

# TAAA DESERT SKIES BULLETIN

Observing Our

Since



Desert Skies

1954

July 2022

[www.tucsonastronomy.org](http://www.tucsonastronomy.org)

## Membership Meeting

July 1 @ 6:30 pm - 9:00 pm

TAAA's next general member meeting will be held on **Friday, July 1, 2022**. The Main Presentation starts at 6:30 PM (AZT), followed a Members Only meeting.

This will be a **hybrid meeting** (both in person and online). TAAA members will receive a Zoom link should they wish to attend remotely. The public may attend in person at the **Steward Observatory Lecture Hall (Rm N210), 933 N Cherry Ave., Tucson** or online through our **Facebook page** at <https://www.facebook.com/TucsonAstronomy/>.

**Main Presentation at 6:30 AZT**

**Title: Space Domain Awareness for Sustainable Orbital Space**

**Presentation:** The orbital space around the Earth is congested, contested and competitive. Over the last decade, the number of operational satellites has increased >250% and the number of orbital debris has doubled. With the impending launch of commercial mega constellations, the sustainable use of orbital space is questioned. As humans expand their footprint beyond near-Earth environment into cislunar space (between Earth and the moon), there is a critical need to detect, track, and characterize space objects not only for space traffic management but to avoid strategic surprises. Dr. Reddy's talk will be a primer on space domain awareness, including a synopsis of the current situation, highlighting key challenges ahead and the application of planetary science techniques to resolve some of them.

**Biography:** **Vishnu Reddy** is a planetary scientist and an infrared spectroscopist researching connections between asteroids and meteorites to understand Solar System formation and evolution. His research also focuses on space objects in cislunar space for



**Vishnu Reddy**

the US Air Force. He received his doctorate from the University of North Dakota (UND) in Earth System Science and Policy (2009) and was a post-doctoral researcher at Observatório Nacional, Brazil (2010). While a Research Assistant Professor at UND (2010-2013) he worked with the Max-Planck Institute for Solar System Research in Germany on NASA's Dawn mission to asteroid (4) Vesta. He subsequently worked at the Planetary Science Institute (2013-2016) before moving to the University of Arizona (2016-present) where he is an Associate Professor in the Lunar and Planetary Lab. He served as the investigation team lead (2015-2020) on NASA's Near-Earth Object Surveyor Mission to discover 90% of near-Earth objects (NEOs) larger than 140 meters. Currently, as Director of UA's Biosphere 2 Space Domain Awareness Observatory Complex, he oversees all ground-based optical/infrared and passive radio frequency space surveillance assets. Asteroid 1981 EQ28 has been named (8068) vishnureddy by the International Astronomical Union in recognition of his contribution to planetary science.

**Members Only Meeting** will occur after a break following the main presentation. This will include Zoom breakout rooms discussing various subjects at members' discretion along with in-person discussions.

### June 2022

I am writing this struggling with Internet at the 2022 Grand Canyon Star Party. Internet reception here is even more difficult than usual this year, but we are having a great event. The public audience, as always, is great and we are reaching even more people. We have tremendous volunteers who are doing super astronomy education, despite several weather events like cold, rain and even hail today. Returning in person after two years only serves to enrich the experiences we share. We anticipate a full report on GCSP 2022 activities to appear in the August TAAA bulletin.

The TAAA Board met on June 8th. Since it was the first meeting of a new service year, the Board reviewed any possible conflicts of interest of Board members and made decisions about how things would be managed to avoid any undue influence of any possible conflicts. No COVID changes were made. We are pleased that we were able to have the first joint in-person and virtual member meeting in June and are thankful to our dedicated volunteers who accomplished this.

The Board thoroughly reviewed a possible budget for the upcoming year, made several adjustments, and decided to review the final product again at the July meeting. The main item of discussion was a proposal to increase TAAA member dues. TAAA member dues have not been increased in over 20 years. Doug Smith conducted a review of astronomy clubs that belong to the Astronomical League as it was felt that such clubs, like TAAA, place high priority on astronomy education activities. The results of that research resulted in the approval of a motion to recommend to members an increase in TAAA membership dues. (According to the TAAA Constitution and Bylaws, a vote with a margin of two thirds of the voting members needs to occur for there to be a dues increase.) Thus, the proposed dues

*by Mae Smith*

increase will be presented to members at the July 1st general membership meeting. The vote is scheduled for the August 5th meeting. The proposal will include an increase of individual memberships from \$25 to \$30, of individual senior memberships from \$23 to \$25, an increase in family memberships from \$30 to \$35, an increase in family/senior membership from \$28 to \$30, and increasing student/teacher memberships, college student memberships, and youth memberships by \$1 per annum.

As President, I would like to reflect here that it is important for members to understand that our annual membership dues go to support the general operation of the club, our educational programs, annual rent for TIMPA, our insurance costs, etc. In the last 20 years we have added an extensive web site, the MemberPlanet program where we host our membership database (this service provides our ability to track membership status, member interests, receive payment of dues, collect donations, conduct surveys, and other services), acquired new accounting programs for our Treasurer to use, the TAAA Forum on Groups.io, our Zoom program, etc. We should note that 20 years ago, when the current dues structure was established, we were using none of these items. Also, it may be important to note that CAC funding comes from paid star parties and donations.

We understand that one of the firefighters that so valiantly defended Kitt Peak and whose efforts are responsible for saving the telescopes on Kitt Peak was our own TAAA member, Richard Dougall. We are immensely grateful to Richard and the other 69 firefighters who fought with such enduring strength and fortitude! We are indebted to them all for years and years to come! We hope that next year Richard will otherwise be occupied and again be able to join us at GCSP.

President [Mae Smith](#)



# Jim O'Connor Receives National Award

TAAA leader, Jim O'Connor, was named an Honorary National Dark Ranger on June 25, 2022, by the National Park Service for his outstanding service as TAAA Grand Canyon Star Party Coordinator for the South Rim.

During Jim's 12 years of service and through his work in conjunction with the National Park Service and with TAAA, there has been unprecedented growth and development of one of the largest star parties in existence that is directed solely to the benefit of public astronomy education. As one example of the tremendous expansion in influence of the event, the audience size of the pre-event nightly astronomy lecture has expanded during Jim's reign from a previous attendance of around 50 or 60 people to over 850 people on Saturday June 18, 2022.

TAAA has co-hosted the GCSP with the National Park Service for 32 years. The event consists of activities such as nightly astronomy lectures, constellation tours, evening observing with 50-60 telescopes for eight straight nights as well as solar observing and Junior Ranger activities.

Congratulations to Jim on this well-deserved honor!



Rader Lane, our NPS Star Party Manager, awarding the Honorary Dark Ranger Award to Jim O'Connor



# Book Of the Month

By Douglas Smith (TAAA Librarian)

## *Book: Norton's Star Atlas and Reference Handbook*

This book is considered one of the classic star atlases. Now in its 20th edition, it contains much more than just the star charts. It is loaded with an assortment of information that is very useful to amateur astronomers. A table of all the named stars, a table of the Messier objects, articles about the Sun, variable stars, information about the planets, and much more. Of course, the star charts are the heart of this book. The star charts are in a reasonable format with a good size scale. The charts show all the stars visible to the naked eye (around magnitude 7). All the Messier objects are plotted along with the brighter NGC objects. Each chart covers 4 hours in Right Ascension and goes from -60 degrees to +60 degrees declination. The polar regions are on separate charts. For each chart there are two pages of 'Interesting Objects' associated with that chart. The list includes double stars, variable stars, clusters, nebulae and galaxies. This star atlas is a great resource for any amateur who has small to moderate sized telescope. This book is a must purchase for any amateur astronomer whether they own a telescope or just use binoculars.

## TAAA Dues Increase Proposed

On June 8, 2022, the TAAA Board of Directors voted to increase the TAAA annual dues, effective September 1, 2022. TAAA has not raised dues in 20 years. During that time inflation has made operating expenses higher. TAAA has much more to offer than 20 years ago. The increase to be implemented is as small as deemed reasonable, but keeps TAAA dues in line with other astronomy clubs (and is below the national average). We believe TAAA offers more than most other astronomy clubs. Please see President Mae Smith's "Notes From the President" column on page two for more details.

The increase is as follows:

Membership Category	Current Dues	Proposed
Individual	\$25	\$30
Senior	\$23	\$25
Teacher (K-12) or College Student	\$17	\$18
Family	\$30	\$35
Family/Senior	\$28	\$30
Family/Teacher (K-12) or College Student	\$22	\$23
Youth	\$17	\$18

This proposal will be discussed at the July 1, 2022 general member's meeting. A general member vote on this proposal will take place at the August 5, 2022 general member's meeting. Instructions for participating in this vote will be distributed to all members prior to the vote.

## **Fundamentals of Astronomy Class Open for Enrollment**

*Place:* Armory Park Center, 220 S. 5th Ave, Tucson

*Date:* 3 consecutive Saturdays: **October 8, 2022; October 15, 2022; October 22, 2022**

*Time:* 9 AM until 4 PM each day

*Synopsis:* This class covers all the basic topics in Amateur Astronomy. The course is designed for any TAAA member interested in learning the basic concepts in Amateur Astronomy. Topics covered (but not limited to) include the solar system, deep sky objects, stars, telescopes, eyepieces, mounts, star hopping, observation techniques, plus much more. This course is highly recommended for novice amateur astronomers and for anyone who may have just purchased a telescope for the first time. Taking this class will also aid the student in understanding the more advanced lectures often given during general membership meetings.

If interested you can contact the instructor at the information listed below or sign up using the signup sheet that will be available at the August, September and October General Members meeting. Enrollment is strictly limited to 20 students and is on a first come basis. If there is sufficient interest the class may be offered again in the spring time frame.

Instructor – Douglas Smith

Phone: 520-396-3233

e-mail: [alcor@tucsonastronomy.org](mailto:alcor@tucsonastronomy.org) or [fundamentals@tucsonastronomy.org](mailto:fundamentals@tucsonastronomy.org)

## **Astronomical League Workshop Open for Enrollment**

*Place:* Woods Memorial Library, 3455 N First Ave., Tucson

*Date:* Saturday August 20, 2022

*Time:* 10 AM until Noon

*Synopsis:* This workshop is designed for anyone who may be interested in pursuing one of the Astronomical League observing programs for the first time or anyone in interesting in learning about these observing programs. The workshop will cover how the various observing programs work, program requirements, selection of appropriate program, recommended equipment, resources, logging requirements, and much more.



If interested you can contact the TAAA Astronomical League [Correspondent](#) (ALCOR) or sign up using the sign up sheet that will be available at the June, July and August General Member meetings. Please note the workshop is limited to 20 people.

TAAA ALCOR: [Douglas Smith](#); 520-396-3233



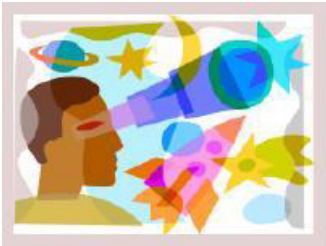


NASA, in partnership with ESA (European Space Agency) and CSA (Canadian Space Agency), will release the telescope's first full-color images and spectroscopic data during a televised broadcast beginning at 10:30 a.m. EDT on Tuesday, July 12. Live coverage of the image release broadcast will air on the NASA app and the agency's website (<https://www.nasa.gov/nasalive>). The public also can watch live on Facebook, Twitter, YouTube, Twitch, and Daily Motion.

Released one by one on the broadcast, each image will simultaneously be made available on social media as well as on the agency's website at: [nasa.gov/webbfirstimages](https://www.nasa.gov/webbfirstimages). You can read more at <https://www.nasa.gov/press-release/nasa-invites-media-public-to-view-webb-telescope-s-first-images>.

The TAAA has planned an event at the Sunsites, AZ Public Library on July 23rd from 1:30 to 2:30 featuring these first images. [More Information](#)

## *Special Interests Groups*



### *Starry Messengers Special Interest Group*

#### *Opening Minds to the Universe*

You may have heard that the first science images from the James Web Space Telescope will be released on July 12th. **We have planned an event at the Sunsites, AZ Public Library on July 23rd featuring these first images.** We hope to plan additional JWST events through the fall, so watch your email.

The Starry Messengers SIG will take a break over the summer. Our next meeting will be on September 12th.

If you want to become involved in astronomy outreach with the TAAA, send your email address to [Terri Lappin](#) so you can be added to the SMSIG email list.

[SMSIG on the Web](#)

### *Astronomy Fundamentals SIG*

Come join us for a presentation from the fundamentals of amateur astronomy. Learn your way around the night sky to add to your observing enjoyment. Meetings are on the second Thursday of each month.

The next meeting is on Thursday, July 14th at 6:30 pm - 8:00 pm. Topics to be determined.

Contact [Conner Justice](#) for Zoom link and more information.

[AFSIG on the Web](#)

Access videos of previous meetings through the Members Only section of the TAAA web site.

## **TAAA Ladies' Night Out**

**by Susan O'Conner**

Ladies' Night Out is a social interest group for women members of the club. The group meets once a month at a local restaurant for fellowship and conversation.

If you are interested in Ladies' Night Out, please contact [Susan O'Connor](#)

July Ladies Night Out  
Thursday, July 21, 6:30pm

North Italia  
2995 E Skyline Dr (Upper Level of La Encatada)  
NW corner of Campbell and Skyline

Preview the menu at <https://www.northitalia.com>

A free jazz concert featuring Joe Bourne and Friends will begin at 5pm

If you are interested in meeting with other participants for this event, RSVP [Susan](#)

## **Astro-Imaging SIG**

**by Gregg Ruppel**

The next AISIG meeting is **Monday, July 18 @ 7:00 pm** via ZOOM. Email [Gregg Ruppel](#) for the ZOOM link or find it in the [TAAA Forum](#).

### **Topic: Monsoon Challenge**

Make your best image of either M13 or M16 before the monsoon rain and clouds start to share at the July AISIG meeting!

Check out [AISIG On the Web](#) or contact [Gregg Ruppel](#) for the latest information and Zoom links. Gregg and the AISIG folks are very active on the [TAAA groups.io](#) forum. Check out all the helpful advice and amazing images there. For more information or instructions on how to join the forum, check out the [TAAA Forum](#).

Imagers, to help ensure that the TAAA Desert Skies Bulletin has explicit permission to publish your fine work, we need you to submit your images directly to [Gregg Ruppel](#), our Imaging Editor or come up with alternative arrangements. We would like you to restrict the size of your images to around 10MB (a little over is okay if needed). Members would appreciate a brief description of the object if it is not a common target along with your imaging details. If you desire, please include a link to the full-size version. I want to limit space to one page of the bulletin per contributor. If you submit five photos, they will be small or we may ask you to pick your favorites. If you do submit images, I will include you in a pre-publication version of the bulletin for your approval of the quality and layout. Feel free to ask me ([David Rossetter](#) – Bulletin Editor) or [Gregg](#) if you have any questions.

## June Highlights from the Astro-Imaging SIG

From Tom Eby



**IC 4182**

C11 Edge@f/7,  
asi2600, AP  
900GTOCP4  
mount guided  
60mm  
4/7 2022.  
Res = 0.4 "/px.



**M104**

thru the  
C11@f/7



From Randy Smith

### M106

3/24/22

C11 w/HyperStar ZWO 183

MC L-Pro Filter 300x45



### M20

9/6/21

(reprocessed 4/19/22)

C11 w/HyperStar ZWO 183

MC L-Enhance Filter, 25x180



### M 63

4/2/22

C11 w/HyperStar

ZWO 183 MC L-Pro Filter  
3030x45





From Alex Woronow

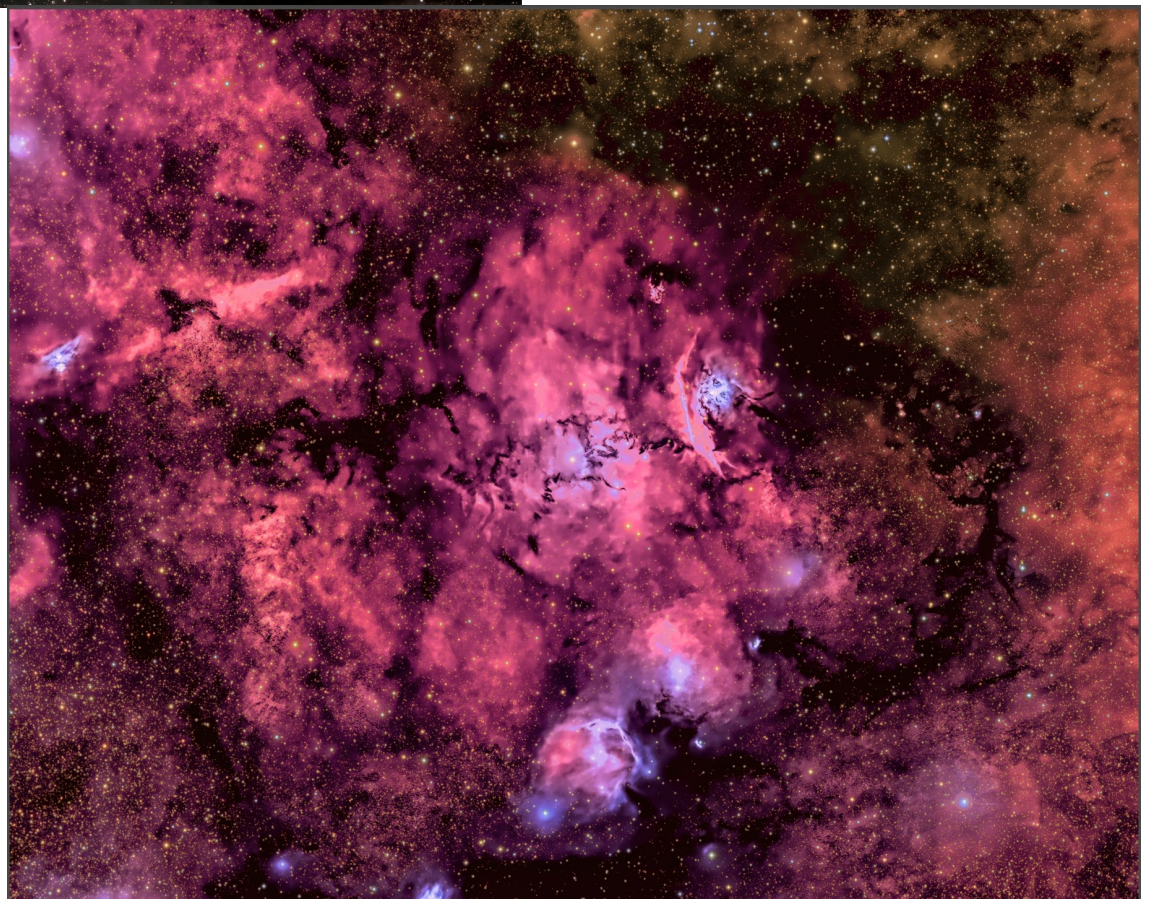


NGC6726, NGC6727  
IC4812, NGC6723

[Astrobin Link](#)

IC 4685

[Astrobin Link](#)





# Observing Sites

## TIMPA

*by Ralph Means*

TIMPA (Tucson International Modelplex Park Association), Dark Sky site west of the Tucson Mountains.

[TIMPA on the Web](#)

TIMPA Star Party Dates this month: *Monsoon Break.*

Location: The TIMPA observing site is located a few miles beyond the Desert Museum (3250 N. Reservation Road, Tucson, AZ 85743).

The TIMPA site is only partially improved. There are no inside buildings provided other than restrooms. TAAA does not provide seating (members are welcome to bring folding chairs). Please note that members visiting the TIMPA site may encounter things commonly found in partially improved desert areas such as desert creatures and/or their remnants (such as gopher holes or ant hills), uneven terrain, weeds, and desert pollens. Members using the site are encouraged to bring red lights and to move cautiously taking appropriate safety measures. The site does not have potable water, so bring your own non-alcoholic drinks.

[Reservation Form](#)

Any questions, please contact the TIMPA Director: [Ralph Means](#)

## Chiricahua Astronomy Complex

*by Jim Knoll*

CAC Weekend Dates coming up (Friday/Saturday):

*July 29-30 (New Moon July 28)*

*Hosts may not be present during Monsoon (July & August). Members should be qualified to open or close the site or be with someone that is qualified.*

Chiricahua Astronomy Complex (CAC) is the club's dark observing site, located in Cochise County approximately 100 miles southeast of the center of Tucson. If you would like to attend, you must make a reservation on the CAC Web page at [CAC Reservations](#).

Unless you are qualified to open and close the site, dates will be limited to those around the New Moon and are listed on the CAC web page. Hosted personnel are generally on site a few days before and after these dates.

CAC Director: [Jim Knoll](#)

[CAC on the Web](#)

## Observing Sites Star Party Dates 2022

### TIMPA

July monsoon season no dates set  
August monsoon season no dates set  
September 23 and 24  
October 21 and 22  
November 18 and 19  
December 16 and 17

### CAC

July 29 – 30 (New Moon July 28)  
August 26 – 27 (New Moon August 27)  
September 23 – 24 (New Moon September 25)  
October 21 – 22 (New Moon October 25)  
November 25 – 26 (New Moon November 23)  
December 22 – 23 (New Moon December 23)



# CAC Learning Center Update

By Ed Foley

TAAA concluded the search for a contractor to complete the work on the Learning Center with the award of the Job to Tres Casas Builders of Willcox. The contractor began work on the site on June 15th with the arrival of building materials. They began with the initial framing of the interiors of each building. Additionally, they have reestablished and enlarged the trench which runs from the new buildings to the existing restroom. The electric cables, the water supply and the sewer pipes will be laid in the trench in the coming weeks. This trench will be marked with caution tape, but members are cautioned to avoid the area directly east of the restrooms as the trench will be a hazard in June and July until this work is completed.



Framing the Learning Center

Framed sleeping rooms



## **What's Up list for July 2022 – August 2022**

Fellow amateur astronomers, many of the Astronomical League observing programs can be done from our backyards. The following is a list of objects visible during July and August for the more common observing programs.

### **Constellation Hunter Program – Northern Skies**

The following Northern Constellations are well placed for viewing for July and August:

Aquila, Bootes, Corona Borealis, Draco, Hercules, Lyra, Sagitta, Serpens Caput, Serpens Cauda, Ursa Minor, Vulpecula

### **Messier Observing Program**

The following Messier objects are well placed for observation during July and August (listed in ascending RA):

M5, M80, M4, M107, M13, M12, M10, M62, M19, M92, M9, M14, M6, M7, M23

### **Lunar and Binocular Observing Program**

The following is a list of dates for the lunar phase when observations should be made during July and August:

New Moon: July 28, August 27  
40 Hours waxing: July 1, July 30, August 29  
72 hours waxing: July 2, July 31, August 30  
4 days old: July 3, August 2, August 31  
7 days old: July 6, August 5  
10 days old: July 9, August 8  
Full (14 days old): July 13, August 12  
Gibbous: July 17, August 19  
72 hours waning: July 25, August 24  
40 hours waning: July 26, August 25

### **Solar System Observing Program**

The following list describes the various solar system objects and their visibility during July and August:

**Mercury** is an early morning object during the first two weeks of July. Mercury is an evening object during the remainder of July and August.

**Venus** is an morning object during July and August.

**Mars** is rising earlier each day during July and August. At the start of July Mars rises around 12:30 AM. By the end of August it is rising around 10:30 PM.

**Jupiter** is becoming an evening object, rising around 11:30 on July 1 and rising around 7:30 by the end of August.

**Saturn** is now well positioned for evening viewing. On July 1 it rises around 10 PM. By end of August it is well up by sunset, transiting around 11 PM.

**Uranus** is an evening object in July and August, rising earlier each day. On July 1 it rises around 1:30 AM. By the end of August it is rising around 9:30 PM.

**Neptune** is an evening object in July and August, rising around 15 minutes before Jupiter.

### **Urban Observing Program**

The following deep sky objects are well placed for observing during July and August:

M5, M4, M13, NGC 6210, M12, M10, M62, M92, M6, IC 4665, M7

The following Double Star is well placed for observation during July and August:

Beta Scorpius



# Skyward

By David H. Levy  
July 2022

## The Meteor Shower that wasn't, but not so much

On May 30 observers all across the western hemisphere were outside, hoping to see a wonderful “new” meteor shower. The shower is actually not new. It is called the Tau Herculis, and it sends us dust particles from Comet Schwassmann-Wachman III. In 1995 this normally faint comet brightened dramatically as it split into several parts, releasing huge amounts of dust into space.

On May 30, at 10 pm Mountain Standard time, the Earth plowed through the debris released in 1995. We were hoping for a possible meteor storm of hundreds of thousands of meteors. Wendee and I sat outside at Jarnac observatory, waited, watched, and waited some more. There was one bright meteor that seemed too far from the direction my camera was pointing for its lens to detect. Ten o'clock came and went, and we counted a few shooting stars here and there. Over the course of the evening we counted 18 meteors. But a meteor storm? To use the Yiddish word that means what you think it means, we saw bupkis. Somewhat disappointed, we went indoors and completed a quiet evening.

The next day, I examined the pictures I took. I have found that it is very difficult for a camera to record all but the brightest meteors, even from the major showers. But the second picture I saw captured the bright meteor I saw just south of Corvus in Hydra, and the third frame recorded a fainter one. All in all, the camera counted five meteors, only the first of which I actually saw. And one frame displayed two meteors!



The second of many images I took that night captured this brighter Tau Herculis dropping in Hydra, just south of Corvus.

Photograph by David Levy.



Even though these meteors were generally faint, they moved so slowly that they showed up nicely on the camera. So this crazy little shower produced more meteors on camera than any other meteor shower I have witnessed. The experience proved to me that meteor showers, while poorly predictable, do offer surprises, and this one certainly did.

There was more. In Electronic Telegram 5125 of the International Astronomical Union, Daniel Green suggested that “a very faint glow from scattered sunlight may be visible in the sky centered...in Leo.” I had no difficulty at all seeing that glow in Leo, particularly when I used averted vision, and I also noted its absence on the following night. (I saw a similar glow during the strong Perseid meteor shower in 1992.)

The best (by far) meteor shower I saw was the Leonids, from near Alice Springs, Australia, in 2001. During that night Wendee and I counted 2406 meteors. This year’s Tau Herculis might have been less than stellar, but the sky was clear, the night was beautiful, and we enjoyed being outside as planet Earth raced through the emptiness of space, picking up cosmic dust on its windshield along the way.

Dr. David Levy is a long-time member and former President of the TAAA. He is a well know astronomy writer and discoverer of comets. He writes this monthly “Skyward” column for the Vail Voice and generously allows us to publish it here.



David Levy has been working with the Denver Astronomical Society and the Tucson Amateur Astronomy Association to help organize an online student astronomy group called the **Cosmic Generation Club**.

Check them out at <https://www.denverastro.org/tag/cosmic-generation/>.

TAAA Desert Skies Bulletin

[David Rossetter](#) – Editor

Terri Lappin & Jim Knoll - Proofreading

Greg Ruppel - Images;

Ken Bertschy - Graphics