General Meeting News
Lynne Olson

TAAS General Meeting
Saturday, September 26, 7:00 P.M
Science and Math Learning Center (SMLC)
UNM Campus

TAAS at Star Party in Australia

G’DAY MATE! TAAS MEMBERS Larry Cash, Gordon Pegue, and Alan Scott traveled to Australia in April to attend the OzSky star party (www.ozsky.org). Alan will share this trip of a lifetime, including tales of BLACK southern skies, observing with a

Cabezon Peak and the Milky Way. Camera is Canon 70D. Lens is a 10 mm f/2.8 Rokinon. The single exposure is 30 seconds at ISO 3200.

Photo: Dale Murray

Oak Flat Public Star Parties
Season Finale on Saturday
Fifth in the Summer Series

by Lynne Olson

Saturday, September 19
Nine miles south of Tijeras on #337
One mile in from Oak Flat cutoff

“Look at the skies, they have stars in their eyes, on this lovely bella notte!”
—Disney’s Lady and the Tramp

TAAS will host the September Oak Flat Public Star Party on Saturday, September 19, opening the gates at 5:30 p.m. Come celebrate another splendid night of stars and the Milky Way. This is another opportunity for TAAS scope owners to show the celestial wonders to our guests...the Moon and Saturn and many, many deep-sky objects will be our main targets!

Doug and Christina LeGrand will be our openers/closers again, giving access to the Juniper and Yucca public parking areas, and the road to the observing field (only for cars with telescopes to set up.) Restrooms are at Yucca. Please arrive early to park and orient yourselves and talk with our scope operators as they set up. They have acquired some impressive

continued on page 2

Public Star Party
Oak Flat Picnic Area
Sat., September 19

School Star Party
Tierra Adentro
Tue., September 22

TAAS-NMMNH&S
Total Lunar Eclipse
Sun., September 27
7:00–11:00 p.m.

INSIDE
2.......Astrophoto: NGC7789
3.......Under the Dome
4.......Total Lunar Eclipse
5.......August Oak Flat Star Party Report
6.......July Board Minutes
7.......August Accounts Summary
8.......TAAS Reports & Notices
9.......TAAS Directors & Staff
NGC7789 is a rich open cluster in Cassiopeia about 6000 light-years distance and very old, 2 billion years, for this type of cluster. It is located about 3 degrees to the east of beta Cas (Caph). It has many evolved red giants in it with yellow and orange colors.

During my imaging I was getting a reflection of bright stars to the left very close, but I did not have time to troubleshoot it because clouds were moving in. I instead had to align images manually and delete the reflection on the combined images for each filter.

Equipment: ES ED127CF f/7.5 (5” APO), iOptron CEM60 with new TriPier, SBIG ST8300M and FW5, guided with SBIG SG-4 on an AT72ED f/6.

Software: CCDSoft V5.210, CCDStack V2, MaxIm DLIP V5, Photoshop Elements V9.

Exposure: RGB 10x3 minutes, total of 90 minutes.

Location: 3 miles north of Oak Flat on my backyard patio near Tijeras, NM.

—John Laning
August 15 New Moon Observing and Picnic:
When we opened the site for the annual picnic at 3:00 p.m. it was fairly clear, but dark clouds were gathering over the Sandia, Manzano, and Gallinas Mountains. The picnic setup and preparation was complete by 4:45 p.m. while attendees continued to arrive through 6:00 p.m. During the pre-dinner hour, we were monitoring lightning events with Jim Kaminski’s lighting meter which was giving a distance of 12 to 24 miles. As the grill was fired up and Larry Cash began cooking, the distance to the lightning was fairly constant but the sky overhead darkened quickly. Larry managed to complete one full round of grilling before the wind kicked up and a few raindrops started falling.

The lightning closed to 6 miles and soon the rain drove everyone inside. About half of the attendees departed while the die-hards held out hope. It was not to be. By about 8:00 p.m. the site was cleaned and cleared. The road out was slippery with mud and one vehicle had to be rescued from the mire by Jody Forster and Will Ferrell. Jeff Boggs in his big pickup led some of us off-road around the trouble areas. At 10:00 p.m. the sky was still completely overcast.

Special thanks to Dee Friesen who was prepped and ready for an after-dinner presentation and to Kevin McKeown who was prepared to do a laser sky tour. Thanks to everyone who helped with the food and preparations. The Good Samaritan award goes to Jody and Will for the mud rescue.

Attendees were Mike Molitor, Shane and Becky Ramatowski, Pete Eschman, Jeff Boggs, Kevin McKeown, Jody Forster, Will Ferrell, Dee Friesen, Dan and Vera Rossbach, Bill Wallace, Bob Hufnagel, John Laning, Sigrid Monaghan and her guest Danny, Dale and Dianne Murray, Gordon Pegg, Larry Cash, Vance Ley, Jim and Bunny Kaminski, Mike Fuge, Ray Collins, and myself.

September 10 GNTO Committee Meeting:
The GNTO Committee met on September 10 but my departure for the Okie-Tex Star Party early the next morning precluded reporting on the meeting for this issue.

September 12 New Moon Observing:
As I write this report, the observing conditions appear to be very favorable for the 12th. I will report on the event next month.

Signage Improvements:
When you visit the site, you will notice new reflectors and signs intended to make it easier to exit the site in the dark using your car’s parking lights. We need your feedback on whether you can see the signage as you exit and where other signs are needed. Please send comments to GNTO@TAAS.org.

TAAS 200 Scavenger Hunt:
We will hold the fall TAAS 200 Scavenger Hunt on November 14. If you are not familiar with the TAAS 200 list, go to http://www.TAAS.org/TAAS200/taas200intro.html. Will Ferrell is the organizer for this fun event. Plan to attend and see how many TAAS 200 objects you can find!
Exceptional Total Lunar Eclipse to Arrive in Albuquerque at a Civilized Hour
Last One This Good Before 2019
by Barry Spletzer

September 27 marks the end of a remarkable series of lunar eclipses with perhaps the most remarkable eclipse of all. So what is it that makes me use the word “remarkable” twice in one sentence?

First, over the past year and a half, Albuquerque has been treated to four total lunar eclipses at about six-month intervals. Lunar eclipses occur about every six months, but most are not total and only about one-half of them are observable from any given location.

Given this, having four total eclipses in a row is quite rare. A series of four total lunar eclipses is called a tetrad, although the term “tetrad” can be applied to any group of four things. Tetrads come at very uneven intervals. Between the years 1600 and 1900 no tetrad occurred. In our current century there will be eight of them. Add to this the fact that all four eclipses are visible from Albuquerque, and it is pretty remarkable.

What about my second “remarkable”? Why is this eclipse better than the others? It’s all about timing. The April 2014 eclipse reached midpoint around 1:00 a.m. and ended after 3:00 a.m. requiring some dedication to see the whole thing. The next one, in October 2014, reached midpoint around 3:30 a.m.—that seems uncivilized to me. The April 4, 2015, eclipse peaked at 5:00 a.m.—again, just inconsiderate for those who want to get some sleep. Then along comes this one, a truly considerate eclipse!

Moonrise is at 6:56 p.m. The Moon reaches position U1 at 7:07 p.m. meaning the Moon just touches the umbra (the good part of the eclipse) 10 minutes after moonrise. Now that’s a civilized eclipse and a great view. The timing couldn’t be better.

But wait, there’s more! This eclipse occurs during a “Super Moon,” which means a full Moon near the Moon’s closest approach to Earth in its monthly orbit. It’s not a huge effect with the Moon being about 7% bigger than average, but it is somewhat noticeable. In this case, the eclipse happens only about 12 hours before the Moon’s closest approach to Earth (the perigee). This is the closest perigee since July of last year, and the Moon will not come this close again until November of next year. Add to this that the Moon is near the horizon, where it often seems unusually large, and you’ve got a real chart-topper of an eclipse.

Of course you can observe from almost anywhere, but the New Mexico Museum of Natural History and Science will be hosting a special event from 7:00–9:30 p.m. Go to http://www.nmnmnaturalhistory.org/total-lunar-eclipse.html for details.

To top it all off, the next total lunar eclipse with such good visibility isn’t until January of 2019, so mark your calendar and don’t miss this one. It’s rare, it’s big, it’s well-timed, and it’s coming soon!

Important Facts:

About the upcoming eclipse, let me be very clear—it is on September 27 not September 28. I say this because the authoritative NASA Eclipse Website (http://eclipse.gsfc.nasa.gov/eclipse.html) correctly lists the eclipse as September 28. This can cause confusion.

Lunar eclipses come in three types, penumbral, partial and total. It’s easiest to understand the differences by imagining yourself on the Moon during the eclipse. In a penumbral eclipse, the Moon passes through Earth’s penumbra. The penumbra is the fuzzy part of a shadow. Standing on the Moon this means that only part of the Sun is blocked from view and nowhere would the Sun be completely blocked. From our vantage point on Earth a penumbral eclipse is barely noticeable.

A partial eclipse occurs when some portion of the Moon passes into Earth’s umbra, meaning there are places on the Moon where the Sun would be completely blocked and places where the Sun is still partially visible. A total eclipse means there is no spot on the Moon where the Sun is visible. Total lunar eclipses are less common since the Moon is about three times as likely to pass through the fuzzy penumbra as it is to pass through the dark umbra.

continued on page 5 . . .
Oak Flat Star Party Report, August 22

by Lynne Olson

We had yet another incredible public star party with somewhere between 100–150 visitors, whole families and young students, first timers and veterans of many Oak Flat events...and, of course, the many telescopes of TAAS and their friendly and generous owners. The weather came through for us again, not flawless, but good enough to see many, many deep-sky objects, Saturn, Neptune, and of course, the crowd favorite—the Moon.

Thanks to all who brought their beautiful scopes and shared the views and their knowledge with the public. The biggest thanks of all to our openers/closers, Doug and Christina LeGrand, who have kindly offered to repeat that service for our last Oak Flat event of the season on September 19. Again, our appreciation to the Forest Service and the Tijeras Ranger Station for being our hosts and providing the areas to TAAS year after year.

...Total Lunar Eclipse continued from page 4

Here’s the full schedule of eclipse timing for the positions shown in the NASA graphic:

Moon touches the penumbra (P1) 6:11 p.m.
Moonrise: 6:56 p.m.
Moon touches the umbra (U1): 7:07 p.m.
Moon fully eclipsed (U2): 8:11 p.m.
Eclipse midpoint (Greatest): 8:48 p.m.
Moon begins to emerge from the umbra (U3): 9:23 p.m.
Moon clears the umbra (U4): 10:27 p.m.
Moon clears the penumbra (P4): 11:22 p.m.
Meeting Minutes

TAAS Board Meeting
Thursday, July 30, 2015

Attended by: Stephen Snider, Mike Molitor, Bob Anderson, Jim Fordice, Dan Clark, Roger Kennedy, Trish Logan, Bob Havlen, Sigrid Monaghan
Absent: Lynne Olsen; David Frizzell
Guests: Thaddeus LaCoursiere

I. Approval of Agenda: Jim Fordice requested two additional topics to the agenda:
   1. Loaner Program Old Equipment Disposal
   2. Renewal of AED Support
   With the additions agreed upon the Agenda was approved.

II. Approval of Minutes: Minutes approved for June 25 and sent to the newsletter.

III. Committee Reports:
   A. Education
      1. Education (SAO) - Roger Kennedy
         Roger reported that they have added a Solar/Lunar Event scheduled for Wednesday, 8/5/2015 at Tingley Beach per the BioPark Foundation. Roger was joined by Thaddeus who is the Planetarium Coordinator at NMMNH&S.
         • The ABQ Hamfest - Amateur Radio Operators will be at the Marriott Pyramid Friday, Saturday, and Sunday August 7, 8, and 9 with night scopes set up on the 8th.
         • Lunar Monday begins again at NMMNH&S July, August, and September. Geoff Goins will be talking at the Bandelier National Monument Saturday August 22, September 5, Friday September 11, and Saturday September 26. There will be opportunities for nighttime observing as well.
      2. Education (Night) - Trish Logan - First Nighttime School Star Party will take place at Alvarado Elementary August 25 from 7:00 to 9:00 p.m.

   B. Finance - Dan Clark presented hard copies of the Treasurer’s Report including Investment in two CD’s for $5,000 apiece.

   C. GNTO - Jim Fordice
      • Jim relieved Mike Molitor as the Director of the GNTO on July 1, 2015
      • Preparations for the August 14 Picnic are almost complete including site weeding and mesquite bush trimming.
      • Signs and some new arrows for direction have been installed.
      • Financial report submitted including reimbursements for focuser for the Isengard Telescope, Security Camera System, and new posts and fasteners.

   D. Membership - Bob Anderson
      • Eight new members for the previous month
      • Eight renewals
      • Bob says that the expiration dates on membership cards will be eliminated.

   E. Publicity/Special Events - In the absence of Lynne Olsen, a written report of all upcoming events was handed out to the Board Members.

IV. Current Activities
   Upcoming General Meeting of August 1: Guest speaker will be Robert Fugate talking about the Starfire Optical Range and Adaptive Optics.

V. Future Activities
   • Fab 50 Summer Review at Dee Friesen’s Home
   • HamFest Solar Event
   • GNTO Picnic
   • Oak Flat Star Party

VI. Old Business - Stephen presented the latest Business Insurance Proposal
   • Insurance Coverage - Current proposed cost for General Liability is $3400
   • Board will be looking into getting more quotes.
   • Other options were discussed including self insurance.
   • Board has decided to keep the current number of Board Members which is 11
   • Roger has volunteered to talk to Jim Greenhouse of the Planetarium and to the directors at Explora on light Issues.
   • The Astro 101 Program will begin again at the next General Meeting and each month thereafter. The first lecturer will be Kevin McKeown on the topic of “Eyepieces.”

continued on page 7…
VII. New Business
A. Vendors at TAAS Events
B. Loaner Program - Old Equipment Disposal - Jim Fordice presented a list of unused equipment that will be offered to TAAS members free of charge. Any remaining equipment will be disposed of.
C. Renewal of AED support at GNTO - The Board approved expenditure of $540.35 for AED training and replacement of the defibrillator pads.
D. The Cannon Rebel camera will be transferred from the SAO to the TAAS Telescope Loaner Program.
E. The Board voted against including mandatory AL membership in our membership program. Members will continue to be able to choose whether they want to join or not.

VIII. BOD remarks/discussion
IX. Adjourn

Next scheduled Board of Directors Meeting will be September 24, 2015.

Account Summary, August 2015
by Dan Clark, Treasurer

Total Funds on Deposit:

<table>
<thead>
<tr>
<th>Category</th>
<th>Current</th>
<th>Previous</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>$6,375.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GNTO</td>
<td>$8,257.40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>$7,225.98</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dark Sky</td>
<td>$2,078.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science Fair</td>
<td>$50.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Projects</td>
<td>$742.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solar Outreach</td>
<td>$539.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Astro League Dues</td>
<td>$285.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(not in total)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Totals:

Free and Open to the Public
Saturday, September 26, 7:00 P.M
UNM Science and Math Learning Center

TAAS at Star Party
in Australia

Alan Scott, Speaker

...Under the Dome
continued from page 3

New Route to GNTO:
Due to construction of a new crosswind runway at the Belen Alexander Municipal Airport, the route to GNTO has changed. Please contact any GNTO Committee member for a copy of the map that shows the new route.

Upcoming Events:
- September 19: Training Event for the Isengard and Imaging
- October 3: Third Quarter Moon Observing
- October 10: New Moon Observing
- November 7: Third Quarter Moon Observing
- November 14: New Moon Observing and TAAS 200 Scavenger Hunt

Don’t forget that the GNTO observing field is available for use by TAAS members anytime. Check the TAAS website for the procedure to follow. Contact me if you have any questions. As always, check TAAS_Talk and the TAAS website for last-minute changes and updates. GNTO events are open to all TAAS members and their guests.

GNTO Director: GNTO@TAAS.org or 505-803-3640.
Welcome to New and Returning TAAS Members

Anthony Antognoli
Michael Apodaca
Gary Carter
Jeremy Dean
Michael Payne
Daniel Russell

Donations to TAAS

SEE NEXT ISSUE FOR RECENT DONORS LIST

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

Location, Location, Location

• Chaco Canyon•
6185’ elevation
Latitude  Longitude
36˚ 01’ 50"N   107˚ 54’36"W
36.03˚   -107.91˚
36˚ 1.83’   -107˚ 54.60’

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

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

For security reasons, GNTO location is available by request only, so please contact Jim Fordice, GNTO Director, for GNTO information.

Editor’s Note

The deadline for the next issue of The Sidereal Times is Friday, October 9. 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.

Monthly Membership Report

July 2015

<table>
<thead>
<tr>
<th>Membership Type</th>
<th>Current Month</th>
<th>Past Month</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular</td>
<td>248</td>
<td>249</td>
<td>-1</td>
</tr>
<tr>
<td>Family</td>
<td>75</td>
<td>78</td>
<td>-3</td>
</tr>
<tr>
<td>Education</td>
<td>15</td>
<td>15</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>339</td>
<td>343</td>
<td>-4</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>360</td>
<td>364</td>
<td>-4</td>
</tr>
</tbody>
</table>

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.

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

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

Donations to TAAS

The Official Newsletter of The Albuquerque Astronomical Society
MEMBERSHIP: You may request a membership application by sending e-mail to membership@TAAS.org. 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.

TAAS is honored to receive an “Editor’s Pick 2013 Best of the City” award from Albuquerque Magazine.

BEST PLACE TO STARGAZE

CELESTIAL EDITION

TAAS ON THE WORLD WIDE WEB:

TAAS Web site: http://www.TAAS.org

The TAAS Web site includes:
- Online Sidereal Times
- Educational Outreach
- Programs: TAAS 200, Equipment Trader, Telescope Loaner Program, and more
- Special Interest Groups (SIGs)
- Members Guide
- Links to Astronomy Resources and Members’ Blogs

E-mail: TAAS@TAAS.org

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.