your bedroom window), but in the fall, light from the Andromeda Galaxy also makes its way in. These photons have been traveling for about 2 million years before landing on your carpet. Stuff this old belongs at the Goodwill.

2. Comet Dust. Comets are really messy beasts, and like Pigpen, in the Peanuts cartoon strip, they leave a trail of dust behind them. Sometimes this dust enters the Earth’s atmosphere and is heavy enough to streak through it creating a bright tail mistakenly called a shooting star, but usually is so small it just drifts slowly through the atmosphere and settles quietly near your home where it gets tracked in every day. About 50 tons of comet dust land on the earth every day, and I’ll bet a lot of it is in your room. Please vacuum.

3. Dead Star Stuff. Your room is undoubtably full of stuff made in dead or dying stars. This sounds unpleasant. Please toss the following: furniture, clothes, books, toys and games. You were all made from elements created in the hearts of dying stars. Also toss your cool gold ID bracelet and silver swim medal. These were made in the explosions of dying stars. In fact, to make things simpler, just throw out all but your hydrogen and helium items. You can be pretty sure everything else is made from elements cooked up in stars.

There. All clean now. Doesn’t that look better? What about the gravity, you ask? I don’t know. I’ve tried just about everything, but no matter what I do, the gravity always gets in.

—Lisa Wood

The Mysterious Cowboy

I often see Cowboy while driving to the observatory. We fly past each other billowing dust behind us, and I’m sure I see him tip his hat as we pass. He knows I belong there, and goes on his way. “Cowboy,” as he is known, patrols the lonely sage-dotted plateaus of Belen. He watches over our observatory, along with the livestock that inhabit this region. It was Cowboy who discovered the break-in we experienced the spring before last, and now the most recent break-in of August. He let us know about both.

We don’t know his name or address, but members of the Society are grateful to him for his watchful eyes over our little “zerbatory” as he calls it. We’ll be sending him a TAAS mug and newsletter (as soon as we can pin down his hideout)! Thanks Cowboy! We consider you a part of our stargazing family!

—Lisa Wood
DUES: Please note the expiration date on your mailing label. If you are due for membership renewal, you may send your dues by mail to our newsletter return address with your check written out to The Albuquerque Astronomical Society or give your check to the Treasurer (Gordon Pegue) at the next meeting. Please include the membership application that is sent with your newsletter when it is time to renew. NOTE: Discount magazine subscriptions to Sky and Telescope ($27/12 issues), Astronomy ($18/12 issues) and CCD Astronomy ($20/4 issues) as well as discounts on books from Sky Publishing Corporation are available when purchased by TAAS members through our society. Include any of the above magazine renewal mailers and subscription payments as part of your renewal check (We recommend you renew 1-2 months early to ensure uninterrupted magazine subscriptions.). Membership dues are $20.00 per year plus $5.00 per year for each additional family member. Also available for qualified applicants is an Educator Membership—contact a Board Member for details. Membership Packets cost $3.50 each for new members or renewing members without a packet. Contact the Treasurer for more information.

NEWSLETTER ARTICLES/ADVERTISEMENTS: Articles, personal astronomical classified advertisements and business card size advertisements for businesses related to astronomy can be submitted within 3 days after the latest Society general meeting for publication in the following Sidereal Times. Rates for business card size ads are $10/ad/issue or $7/ad/issue for 6 consecutive issues and $5/ad/issue for 12 consecutive issues. The newsletter editor reserves the right to include and/or edit any article or advertisement. **ASCII files uploaded to the TAAS BBS newsletter file section are preferred. Contact the Newsletter Editor (Wade Douglas) for more information.

CHANGE OF ADDRESS: Note that the Sidereal Times is mailed at a non-profit organization bulk mail rate. As a result, the newsletter will NOT be forwarded to your new address should you move!! Please provide the Secretary (Steve Snider) with your new mailing address to ensure that you receive your newsletter.

TAAS LIBRARY: Please contact the Librarian (Lisa Wood) to check out a book or make a contribution.

New TAAS Hot Line Phone Number is 296-0549

---

Board Members

President: Michael Pendley
V. President/Librarian: Lisa Wood
Secretary / Society BBS Sysop: Steve Snider
Treasurer/Observatory Director: Gordon Pegue
Event Coordinator/Telescope Curator: Carl Frisch
Board Member: Elinor Gates
Board Member: Brock Parker
Board Member: Allan Green
Board Member: George Pellegrino
Board Member: Jay Harden
Board Member: Bruce Levin
Board Member: Kevin McKeown
Board Member: Ruth Pendley
Education Coordinator: Karina Running Horse

Non-Board Members

Campus Observatory Coordinator: Brad Hamlin
Archivist: Jaclyn Fuller Lane
Database Manager: Bill Tondreau
Newsletter Editor: Michael Wade Douglas

---

SOCIETY STAFF — Phone — E-mail Address

Michael Pendley 296-0549 (H) mycall@rt66.com
Lisa Wood 344-8308 (H) egates@ursaminor.phys.unm.edu
Steve Snider 867-4199 (H) frisch@nmeri_gate.unm.edu
Gordon Pegue 299-5944 (H) egates@ursaminor.phys.unm.edu
Carl Frisch 272-7238 (W)
Elinor Gates 277-1529 (W)
Brock Parker 298-2792 (H)
Allan Green 281-6651 (H)
George Pellegrino 821-8516 (H)
Jay Harden 296-0537 (H)
Bruce Levin 299-0891 (H)
Kevin McKeown 254-9117 (H)
Ruth Pendley 293-2630 (H)
Karina Running Horse 275-4797 (H) horse@carina.unm.edu
Brad Hamlin 343-8943 (H) wolf@wizrealm.com
Jaclyn Fuller Lane 296-4980 (H)
Bill Tondreau 263-5949 (H)
Michael Wade Douglas 281-8093 (H) Skygazer@RT66.com

---

TAAS BBS: Set your computer’s modem to 8N1 and call 867-4295 any time of day or night.

TAAS on the World Wide Web:
http://www.phys.unm.edu/~egates/TAAS/taas.html

---

MAP TO REGENER HALL

Images not included in master at this time

---

The Albuquerque Astronomical Society
P. O. Box 54072
Albuquerque, NM 87153-4072
Address Correction Requested

---

NONPROFIT ORG.
U.S. POSTAGE
PAID
ALBUQUERQUE, NM
PERMIT NO. 352