

San Diego Astronomy Association

Celebrating Over 50 Years of Astronomical Outreach



June 2020

<https://www.sdaa.org/>
A Non-Profit Educational Association
P.O. Box 23215, San Diego, CA 92193-3215

SDAA Update

Next SDAA Business Meeting

June 9th at 7:00pm
10070 Willow Creek Rd
San Diego, CA 92131

Next Program Meeting

June 17th at 7:00pm
Mission Trails Regional Park
Visitor and Interpretive Center
1 Father Junipero Serra Trail

CONTENTS

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| | |
|--------------------------|----|
| Update..... | 1 |
| Program Meeting..... | 1 |
| May Minutes..... | 2 |
| Astronomical League..... | 4 |
| Betelgeuse..... | 5 |
| TDS Schedule..... | 7 |
| SDAA Contacts..... | 8 |
| For Sale..... | 9 |
| NASA Night Sky Notes.... | 12 |
| Astronomy Cartoon..... | 14 |

Newsletter Deadline

The deadline to submit articles
for publication is the
15th of each month.

In keeping with state and local mandates in regards to social distancing, the **SDAA has cancelled all public outreach and club events** for the foreseeable future. These include our regularly scheduled monthly meetings at Mission Trails Regional Park.

The LIPP telescope will also be closed until further notice.

Since TDS is private space there is no reason to lock down the facility but there are actions you can take to help keep the site safe for all of us. If you plan to visit and use the facility, please bring along some disinfectant wipes or disinfectant spray cleaner. When you finish using the restrooms or the warming room, please wipe down the areas that you touched in order to help prevent the spread of any viruses. As much as we love sharing the views of the night sky, try to maintain the recommended 6-foot social distance guideline.

June Program Meeting

June 17th 7:00pm via Zoom
Dr. Jim Fuller (CalTech) - The Sound of Stars

Dr. Fuller is a professor researching theoretical astrophysics at the California Institute of Technology. Most of his research focuses on the physics of vibrating fluid spheres. Although this sounds esoteric, the applications within astronomy are nearly limitless!



[Link to SDAA Merchandise Store](#)

<https://sdaa28.wildapricot.org/SDAA-Store>

[Link to Outreach Calendar](#)

<https://calendar.google.com/calendar/embed?src=g-calendar@sdaa.org&ctz=America/Los>



San Diego Astronomy Association

San Diego Astronomy Association Board of Directors Meeting 12 May 2020 – Unapproved and subject to revision

1. Call to Order

The meeting was held via Zoom and called to order at 7:05pm with the following board members in attendance: Dave Wood, President; Steve Hallman, Vice President; Melany Biendara, Treasurer; Gene Burch, Recording Secretary; Dave Decker, Director; Hiro Hakozaiki, Director; Mike Chasin, Director; Pat Boyce, Director; members Dan Kiser and Laird Stiegler were also present.

2. Approval of Last Meeting Minutes

April meeting minutes were approved.

3. Priority / Member Business – Laird presented plans for an observatory on his private pad (#14). After review and discussion, Laird was asked to make some modifications and then re-submit the plans for further review.

4. Treasurer’s & Membership Report

a. Report approved

5. Standard Reports

a. Site Maintenance Report:

- There is a beehive in the rocks on the north side of the fence behind Allen Ruckle’s observatory. Something disturbed them a couple of weeks ago and a huge swarm was hovering around the area. They settled down after about an hour. Anyone who weed wacks in that area needs to be cautious and avoid disturbing them. A sign was hung in front of the hive and Allen was notified.
- There was a wasp’s nest in the shower, and it was removed.
- Replaced the broken patio cover structure (4x4) support beam on the upper northwest corner.
- We now have the feeder and branch circuit wire for the North East electric service.

b. Observatory/Loaner Scope Report: Both star parties were cancelled. Equipment remains excellent. Social distancing cannot be accommodated in the Lipp Observatory – all May star parties have been cancelled.

c. Private Pad Report: Four available pads and 5 people currently on the waiting list. Two people on the waiting list are current pad holders looking to upgrade.

d. Program Meetings Report: April 2020 Speaker/Topic – Steve Hallman on Backyard Spectroscopy. This was the first online meeting via Zoom and had 59 attendees. Current petty cash on hand \$524. The meeting was recorded and hopefully will be posted online soon.

e. AISIG Report: The meeting via Zoom on 4/24 with Stuart Foreman went well. Lots of follow-up questions. Next meeting is a Zoom meeting on 5/27 and will feature various AISIG members that will take a shot at processing TARO data.

f. Newsletter Report: Current issue looks good with nothing new to report.

g. Website Report: Nothing new, but cancellations are being posted as needed.

h. Social Media Report: No report

i. Outreach Report: During April, no new events were scheduled, and no events were completed. We cancelled the (9) events previously scheduled in compliance with the COVID-19 orders issued by Federal, State, and County officials. The SDAA Outreach Program will continue in a non-operational status for at least another month. We hope to be able to re-establish a few of the public events sometime this Summer. Here are the numbers so far this year:

Totals for March

| | | |
|-------------------|--------------------|---|
| Totals for Month: | Events Completed | 0 |
| | Events Cancelled | 9 |
| | Public Attendance | 0 |
| | Private Attendance | 0 |
| | Total Attendance | 0 |
| | Mem Support: | 0 |
| Average: | Mem/Event: | |



San Diego Astronomy Association

| | |
|-----------------------------------|------|
| Completed Events since January 1: | 29 |
| Cancelled Events since January 1: | 30 |
| Events Scheduled since January 1: | 59 |
| Public Attendees since Jan 1: | 962 |
| Private Attendees since Jan 1: | 1727 |
| Total Attendees since Jan 1: | 2689 |

- j. TARO Report: Operations have resumed, weather permitting. In coordination with Pat Boyce (BARO), TARO was involved with SDSU and observatories in Texas and Arizona to record data to confirm the existence of an exoplanet orbiting around an eclipsing binary. The results should be published this fall.
- k. Merchandise Report: A few more sales of shirts and hats
- l. Cruzen Report: Both roof motors, open/close switches, and limit switches are installed and working perfectly (thanks Dennis!).
- The south roof is still jamming up on occasion – one of the wheels popped off Saturday night while closing the roof (it's in the cabinet). We need to find a solution to this.
 - The Gemini II power supply is missing so we need to order a new one.
 - Cassegrain is pretty much polar aligned – we were finishing up Saturday night when it got so wet, we had to close the roof. The alignment may need a final tweak – will test next visit.
 - New encoders and digital setting circles installed. The dec encoder not operating correctly – suspect the polarity was reversed in the S/W; fixed it Sunday morning. Will test next visit.
 - Had both roofs open Saturday night and both scopes operating (using a borrowed power supply for the Tak/Gemini II). Cruzen is very close to operational.
 - Still need some proper scope covers.
 - We need a ladder in the observatory, so we donated one to the cause.
- m. Astronomical League Report: No report
- n. JSF Report: Unfortunately, JSF has been cancelled for 2020. The County is not issuing permits due to COVID-19. Plans are already underway for JSF – 2021.
- 6. Old Business**
- a. A proposed summer event at the Natural History Museum planned for July was cancelled due to the ongoing social distancing requirements
 - b. Solar Grid Updates – nothing new
 - c. Site grading still needs to be done, will continue to look for a contractor
 - d. Spring clean-up and BBQ planned for May has been cancelled. We still plan to change the combinations on the locks at TDS so watch the newsletter and email for updates.
 - e. Still looking for a Corresponding Secretary
- 7. New Business**
- a. Annual Budget meeting to be scheduled in June
- 8. Adjournment**
Adjourned at 8:55pm.



ASTRONOMICAL LEAGUE CONFERENCE 2020 Update

ALCon 2020 Postponement to 2021

Submitted by solar on Sun Apr 5, 2020 04:03 pm MDT

As of 4/3/2020, ALCon 2020 has been postponed to August 4-7, 2021, as ALCon 2021.

ALCon 2021 will be held at the Embassy Suites-Albuquerque. Revised information for ALCon 2021 will be published soon.

Refunds will be made for all who have registered for ALCon 2020.



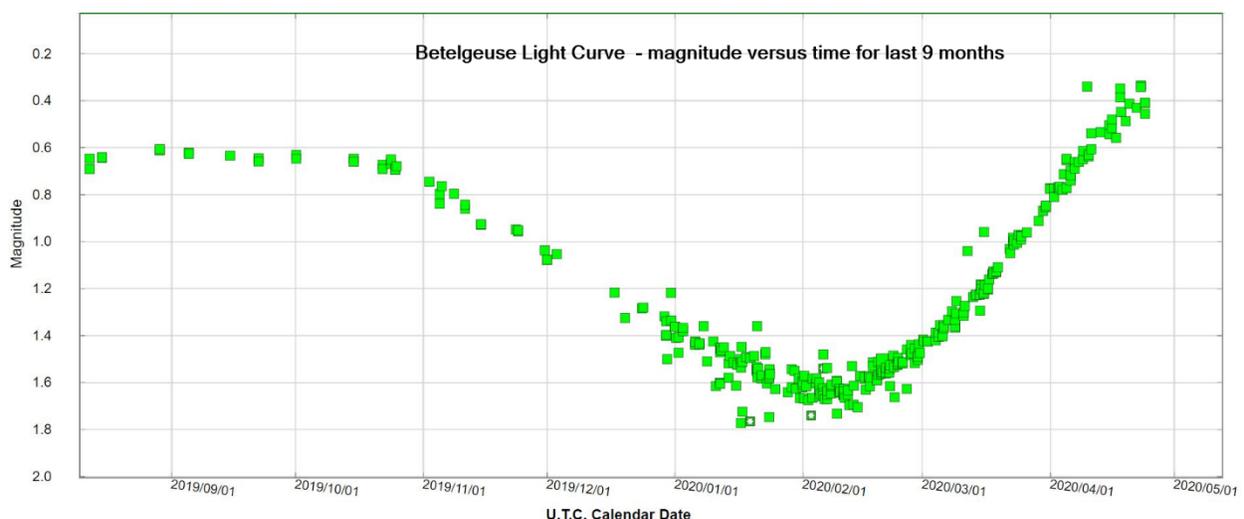
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The “Fainting” of Betelgeuse

When observer Wolfgang Vollmann caught Orion in the pre-dawn sky on August 12, 2019 with his DSLR camera, it looked like “business as usual” for Betelgeuse (1). The star – the red supergiant in the armpit of that mythic hunter – shone at magnitude $V = +0.65$, just a bit on the low side of its normal range of variation. Over the past century, the star had wandered in a quasi-periodic fashion between highs of $V = 0.0$ and lows of $V = +1.0$ (V means “visual magnitude”), around a mean of $+0.5$. In December of 2018, it had dipped to $+0.9$, and by March 2019, it had peaked at $+0.3$.

To those who follow Betelgeuse closely, however, the amplitude of the star’s variation looked suspiciously as if it had been growing larger for a decade or more, posting ever higher peaks and deeper valleys. At the March 2016 peak, astronomers Ed Guinan and Richard Wasatonic of Villanova University had called for more observations of Betelgeuse. As November 2019 began, the star began a slow decline, and by the end of that month, it had dropped below $V = +1.0$, the bottom of its normal range. On December 7, Guinan, Wasatonic, and AAVSO observer Tom Calderwood alerted the astronomical world in ATel #13341 titled, *The Fainting of the Nearby Red Supergiant Betelgeuse* (2), pointing out that the red supergiant had just reached a modern all-time low of $V = +1.12$. Their next post, ATel #13365, suggested that the “fainting” could be due to the coincidence of its 425-day and a 5.9-year cycles, combining for a much deeper-than-normal minimum light.

As the dimming continued through December and into January 2020, the appearance of Orion changed! No longer did Orion’s ruddy shoulder star rival the blue star Bellatrix in Orion’s opposite shoulder. By mid-February, Betelgeuse dimmed to $V = +1.65$.



Observers in the AAVSO supplied hundreds of observations. Using a DSLR camera, the indefatigable Viennese observer Wolfgang Vollmann alone supplied an observation almost every clear night. Especially valuable were those made with Optec SSP-3 solid-state photometers. Although making each observation is slow compared to those made with CCDs, these photometers are extremely stable and,



San Diego Astronomy Association

more importantly, its photodiode sensor can respond to bright starlight without saturating. Point by point, Betelgeuse began to brighten. By the end of March, it was on its way back to its normal range of brightness.

What was going on with Betelgeuse? On the basis of infrared photometry and spectroscopy, Guinan and Wasatonic suggested that the star had cooled and its radius grown by some 9%. If the variations were due to pulsation and convection, they predicted minimum light would soon occur. Alternatively, Betelgeuse may have puffed off gas that condensed as silicate dust or carbon particles, blocking the star's light. Then high-resolution images from the European Southern Observatory made with the VLT showed the star had not dimmed uniformly, but appeared asymmetric, again suggesting partial occultation by circumstellar dust rather than a change in radius and temperature.

Of course, the story that captured the attention of many amateur astronomers, as well as gleaming headlines in all sorts of media, was the possibility that Betelgeuse was about to “go supernova.” This is the ultimate fate of red supergiant stars and the probable fate of this star ... within the next 100,000 years or so. It would be fun indeed for us on Earth to witness such an event.

The study that clinched the case for circumstellar dust demonstrated that the spectrum of Betelgeuse showed no evidence of temperature change during the “fainting” event, but that held steady at 3600 K within 25 K (4). Because the spectrum was not reddened, the occulting material must have consisted of grains or particles considerably larger than visible light. This material may have blown off the star during a peak event as hot gas, and subsequently cooled condensed into solid grains. If that is indeed the case, we may see more “faintings” in the future.

—Richard Berry, AAVSO

-
1. To access Betelgeuse data as “alf ori”, go to: <https://www.aavso.org/LCGv2/>.
 2. Access this and other ATels at: <http://www.astronomerstelegam.org/?read=13341>
 3. For more about the Optec ssp-3, see https://optecinc.com/astronomy/catalog/ssp/pdf/ssp_3_generation2.pdf
 4. See this paper by E. Levesque and P Massey: <https://arxiv.org/pdf/2002.10463.pdf>

Addendum: Dr. Stella Kafka made this 45-minute video “What is the Deal with Betelgeuse” <https://drive.google.com/file/d/1oEbKYqZ8jlqHkHD0px68ABUY112Bo1I2/view?usp=sharing> including Q&A’s for Boyce-Astro on May 13, 2020.



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2020 Star Party Schedule

| Date | Hours | Type | Sunset | Twilight | Moonrise(set) | Illumination |
|------------|------------------|--------|---------|----------|---------------|--------------|
| 6/20/2020 | 8:30 to 11:30 PM | Member | 7:59 PM | 9:41 PM | 5:59 AM | 0% |
| 7/11/2020 | 8:30 to 11:30 PM | Public | 7:58 PM | 9:37 PM | 12:21 AM | 64% |
| 7/18/2020 | 8:30 to 11:30 PM | Member | 7:55 PM | 9:33 PM | 4:42 AM | 5% |
| 8/8/2020 | 8:30 to 11:30 PM | Public | 7:40 PM | 9:11 PM | 10:49 PM | 79% |
| 8/15/2020 | 8:30 to 11:30 PM | Member | 7:32 PM | 9:01 PM | 3:25 AM | 14% |
| 9/12/2020 | 7:30 to 10:30 PM | Public | 6:57 PM | 8:21 PM | 2:09 AM | 28% |
| 9/19/2020 | 7:30 to 10:30 PM | Member | 6:48 PM | 8:10 PM | (8:42 PM) | 9% |
| 10/10/2020 | 7:00 to 10:00 PM | Public | 6:20 PM | 7:42 PM | 12:55 AM | 44% |
| 10/17/2020 | 7:00 to 10:00 PM | Member | 6:12 PM | 7:34 PM | (7:13 PM) | 2% |
| 11/7/2020 | 5:30 to 8:30 PM | Public | 4:52 PM | 6:16 PM | 10:46 PM | 61% |
| 11/14/2020 | 5:30 to 8:30 PM | Member | 4:47 PM | 6:12 PM | 6:48 AM | 0% |
| 12/5/2020 | 5:30 to 8:30 PM | Public | 4:42 PM | 6:09 PM | 9:42 PM | 76% |
| 12/12/2020 | 5:30 to 8:30 PM | Member | 4:43 PM | 6:11 PM | 5:34 AM | 0% |



San Diego Astronomy Association

SDAA Contacts

Club Officers and Directors

| | | | |
|-------------------------|-----------------|--|----------------|
| President | Dave Wood | President@sdaa.org | (858) 735-8808 |
| Vice President | Steve Hallman | VicePresident@sdaa.org | (858) 371-9706 |
| Recording Secretary | Gene Burch | Recording@sdaa.org | (858) 926-9610 |
| Treasurer | Melany Biendara | Treasurer@sdaa.org | (619) 213-9887 |
| Corresponding Secretary | -Vacant- | Corresponding@sdaa.org | |
| Director Alpha | Pat Boyce | DirectorAlpha@sdaa.org | (619) 227-9614 |
| Director Beta | Mike Chasin | DirectorBeta@sdaa.org | (858) 210-1454 |
| Director Gamma | Dave Decker | DirectorGamma@sdaa.org | (619) 972-1003 |
| Director Delta | Hiro Hakozaiki | DirectorDelta@sdaa.org | (858) 869-9507 |

Committees

| | | | |
|---|------------------|--|----------------|
| Site Maintenance | Bill Quackenbush | TDS@sdaa.org | (858) 395-1007 |
| Observatory Director | Ed Rumsey | Observatory@sdaa.org | (858) 722-3846 |
| Private Pads | Mark Smith | Pads@sdaa.org | (858) 484-0540 |
| Outreach | Dave Decker | Outreach@sdaa.org | (619) 972-1003 |
| N. County Star Parties | -Vacant- | NorthStarParty@sdaa.org | |
| S. County Star Parties | -Vacant- | SouthStarParty@sdaa.org | |
| E. County Star Parties | Dave Decker | EastStarParty@sdaa.org | (619) 972-1003 |
| Central County Star Parties | Dennis Ammann | CentralStarParty@sdaa.org | (619) 247-2457 |
| Camp with the Stars | -Vacant- | CampWiththeStars@sdaa.org | |
| K.Q. Ranch Coordinator | Dennis Ammann | KQ@sdaa.org | (619) 247-2457 |
| Newsletter | Andrea Kuhl | Newsletter@sdaa.org | (858) 547-9887 |
| New Member Mentor | Dan Kiser | Mentor@sdaa.org | (858) 922-0592 |
| Webmaster | Jeff Stevens | Webmaster@sdaa.org | (858) 566-2261 |
| AISIG | Scott Dixon | AISIG@sdaa.org | (858) 673-9588 |
| Site Acquisition | -Vacant- | SecondSite@sdaa.org | |
| Field Trips | -Vacant- | FieldTrips@sdaa.org | |
| Grants/Fund Raising | -Vacant- | Grants@sdaa.org | |
| Julian StarFest | -Vacant- | info@julianstarfest.com | |
| Merchandising | Gene Burch | Merchandising@sdaa.org | (858) 926-9610 |
| Publicity | Jeff Flynn | Publicity@sdaa.org | (619) 806-6505 |
| Loaner Scopes | Ed Rumsey | loanerscopes@sdaa.org | (858) 722-3846 |
| Governing Documents | TBD | | |
| TDS Network | Dave Wood | TDSNet@sdaa.org | (858) 735-8808 |
| Amateur Telescope Making | -Vacant- | | |
| ALCOR (Astronomical League Correspondent) Mary Todd | | ALCOR@sdaa.org | (858) 560-2052 |

SDAA Editorial Staff

Editor - Andrea Kuhl

newsletter@sdaa.org

Assistant Editor: Craig Ewing

Have a great new piece of gear? Read an astronomy-related book that you think others should know about? How about a photograph of an SDAA Member in action? Or are you simply tired of seeing these Boxes in the Newsletter rather than something, well, interesting?

Join the campaign to rid the Newsletter of little boxes by sharing them with the membership. In return for your efforts, you will get your very own byline or photograph credit in addition to the undying gratitude of the Newsletter Editor. Just send your article or picture to Newsletter@SDAA.Org.



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For Sale – Scope Caddy



SDAA presale price of **\$25** for Contributing Members.

Cloudy Nights & Astromart pricing will be **\$30**.

Do you think you would observe more often if home setup was rolling your scope out of the garage and running power? If so, this may be the item for you. Would accommodate a Celestron mount with pointed tips easily – no way would it support Losmandy G11 legs. Casters look like medical cart grade with firm locks. Center to leg distance is 25" – tip distance is a bit more. Do the math to figure out floor area and smallest opening. The wheels do not look suitable for grass or rough terrain as configured. Nice caddy. As is – buyer beware.

Ed Rumsey, for SDAA – (858) 722-3846



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Orange Tube – Needs a Bit of Love



SDAA presale price of **\$100**, or best offer, for any member.

First \$100 bid takes it away. Best offer gets it at the end of the month. Remember zero is a number. Old '84/'85 vintage Orange Tube that needs attention. Clock drive doesn't work but likely just a rewire to repair. Tube has obviously been dropped and front ring absorbed it. See photo. Corrector plate looks good as does the mirror. Views are what you would expect of an orange tube. R.A. and Dec adjusters seem fine. Tripod, wedge, and case, in excellent condition. 25mm Plössl, finder scope, diagonal, and moon filter, included. Call with questions. I think de-forking and some simple metal work would result in a very nice instrument. Part out the rest to cover some costs. Orange tubes are renowned for their optics.

Ed Rumsey, for SDAA – (858) 722-3846



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NexStar 8 Ready to be De-forked



SDAA presale price of **\$100**, or best offer, for any member.

First \$100 bid takes it away. Best offer gets it at the end of the month. Remember zero is a number. 2005 or so NexStar 8 ready for a new life. RA gear has been damaged and hand controller's visual screen is not any more. That being said, this scope still has a lot of life in it. De-forking the scope is easy as is adding a dovetail for a GEM. A very cost effective method for obtaining an 8" SCT. Corrector plate and mirror look clean. Call if any questions. As is – buyer beware.

Ed Rumsey, for SDAA – (858) 722-3846



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NASA Night Sky Notes

June 2020



This article is distributed by NASA Night Sky Network

The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!

Summer Triangle Corner: Vega

David Prosper and Vivian White

If you live in the Northern Hemisphere and look up during June evenings, you'll see the brilliant star **Vega** shining overhead. Did you know that Vega is one of the most studied stars in our skies? As one of the brightest summer stars, Vega has fascinated astronomers for thousands of years.

Vega is the brightest star in the small Greek constellation of Lyra, the harp. It's also one of the three points of the large "Summer Triangle" asterism, making Vega one of the easiest stars to find for novice stargazers. Ancient humans from 14,000 years ago likely knew Vega for another reason: it was the Earth's northern pole star! Compare Vega's current position with that of the current north star, Polaris, and you can see how much the Earth's tilt changes over thousands of years. This slow movement is called **precession**, and in 12,000 years Vega will return to the northern pole star position. Bright Vega has been observed closely since the beginning of modern astronomy and even helped to set the standard for the current magnitude scale used to categorize the brightness of stars. Polaris and Vega have something else in common, besides being once and future pole stars: their brightness varies over time, making them **variable stars**. Variable stars' light can change for many different reasons. Dust, smaller stars, or even planets may block the light we see from the star. Or the star itself might be unstable with active sunspots, expansions, or eruptions changing its brightness. Most stars are so far away that we only record the change in light, and can't see their surface.

NASA's TESS satellite has ultra-sensitive light sensors primed to look for the tiny dimming of starlight caused by transits of extrasolar planets. Their sensitivity also allowed TESS to observe much smaller pulsations in a certain type of variable star's light than previously observed. These observations of **Delta Scuti** variable stars will help astronomers model their complex interiors and make sense of their distinct, seemingly chaotic, pulsations. This is a major contribution towards the field of astroseismology: the study of stellar interiors via observations of how sound waves "sing" as they travel through stars. The findings may help settle the debate over what kind of variable star Vega is. Find more details on this research, including a sonification demo that lets you "hear" the heartbeat of one of these stars, at: bit.ly/DeltaScutiTESS

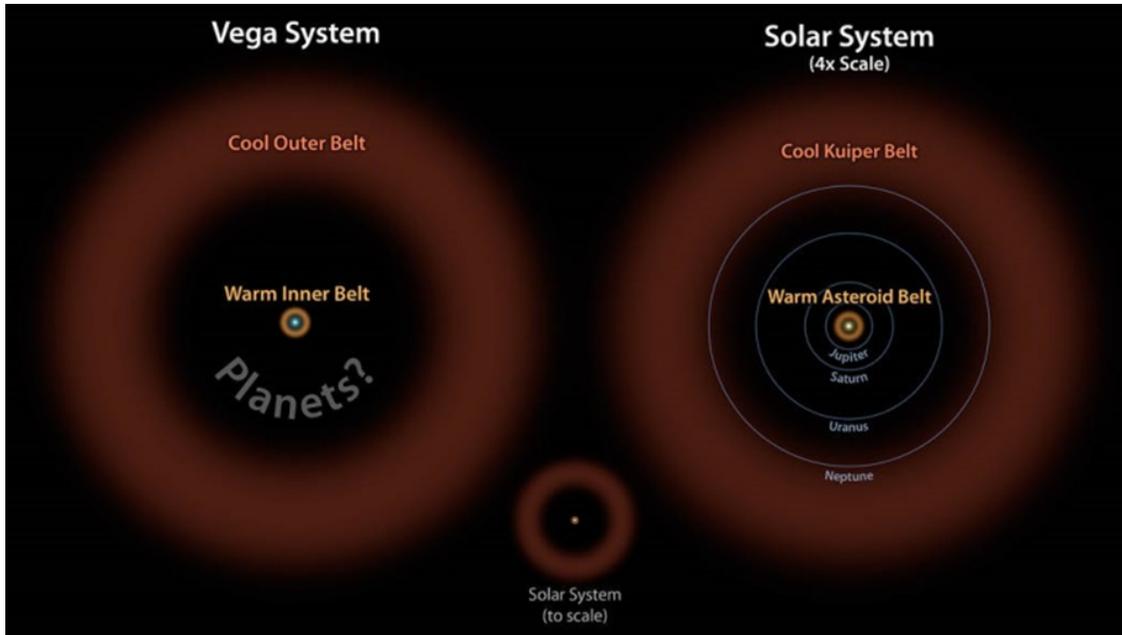
Interested in learning more about variable stars? Want to observe their changing brightness? Check out the website for the American Association of Variable Star Observers (AAVSO) at aavso.org. You can also find the latest news about Vega and other fascinating stars at nasa.gov.



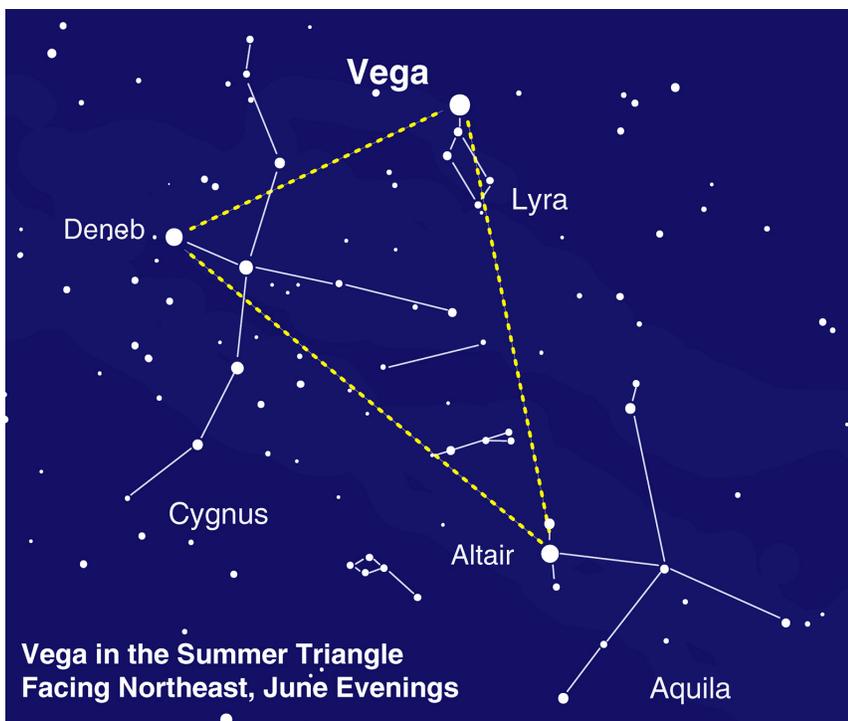
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NASA Night Sky Notes

June 2020



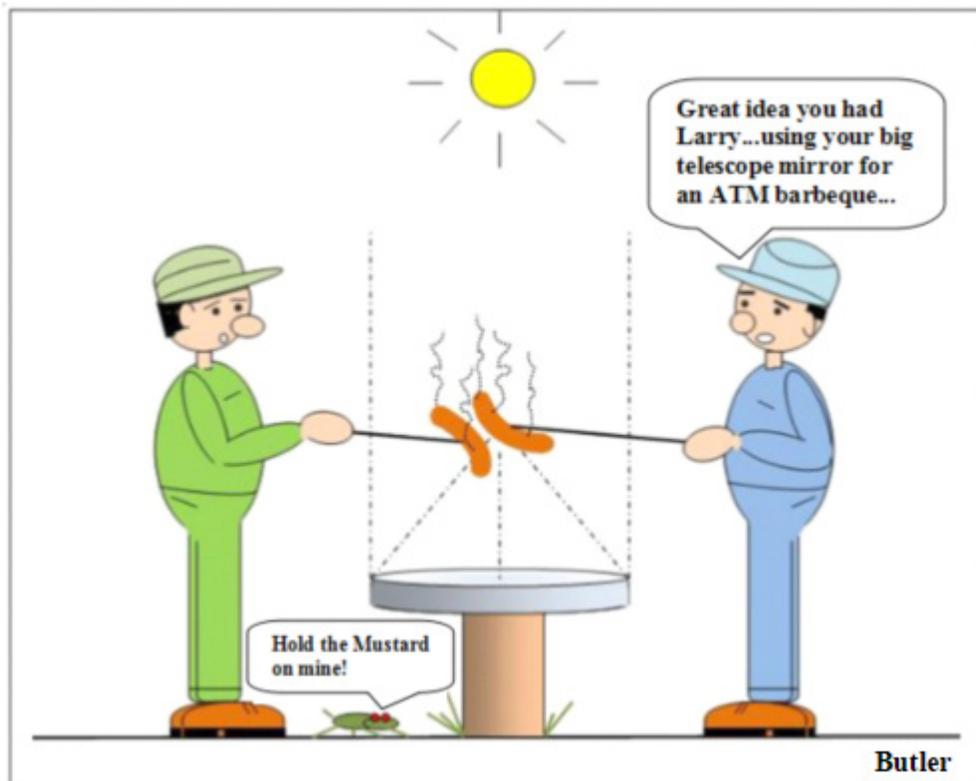
Vega possesses two debris fields, similar to our own solar system's asteroid and Kuiper belts. Astronomers continue to hunt for planets orbiting Vega, but as of May 2020 none have been confirmed. More info: bit.ly/VegaSystem Credit: NASA/JPL-Caltech



Can you spot Vega? You may need to look straight up to find it, especially if observing after midnight.



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MEMBERSHIP INFORMATION

Send dues and renewals to P.O. Box 23215, San Diego, CA 92193-3215. Include any renewal cards from Sky & Telescope or Astronomy magazine in which you wish to continue your subscription. The expiration date shown on your newsletter's mailing label is the only notice that your membership in SDAA will expire. Dues are \$60 for Contributing Memberships; \$35 for Basic Membership; \$60.00 for Private Pads; \$5 for each Family membership. In addition to the club dues the annual rates for magazines available at the club discount are: Sky & Telescope \$32.95 and Astronomy \$34. Make checks payable to S.D. Astronomy Assn. PLEASE DO NOT send renewals directly to Sky Publishing. They return them to us for processing.