The Mysterious Green Aurora of Venus

TAAS General Meeting
Saturday, June 10, 7:00 P.M.
Science and Math Learning Center,
UNM Campus

Featured Speaker: Dr. Candace Gray

DR. GRAY: “The Aurora Borealis is one of the most spectacular atmospheric displays we see on Earth—vivid green, reds, blues, and purples seem to dance around the sky. However, this phenomenon is not isolated to the Earth alone—any planet hosting an atmosphere and magnetic field can produce aurora. But what of planets like Mars and Venus that do not possess a strong magnetic field?

“In this presentation, we will investigate...

continued on page 2

HAVE YOU EVER OBSERVED AN ASTEROID WITH BINOCULARS OR A TELESCOPE? How can you tell what you saw was an asteroid and not a star, planet, or comet? In this presentation, we’ll explore how to wet your toes with some binocular observing, what tools are available to help locate brighter asteroids with a telescope, and what to look for when hunting. The Astronomical League has many observing programs to encourage amateur astronomers

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Oak Flat Public Star Party
Saturday, June 3
Oak Flat Picnic Grounds, South of Tijeras

by Lynne Olson

FOLLOWING QUICKLY on the heels of our first Oak Flat Star Party, the second in the annual summer series of Oak Flat Public Star Parties will be held on Saturday, June 3, at the Yucca and Juniper areas of the Oak Flat Picnic Grounds. TAAS telescopes of all types and sizes will be on hand around the observing field under the dark skies of this location, generously offered to TAAS over the years, to allow us to show the wonders of our New Mexico skies to the visiting public.

continued on page 2
The Sidereal Times June 2017

Observe – Educate – Have Fun
and explore the case of the mysterious green light occasionally observed on Venus and its implications for auroral activity."

DR. GRAY completed her physics degree at the University of Texas at El Paso in 2006. During that time, she conducted research in magnetic cataclysmic variable stars using the VLA at Socorro, NM.

She earned her master’s degree at the University of Texas at Austin in 2009, using the 2.1m Harlan J. Smith telescope at McDonald Observatory, observing comets and their composition.

In 2015, she completed her PhD at New Mexico State University in Venusian aeronomy. For her doctoral work, she used the 3.5m Astrophysical Research Consortium telescope at Apache Point Observatory south of Cloudcroft, NM, to observe the Venusian nightglow after solar storms.

Enjoying the sense of power controlling a large telescope gave her, she began working as a Support Astronomer at Apache Point Observatory in 2015, after completion of her PhD.

She has amplified her interest in teaching and public outreach through participation in the American Astronomical Society’s Astronomy Ambassadors continuing education program.

...General Meeting News continued from page 1

...Oak Flat Star Party continued from page 1

The gates to the parking areas (restrooms are at Yucca only) will open at 6:00 p.m. so that guests can have time to picnic and enjoy the area and get to know the astronomers and their telescopes as they set up before darkness slowly moves in and observing begins. Sunset is at 8:17 p.m.

The event is free and open to the public, families are welcome! Bring jackets for any evening chill and water as needed, along with red light headlamps or flashlights to preserve night vision on the observing field.

As of: 5/23/17

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Milky Way above Oak Flat.
PHOTO BY MARTIN HILARIO (DETAIL)
frames a second and stack them so that on its deepest setting you get about 256 frames stacked every eight seconds. This allows for amazing views on the monitor. The next time you are at GNTO with Pete and/or Bill be sure to have them show you this capability.

Four of us (Marshall, Vance, Viola, and I) stayed the entire night and drove home after sunrise. It makes driving home a lot easier and safer after having slept at least a few hours.

GNTO 25th Anniversary Celebration and Annual Picnic:
The GNTO Committee will host a celebration of GNTO’s 25th anniversary on June 24 in conjunction with the annual picnic. Plan to arrive about 4:00 p.m. Please join us for this memorable milestone event for our dark-sky site. Be looking for more details on the TAAS website and on TAAS_TALK.

UPCOMING EVENTS:
• June 17: 3rd Quarter Moon Observing
• June 24: Annual Picnic and 25th Anniversary Celebration
• July 15: 3rd Quarter Moon Observing
• July 22: New Moon Observing

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.
Oak Flat Star Party Report

May 20, 2017

by Lynne Olson

TAAS was gifted with clear and chilly skies for its first Oak Flat Public Star Party of the summer series, with a nice turnout by member scopes and visitors alike. Jupiter, of course, was the main attraction, and with no moon for most of the evening, many deep-sky objects could be shown to those attending. Tom Graham was the Opener and Martin Hilario the Closer for the occasion. Constellation tours were done by Kevin McKeown and Dave Ray, and donuts were brought by Sandy Fleming.

The viewing field had been mowed by the Tijeras Ranger Station maintenance, pathway lights and direction signs were out, and we are on our way to another successful season at this dark-sky location.

Members and scopes on hand were as follows: Tom Graham, Andy House, Tom and Sharon Oler, Jim and Ann Seargeant, Bob Hufnagel, Kevin McKeown, Melissa Kirk, David Frizzell, Ed Juddo, Dave Ray, David and Ralph Thorman, Greg Dillon, Barry Spletzer, Boris Venet, Martin Hilario, Ed Kist, Phil and Sandy Fleming, Dale Murray, Bruce Meyer, Tom Grzybowski, Rich Richins, and Mike and Debbie Salazar.

Thanks to all who participated, and we hope you will join us for the next event at Oak Flat on Saturday, July 15.
M106, May 2017 at GNTO Imaging Dome

by Vance Ley

M106, an intermediate spiral galaxy approximately 24 million light-years away in the direction of the constellation Canes Venatici. M106 is approximately 135,000 light-years in diameter.

Captured on May 20–21, 2017, at GNTO using a C11 Edge with focal reducer (f/7, 2960 mm), an SBIG ST4000XCM, and a Losmandy G-11 mount. A total of 18 x 10' subframes were combined with DSS and processed using PixInsight.
Monte Vista Elementary Caps Challenging TAAS School Star Party Season

by Tom Grzybowski

On Tuesday, May 9, we closed out our 2016/17 TAAS School Star Party season at the Monte Vista Elementary School, the fractal school, where more than 200 students and adults came to see our TAAS and Explora evening event. We would like to thank Grace Perce’s Monte Vista team of volunteers who helped with setup and kept things moving smoothly through the evening. We also need to thank Trish Logan for event photos.

Kyle Doan from Digitalis Education and Jim Greenhouse provided four planetarium shows demonstrating their next-generation planetarium system to us and about 180 eager students and parents. Bob Havlen and Tom Grzybowski provided classroom demonstrations on our Milky Way and comets and Solar System respectively. Roger Kennedy led discussions of the Moon with his lunar scope, posters, and maps.

Even though the weather outside was very questionable with storm clouds and high winds early on, it did finally clear out allowing views of Jupiter and the Moon. We appreciated that a few TAAS members, Martin Hilario, Bob Hufnagel, and Trish Logan, braved bringing out their scopes and equipment into the windy and dusty school commons area to allow viewing once the clouds cleared.

This was a challenging year for our TAAS Educational Outreach Star Party program due to the theft of our planetarium system in early February. We need to thank all of our continued TAAS volunteer supporters who made everything look seamless through it all. We were able to complete the remaining star parties by borrowing back our old planetarium system from Judy Stanley in Socorro and working with Kyle Doan, our Digitalis planetarium supplier, who graciously brought their latest planetarium systems to several of our final star parties to demonstrate for us and the students. Finally, with the help of several TAAS Planetarium replacement fund-raising sites, individual TAAS member donations, and a grant from Sandia National Labs we were able to purchase a replacement planetarium with a larger dome to accommodate more students, which should arrive later this summer.

The 2017/18 school year is quickly coming and we are looking forward to continued TAAS member support for our School Star Party Program. Our first scheduled star party for the new school year is September 26 at the Navajo Elementary School in Albuquerque as we continue to Observe, Educate and have Fun!
IC443

Also Known as the Jellyfish Nebula and Sharpless 248

Equipment: ES ED127CF f/7.5, SBIG ST8300M with FW5, iOptron CEM60 mount, guided with an SBIG SG-4 on an AT72ED f/6.

Software: CCDSoft v5.210, ImagesPlus v5.25a, Photoshop Elements v9, Astronomy Tools (false Color)

Exposure: 20 x 5 minutes for total of 100 minutes due setting in west. Hydrogen Alpha Filter 656 nm with bandwidth on 7 nm.

Location: 3 miles north of Oak Flat on my backyard patio. May 4, 2017, after 9 P.M.

—John Laning
Sh2-91, Supernova Remnant in Cygnus

BESIDES THE FAMOUS VEIL NEBULA, Cygnus hosts another large supernova remnant, part of which is Sharpless2-91, as well as 94 and 96. It also goes by the name SNR G065.3+05.7 but I don’t understand that numbering system.

With help from TAAS member John Briggs, and with my telescope located at his FOAH observatory in Magdalena, I shot the SNR in May over the course of four nights. I used Ha and OIII filters, an RH-200 astrograph, and a FLI 16803 camera. The object is larger than the 3.5 degree field of view of my setup, and it is extremely dim. It was a good challenge, and a rarely-imaged object.

A huge version of the file is at http://www.rickthurmond.com/Big/Sh2-91_5.png where you can zoom in and see more details of the filaments of hydrogen and oxygen.

—Rick Thurmond
Saturn

Saturn, captured at approximately 5:00 A.M. on May 21, 2017, at GNTO, using a C11 Edge at f/10 with an ASI 120mm camera with ASI filters. A total of 2000 frames of video were recorded in each color channel. The best 30% of each video was combined in Autostakkert 2. Wavelet sharpening was done using Registax 6 and the individual channels were combined using Photoshop CS2. Once again, the seeing at GNTO was superior to what I experience at home in Albuquerque.

—Vance Ley

Texas Star Party Report
by Jim Kaminski

THE 2017 TEXAS STAR PARTY (TSP) just concluded with 427 registered attendees. TAAS was well represented with four members on staff (Christina and Doug LeGrand, Becky and Shane Ramotowski) and three participants (Jim Kaminski, Gordon Pegue, and Fernando Torres).

Most of the week allowed for dark-sky observing without rain, although several nights had some pesky clouds pass through. On a few nights TAAS members also had to deal with a strange phenomenon: heavy dew. The picture at right was taken mid-week of the TSP Upper Field where six TAAS members observed. (For extra credit: can you identify their observing rigs?)

Next year’s TSP will be May 6 to 13, with information to be developed and posted at http://texasstarparty.org.

Need help with your Telescope?

Attend the ATM meeting and receive assistance.

First and third Wednesday of the month.

Manzano Mesa Multi-Gen Center
501 Elizabeth St SE, Albuquerque, NM
map is available at www.TAAS.org

TAAS General Meeting

Saturday, June 10, 7:00 P.M.
Science and Math Learning Center, UNM Campus

The Mysterious Green Aurora of Venus
Dr. Candace Gray
FEATURED SPEAKER

6:00 p.m. Astronomy 101: Observing Asteroids with Jon Schuchardt
**Donations to TAAS**

Sammy Lockwood

Henry Schweitzer

Ian Zedalis

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

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**Welcome to New or Returning TAAS Members**

Evan Crockett
Richard Dargan
Shayna Degidio
Erik Fox
James Gallegos
Sammy Lockwood
Shayna Lockwood
Sheryn Lockwood
Melissa Pinson
Deborah Salazar
Mike Salazar
Ryan Sciorilli
Ian Zedalis

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**Explanation of Dues and Membership Renewal Date**

New memberships are registered immediately if you pay online. If you pay by check, your membership is registered when your check is received by the treasurer.

Renewal notices will be sent out via e-mail beginning 60 days before your membership expires. If your membership is renewed before it expires or within 90 days after it expires, your new expiration date will be advanced one year from the previous expiration date and your membership will be continuous.

If dues payment is received more than 90 days after the expiration date, you will be reinstated as a member with an expiration date set as one year from the receipt of payment.

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**Monthly Membership Report**

**May 2017**

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**Editor’s Note**

The deadline for the next issue of *The Sidereal Times* is Friday, June 23. The newsletter editor’s e-mail address is editor@TAAS.org.

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**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’

For security reasons, GNTO location is available by request only, so please contact Jim Fordice, GNTO Director, for GNTO information, e-mail GNTO@TAAS.org.

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**Membership Services**

for:
- Membership Inquiries
- Events Information
- Volunteer Opportunities

Contact Bob Anderson at membership@TAAS.org

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Contact Doug LeGrand at treasurer@TAAS.org

TAAS
P.O. Box 50581
Albuquerque, NM 87181
2017 TAAS Board of Directors/Staff

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Volunteer Coordinator Barry Spletzer 505-228-4384 (C) webmaster@TAAS.org
TAAS is honored to receive an “OUT-OF-THIS-WORLD” AWARD 2011 from Astronomy Magazine for Outstanding Public Programming.

TAAS is honored to receive an “Editor’s Pick 2013 Best of the City” award from Albuquerque Magazine. BEST PLACE TO STARGAZE CELESTIAL EDITION

MEMBERSHIP
You can join TAAS or renew your membership online. Just go to www.taas.org and select “Join Us!” or “Renew Your Membership” from the main menu on the left side. Annual dues are $30 for a regular membership, $15 for educators and active military, and $5 for students. Only regular members are eligible to vote in society matters. Our new member information packet can be viewed or downloaded from the same location on the website. You can pay your dues on line through PayPal, by Visa, MasterCard, or American Express. To pay by check, mail your check to TAAS, P.O. Box 50581, Albuquerque, NM 87181-0581 or give it to the treasurer at one of our meetings.

MAGAZINES
TAAS no longer offers magazine subscriptions.

ARTICLES/ADVERTISEMENTS
Articles, personal astronomical classified advertisements and 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 format; ASCII and RTF are acceptable. One space between paragraphs is preferred. One column is approximately 350 words. Contact the Newsletter Editor at editor@TAAS.org for more information.

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

Send submissions or correspondence to editor@TAAS.org.

TAAS ONLINE
The TAAS website: http://www.TAAS.org

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- TAAS Fabulous Fifty
- Educational Outreach: School Star Parties, Solar Astronomy Outreach
- Equipment Trader
- Telescope Loaner Program
- Telescope Making and Maintenance . . . And more
- Online Sidereal Times
- Calendar of TAAS Events
- Members’ Guide
- Links to Astronomy Resources and Members’ Blogs

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