The Hubble Telescope: A Personal Engineering Perspective

Thomas Farrell, Speaker

Our speaker for the evening will be Thomas Farrell, explaining the Hubble engineering history:

- The Hubble design and integration, the achievements, design drivers, solutions, and results
- What “really” happened to cause the original Hubble Primary Mirror error, when did it happen, and who knew?
- How Farrell got into this area, what is going on out there in large-scale optical instruments, and what is our participation

Next Oak Flat Star Party
This Saturday, June 20

by Lynne Olson

The second in our summer series will take place on Saturday, June 20, at the Oak Flat area nine miles south of Tijeras and one mile in from the Oak Flat turnoff. This is an excellent opportunity for members to bring their telescopes to show off the astronomical wonders awaiting in the skies of New Mexico, and for the public to come:

Details are at https://alcon2015.astroleague.org/. Contact Dee at taasdee@comcast.net for more information.

Above, Tom Grzybowski sets up at Oak Flat, May 23. Photo David Frizzell

MORE PHOTOS AND REPORT ON PAGE 9
Avoiding Astronomical Burnout

by Jim Kaminski

Some may get discouraged during astronomical pursuits, either because of the complexity or the monotony. When burnout threatens, it helps to remember that astronomy has many sub-hobbies, with different aspects and levels for folks to enjoy.

First, there are some obvious variations in astronomizing; here are a few:

- Binocular versus Telescopic versus Armchair
- Grab-and-Go Scopes versus Monster Scopes versus Observatory Scopes
- Gear Analysis and/or Making and/or Modification
- Gear Collecting and/or Restoration

...Oak Flat Star Party continued from page 1

and view all those wonders while asking myriads of questions of the TAAS scope operators.

The observing field is between the Yucca and Juniper picnic grounds—parking at both sites, restrooms at Yucca, and gates open at 5:30 p.m. Come early and enjoy the picnic facilities where you can spend a happy time with friends and family and take in some solar observing on the field to see your first star of the evening—our Sun! Sunset is at 8:22 and Venus, Jupiter, and the Moon will keep scopes busy as twilight deepens.

Please bring red headlamps or flashlights for the observing field after dark to preserve night vision. Always have a jacket handy or wear layers as it can get quite chilly after the sun goes down. Water and food are not provided so have your own—and, of course, bring good weather and clear skies!

Map to the site is at www.taas.org. Questions can be sent to taas@taas.org.

Read about and see photos of the May 23 Oak Flat Star Party on page 9.
Under the Dome

Notes from and about GNTO

Mike Molitor

The weather for our May 16 New Moon event was very cooperative; however with conflicting events at Chaco Canyon, TSP and elsewhere, Pete Eschman opened and closed without anyone else showing up. Pete spent the time productively doing computer software updates and other software maintenance. The site closed around midnight.

Conditions for the June 6 Third-quarter Moon event started out 60% cloudy with a good 11-mph breeze. Host Jim Fordice was assisted by Marshall Gatten in the opening/closing duties. Marshall demonstrated his ability to open/close using our checklist and so will be receiving a set of site keys. He will do the opening/closing for a few future dates. If you are interested in becoming an opener the first step is to join the GNTO Committee. The committee meets every other month. The next meeting is July 23. By 10:00 p.m. the sky was mostly clear, with clouds continuing to move through. The wind lessened to about 5 mph. Sigrid Monaghan worked on Messier observations with her SCT. Mike Williams used his binoculars, while Jim Kaminski assisted Mike and Sigrid. Earlier in the evening, Jim Fordice, Marshall, and Mike Molitor worked on a few maintenance items including installing a finderscope and repairing the focuser on the loaner 16-inch Dob.

Look for the report on the June 13 New Moon event in next month’s newsletter.

The GNTO committee met May 21. Marshall Gatten and Jeff Boggs attended their first committee meeting. Welcome, Jeff and Marshall. After hearing the area status reports, we proceeded to seek volunteers for opening dates for the next two months. We now have volunteers for site opening through August 15. Regarding the La Luz Energy Center lighting plan review, our comments were sent to PNM May 22. We hope for a response in mid-June. Mostly our concern is in regard to light fixtures that are not full cutoff design. Barry Spletzer has modified the focuser and secondary mirror spider on the 10-inch "Pellegino" Dobsonian. The scope is now easy to collimate and the vignetting has been reduced. Thanks Barry! It was reported that the focuser for the 16-inch loaner Dob is failing and needs adjustment and/or replacement. The committee agreed to look into getting a Featherfocus brand focuser as replacement, and Gordon Pegue will lead the effort. Meanwhile we will try to adjust the current JMI focuser. The subcommittee’s objectives for site security cameras were briefly reviewed. The only concern raised was in regard to IR illumination and imaging. The subcommittee will investigate and address this concern.

In response to comments from the 2014 TAAS member survey, a preliminary plan for better site navigation signs was proposed. A subcommittee will review the plan and modify as needed. The inventory reduction committee reported that the Celestron 11 and 3-inch refractor were sold. There was only one bid on the Losmandy G11 mount. After some consideration, it was decided that we might improve our odds with a larger bidder pool, and so the posting will be expanded to other local clubs.

The committee agreed without objection to propose Jim Fordice as the next GNTO Director. The GNTO Director must be approved/appointed by the TAAS BoD. I will nominate Jim at the June 25 TAAS board meeting. Jim has been very active at GNTO and on the committee. He will make an excellent director.

Upcoming events:

- July 18 – New Moon. General observing.
- August 8 – Third-quarter Moon. General observing.
- August 15 – New Moon. TAAS/GNTO “post-Perseid” picnic. General observing.

Don’t forget that the GNTO observing field is available for use by TAAS members anytime. Check the TAAS website for the proper procedure to follow for anytime observing use.

As always, check TAAS Talk and the TAAS website for last-minute changes and updates.

GNTO is open to all TAAS members and their guests. Contact me, or speak with one of the Committee members.

GNTO Director e-mail: gnito@TAAS.org, or
**The Best of All**

*by Kevin McKeown*

Having stargazed for some 53 years now, I’ve done a lot of ordinary, fun observing. Hundreds of hours of watching meteor showers, chasing faint fuzzies, and logging variable stars, twenty some-odd Messier Marathons, but there are maybe 15 events that are extraordinary. I’d like to share these with you. Since it has been 40 years, this August, since the appearance of Nova Cygni, this seems a good place to start.

August 29, 1975. At sunset, the sky was beautifully clear over Golden, Colorado. I eagerly awaited doing astrophotography with my new barn-door tracker, to clock drive my cameras. Awaiting full darkness, I laid back and scanned the sky. About 9:00 p.m., my eye caught a starlike object just northeast of Deneb. It was 2nd magnitude so I first assumed it was a satellite of sorts. What else could it have been? My 3-inch Jaeger’s refractor revealed a weird purple color—and no drift. I knew immediately this was a nova, or supernova! Oh my goodness! I watched and photographed the “new star” ‘til maybe 2:00 a.m. In that short time, it brightened and turned a rich apple green color until it grew as bright as one of the stars of Cassiopeia’s W. These first photos off of my new tracker were of Nova Cygni. I wasn’t aware that perhaps tens of thousands of stargazers worldwide—especially in Japan and China—had spied the nova a half-day earlier. A future college classmate—Peter Quadt, an experienced member of the American Association of Variable Star Observers (AAVSO)—also found the star this night. When he phoned in his report to the University of Denver’s Physics and Astronomy Department, astronomy professors said he was confused. Didn’t know the night sky, they said. Until, that is, he mentioned his AAVSO membership. Then they got serious. The AAVSO would designate Nova Cygni as V1500 Cyg.

I watched and photographed the “new star” ‘til maybe 2:00 a.m. In that short time, it brightened and turned a rich apple green color until it grew as bright as one of the stars of Cassiopeia’s W. These first photos off of my new tracker were of Nova Cygni. September 2. Nova Cygni gone! Tonight it was binocular bright, near 6th magnitude, too faint to be seen in Golden’s slightly light-polluted but clear sky.

I wouldn’t make another observation of the nova. College had started up again, and my late nights under the stars had ended. However, I had the curious pleasure to “rediscover” Nova Cygni. Having some time in late September to photograph the Cygnus Milky Way, I discovered a pure red object of the 8th magnitude or so, in one of my Ektachrome slides. My first thought was a film defect. After a few minutes, I realized with amazement that this was Nova Cygni, faded, and shining by pure ionized hydrogen light.

**Epilogue.** Nova Cygni proved to be the fastest classical nova with the greatest amplitude, rising from nearly 20th magnitude to rival Deneb. Early on, this led some to suspect a supernova. But Nova Cygni’s light curve quickly nixed this possibility. Since 1900, only 5 novas have been brighter. A bright Milky Way supernova is on my bucket list (are you listening out there?).

Unbeknownst to me, word was spreading worldwide among the astronomical community. Nova Cygni was BIG. The brightest nova since Nova Puppis, 1942. I recall a brief blurb about the nova on KOA radio. (Back then, there was no Internet.) As luck would have it, August 30 would be another perfect night for stargazing. As darkness fell, Nova Cygni would be one of the first stars to emerge out of twilight. This night the nova was at its best, just about the equal of Deneb! My notes that night tell me that Nova Cygni shone with a “soft, cream white color,” with maybe a slight bluish tint, so bright that the Northern Cross and the Summer Triangle were thrown into confusion. In a dark sky, it stuck out like a sore thumb.

August 31. The clear weather continued, and Nova Cygni was obviously fainter at about magnitude +2.5. It had a yellow tint.

Epilogue. Nova Cygni proved to be the fastest classical nova with the greatest amplitude, rising from nearly 20th magnitude to rival Deneb. Early on, this led some to suspect a supernova. But Nova Cygni’s light curve quickly nixed this possibility. Since 1900, only 5 novas have been brighter. A bright Milky Way supernova is on my bucket list (are you listening out there?).

I wasn’t aware that perhaps tens of thousands of stargazers worldwide—especially in Japan and China—had spied the nova a half-day earlier. A future college classmate—Peter Quadt, an experienced member of the American Association of Variable Star Observers (AAVSO)—also found the star this night. When he phoned in his report to the University of Denver’s Physics and Astronomy Department, astronomy professors said he was confused. Didn’t know the night sky, they said. Until, that is, he mentioned his AAVSO membership. Then they got serious. The AAVSO would designate Nova Cygni as V1500 Cyg.

September 1. Another perfect night. Nova Cygni was naked-eye bright, but inconspicuous. My magnitude estimate tonight was +3.8.

**Epilogue.** Nova Cygni proved to be the fastest classical nova with the greatest amplitude, rising from nearly 20th magnitude to rival Deneb. Early on, this led some to suspect a supernova. But Nova Cygni’s light curve quickly nixed this possibility. Since 1900, only 5 novas have been brighter. A bright Milky Way supernova is on my bucket list (are you listening out there?).

Unbeknownst to me, word was spreading worldwide among the astronomical community. Nova Cygni was BIG. The brightest nova since Nova Puppis, 1942. I recall a brief blurb about the nova on KOA radio. (Back then, there was no Internet.) As luck would have it, August 30 would be another perfect night for stargazing. As darkness fell, Nova Cygni would be one of the first stars to emerge out of twilight. This night the nova was at its best, just about the equal of Deneb! My notes that night tell me that Nova Cygni shone with a “soft, cream white color,” with maybe a slight bluish tint, so bright that the Northern Cross and the Summer Triangle were thrown into confusion. In a dark sky, it stuck out like a sore thumb.

August 31. The clear weather continued, and Nova Cygni was obviously fainter at about magnitude +2.5. It had a yellow tint.

September 1. Another perfect night. Nova Cygni was naked-eye bright, but inconspicuous. My magnitude estimate tonight was +3.8.

I watched and photographed the “new star” ‘til maybe 2:00 a.m. In that short time, it brightened and turned a rich apple green color until it grew as bright as one of the stars of Cassiopeia’s W. These first photos off of my new tracker were of Nova Cygni.

Epilogue. Nova Cygni proved to be the fastest classical nova with the greatest amplitude, rising from nearly 20th magnitude to rival Deneb. Early on, this led some to suspect a supernova. But Nova Cygni’s light curve quickly nixed this possibility. Since 1900, only 5 novas have been brighter. A bright Milky Way supernova is on my bucket list (are you listening out there?).

I wasn’t aware that perhaps tens of thousands of stargazers worldwide—especially in Japan and China—had spied the nova a half-day earlier. A future college classmate—Peter Quadt, an experienced member of the American Association of Variable Star Observers (AAVSO)—also found the star this night. When he phoned in his report to the University of Denver’s Physics and Astronomy Department, astronomy professors said he was confused. Didn’t know the night sky, they said. Until, that is, he mentioned his AAVSO membership. Then they got serious. The AAVSO would designate Nova Cygni as V1500 Cyg.

Lacerta, Cygnus, Lyra, Vulpecula, and Anser from *Urania’s Mirror* by Sidney Hall

Wikimedia, Library of Congress
La Vida Llena Sees Planets, Stars, HandiScope Demo
by David Frizzell

TAAS PARTNERED with Lanie and John Dickel to hold a star party at La Vida Llena retirement community on Friday, May 29. Although the skies were not very cooperative, the astronomers were able to show a few sunspots in the late afternoon, and the Moon, Venus, Jupiter, and Saturn as the sky darkened. The skies cleared enough that a few major stars, including Arcturus, Castor, Pollux, Regulus, Spica, Antares, and Vega—and parts of Ursa Major, Gemini, and Leo—could be pointed out with a green laser pointer.

Altogether about twenty residents joined in the observing, discussion, and socializing. TAAS volunteers included Jeff Boggs, John Laning, Barry Spletzer, Jon Schuchardt, Ed Juddo, and David Frizzell. Barry was able to demonstrate the HandiScope and it was very much appreciated. The La Vida Llena residents were very kind and invited TAAS to come again next year.

Observe – Educate – Have Fun

TAAS General Meeting

Free and Open to the Public
Saturday, June 27, 7:00 P.M
UNM Science and Math Learning Center

The Hubble Telescope:
A Personal Engineering Perspective
Thomas Farrell, Speaker

LIBRARY SUMMER READING PROGRAM
Solar Astronomy Outreach 2015
by Roger Kennedy

ONCE AGAIN, this summer TAAS will be providing our solar observing and related activities program to the area libraries. These programs have gained in popularity over the past five years, and the library systems will be promoting our events. We will include all Albuquerque and Santa Fe libraries this year, including the brand new building at Central and Unser. The detailed calendar of events can be found on the TAAS.org website solar program pages with navigation maps and times. Below are the dates and facilities:

June
13 Lomas-Tramway
15 Taylor Ranch
16 Erna Ferguson
17 Hillerman
18 Cherry Hills
19 Ernie Pyle
22 Alamosa
23 North Valley
24 East Mountain
25 Albuquerque Main
26 Los Griegos
27 Central-Unser
30 South Valley

July
1 South Broadway
7 San Pedro
8 Juan Tabo
14 Westgate
15 Santa Fe Southside
16 Santa Fe LaFarge
17 Santa Fe Main

All are invited to participate in this rewarding community outreach mission. We would like to include solar imaging this year and observing with our new Calcium K (II) filter.

Enchanted Skies Star Party Announced for October

MAGDALENA’S Enchanted Skies Star Party will be held again October 13–17 with night viewing on Cibola National Forest land, just a few miles outside of the Village of Magdalena in Socorro County.

For registration, full list of activities, and hotel information, go to www.enchantedskies.org or call Judy Stanley at 505-515-5780 or e-mail: esspnm@gmail.com.
Great Balls of Fire!

by Jon Schuchardt

You shake my nerves and you rattle my brain
Too much love drives a man insane
You broke my will, oh what a thrill
Goodness gracious great balls of fire

—Otis Blackwell and Jack Hammer
as performed by Jerry Lee Lewis

GOODNESS gracious, little compares with the thrill of a summertime eyepiece-full of M13, that ball of fire we call the Great Hercules Cluster. Discovered by Edmond Halley in 1714, M13 is about 25,000 light-years away, has a diameter of about 150 light-years, and contains about one million stars. William Herschel described it as a "globular cluster" in 1789 and estimated that it had about 14,000 stars. Philip Harrington aptly described the 100x view of M13 through an eight-inch telescope as if "someone dropped a pinch of sugar onto a black-velvet backdrop."

Globular clusters are densely packed, spherical agglomerations of $10^4$ to $10^7$ gravitationally bound, relatively old stars that surround a galactic nucleus. Their diameters span tens to hundreds of light-years. With densities typically about 1 star per cubic light-year, they resist disruption by galactic tidal forces. Many globular clusters are believed to be ten or more billion years old. The Milky Way contains about 150 cataloged globular clusters, most within reach of a modest backyard telescope.

In the early 1920s, Harlow Shapley’s study of globular clusters enabled him to infer the size of the Milky Way and our Sun’s location in it. Shapley believed that the massive star clusters must orbit the center of the galaxy. He noticed that globular clusters are concentrated in the direction of Sagittarius. To map positions of the clusters, Shapley found their distances by measuring the luminosities and

continued on page 7 . . .
M81, "Bode's Nebula," captured on May 17 and 18 of 2015 at GNTO. 18 x 10 min subs were obtained with an SBIG 4000XCM camera on a C11-Edge with f/7 focal reducer. The focal length was 1960 mm. The mount was a Losmandy G11, guided using the in-camera guide chip. Processing was done in DSS and Photoshop.

M81 is a large, bright spiral located about 12 million miles away in Ursa Major. Compared to the image I obtained last year, with the same equipment plus an IDAS LP2 filter, with an additional hour of exposure, this image has much better detail in the fainter regions. The lesson from this is that we must all work together to protect our dark sky from further erosion.

—Vance Ley

apparent brightnesses of RR Lyrae variable stars in the globular clusters. From his plot, he correctly deduced that the Sun lies about two-thirds of the way from the center of the Milky Way, not at its center as others had postulated. Shapley actually overestimated the size of the Milky Way by about 3x because interstellar dust made the clusters appear farther away than they are.

M13 aside, the Messier list includes many spectacular globular clusters. M22, discovered in 1665 by Abraham Ihle, and cataloged by Messier in 1764, is a mere 10,400 light-years away. M22 is the third-brightest globular in the sky, behind the southern clusters Omega Centauri and 47 Tucanae. Its 32' angular diameter makes it appear slightly larger than a Full Moon.

In addition to M22, Sagittarius is home to six other Messier globular clusters: M28, M69, M70, M54, M55, and M75. Discovered by Pierre Méchain in 1780, M75 resides 67,500 light-years away, well beyond the Galactic Center. It has a diameter of 130 light-years and shines at an absolute magnitude of about -8.55, or about 180,000 times that of our Sun.

William Herschel called M80 (see photo), a class II cluster in Scorpius, "one of the richest and most compressed clusters of small stars I remember to have seen." Found by Messier in 1780, M80 is home to a large number of "blue stragglers," which are young, massive stars near the main sequence of the Hertzsprung-Russell diagram.

The Astronomical League invites us to earn a globular cluster observing certificate and pin, and it proposes a worthy summertime challenge for globular thrill seekers: using any star-hopping or device-aided technique, locate and study fifty globular star clusters, including at least one "challenge" object, and estimate the Shapley-Sawyer concentration class of each. The classes range from I to XII, with I for a dense concentration of stars and XII for a loose concentration of stars in the halo of the globular. The "best" globulars have an easily seen core and halo, and they often fall into classes V-VII. See the League’s observing guide for more details and comparison photos. Ideally, use the same eyepiece to permit consistent comparisons. A convenient eyepiece will show all of M13 in the field.

continued on page 8 . . .
Southwestern Night Skies Evoked in Epic Novel

I recently read Cormac McCarthy’s acknowledged masterpiece, Blood Meridian, a novel first published in 1985. It’s a brutal story mostly set in mid-19th century Texas and northern Mexico, overflowing with ugliness and violence – yet told with improbable grace and elegance. I was struck by McCarthy’s vivid descriptions of the night sky, scattered throughout the book like lovely respite from the relentless savagery of the tale. This is an account of my project to study the Messier objects, which I completed during July and August of 2008 from French Creek State Gamelands, about an hour and a half west of Philadelphia. French Creek is an “orange” (Bortle class 5) rated sky on the Clear Sky charts, which is similar in darkness to Rainbow Park in Rio Rancho. Estimating the Shapley-Sawyer class is considerably easier for most of the twenty-nine Messier objects than for the NGC clusters (62 of which are also on the Herschel 400 list). I needed to revisit some NGC objects several times to confirm classification. A few objects, such as NGC 7006, an “intergalactic wanderer” about 185,000 light-years away, are a challenge to classify; this one is in class I, but it looked more like a class V object to me.

Too much love may drive an astronaut insane, but I promise you’ll never get the summertime blues chasing down those great balls of fire, the globular star clusters!

Sun and Star Party on the Patio in Sedona

My sister and I made a quick trip to Sedona last week for a mini-vacation. Since Tuesday, June 2, was a full Strawberry Moon, I took along my 6” Orion StarBlast scope and some solar glasses. What fun it was to show off the Sun during happy hour on the patio of our hotel and then later on treat other guests to the Moon, Saturn, Venus and Jupiter! I took the TAAS sign with me and passed out a few cards, too. We had about 20 of the hotel guests share the solar glasses and look through the scope. I did manage to teach one young man how to use my scope, and that’s always the most fun! —Trish Logan

NGC6093 (M80)

NGC6093 (M80)

NGC6093 (M80)

NGC6093 (M80)

NGC6093 (M80)

NGC6093 (M80)

NGC6093 (M80)

NGC6093 (M80)
Oak Flat Public Star Party Season Opens with Success

by Lynne Olson

Our first Oak Flat Public Star Party of 2015 was a great success, even with some clouds and a chilly atmosphere. A very large sampling of our members and their telescopes were on hand to show the Moon and Jupiter and Venus and, eventually, Saturn and many Messiers to the visitors and their families who showed up to inaugurat our summer series in such good fashion. The guests were as interested in the different scopes and equipment as the objects in the heavens, and many learned what they might look for in their first/next telescope.

Here’s a small album of the sights at the star party—you may be in one of these photos at the next Oak Flat star party on Saturday, June 20!
The Sidereal Times

July 2015

Meeting Minutes

TAAS Board Meeting
Thursday, April 30, 2015

Attended by: Steve Snider, Trish Logan, Robert Anderson, Mike Molitor, Jim Fordice, Lynne Olsen, Dan Clark, Sigrid Monaghan.

Absent: David Frizzell, Bob Havlen, Roger Kennedy

Guest: Hilton Stout, Wayne Itokazu

I. Approval of Agenda
No additions made to agenda. Motion to approve the agenda and seconded.

II. Approval of Minutes
No additions or corrections of the minutes. Motion to approve the minutes and seconded. Minutes then forwarded to the Webmaster for inclusion in the newsletter.

III. Committee Reports

A. Education - Trish Logan [Nighttime]
- Trish reported a successful Star Party conducted at the Alamosa Elementary School April 28. This was the last school star party of the year.
- The pathway lights donated by Barry Spletzer proved very useful at this event and the Open Space Visitor Center Star Party on the 25th.
- Trish will be assisting Dan Clark, Treasurer, in entering/splitting funds received from a Grant for the Educational Outreach programs between the Solar Outreach and the Night-Time programs.
- Trish expressed gratitude to the volunteers who served during the many activities of this current year so far.

B. Finance - Dan Clark
- As it is the last day of the month, reports have not been completed yet.
- Reports will be e-mailed to the Board.

C. GNTO - Mike Molitor
- The Committee is continuing its plan for inventory reduction.
- Scheduled events throughout April did well.

D. Membership - Bob Anderson
- Membership renewal letters went out for the month of June.
- Welcome packages for 2 new members have gone out.
- Sign-In sheets for the May 2 General Meeting have been printed.

E. Publicity/Special Events - Lynne Olson
Events scheduled in the near future include:
- Oak Flat Star Party (first of the season) coming May 23.
- Lynne is seeking more member participation in the opening and closing at the Oak Flat location for the entire season
- If there are no volunteers for a scheduled Oak Flat Star Party, the event may have to be cancelled.
- Oak Flat will also be available in September on the 19th (Saturday)
- On Friday, May 8, at 7:30 p.m., Dee Friesen will be hosting the spring session of the TAAS Fabulous Fifty at his house.
- VLOA (first of the season) May 8.
- Chaco Canyon Star Party with a reminder to call and make reservations for overnight camping space.

IV. Current Activities

General Meeting 5/2/2015

V. Future Activities

A. TAAS Events for next three months

B. Oak Flat Star Party Season
- Future Oak Flat Star Parties will be available and scheduled for June, July and August due to an increase in availability.

C. ALCON Conference - Dee Friesen’s Presentation
- Dee will be representing TAAS at the ALCON

continued on page 11...
Conference speaking on Educational Outreach.

D. Black Canyon Star Party June 17 to 20

VI. Old Business

1. Insurance Coverage Proposal - Presented by Hilton Stout, USI Insurance. Due to the nature of our account - Location of the property and Equipment (GNTO), most standard insurance companies are not interested in quoting. USI’s marketing department has proposed alternatives for consideration:

   2. Coverage of Property - designed to cover Buildings and Contents that are at the specific location (GNTO)

   3. Inland Marine Coverage - which would be for the various astronomical equipment and other miscellaneous items.

4. General Liability - Replacement of the Travelers policy with a policy that will cover only the general liability.

A written Proposal of Coverage was presented to the Board for review. There were discussions of additions and exclusions to the proposed policy as well as questions for clarification. Jim is going to put together list of items that travel to various locations, and Mike will update the list of items and property at GNTO. Both lists will go to Steve Snider to present to the Insurance Company for a final quote. Current policy will remain active until replaced with the more comprehensive policy.

VII. New Business

A. Board Member Replacement


1. The purpose of the Committee will be to Plan TAAS’s response for the upcoming 2017 Solar Eclipse.

2. The path of the eclipse will bring it within 500 miles of NM.

3. So far the committee consists of two members, Wayne and Jim Fordice.

4. More volunteers will be asked to participate.

C. Amendments to By-Laws

- Discussions on changes to sections of the By-Laws including the publication of the monthly BOD meeting Minutes

- Updating the Newsletter

- Changes to be made to the By-Laws

- Changes to the descriptions concerning appointed Board Members and elected Board Members

- A meeting Minutes archive will be maintained on the TAAS website.

- Jim Fordice will prepare the proposed changes to the by-laws in a “line in/line out” format and send it to the BOD members.

- Intention is to approve the changes at the next BOD meeting on May 28.

VIII. BOD Remarks/Discussion

IX. Adjourn

Account Summary, May 2015

by Dan Clark, Treasurer

Total Funds on Deposit:

<table>
<thead>
<tr>
<th>Current</th>
<th>Previous</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>$26,456.22</td>
<td>$25,685.35</td>
<td>$770.87</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Totals:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>$5,978.09</td>
<td></td>
</tr>
<tr>
<td>GNTO</td>
<td>$7,731.73</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>$8,286.41</td>
<td></td>
</tr>
<tr>
<td>Dark Sky</td>
<td>$2,078.32</td>
<td></td>
</tr>
<tr>
<td>Science Fair</td>
<td>$50.00</td>
<td></td>
</tr>
<tr>
<td>Special Projects</td>
<td>$742.23</td>
<td></td>
</tr>
<tr>
<td>Solar Outreach</td>
<td>$896.48</td>
<td></td>
</tr>
<tr>
<td>Astro League Dues (not in total)</td>
<td>$692.96</td>
<td></td>
</tr>
<tr>
<td>Investments Wells Fargo (included in total)</td>
<td>$10,000.00</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Major Revenue Total:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Memberships</td>
<td>$915.00</td>
<td></td>
</tr>
<tr>
<td>Donations</td>
<td>$170.00</td>
<td></td>
</tr>
<tr>
<td>April Interest</td>
<td>$0.12</td>
<td></td>
</tr>
<tr>
<td>Reversed Checks, Not Cashed</td>
<td>$41.05</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Major Expenses Total:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage Unit</td>
<td>$161.00</td>
<td></td>
</tr>
<tr>
<td>CenturyLink</td>
<td>$26.83</td>
<td></td>
</tr>
<tr>
<td>Trish Logan Edu Supplies</td>
<td>$70.62</td>
<td></td>
</tr>
<tr>
<td>IDA Membership</td>
<td>$100.00</td>
<td></td>
</tr>
<tr>
<td>Purchase of New Checks</td>
<td>$48.73</td>
<td></td>
</tr>
<tr>
<td>Adj. Check Total</td>
<td>$62.00</td>
<td></td>
</tr>
</tbody>
</table>
Welcome to New and Returning TAAS Members

Beate Boudto
Geoffrey Forden
Neil Goldberg
Kathleen Gregory
Kathleen Gygi
Daniel Kratish
Tom Liles
William Marchetto

Donations to TAAS

GENERAL
William Marchetto
Jim Degnan
José Rodriquez

EDUCATION
Kevin McKeown
Norton Newsom

GNTO
Pete Eschman
Kevin McKeown

Location, Location, Location

- Chaco Canyon
  6185’ elevation
  Latitude 36° 01’ 50”N
  Longitude 107° 54’ 36”W
  36.03’   -107.91’
  36° 1.83’  -107° 54.60’

- Oak Flat
  7680’ elevation
  Latitude 34° 59’ 48”N
  Longitude 106° 19’ 17”W
  34.99’   -106.32’
  34° 59.80’  -106° 19.28’

- UNM Campus Observatory
  5180’ elevation
  Latitude 35° 5’ 29”N
  Longitude 106° 37’ 17”W
  35.09’   -106.62’
  35° 5.48’  -106° 37.29’

The Albuquerque Astronomical Society is a 501(c)(3) organization. Donations are deductible as charitable contributions on the donor’s federal income tax return.

Explanation of Dues and Membership Renewal Date

NEW MEMBERSHIPS will be posted as beginning the first day of the month regardless of what day during that month the check is received. Notice of renewal will be sent out the month before the due date. You will have until the end of the month after your renewal date to send your membership check. majik-647flmajik

If you fail to pay and renew at that time, your membership will lapse. When you pay on a lapsed membership you will be reinstated in the month that the membership was originally due. (If dues were due in March and you did not renew until May or June or July, etc., the date of your renewal will be in March. If your dues are due in April and you pay in March, your membership will still be renewed in April.)

In a nutshell, if you pay late or early your membership date stays the same and your next year’s dues will be due on that date next year. —Dan Clark

Monthly Membership Report

May 2015

<table>
<thead>
<tr>
<th>Membership</th>
<th>Current Month</th>
<th>Past Month</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular</td>
<td>246</td>
<td>238</td>
<td>8</td>
</tr>
<tr>
<td>Family</td>
<td>77</td>
<td>74</td>
<td>3</td>
</tr>
<tr>
<td>Education</td>
<td>17</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>Military</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Total Paid</td>
<td>341</td>
<td>330</td>
<td>11</td>
</tr>
<tr>
<td>Honorary</td>
<td>7</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Complimentary</td>
<td>14</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>Total Members</td>
<td>362</td>
<td>351</td>
<td>11</td>
</tr>
</tbody>
</table>

Editor’s Note

The deadline for the next issue of The Sidereal Times is Friday, July 17. The newsletter editor’s e-mail address is TAASeditor@gmail.com.

Text: E-mail text as an attachment, preferably in Microsoft Word or compatible format.

Photos: Caption and credit needed. Attach photos or graphics in separate graphics files. Photos or graphics in Word files are no longer acceptable.

Membership Services

for:
- Membership Inquiries
- Events Information
- Volunteer Opportunities

Contact Bob Anderson at membership@TAAS.org

for:
- Membership Dues
- Magazine Subscriptions
- Address/e-mail changes

Contact Dan Clark at treasurer@TAAS.org

P.O. Box 50581
Albuquerque, NM 87181
MEMBERSHIP: You may request a membership application by sending e-mail to membership@TAAS.org or calling (505) 254-TAAS (8227). Applications may also be downloaded from the Web site. Annual dues to The Albuquerque Astronomical Society are $30/year for a full membership and $15/year for a teacher, student (grades K-12), or military membership. Additional family members may join for $5/each (teacher, student and family memberships are not eligible to vote on society matters). New member information packets can be downloaded from the Web site or requested from the TAAS Membership Services Director at membership@TAAS.org. 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 at the next meeting.

MAGAZINES: Discount magazine subscriptions to Sky and Telescope and Astronomy 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. Make checks out to TAAS (we will combine and send one check to the publisher). Warning: publishers take several months to process magazine subscriptions.

ARTICLES/ADVERTISEMENTS: Articles, personal astronomical classified advertisements and business card size advertisements for businesses related to astronomy must be submitted by the deadline shown on the Society calendar (generally the Friday near the new Moon). Rates for commercial ads (per issue) are $120 per page, $60 per half page, $30 per quarter page. $7 for business card size. The newsletter editor reserves the right to include and/or edit any article or advertisement. E-mail attachments in Microsoft Word or compatible word processor; one space between paragraphs is preferred. ASCII and RTF are acceptable. One column is approximately 350 words. Contact the Newsletter Editor at TAASeditor@gmail.com for more information.

Note that the Sidereal Times is no longer mailed. It is posted on the TAAS Web site, www.TAAS.org.

The editor’s e-mail address is TAASeditor@gmail.com.

TAAS LIBRARY: Please contact the Librarian at librarian@TAAS.org or 890-8122 to check out a book or make a contribution.

TAAS ON THE WORLD WIDE WEB:

The TAAS Web site includes:

- Online Sidereal Times
- Educational Outreach
- Programs: TAAS 200, Equipment Trader, Telescope Loaner Program, and more
- SIGs
- Members Guide
- Links to Astronomy Resources and Members’ Blogs

E-mail: TAAS@TAAS.org