February 1996

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FEBRUARY 1996

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.
Notes on Upcoming Events:

- GNTO: The General Nathan Twining Observatory
- TAAS: The Albuquerque Astronomical Society
- SFCC: Santa Fe Community College

- For SFCC Observing, call Brock Parker to confirm @ 298-2792.
- For UNM Observatory Observing, Call Brad Hamlin @ 343-8943 to confirm.
- For GNTO Observing (including the Messier Marathon), call Bill Tondreau @ 263-5949 to confirm.

- Board meetings and General meetings are at 7:00 p.m. unless otherwise noted.

UPCOMING EVENTS

FEBRUARY

2-1 Thursday: * Board meeting.
SFCC Observing.
2-2 Friday: * UNM Observatory Observing.
2-3 Saturday: * TAAS Regular meeting @ 7:00 p.m. @ Regener Hall on the UNM campus (see map on back of newsletter).
2-4 Sunday: Full moon
2-6 Tuesday: * Marie Hughes Elementary School star party.
2-9 Friday: * UNM Observatory Observing.
2-11 Sunday: Mercury at greatest western elongation and 0.07 deg. north of Neptune.
2-12 Monday: Last quarter moon.
2-14 Wednesday: Valentine's Day.
2-16 Friday: * UNM Observatory Observing.
Mercury 0.2 deg. north of Uranus.
2-17 Saturday: * GNTO Observing.
2-18 Sunday: New moon.
2-20 Tuesday: * Tome Elementary School star party.
2-21 Wednesday: Ash Wednesday.
2-22 Thursday: * Observatory committee meets.
2-24 Saturday: * GNTO Observing.
2-26 Monday: First quarter moon.
2-29 Thursday: * Board meeting.

MARCH

3-1 Friday: * UNM Observatory Observing.
3-2 Saturday: * TAAS regular meeting.
3-5  Tuesday:  Full moon.
3-7  Thursday:  * SFCC Observing.  Pluto stationary.
3-8  Friday:   * UNM Observatory Observing.
3-12 Tuesday:  Last quarter moon.  Asteroid Pallas stationary.
3-15 Friday:   * UNM Observatory Observing.
3-16 Saturday: * Messier Marathon at GNTO.
3-17  Sunday:  St. Patrick's Day.
3-19  Tuesday:  New moon.
3-20 Wednesday:  Vernal Equinox.
3-22  Friday:  * UNM Observatory Observing.  Mars 1.3 deg. north of Saturn.
3-23 Saturday: * Messier Marathon at GNTO rain date.
    Mercury 0.3 deg. north of Saturn.
    Mercury 0.9 deg. south of Mars.
3-26  Tuesday:  First quarter moon.
3-28 Thursday: * Observatory committee meets.
3-29  Friday:  * UNM Observatory Observing.
    Asteroid Vesta stationary.
3-31  Sunday:  Palm Sunday.

THE JANUARY MEETING

Guest speaker Dr. Jack Drummond from the Starfire Optical Range told us about meteors. Dr. Hammond's specialty is the physical characteristics of asteroids, and he is currently investigating the part asteroids may play in spawning meteor showers.

Daily, between one and two million meteors flash into the Earth's atmosphere, varying in intensity from Sun bright to an invisible 20th magnitude. Most of these objects are grains of dust from active comets, completely disintegrating in the atmosphere. But between 20 and 30 larger objects, meteorites, are big enough to survive their entry and strike the ground. These we see as bolides and fire-balls, and are associated with asteroids and the asteroid-like remains of expended comets.

Dr. Hammond covered the history of meteor observations, and his favorite subject--meteor storms, events of 10,000+ meteors per hour. The Exodus "pillar of fire" may have its inspiration in such a storm. In 1833 a Leonid storm revealed a radiant, a point in the sky from which meteor trails diverge. As late as 1866 some scientific authorities regarded meteors as fanciful, but in that year the orbit of Temple's comet was associated with the Leonids. In the 1920's New Mexico hosted some of the first serious meteor observations, which incorrectly suggested that meteors were on hyperbolic orbits from outside the Solar System. In the 1950's Whipple got the first accurate meteor orbits from cameras in Dona Ana County. The most spectacular recorded meteor storm occurred in 1966, visible from the Western U.S. An incredible 200,000 Leonid meteors crashed into the atmosphere each hour. Sound interesting? The Earth will again pass near the Leonid comet-trail in 1999.

Much fascinating information was presented. All over the Earth, we see fewer meteors in the January to March period than in late Summer, and nobody knows why. Audible hissing and cracking sounds have been heard with meteors, and amazingly the sometimes simultaneous arrival of sound and light from these events seems to be a real phenomenon, again unexplained.
We are most likely to see the rare fireballs of asteroid material as "Sunset Meteors" as they overtake the Earth from behind in roughly similar orbits. Comet debris meteors are most pronounced near sunrise as the dark sky faces the direction of the Earth's motion during comet path crossings. And the composition of the most common meteorites is not similar to the asteroids. Much remains to be learned about meteors, comets, and asteroids, and Dr. Drummond reminded us that these are areas where amateur observations can be of considerable scientific value.

After a brief recess, outgoing President George Pellegrino presented handsome award certificates to the large group of members mentioned in the previous newsletter who have given time and resources to fulfilling the Society's charter for public education.

Bruce Levin officiated over the annual elections. Bruce made the motion and presented the slate of officers as recommended by the election committee. The motion was seconded by Dr. Sidney Stone. After an opportunity by the members to discuss the motion, the nomination committee's selections were unanimously approved by all qualified voters present. The new officers are: Mike Pendley, President; Lisa, Vice President; Steve Snider, Secretary; Gordon Pegue, Treasurer. Congratulations to all!

George gave his presidential farewell speech, and handed over the Presidential Gavel to incoming President Mike Pendley. We can all thank George for another job well done, and for returning that Gavel in better condition than when he got it. Mike made an auspicious beginning by adjourning the meeting to cookies and coffee.

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THE FEBRUARY MEETING

The major events at the February 3rd Society meeting will be the presentation of several awards (see the "President's Update"), club business, and a presentation by Dr. Adrian Brearley of the Institute of Meteoritics, Department of Earth and Planetary Sciences, University of New Mexico. The title of Dr. Brearley's talk is "Meteorites: Ancient Messengers from the Birth of the Solar System."

You may recall that in January, Dr. Jack Drummond of the Starfire Range talked to us about the relationship between comets, asteroids, meteors and meteorites (see the January meeting column). This month, Dr. Brearley will continue with this subject by going into detail on what meteorites are, where we find them, where they come from and most importantly why they are important and what they tell us about the environment in the early solar system. The Institute of Meteoritics was the first institute in the world to be dedicated solely to the study of extraterrestrial materials and the major research initiative of the research staff in the Institute is in the area of planetary materials and geochemistry. This should be a very interesting talk.

We will wrap the meeting up with show and tell, and our usual social hour. Don't forget to bring the goodies! A map to Regener Hall appears on the back page of the newsletter. The meeting will start at 7 p.m.
Please feel free to call me if you have any questions about the speaker or the topic.

Mike Pendley, mycall@rt66.com

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**PRESIDENT'S UPDATE**

You may not know that newsletter articles are due to our editor by the Tuesday following the general meeting. That means that I have only been President for three days. The only significant event that has happened since the January general meeting was the selection of the 1996 Board of Directors by the Society Officers. The list of 1996 TAAS Officers and Board Members appears just below the newsletter mailing label. I think we have a good team and I feel certain that we will do a good job on your behalf in 1996. The returning board members will see that we have a seamless transition into the new year and our new members will help us to look at things in a fresh way. The most important thing you can do is give us your feedback. We need to know what you like, what you don't, and how we can make your membership in the Society more rewarding. Phone numbers and e-mail addresses for board members are published each month in the newsletter.

The February meeting will feature the presentation of several certificates recognizing participation in public education and TAAS's two major annual awards.

The first award, the John Dobson Award, is presented each year to an individual who has demonstrated a clear and outstanding record of sustained activity in public education through astronomy. The award was presented to John Dobson in 1994 and Dr. John McGraw in 1995.

The second award, the Lieutenant Colonel William S. Isengard Award, is presented each year to recognize an individual's exceptional generosity to the Society. This award was presented for the first time in 1995 to Bill Tondreau.

Well that's all for now. I hope you will be able to attend the February meeting to congratulate our award winners and hear what should be an excellent talk.

Mike Pendley, mycall@rt66.com

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**JANUARY'S BOARD MEETING**

Gordon Pegue called the meeting to order at 7:04 p.m. Reading of December minutes was tabled until next meeting due to Secretary Heather Vogel's absence from the meeting. Gordon Pegue stated that the treasury has $591.57 in the Education Fund, $3877.14 in the Observatory Fund, and $1459.40 in the General Fund. Gordon also presented the yearly summary for the treasury, this year there was a net increase of $1,133.72. The telescope raffle summary showed a net
increase to the Observatory break-in fund of $1247.40. The membership activity report for the year of 1995 showed 43 new applications and 114 renewal applications.

The Observatory committee report was also given by Gordon Pegue. The last work party at GNTO was on Saturday, December 16th. The digital setting circles are now in place and functioning properly. The counterweight for the declination axis was fabricated by member Jim Moore and installed by Jim and Bill Tondreau. Bill reports that the balance of the Isengard telescope is now very good. Gordon Pegue also presented a list of work yet to be done at GNTO. Karina Running Horse suggested that getting a theft-proof outhouse should be our first priority to make going down to GNTO more pleasant for members for both work parties and observing.

Next was old business. Carl Frisch, our telescope curator, has looked at and reinstalled the mirror in the 8” Cave telescope. Carl will write periodic newsletter articles about what telescopes are available for members to check out.

New business followed with Astronomy Day being mentioned by Mike Pendley. Proposed date is Saturday, April 27th. Bruce Levin noted that the official date for Astronomy Day is April 20th. Further planning of Astronomy Day was tabled until Brock Parker (organizer of last year's Astronomy Day) could be contacted.

Brock Parker has scheduled school star parties through February. See calendar for dates and locations.

Carl Frisch presented a tentative schedule of events for the upcoming year. Events include the El Malpais star party on March 9th, Messier Marathon on March 16th, and a tour of McDonald Observatory in Texas April 20th. Due to Astronomy Day being the next weekend, discussion about changing dates of Astronomy Day and McDonald Observatory took place. Board decided that Coronado Mall needs to be contacted to see if April 27th is available for Astronomy Day with April 20th being the second choice date.

Finally, newsletter article assignments were made and the meeting was adjourned.

Ellie Gates

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DECEMBER 1995 OBSERVATORY COMMITTEE MEETING SUMMARY

The meeting was held Thursday Night, December 28, 1995 at Dion's Pizza and the major topics discussed were: 1. Our telescope's status, 2. Additional work required on the dome, 3. A brief summary of 1995 and 4. The future.

The main mount of the Isengard Telescope is complete except for two items: 1. The worm gear spacer plate and 2. The drive motors for tracking objects. The digital setting circles are in-place and functioning properly. The large counterweight for the declination axis necessary to complete the balancing of the telescope was fabricated by member, Jim Moore, and installed by Jim and
Bill Tondreau at our last work party on Saturday, December 16, 1995. Bill reports that the balance of the telescope is now very good and that the 'scope stays where it's pointed regardless of direction. As for the work that remains to be done on the mount, these items of work will be performed as soon as possible.

As far as work on the dome is concerned, required materials have been fabricated and components purchased for the installation of three more dome restraint wheels, the dome push bar system and repair of the observing ladder. The installation of these items will take place on Saturday, January 13, 1996.

We've all endured the fact that our telescope has been out of service now for just a little over a year, but it is just about ready to be used again. Improvements made to the system during this time period will make use of the telescope easier and more enjoyable.

The observatory suffered a break-in back in March of '95 and because of losses sustained, the Society put on a very successful raffle to generate money to purchase items that we lost. On behalf of the Board of Directors and members of the Observatory Committee I would like to express my appreciation for the efforts of a few folks who brought off the raffle. First, John Triarchis, whose donated 12 1/2" mirror blank got the whole thing started. Next, Mike Pendley whose substantial donation of time resulted in a completed telescope. Kevin McKeown and Carl Frisch donated various components. Finally, the Raffle Committee and especially Karina Running Horse for organizing the raffle and keeping track of ticket sales.

The saga of the Isengard Telescope coating mess is, without a doubt, an amazing story of persistence and patience on our part, because we really had no idea what we were dealing with. No one could tell us exactly what was used to coat our mirror. The long and the short of it is that we had to have our 16" mirror polished (to remove the unknown coating) and aluminized.

We had a wild work party back in May which should have been called "May Madness." At that work party Blair Johanson and others attempted to weld additional security measures on the outside of the observatory door in winds that were quite nasty. Have you ever tried to stick-weld in high winds? Not my idea of a good time, but, we managed to succeed.

Then in October I discovered that our roofless outhouse had been unceremoniously unbolted from its supporting slab, tipped over onto the back of a large truck and hauled off. Is there no decency left in this world??

As for the future, there is one thing that concerns me as out-going Observatory Committee Chairman. It is that it's difficult to keep a small group of dedicated individuals motivated about a task which seemingly has no end. Maintenance and up-keep at the observatory requires people to donate (sometimes) large amounts of their spare time. With more participation by the membership at large, more work could be accomplished and believe me, there are many things which need to be done. For example:

1. Construction of a theft-proof outhouse. OUR MAIN PRIORITY !!!!
2. Completion of the electrical system.
3. Sealing the dome against the elements.
4. Weather proofing and painting the wooden structures inside and out.
5. Replacing the stair treads which act like dirt magnets.
6. Protecting the building foundation against the elements.
7. Grading and leveling the observing area around the building.
8. Providing a parking area for folks who visit but don't bring a scope.
10. Getting rid of the junk which has accumulated over the years.
11. Motorizing the dome drive system.
12. Automating the telescope system.
13. Providing a SECURE storage space for valuable equipment.

As out-going committee chairman I would like to suggest to the incoming administration that we take a hard look at how we might get more member participation in the observatory committee. This really needs to be looked at so that we don't lose the core group of dedicated people who volunteer for every work party to BURN-OUT.

Gordon Pegue

"TO POTTY OR NOT TO POTTY" THAT IS THE QUESTION

Well, fellow T.A.A.S. members, as I am sure you have heard, our roofless, rather weather beaten outhouse was stolen some time ago from G.N.T.O. This has left our group of hearty and intrepid observers in a situation, or rather an UNSITuation, as the case may be. Therefore, as chairperson of your "Potty" committee I would like to solicit any odd bits of building material that anyone has laying around their garage. You know, that 1/2 of a bag of cement, or 3 cinder blocks that you're saving because..."some day maybe we'll find a use for that..." Well, now you have found a use for those odds and ends that are just too good to throw away. You can donate those "treasures" to T.A.A.S. and help us build a permanent, secure and hopefully theft-proof outhouse. The odd 2x4, bag of cement, nails, paint, roofing material and especially bricks and cinder blocks would be much appreciated. If you would like to make a donation please call Karina at 275-4797. We'll make arrangements to pick up any materials and see that they get to the right place. Anyone donating any material gets one vote, pro or con, on the burning issue of a "one hole or two hole affair." So far the traditionalists have it by a margin of 2 to 1 (no pun intended).

Karina Running Horse

OBSERVATORY TOUR

A tour of a world class observatory is being planned for our Society members and guests. Tentative arrangements have been made to visit the McDonald Observatory in west Texas on
April 20, 1996, at 4 p.m. More information will be published in the next *Sidereal Times* regarding travel and accommodations. This is the site for what will be the largest optical telescope in the world using a new technology segmented mirror. We will get to see the 82" and 107" telescopes, facilities, and visitor center, among other things. We can participate in their public star party after dusk. If you have any questions call me at 272-7238 or 891-8978. I'll do what I can to help organize car pools and camping arrangements, etc. By the way, seeing conditions there are probably the best in the country.

Carl Frisch

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**SCOPES FOR YOU**

This is just a reminder that your Society has reflector telescopes to check out. We have just acquired a new 8" Meade Dobsonian. In addition we have a 6" and 8" equatorial mounted, and a 8, 10, and 13" Dobsonian. If you would like a telescope for the upcoming Messier Marathon the middle of March, get your name on the check out waiting list; it's incredibly short right now. To reserve your scope give me, Carl Frisch, a call @ 272-7238 or 891-8978.

Carl Frisch

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**LIBRARY BLUES AND NEWS**

- **1996 Inventory**

It's time for inventory again, so as much as I hate to interrupt anyone's literary pursuits, I need all the items to be returned to the library. I will be sending out notices soon--please bring your books to the next meeting if possible.

- **The Mysterious Stranger**

Also, would whoever so kindly loaned Pale Blue Dot by Carl Sagan to the library please give me a call? I'd love to have you write a short review for the newsletter as well as refresh my memory as to your identity!

- **Our Cup Runneth Over**

Our library bookshelves are overflowing with wonderful stuff. I am pleased to note how generous members have been in the past couple of years with donations. The bad news is that I simply have no more room for storing our legendary, but ponderous collection of "Sky and Telescope" magazines. We have a nearly complete collection of these classic magazines dating back from the first issue in 1941. I feel that continuing to stockpile these magazines is no longer necessary and the Board has approved the discontinuation of this process with the stipulation that
we keep our current collection in good order. If anyone in the club feels a great sense of loss over this decision, we would love to appoint you as "Keeper of the 'Mags" from 1995 on. Please give me a call.

Lisa, Librarian

THE FIFTH FORCE: ENTHUSIASM

I first met George Pellegrino at the Museum of Natural History where we had agreed to discuss my future involvement with TAAS. We spent an hour at the cafe upstairs deeply engaged in conversation of a philosophical nature. I was impressed by this man's almost exhausting intensity. I think I went home and took a nap after our conversation.

George had numerous plans for propelling our organization into a more prominent role in New Mexico. I've met many an amateur, most of whom are intense about some aspect of astronomy, but few who viewed the whole picture of how astronomy can shape our state, our educational systems, our lives. I tend to be dubious about joining groups. If I join a crew, I want to know where we're sailing and which will be our guiding star. I look for that intensity of spirit that tells me the captain knows where he's going, and that I am not going to be spending my time rearranging deck chairs on the Titanic. I knew the answer to my unasked question, "But can he get there from here?" was an unequivocal yes.

I was soon to see George swing the Isengard telescope about like a man dancing with a beautiful partner, enthusiastically showing several guests the wonders of the Orion Nebula, and numerous globular and open clusters. I was envious of his "telescope talk" and amused with his folksy and compelling descriptions of these splendors.

I had a great many ideas for TAAS when I first joined the board. Some were terrific ideas, many were unrealistic, or just plain silly. George's response was always "Yes! Try it!" George rarely puts the kaibosh on anyone's grand scheme.

George not only says yes to the more public tasks of the presidency, such as presenting awards, running meetings, and steering board meetings. I have seen George perform innumerable small, but time-consuming tasks, that were not likely to show up on an End Of The Year plaque. Driving to members' homes to collimate their new telescopes, welding twisted metal at the Twining, clearing out debris left over from a break-in for hours, painting and repairing exhibits for Astronomy Day. And who can forget skreeting and floating the cement for the outhouse repair?

My true moment of epiphany about George, and indeed the entire TAAS organization, occurred when I followed him to the Twining Observatory for the first time a few months after our meeting, on a cold, cold, cold February evening. It was already pitch black by the time we met up with the others, but the sight that greeted me was overwhelming. This was the eloquent statement of commitment that I had been looking for. I just had to get to know the people who
would and could create this jewel in the middle of such a stark and beautiful nowhere. George spontaneously let out a whoop of joy at the sight of a perfect sky, and showed me the zodiacal light drifting from the horizon, visible even with a setting moon above. This had to have occurred, not because of one visionary member, but many. Whether they were visionaries like George, or counters of meteors, collectors of galaxies or watchers of planets, there had to be a tremendous story of passion behind this accomplishment. This kind of passion and positive attitude is what George is about. Attitude and enthusiasm are what George has shared with our Society. This is his unique gift. If photons, gravitons, gluons, and weak bosons are the particles that convey the four forces in the universe (it's amazing what one can learn from books!), I'd like to coin the term for the particle that conveys the "fifth force": enthusiasm. I think we should call them "pellegrons!" And as I see George leave his fourth term as President, should I be asked to serve with him some time in the future the answer would be a most resounding YES!

Lisa, Vice President

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**THE OBSERVER'S REPORT**

by Kevin McKeown

- Geminid Meteors, 1995

From near LaJoya, NM, on Wednesday evening, December 13, I observed 25 Geminids and 3 sporadics in the hour beginning at 9:55 p.m. However, although the sky was starry, a translucent veil of high clouds covered most of the sky, obliterating all Geminids fainter than about magnitude 3. I did observe many bright Geminids during this hour: 19 of the 25 members were of first magnitude or brighter, and the brightest was minus 2.5 magn. Alas, data obtained on the evening of the 13th are unusable, as there is no way to account for the loss of the many fainter Geminids.

The evening of December 14th fared better, and provided some useful data. Again, observing from near LaJoya, I counted 25 Geminids and 2 sporadics in 50 continuous minutes beginning at 9:55 p.m. The warm, humid, but excellent black sky (zenith star~6.3) was abruptly terminated by heavy valley fog that "came out of nowhere" at 10:45! Magnitude estimates for Geminids seen during the 50 minutes show a higher proportion of faint meteors than what I had expected, along with 9 fireballs, the brightest of which was (only) minus 2.5 magnitude. The really bright fireballs (i.e. those brighter than Venus) I had expected to see this evening did not show, but the reason for this may be due simply to small number statistics, and the low radiant altitude. In other words, if the zenith hourly rate, based on a planet wide analysis, for minus 4 and brighter Geminids, was say...4, statistically then, the odds are fair that you might not see any brilliant fireballs in one hour of looking. Did any of you see any really big Geminids? Let us know.

- An Unusual Sunset
While driving in Chickasha Reservation, central Oklahoma, on the evening of January 4th, I observed the most incredible sunset! It was 5:30 p.m. local time, and heavy clouds made it seem like sunset had already occurred. Since I had been travelling uphill, I was not aware of a narrow strip of clear sky, 2 degrees high, along the horizon. However, when I reached the crest of a broad ridge, I spotted a round "water tower," purposefully illuminated by pure, deep, hot pink neon light, so I thought. This "tower" was straight ahead on the highway, and three minutes of driving 75 mph did not bring it any closer! Then the bottom edge of the "tower" hit a distant silhouetted forested ridge. This was at 5:33 p.m. CST. Only then did I realize it was the setting sun that I was observing! A minute or two later, I watched the distant ridge gobble up the sun.

This setting sun was very faint, and had a pure, uniformly deep pink color, with no orange tones. Because there were none of the usual sunset aspects such as a ruddy horizon, I was completely spooked. Furthermore, the highway just happened to point in the direction that the sun was about to set, and this added to the deception. But the pure pink color of the sun, like the color of prominences seen visually (not through an H-alpha filter) during a total solar eclipse, was memorable. Has anyone else seen a similar sunset?

- Omicron-2 Eridani:

Not far from Rigel, just to the west, lies one of the most remarkable triple stars in the sky. Also known as 40 Eridani, this system consists of an orange K type dwarf of magnitude 4.3, a white dwarf of about magnitude 9.9, and a red M4 dwarf of about magnitude 11.7. The white dwarf and red dwarf form a close binary of about 8 arc seconds separation lying 83 arc seconds distant from the orange primary. The white dwarf is a true degenerate A type dwarf, and serves as the easiest example of one of these stars to observe (see Burnham's). The color contrast--clear blue and deep orange--between the white and red dwarfs is exquisite! Omicron-2 is only 16 light years distant and the faintness of the white and red dwarfs should be a clue to the nature of both these stars, namely, their extreme low luminosity. Remember, our own sun would appear as a third magnitude star as seen from Omicron-2! Check this star out, it is beautiful! Those with really big reflectors should show the colors of the white and red dwarfs well.