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AAVSO Newsletter

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SINCE 1911...

The AAVSO is an international non-profit organization of variable star observers whose mission is: to observe and analyze variable stars; to collect and archive observations for worldwide access; and to forge strong collaborations and mentoring between amateurs and professionals that promote both scientific research and education on variable sources.

FROM THE DIRECTOR'S DESK

STELLA KAFKA

The value of science communication

This century's great advances in technology have brought changes in our communication avenues and our need to share scientific information. Within the professional community, long gone are the days when the lone scientist produced single-author manuscripts, shared them at conferences and in specialized refereed journals, and discussed them only with the small group of colleagues who worked in the same field. Long gone are the days when journalists struggled to understand scientific jargon and tried to present it in as many layman's terms as they possibly could. Long gone are the days when only Hubble Space Telescope photographs were featured almost exclusively in newspapers and magazines by the HST's outreach bureau. Scientific communication has now shifted dramatically: scientists today aspire to share their discoveries with the public through press releases, social media announcements, blog entries, podcasts, and interviews. New discoveries in astronomy are a part of our life. And learning how to share scientific discoveries with our favorite social groups—friends, family, teammates, neighbors, choir members—is a skill that scientists-in-training appreciate and aspire to excel in.

Science communication is about translating difficult concepts in layman's terms and sharing the excitement of discovery with everyone around us. It is about transparency of methods used, explaining data acquisition techniques, answering questions on the meaning of uncertainties.

It is also important in order to convey the impact of science in our lives. Astronomy helps us explore the world around us, helps us understand where we came from and how we evolve, gives us a perspective on our place in the universe. Especially now, we live in exciting times, when technological advances enable a closer look at extrasolar planets, the discovery of Earth's sisters around other stars, and the possible study of exo-planet atmospheres. Sharing this information with taxpayers is essential for astronomy to retain its rightful place in people's priority list and continue to thrive.

In June, I was fortunate to attend the national meeting of ComSciCon (https://comscicon.com), a convention that is designed by science graduate students for science graduate students to provide science communication skills to the scientists

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PRESIDENT'S MESSAGE

KRISTINE LARSEN

Celebrating our common love of all things variable (and some that are constant)

I hope you are all enjoying the Northern Hemisphere Summer, despite the short nights. If you can't fit in an observing run, you can still participate in all things variable. Become a solar observer (we have a section for that!) or introduce a young person (or even not-so-young person) to the joys of observing variable stars! You don't need pristine dark skies to make visual estimates of naked eye variables such as Eta Aquilae or Gamma Cassiopeiae, and warm summer nights are the perfect time to show someone how to do binocular viewing.

This summer is also a time for vacations and star parties, as well as professional conferences and meetings. For example, I'm looking forward seeing old friends of the human and stellar variety at Stellafane this year. If you are going, please stop by the McGregor Observatory Library, where I will be parked for most of the

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The *AAVSO Newsletter* is published in January, April, July, and October. Items of general interest to be considered for the *Newsletter* should be sent to eowaagen@aavso.org.

Membership in the AAVSO is open to anyone who is interested in variable stars and in contributing to the support of valuable research. Members include professional astronomers, amateur astronomers, researchers, educators, students, and those who love variable star astronomy. Photo courtesy of Aaron Springford.

AAVSO
49 Bay State Road
Cambridge, Massachusetts, 02138, USA
617-354-0484 / 1-888-802-STAR(7827)
www.aavso.org

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DIRECTOR'S MESSAGE CONTINUED...

of the future. I was in a room with graduate students from all over the US representing all scientific fields (from cognitive sciences to the study of microbes, Venus, and bats), and observed them articulate their work in a way that is at once elaborate, straightforward, and exciting. Through this meeting, participants learned the value of being concise and of staying away from specialized terminology when describing complex concepts to non-experts. They also discussed the value of diversity in promoting science, the importance of ethics in conducting research, disclosing conflicts of interest, and presenting results. The mastered the art of the 60-second "elevator pitch," where they presented their science results in a succinct, fun, and energetic way. And, most importantly, they went back to their home institutions to share their newfound knowledge with their peers. I left the meeting both inspired and energized. Inspired by this next group of science leaders who are prioritizing sharing their work with anyone anywhere, enabling non-scientists to get a deeper understanding of their discoveries. Energized by interacting with a smart, tech-savvy, and poised group of young leaders. Rest assured, science is in good hands.

Science communication is more than discussing fun scientific results and learning about the work of scientists. It is about democracy. It is about making informed decisions which will determine our quality of life in the future. It is about ensuring that information is not distorted when shared, and that everyone knows data-driven facts with the caveats that come along. It is also about appreciating what those "caveats" tells us about results, and about moving forward to improve the outcome of our work.

Every few months, we ask you to let us know about talks you give in your clubs and astronomy groups to promote variable star astronomy, and I am delighted to see the range of activities by our members around the globe (https://www.aavso.org/talking-about-the-aavso). It is just as important to disseminate the AAVSO's work to a wider audience, and share the importance (and relevance) of studying the variable sky with all. I am sure that many of you are engaged in other forms of science dissemination and sharing within your communities, and we would love to hear more about your outreach activities. If you have stories to share, please send them to us at aavso@aavso.org …we will include them in our next newsletter.

Best wishes—clear skies,

Stella.

PRESIDENT'S MESSAGE CONTINUED...

weekend (moderating the programming during the day and observing with the aforementioned binoculars at night). As you read this column, I will be far from my usual time zone, over the "pond" in England, attending the International Medieval Congress at Leeds University before taking the train south to the University of Warwick for the joint AAVSO/BAA meeting. I also hope to see old friends and make new ones at the joint meeting.

Ed. note: the Spanish language versions of the Director's and President's messages can be found on pages 7 and 8.

If you are doing a double-take at this moment and realizing that I said I was going to a "Medieval Congress", that isn't a misprint. One of the joys of astronomy is that it has always been—and I am bold enough to predict always will be—relevant to the human experience. Over the past few years I have taught myself how to use a medieval astrolabe and do professional workshops at medieval studies conferences. It is a very fulfilling experience to see persons trained in literature, history, or the arts enthusiastically doing science (and math)! My hope is that they will bring that enthusiasm and confidence to their own classrooms whenever they describe the astrolabe in its medieval context.

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PRESIDENT'S MESSAGE
CONTINUED...

While our astronomical technology has certainly advanced since medieval times, the wonder of the night sky has not. In some ways, I would argue it is more wonderful still, as now we know that it is teeming with wonders unseen by the basic human eye. No matter whether you have seen a particular variable star for the first or umpteenth time, the individual photons received by your eye or CCD are being observed for the very first time. It is always something new (despite that the light is actually "old", having left that star many years prior).

Something old, something new. Go borrow a telescope or some binoculars, and observe something blue!

AAVSO MEETINGS

Next meeting

107th Spring Meeting: July 6–8, 2018, AAVSO-British Astronomical Association (BAA), University of Warwick, Coventry, England (2018 Spring Meeting)
https://www.britastro.org/node/10727

A provisional schedule and information about accommodations and location is linked to on the AAVSO meetings page
https://www.aavso.org/aavso-meetings

All slots for oral presentations have been filled, but there is still plenty of room for poster presentations. Please visit the link on the AAVSO meetings page for information about poster presentations.

Upcoming meeting

107th Annual Meeting: November 15–17, 2018, Lowell Observatory, Flagstaff, Arizona (2018 Annual Meeting)
https://www.aavso.org/aavso-meetings

New! Meeting Registration is now open https://www.aavso.org/flagstaff-meeting-page

Lowell Observatory Tour—November 18, 2018

On Sunday, November 18, following the AAVSO Annual meeting in Flagstaff, Lowell Observatory will provide a private tour for AAVSO meeting participants and their families. There is no charge for the tour. Lowell is planning to do telescope viewing through their Clark Telescope and give a Pluto Telescope Dome tour. The tour is expected to start at 5:00pm and end at 10:00 p.m.

Sunset is at 5:19 p.m., so they plan to hold the Pluto tour at 5:00 p.m. and then proceed with telescope viewing at 6:00 p.m.

The schedule will be as follows:

5:00–6:00 p.m. Pluto Telescope Dome Tour
6:00–10:00 p.m. Pluto Telescope Dome Open House
6:00–10:00 p.m. Telescope viewing through the Clark telescope

If you would like to take the tour you will be able to select it as an option on your Annual Meeting registration when it becomes available online later this summer. The hotel has extended the room meeting rate to include Sunday night. Lowell Observatory would like to know in advance of our meeting how many people will participate in the tour, so please be sure to mark your registration accordingly!

Most recent meeting

106th Annual Meeting: November 2–4, 2017, Vanderbilt University, Nashville, Tennessee (2017 Annual Meeting)
https://www.aavso.org/vanderbilt-meeting-page

The group photo from the AAVSO meeting may be viewed on the AAVSO website:
https://www.aavso.org/group-photographs#2010s

Missed the 2017 Annual Membership meeting? Now you can watch it here:
https://www.aavso.org/aavso-membership-meeting-november-4th-2017

TRIMBLEFEST!

AAVSO Director Stella Kafka, was at Trimblefest this month, a celebration of Virginia Trimble's glorious career on the occasions of her 50-year anniversary from her graduation (Ph.D.) from Caltech and her 75th birthday (and hopefully many more to come).

During the proceedings, Stella presented Virginia with the AAVSO's William Tyler Olcott Award for Distinguished Service.

Shown here are photos from the event: one with Stella and Virginia and her Olcott award and one showing the invited speakers with Virginia.

AAVSO ANNUAL CAMPAIGN 2018– FILL OUR SKY WITH STARS!

The AAVSO Annual Campaign 2018—fill our sky with stars is underway and needs your participation!

If you believe in what the AAVSO does, if you want to make a difference for citizen science and for the astronomy of today and tomorrow by supporting AAVSO programs, please make a contribution today.

If you have already contributed, we thank you very much! We have re-instated the CAP program (Citizen Astronomy Promoters) initiated last year for donors contributing $250 or more. If you want to receive a CAP cap, you may contribute again to bring your total for this year to $250. If you already have your CAP cap from last year, there are beautiful pins to add to it for additional qualifying contributions.

If you have not yet contributed, here is your chance to do so and support the AAVSO. The campaign runs through July 31, 2018, and all contributions are gratefully appreciated! Thank you and clear skies!

THE LEGACY CONTINUES

JOHN L. EADIE, RENSSELAER, NEW YORK

Ed. note: We recently received this letter from AAVSO member John L. Eadie. He was impressed to see that his ancestor, John H. Eadie, was mentioned in the AAVSO's history web page. John H. Eadie was one of the "Harvard Corps of Observers" which made variable star observations for Harvard College Observatory in the late 19th and early 20th centuries. The AAVSO, in turn, was impressed to learn that Gwendolyn Eadie, great-great-grandaughter of John H., and niece of John L., is continuing the legacy as an award winning Ph.D. astronomer. We hope you will be delighted and inspired by the letter as much as we all were.

Gwendolyn Eadie, Ph.D., recipient of the J. R. Plaskett Medal of the Royal Astronomical Society of Canada and the Canadian Astronomical Society. Photo by Aaron Springford, Ph.D., used with permission.

Dear AAVSO,

Thank you for recognizing Great Grandfather, John Humphrey Eadie, for his pioneering observations in your History of the AAVSO: "Eadie contributed several hundred variable star observations to the Harvard College Observatory (HCO) between 1880 and 1911" (https://www.aavso.org/history-aavso). I am a member of AAVSO to honor him and the AAVSO that carries-on his passion for astronomy. As a child, my grandfather, John G. Eadie, told us of the many nights in Bayonne, New Jersey when he helped his father make the observations by adjusting the telescope so his father could continue observing as the earth turned. Even in frigid winter weather when he could not wear gloves while making the adjustments, he proudly persisted.

I write to bring to your attention Gwendolyn Eadie, Ph.D., my niece, who is following in the footsteps of her Great Great Granddaughter John Humphrey Eadie. She is the 2018 recipient of the J. R. Plaskett Medal that is awarded each year by the The Royal Astronomical Society of Canada and the Canadian Astronomical Society (please see: http://casca.ca/?page_id=524). At the Canadian Astronomical Society website they explain that the award, consisting of a gold medal, is to be made annually to the Ph.D. graduate from a Canadian university who is judged to have submitted the most outstanding doctoral thesis in astronomy or astrophysics in the preceding two calendar years. The recipient is invited to address one or the other of the sponsoring societies (at his or her choice) at their Annual Meeting, and to submit an invited article for the *Journal of the Royal Astronomical Society of Canada* (JRASC).

2018 Plaskett Medal announcement

> CASCA is pleased to announce Dr. Gwendolyn Eadie as the 2018 recipient of the J. S. Plaskett Medal.
>
> Dr. Eadie completed her doctoral studies at McMaster University under the supervision of Dr. William Harris. In her thesis entitled "Lights in Dark Places: Inferring the Milky Way Mass Profile using Galactic Satellites and Hierarchical Bayes", she developed a high-level statistical method to derive the mass and mass distribution within astrophysical systems. Mass is a fundamental variable driving the evolution of galaxies like our Milky Way, but it is notoriously difficult to measure due to the fact that it is dominated by the dark matter extending well beyond the visible starlight. This challenge is compounded by incomplete data on the positions and velocities of "tracer particles" such as stars, star clusters and dwarf satellites scattered through the galaxy's halo. Dr. Eadie developed a powerful Bayesian formulation of the problem combined with Markov Chain Monte Carlo calculations of the relevant parameters in the problem and their probability distributions. Her formulation also included a hierarchical treatment of measurement uncertainties for each tracer. She used it to place a new constraint on the mass profile and total mass of the Milky Way, and it will be a very powerful tool in the exploitation of future very large datasets from the Gaia mission and the Large Synoptic Survey Telescope (LSST). CASCA congratulates Dr. Eadie on the receipt of the 2018 Plaskett medal for her groundbreaking work to shed light on the dark side of our Milky Way galaxy and other corners of the Universe.

It seems appropriate to bring Gwendolyn's accomplishment to your organization and to indicate this important way in which one of AAVSO's prefounder's legacy lives on.

In addition, please bring this matter to the attention of Michael Saladyga who met with a group of us Eadie descendants a number of years ago.

—John L. Eadie

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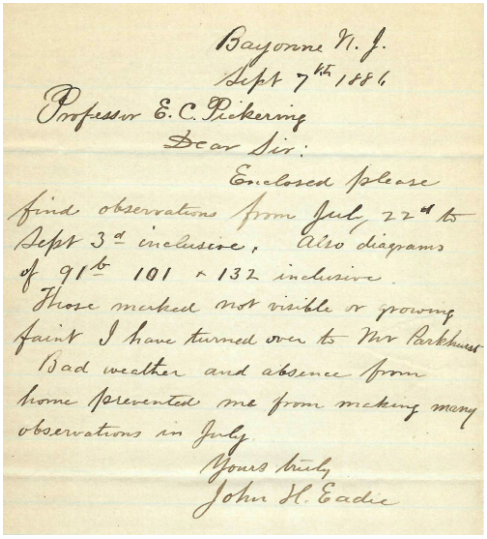
LEGACY
CONTINUED

A selection of letters and variable star observations by John H. Eadie from the AAVSO Archives



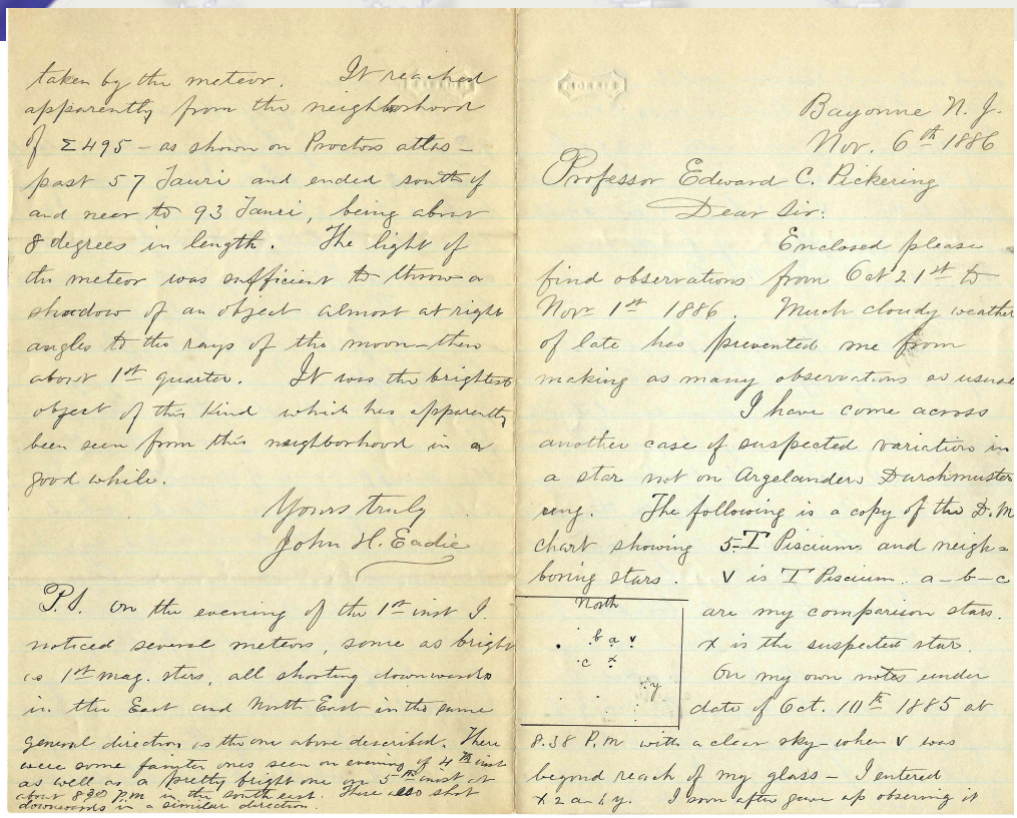
Bayonne N. J.
Sept 7th 1884

Professor E. C. Pickering
Dear Sir:

Enclosed please find observations from July 22d to Sept 3d inclusive. Also diagrams of 91b 101 & 132 inclusive. Those marked not visible or growing faint I have turned over to Mr Parkhurst. Bad weather and absence from home prevented me from making many observations in July.

Yours truly,
John H. Eadie

Letter of September 7, 1884, from John H. Eadie to Harvard Observatory Director Edward C. Pickering.



taken by the meteor. It reached apparently from this neighborhood of Σ495 – as shown on Proctors atlas – past 57 Ursæ and ended south of and near to 93 Ursæ, being about 8 degrees in length. The light of the meteor was sufficient to throw a shadow of an object almost at right angles to the rays of the moon – then about 1st quarter. It was the brightest object of this kind which has apparently been seen from this neighborhood in a good while.

Yours truly
John H. Eadie

P.S. On the evening of the 1st inst I noticed several meteors, some as bright as 1st mag. stars, all shooting downwards in the East and North East in the same general direction as the one above described. There were some fainter ones seen on evening of 4th inst as well as a pretty bright one on 5th most of them about 8.30 P.M. in the south east shooting in a similar direction.

Bayonne N. J.
Nov. 6th 1886

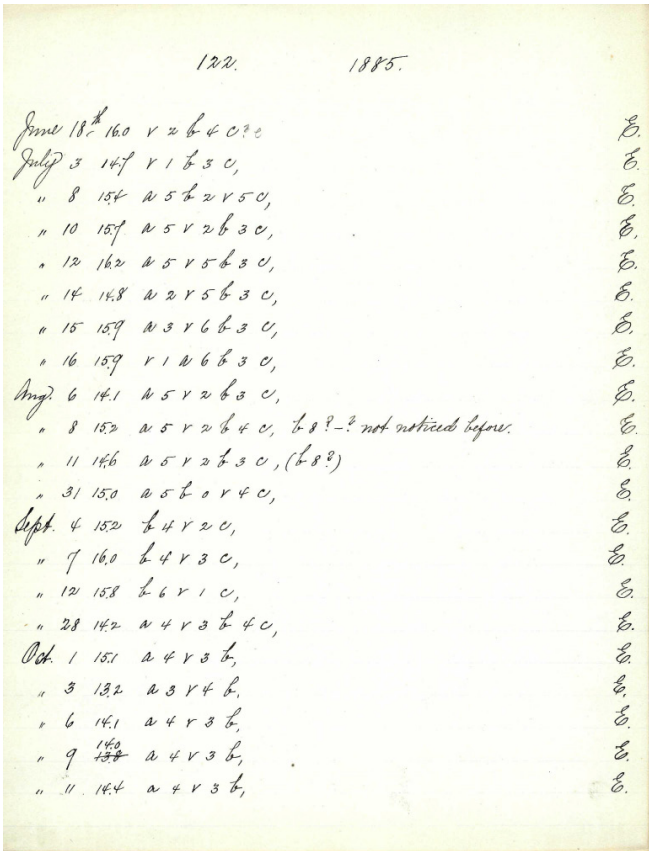
Professor Edward C. Pickering
Dear Sir:

Enclosed please find observations from Oct 21st to Nov 1st 1886. Much cloudy weather of late has prevented me from making as many observations as usual.

I have come across another case of suspected variation in a star not on Argelanders Durchmusterung. The following is a copy of the D.M. chart showing 5 Piscium and neighboring stars. V is I Piscium. a–b–c are my comparison stars. x is the suspected star. On my own notes under date of Oct. 10th 1885 at 8.58 P.M. with a clear sky – when V was beyond reach of my glass – I entered x 2 a 4 y. I soon after gave up observing it

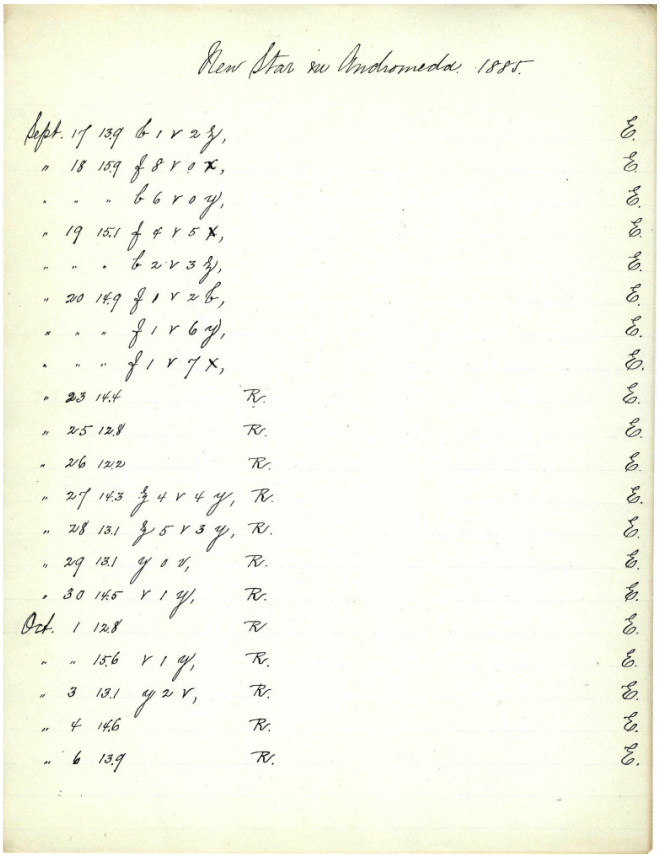
North

Letter of November 6, 1886, from John H. Eadie to Harvard Observatory Director Edward C. Pickering.



122. 1885.

June 18d	16.0	v 2 b 4 c? e	E.
July 3	14.7	v 1 b 3 c,	E.
" 8	15.4	a 5 b 2 v 5 c,	E.
" 10	15.7	a 5 v 2 b 3 c,	E.
" 12	16.2	a 5 v 5 b 3 c,	E.
" 14	14.8	a 2 v 5 b 3 c,	E.
" 15	15.9	a 3 v 6 b 3 c,	E.
" 16	15.9	v 1 a 6 b 3 c,	E.
Aug 6	14.1	a 5 v 2 b 3 c,	E.
" 8	15.2	a 5 v 2 b 4 c, b 8?–2 not noticed before.	E.
" 11	14.6	a 5 v 2 b 3 c, (b 8?)	E.
" 31	15.0	a 5 b 0 v 4 c,	E.
Sept. 4	15.2	b 4 v 2 c,	E.
" 7	16.0	b 4 v 3 c,	E.
" 12	15.8	b 6 v 1 c,	E.
" 28	14.2	a 4 v 3 b 4 c,	E.
Oct. 1	15.1	a 4 v 3 b,	E.
" 3	13.2	a 3 v 4 b,	E.
" 6	14.1	a 4 v 3 b,	E.
" 9	14.0 ~~13.8~~	a 4 v 3 b,	E.
" 11	14.4	a 4 v 3 b,	E.



New Star in Andromeda. 1885.

Sept. 17	13.9	b 1 v 2 y,	E.
" 18	13.9	f 8 v 0 x,	E.
" "		b 6 v 0 y,	E.
" 19	15.1	f 4 v 5 x,	E.
" "		b 2 v 3 y,	E.
" 20	14.9	f 1 v 2 b,	E.
" "		f 1 v 6 y,	E.
" "		f 1 v 7 x,	E.
" 23	14.4	R.	E.
" 25	12.8	R.	E.
" 26	12.2	R.	E.
" 27	14.3	y 4 v 4 y,	R. E.
" 28	13.1	y 5 v 3 y,	R. E.
" 29	13.1	y 0 v,	R. E.
" 30	14.5	v 1 y,	R. E.
Oct. 1	12.8	R	E.
" "	15.6	v 1 y,	R. E.
" 3	13.1	y 2 v,	R. E.
" 4	14.6	R.	E.
" 6	13.9	R.	E.

Some of the variable star observations made by John H. Eadie in 1885.

Ed. note: following are the Spanish language texts of the Director's and President's messages.

MENSAJE DEL DIRECTOR

STELLA KAFKA

El valor de comunicar la ciencia

Los grandes avances en tecnología de este siglo han traído cambios en nuestra forma de comunicarnos y nuestra necesidad de compartir información científica. En el seno de la comunidad profesional, han quedado en el pasado los días en que científicos solitarios producían manuscritos de un solo autor, los compartían en conferencias y revistas especializadas arbitradas, e intercambiaban opiniones sólo con un pequeño grupo de colegas que trabajaban en el mismo campo. Quedaron en el pasado los días en que los periodistas se esforzaban por entender la jerga científica e intentaban presentarla en un lenguaje lo más entendible posible para la gente común. Quedaron en el pasado los días en que las fotografías del Telescopio Espacial Hubble eran incluídas casi con exclusividad en diarios y revistas por el departamento de difusión del HST. La comunicación científica se ha transformado dramáticamente: hoy los científicos aspiran a compartir sus descubrimientos con el público a través de comunicados de prensa, anuncios en las redes sociales, entradas de blogs, podcasts y entrevistas. Los nuevos descubrimientos de la astronomía son parte de nuestra vida. Y aprender cómo compartir los descubrimientos científicos con nuestros grupos sociales favoritos —amigos, familia, compañeros de trabajo, vecinos, miembros del coro—es una habilidad que los científicos en formación valoran y en la cual aspiran a destacarse.

Comunicar la ciencia consiste en traducir conceptos difíciles en términos entendibles para los legos y compartir la emoción del descubrimiento con todos los que nos rodean. Tiene que ver con la transparencia de los métodos utilizados, explicar las técnicas de adquisición de datos, responder preguntas acerca del significado de los errores en las medidas.

También es importante para transmitir el impacto de la ciencia en nuestras vidas. La astronomía nos ayuda a explorar el mundo que nos rodea, nos ayuda a entender de dónde venimos y cómo evolucionamos, nos da una perspectiva acerca de nuestro lugar en el universo. Especialmente ahora, vivimos en una época excitante en la que los avances tecnológicos nos permiten tener una mirada más cercana de los planetas extrasolares, el descubrimiento de hermanas de la Tierra alrededor de otras estrellas y el posible estudio de las atmósferas de exoplanetas. Compartir esta información con quienes pagan sus impuestos es esencial para que la astronomía mantenga su merecido lugar en la lista de prioridades de la gente y continúe creciendo.

En junio tuve la suerte de asistir al encuentro nacional de ComSciCon (https://comscicon.com), una convención que está diseñada por estudiantes de ciencia graduados para otros estudiantes con el objeto de proveerles herramientas de comunicación en ciencia a los científicos del futuro. Estuve en una sala con graduados de todos los Estados Unidos representando todos los campos de la ciencia (desde las ciencias cognitivas hasta el estudio de los microbios, Venus, y los murciélagos) y los observé articular su trabajo de forma tal que es a la vez elaborado, directo y emocionante. Gracias a este encuentro, los participantes aprendieron el valor de ser conciso y alejarse de la terminología especializada al describir conceptos complejos a los no-expertos. También debatieron acerca del valor de la diversidad al promover la ciencia, la importancia de la ética al llevar a cabo investigación, cómo revelar conflictos de interés y presentar resultados. Se volvieron expertos en el arte del "discurso express" de 60 segundos, donde presentaron sus resultados científicos de una forma sucinta, energética y entretenida. Y, lo más importante, volvieron a sus respectivas instituciones a compartir con sus compañeros lo que acababan de aprender. Me fui del encuentro tan inspirada como llena de energía. Inspirada por este grupo de futuros líderes de la ciencia que priorizan compartir su trabajo con quien sea y donde sea, haciendo posible que los no-científicos logren entender con mayor profundidad sus descubrimientos. Llena de energía por haber interactuado con un grupo de inteligentes y preparados jóvenes líderes y genios de la tecnología. No caben dudas de que la ciencia está en buenas manos.

La comunicación de la ciencia es más que discutir resultados científicos interesantes y aprender acerca del trabajo de los científicos. Tiene que ver con la democracia. Con tomar decisiones informadas que determinarán nuestra calidad de vida en el futuro. Se trata de asegurar que la información no se distorsione cuando se comparte y que todos conozcan hechos derivados de los datos pero con la incertidumbre con la que vienen. También se trata de apreciar lo que esas incertidumbres nos dicen acerca de los resultados y de seguir adelante para mejorar el producto final de nuestro trabajo.

Cada varios meses, les pedimos que nos cuenten acerca de las charlas que dan en sus clubes y grupos de astronomía para promover la astronomía de estrellas variables y tengo el placer de ver el amplio rango de actividades de nuestros miembros alrededor del mundo (https://www.aavso.org/talking-about-the-aavso). Es muy importante difundir el trabajo de la AAVSO a una audiencia más amplia y compartir con todos la importancia (y relevancia) de estudiar el cielo variable. Estoy segura de que muchos de ustedes están comprometidos con otras formas de divulgar y compartir la ciencia en sus comunidades y nos encantaría escuchar más acerca de sus actividades de difusión. Si tienen historias para compartir, por favor envíenlas a aavso@aavso.org, las incluiremos en nuestro próximo boletín.

Saludos—cielos claros,

Stella.

A NOTE ON THE TRANSLATIONS

We are grateful to Sebastián Otero and Jaime García for providing, respectively, the Spanish language versions of the Director's and President's messages. We hope that readers of the Newsletter *will enjoy this feature.*

MENSAJE DEL PRESIDENTE

KRISTINE LARSEN

Celebrando nuestro amor común de todas las cosas variables (y algunas que son constantes)

Espero que todos disfruten el verano del hemisferio norte, a pesar de las cortas noches. Si no puede tener una noche de observación, puede participar en alguna de las otras cosas variables. Conviértase en un observador solar (¡tenemos una sección para eso!) o introduzca a una persona joven (o incluso a una persona no tan joven) en el disfrute de observar estrellas variables. No necesita cielos oscuros prístinos para hacer estimaciones visuales de variables accesibles a ojo desnudo como Eta Aquilae o Gamma Cassiopeiae, y las cálidas noches de verano son el momento perfecto para mostrarle a alguien cómo hacer una observación con binoculares.

Este verano es también un momento de vacaciones y fiestas de estrellas, así como conferencias y reuniones profesionales. Por ejemplo, estoy esperando ver a viejos amigos de las variedades humana y estelar en Stellafane este año. Si vas, pasa por la Biblioteca del Observatorio McGregor, donde estaré estacionada la mayor parte del fin de semana (moderando la programación, durante el día, y observando con los binoculares antes mencionados, por la noche). Al leer esta columna, estaré lejos de mi zona horaria habitual, del otro lado del "charco", en Inglaterra, asistiendo al Congreso Medieval Internacional en la Universidad de Leeds, antes de tomar el tren hacia el sur, a la Universidad de Warwick, para la reunión conjunta AAVSO/BAA. También espero ver viejos amigos y hacer nuevos en la reunión conjunta.

Si está haciendo una segunda lectura en este momento pensando que dije que iba a ir a un "Congreso Medieval", eso no es una error de tipeado. Una de los encantos de la astronomía es que siempre ha sido (y soy lo suficientemente valiente como para predecir que siempre será) relevante para la experiencia humana. En los últimos años, aprendí a usar un astrolabio medieval y a hacer talleres profesionales en conferencias de estudios medievales. ¡Es una experiencia muy gratificante ver a personas entrenadas en literatura, historia o artes haciendo ciencia con entusiasmo (y matemáticas)! Mi esperanza es que lleven ese entusiasmo y confianza a sus propias aulas, cada vez que describan el astrolabio en su contexto medieval.

Si bien nuestra tecnología astronómica ciertamente ha avanzado desde la época medieval, el maravillarse del cielo nocturno no lo ha hecho. De alguna manera, diría que es aún más maravilloso ya que ahora sabemos que está lleno de maravillas invisibles para el ojo humano básico. No importa si ha visto una estrella variable en particular por primera o por enésima vez, los fotones individuales recibidos por su ojo o CCD los está observando por primera vez. Siempre es algo nuevo (a pesar de que la luz sea realmente "vieja", habiendo dejado esa estrella muchos años antes).

Algo viejo, algo nuevo. ¡Toma un telescopio o unos binoculares y observa algo inusual!

IN MEMORIAM

MEMBERS, OBSERVERS, COLLEAGUES, AND FRIENDS OF THE AAVSO

Bruce Krobusek

BRUCE KROBUSEK (KRO, Farmington, New York) died April 15, 2018, at the age of 63 after a long illness. An AAVSO member in the 1970s and 1980s and more recently since 2013, he contributed 545 variable star observations made between January 1973 and April 2017 to the AAVSO International Database. Originally a visual observer of mostly pulsating variables, after a long interval away from variable star observing he had recently begun observing again, this time using a CCD and including cataclysmics in his program. In addition to variable stars, Bruce was a solar and planetary observer, and was also an avid astrophotographer. A man of many talents, to counter the problem of local light pollution wherever he might be observing, he developed a portable, folding observing enclosure that he could set up in a few minutes and that shielded him and his telescope on three sides. Bruce was also a longtime member of the Chagrin Valley Astronomical Society and the Astronomical League. We send our deepest condolences to his mother, his wife, and all of his family and many friends.

Terry Moon

TERRY TREVOR (TEX) MOON (MYV, Scottsdale, Tasmania, Australia) died June 20, 2018, after a long illness. An AAVSO member since 2006, Tex contributed 10,911 variable star observations (all but two were PEP) made between August 1977 and April 2012 to the AAVSO International Database. His career was varied, from Infrared Astronomy to electro-optical, infrared, and radar technologies, operations research, systems engineering, complexity and network science, and food science. Tex's variable star interests included SRs and Miras, eclipsing binaries, and symbiotic stars, and he observed using PEP, CCD, and CMOS. He published several papers in the *Journal of the AAVSO*, and in 2017 received an AAVSO Observer Award for contributing over 10,000 variable star observations (PEP) to the AAVSO. Tex was also an active member of Variable Stars South, the Astronomical Society of South Australia, and the Society for Astronomical Sciences. We extend our deepest sympathies to Tex's family, friends, and colleagues.

OBSERVER'S CORNER

Note: This column will include advice on observing practices and tips for observing for visual, DSLR, PEP, and CCD observers.

AAVSO Facilitates Member Participation in TESS

DENNIS M. CONTI, SECTION LEADER, AAVSO EXOPLANET SECTION

With the successful launch of TESS (Transiting Exoplanet Survey Satellite) on April 18, 2018, AAVSO members have an opportunity to materially contribute to the next era of exoplanet discoveries.

To-date, over 2,300 exoplanets have been confirmed by the Kepler mission, with another 309 by K2, the follow-on mission to Kepler after it lost the second of its four reaction wheels. Kepler itself concentrated on stars in a small part of the constellation Cygnus. TESS, on the other hand, will be conducting an all-sky survey of near-by bright, cool stars. TESS' main science goal is to measure the masses of at least 50 small (less than 4 Earth radii) planets. This goal is designed to provide convenient targets for future space telescopes, such as JWST (James Webb Space Telescope), in order to characterize the atmospheres of these Earth and super-Earth size exoplanets.

In order to conduct an all-sky survey in a reasonable amount of time (i.e., two years), each of TESS' four cameras have a large image scale (21 arc-seconds) and TESS has a large photometric aperture for detecting transits (nominally 1 arc-minute). As a result, ground-based observations, with higher resolution than TESS, are needed to detect false positives. False positives are instances where non-exoplanet transits could mimic shallower, exoplanet transits. A common such scenario is a near-by eclipsing binary (NEB) blended with a TESS target. Although such a NEB may not be able to be resolved by TESS, in many cases it can be resolved by ground-based observers.

The pipeline for confirming TESS exoplanet candidates starts with automated vetting, followed by human vetting. Candidates are then passed to the first of several TESS Followup Program (TFOP) Subgroups that will successively move the candidate through the pipeline to either false positive or confirmed status.

The first of these pipeline Subgroups is the Seeing Limited Subgroup (SG1). SG1 is where AAVSO members and other amateur astronomers can play a key role by helping to conduct ground-based observations to detect false positives. A secondary role of SG1 is to refine the ephemerides of confirmed exoplanets, since in many cases TESS will only have imaged an exoplanet candidate for approximately 28 days.

To facilitate AAVSO member participation in SG1, a process has been put in place for members who have some exoplanet observing experience or who have taken the AAVSO Exoplanet Observing CHOICE course. There already are a number of AAVSO members who have completed this process and are participating in SG1. The process consists of successfully completing each the following four steps:

1. Review of four (4) documents on exoplanet observing and false-positive detection that will be provided to the interested participant.
2. Submission of a sample exoplanet observation that the member has conducted.
3. Analysis of a sample TESS data set.
4. Agreement to abide by the TESS Charter and Publication Policy.

A full description of this process can be found at: http://astrodennis.com/AAVSOSupportofTESS.pdf.

For those members who would like to become familiar with the best practices of exoplanet observing, the next round of the Exoplanet Observing CHOICE course will be offered this October. For more information, please go to https://www.aavso.org/choice-astronomy and select either Member Registration or Non-member Registration.

In summary, TESS offers AAVSO members a unique opportunity to work with professional astronomers to help confirm planets around distant worlds that may later prove to have a life-supporting atmosphere.

PERIODIC NORTH-SOUTH HEMISPHERE PHASE CORRELATIONS OF THE SUN

RODNEY HOWE AND JAMIE RIGGS

Subject Key Words: Solar Cycle, AAVSO Solar Observers

1. Introduction

In this paper we use two sets of sunspot count data from those observers who submit their group and sunspot counts for both north and south hemispheres on the sun to the AAVSO Solar Section (see References; approximately 35 observers). The first set is for the time period December 2000 through July 2017, covering parts of cycles 23 and part of 24. Figure 1 shows spline fits for North and South Hemispheres for part of cycles 23 and 24 using these data. The second set of data is of north and south AAVSO Wolf numbers from December 2009 through July 2017, where there are no missing daily data, and can be used for creating rolling correlation plots.

2. Methods

Figure 2 gives examples of QQ plots showing how these data do not reflect a normal distribution. These are data from 2000 to 2017 group and sunspot counts and Wolf numbers; it is evident that these data cannot be compared to normal distributions as there are days of missing data, mostly during the solar minimum.

3. Joint North/South Time Series Analysis

Figure 3 depicts the difference of the northern solar hemisphere Wolf numbers (left panel) from the southern hemisphere Wolf numbers (right panel) from December 2009 through July 2017. This period is chosen for analysis as there are no days for which Wolf numbers are missing in either the northern or the southern hemispheres. The northern hemisphere suggests two local maximum while the southern hemisphere Wolf numbers are dominated by a single maximum. The maxima in the two solar hemispheres approximately align in time but the dominant maxima do not align.

The question for analysis here is whether a correlation between the two hemispheres exists regardless of the apparent misalignment of the maxima. The analysis intends to identify possible leading or lagging of one hemisphere over the other.

Rolling correlation can be used to examine how correlative relationships between the two solar hemisphere Wolf numbers change over time. A value of 1 means both hemispheres are synchronized with each other. A value of -1 means that if one hemisphere's Wolf numbers decline, the other hemisphere's numbers rise. A correlation of zero means no correlation relationship exists. Over the 24th cycle to July 2017, the rolling correlation coefficient shows degrees of periodicity for the

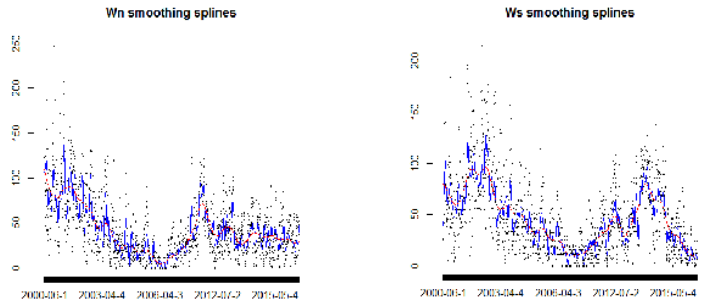


Figure 1. Wolf numbers from January 2000 through July 2017 for the solar northern hemisphere (left panel) and the solar southern hemisphere (right panel).

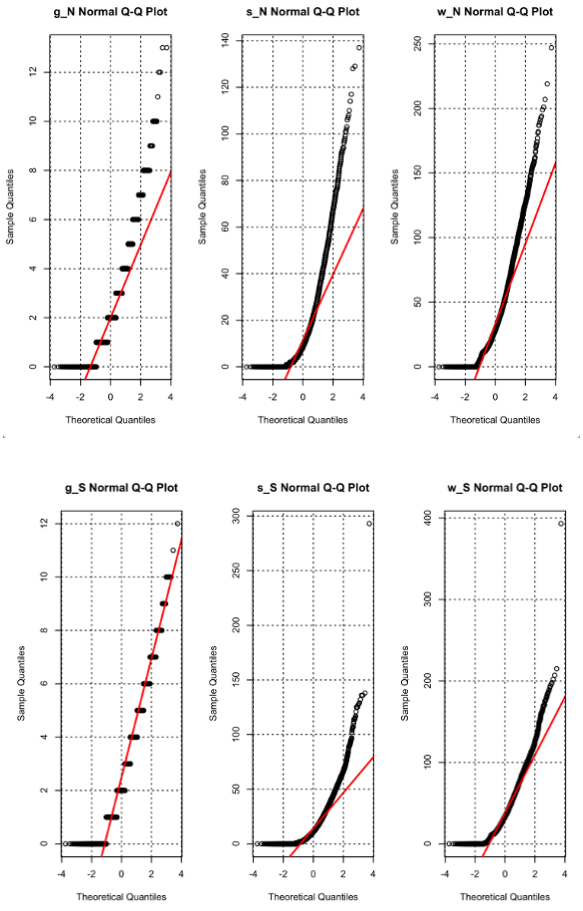


Figure 2. QQ plots for group, sunspot, and Wolf numbers from January 2000 through July 2017 for the solar northern hemisphere (upper panel) and the solar southern hemisphere (lower panel).

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SOLAR
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30-, 90-, and 180-day windows. Increasing the time window of the rolling correlation coefficient smooths the correlation coefficients to near zero. The average correlation coefficient over the portion of the 24th cycle analyzed is 0.1568 (30-day), 0.1681 (90-day), 0.1839 (180-day), 0.1955 (360), all of which are moderately positive correlations.

If these data are assumed to be independent of each observation and independent of time, the static correlation coefficient is 0.1783. The slope of the regression line fitted to the northern versus southern hemisphere (Figure 4, upper left panel) is 0.1837. The difference, though small, between the static correlation coefficient of the slope of the fitted line and the average rolling correlation coefficients is due to the regression accounting only for the differing variability of the two hemispheres and not accounting for time dependence.

References

AAVSO Solar Section (https://www.aavso.org/solar).
G. Foster, 2010, "Analyzing Light Curves, a Practical Guide," Lulu Press.
Shapiro-Wilk normality test (https://en.wikipedia.org/wiki/).
J. Zhang, et al. 2017, "Latitudinal migration of sunspots based on the EASI database" (http://www.raa-journal.org/docs/papers_accepted/0185.pdf).

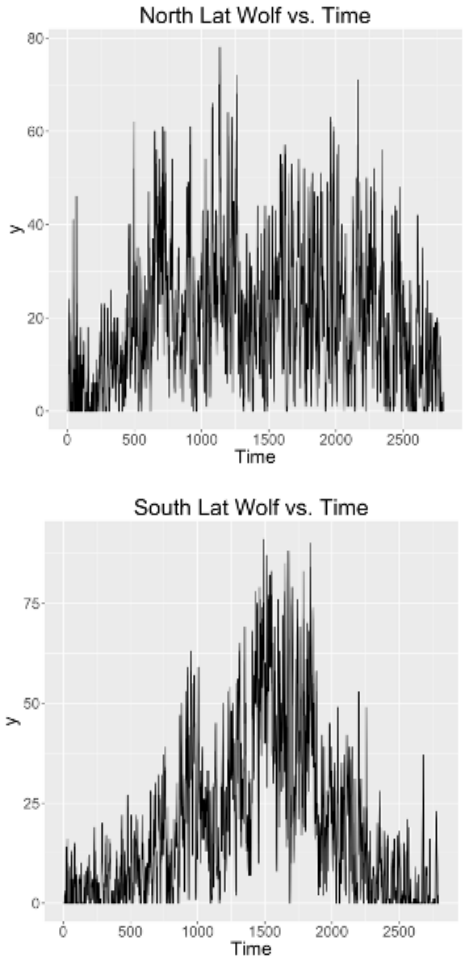

Figure 3. Wolf numbers from December 2009 through July 2017 for the solar northern hemisphere (upper panel) and the solar southern hemisphere (lower panel).

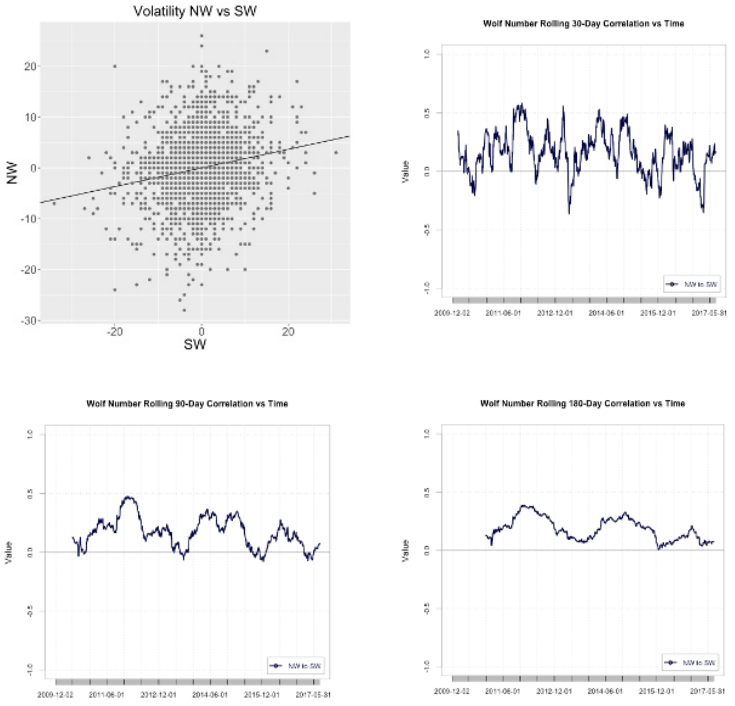

Figure 4. Solar northern hemisphere Wolf numbers versus solar southern hemisphere (upper left panel) with linear regression line of intercept 0 and slope 0.1837. The upper right panel is the 30-day rolling correlation by day of the northern hemisphere Wolf numbers by the southern hemisphere Wolf numbers. The lower two panels are the 90-day and 180-day rolling correlations, respectively.

WHO SPEAKS FOR THE R CORONAE BOREALIS STARS?

JOHN R. PERCY (UNIVERSITY OF TORONTO, EDITOR: JAAVSO)

I just discovered that the enigmatic R Coronae Borealis (RCB) stars are "orphans"! They do not belong in any of the AAVSO observing sections.

Why do I suddenly care? Readers of *JAAVSO* and this *Newsletter* may know that my students and I have been studying pulsating red giants (PRGs) for many years. Quite accidentally, we recently crossed over to the "dark side"—the RCB stars. My undergraduate student Arthur Qiu had been studying the long-term variability of PRGs and came upon Z UMi (https://arxiv.org/abs/1805.11027). This star is misclassified in the *General Catalogue of Variable Stars* (*GCVS*) and VSX as a possible Mira star, but is actually an RCB star.

There's lots of information about RCB stars on the AAVSO website but, in short, they are highly evolved, carbon-rich, hydrogen-poor yellow supergiants which occasionally fade in brightness by up to ten magnitudes, then slowly return to maximum, their normal state. The fadings are due to carbon-rich clouds of gas, ejected from the star. When the cloud cools, the carbon condenses into soot. If the cloud is situated between us and the star, the star appears to fade. As the cloud disperses, the star reappears.

Many, and perhaps all RCB stars also pulsate with periods of a few weeks, and low amplitudes. Although the fadings have long been described as random and unpredictable, they are now known to be "locked" to the pulsation period in several stars (e.g. Crause, Lawson, and Henden 2007, *MNRAS*, 375, 301). This implies a causal relation between the pulsation and the mass ejections. RCB stars are rare; there are only 33 listed in the *GCVS*; wikipedia claims there are about a hundred. We would like to search for such "locking" in as many RCB stars as possible.

Arthur measured the times of onset of 16 fadings in Z UMi. We were initially not able to detect a pulsation period from observations of the star at maximum but, by Fourier-analyzing the times of onset of fadings, we discovered that they were "locked" to a 41.98-day period—a typical pulsation period for an RCB star. Arthur's work on RCB stars is now being continued by Kevin Dembski, a summer undergraduate research student.

So the bottom line is: don't forget to observe the RCB stars. Your measurements of the stars at maximum light can help us identify pulsation periods. Careful detection and measurement of the times of onset of fadings can help to connect the fadings to the stars' pulsation. During the fadings, astronomers can learn more about the fading process, and the gas and dust around the star. Pulsation-driven mass loss is an important process in the evolution of many other types of stars.

Professor Geoff Clayton, Louisiana State University, is an expert on these stars, a member of the *JAAVSO* Editorial Board, a former AAVSO Councilor, and my go-to person as far as RCB stars are concerned. I especially recommend his review article in *JAAVSO*, 40, 539 (2012) (2012JAVSO..40..539C).

EXOPLANET OBSERVING SECTION UPDATE

DENNIS M. CONTI, EXOPLANET SECTION LEADER

Great news! TESS (Transiting Exoplanet Survey Satellite) was successfully launched April 18, 2018, and has entered into its operational orbit. As of this writing, TESS will soon begin taking and downloading science images beginning with the Southern ecliptic hemisphere.

In order to facilitate AAVSO member participation in TESS, an AAVSO program has been established to help qualify members who wish to get involved as part of the TESS science team's vetting of exoplanet candidates. A critical step in this vetting process is to help distinguish true exoplanet transits from false positives. Since TESS has such a large image scale and since its photometric aperture is relatively large, what it detects as a potential transit may actually be the result of the blending of light of the target star and, say, a near-by eclipsing binary. Thus, ground-based followup photometry is needed to better resolve the field of interest and determine if there are any sources of false positives. This month's Observer's Corner describes this AAVSO sponsored TESS program in more detail.

Work continues on beta testing the AAVSO Exoplanet Database. The intent of this database is to provide members with a long-term repository of exoplanet observations—unlike the TESS project, whose objective is more immediate followup exoplanet confirmation.

LONG PERIOD VARIABLE SECTION UPDATE

ANDREW PEARCE, LPV SECTION LEADER

In the last few months, two very interesting papers have been released regarding long period variables and it will be of value in highlighting these to observers and members who are interested in LPVs. Both also relate in some way to the age of automated surveys and how this may impact on the AAVSO in terms of continued monitoring of LPVs.

The first, by N. Mowlavi et al. (May 2018), provides a discussion on Gaia Data Release 2. As most of you would know, Gaia is an ESA space observatory which is undertaking precise astrometry of more than one billion stars in an effort to chart a three-dimensional map of the Milky Way with a view to understanding the composition, formation, and evolution of the galaxy. Of course, along the way it will measure and record significant numbers of variable stars.

In fact, Data Release 2 contains 550,737 variable stars, of which 151,761 were listed as LPVs. Approximately 20% of these were identified as Miras and the remainder as semi-regulars. The authors concluded that this Gaia catalogue has doubled the number of known LPVs with amplitudes larger than 0.2 mag. The authors also note that the survey is expected to add a major contribution to the study of LPV populations until it is completed towards the end of 2020.

The interesting aspect of this paper is the validation check process the authors conducted. This involved using samples of known LPVs to validate the catalogue. One very pleasing aspect of the study was their use of well studied and bright LPVs with good AAVSO-derived light curves as part of the validation process. The Gaia light curves did match well with the AAVSO light curves (their G magnitudes being brighter than V by about 3 magnitudes) and also the derived periods mostly agree very well with AAVSO-derived periods. However, it is noted that quite a large number of brighter LPVs are missing in the DR2 catalogue.

It's an interesting discussion as to how the AAVSO can add value to scientific research in the field of LPVs in the face of an overwhelming flow of new LPV discoveries over the next decade.

The second paper is by Dr. John Percy (*JAAVSO* Editor) that appears in the latest *JAAVSO* (Volume 46, Number 1). In the paper John summarizes his work on the time series analysis of 156 pulsating red giants (PRGs) that are part of the AAVSO observing program and for each of which only 150–250 observations have been made in total. The analysis showed that it was possible to derive an average period and amplitude for less than half of the stars analyzed with this small number of observations. Furthermore, it was noted that it was uncertain as to whether continued sparse observation of these stars will yield better results.

This brings into question the value of current level of sparse monitoring of many LPVs currently under observation by AAVSO members and observers. John suggested that if there is value in continuing to monitor these stars, then a more focused effort is required. This could be achieved by observers "adopting" certain stars and observing these more intensely for a few years in order that their basic parameters could be better derived. So, the debate and discussion is around whether there is value in monitoring this large number of poorly observed stars or whether to focus efforts on plugging gaps in better observed stars.

John also raises the question of how AAVSO observing programs need to react and/or adapt to the voluminous data becoming available for the large all sky surveys. Of course, this is a question for all types of variable stars currently covered by the AAVSO, not just LPVs.

References

"Gaia Data Release 2: The first Gaia catalog of Long Period Variable candidates," N. Mowlavi et al., arXiv:1805.02035, May 2018.

"Sparsely-Observed Pulsating Red Giants in the AAVSO Observing Program," John R. Percy, *JAAVSO*, Volume 46, No. 1, p. 1.

YOUNG STELLAR OBJECT SECTION UPDATE

MIKE POXON, SECTION LEADER

Great run of observations for RW Aur, highly interesting recent behavior of "formerly-thought-to-be-boring" SU Aur, developments on V1117 Her possibly showing evolution of planetesimals, almost record deep fade of the type star UX Ori...these are just a selection of fascinating "discoveries" made by the section recently. But are these just behaviors we have happened to catch, being in the right place at the right time as it were? Surely not—the more folks we have looking at a wide spread of stars, it seems clear that these are not just serendipitous discoveries but instead are the result of a more directed targeting of stars by the section, which was more or less the idea!

I have just seen that the faint YSO CT Vul has gone into decline, and this is maybe a good point to stress that there is a wide range of objects for all observers—from bright stars like SU Aur and CQ Tau down to objects more suited to CCD owners such as the aforementioned CT Vul. And Northerners...I'm not just looking at you! From AAVSO *Alert Notices* I can see that our friends South of the equator are also getting in on the act. As the Aussies say, good on yer!

PHOTOELECTRIC PHOTOMETRY SECTION UPDATE

TOM CALDERWOOD, AAVSO PEP SECTION LEADER

Variables Don't, Constants Aren't

That line is an old software joke, which we plan to disprove. To that end, the PEP group is gearing up for a campaign on Betelgeuse. We have plugged into a research group known as The MOB. They derive their name from "The Month of Betelgeuse," a campaign staged in spring. This coming fall and winter, they will turn their professional instruments on alpha Orionis again. While ALMA, VLT, Hubble, CHARA, NPOI, etc. will give them extraordinary data, they lack (and need) broadband photometry. Betelgeuse, at V=~0.4, is a PEP target, and we are assembling a team of observers. To quote one of the scientists, "The photometry of Betelgeuse is very difficult to measure with even moderately large telescopes due to its extreme brightness. The role of the AAVSO is therefore very important and the accuracy of photoelectric measurements is particularly desirable." Contact me for details (tee jay see at cantordust dot net).

As part of the protocol for the Betelgeuse campaign, we will want participants to verify their proficiency by making measurements of some constant stars. The AAVSO database contains a number of stars once thought to be variable but subsequently deemed not. Data can still be submitted for these stars, and, thus, they provide us with a means to check our skill. The accompanying table lists thirteen bright targets, with a range of color contrast. Their distribution about the sky is not as uniform as I would like, but I had to take what I could get, and I skipped the southern hemisphere, where we presently have no "optical" PEP observers. Of course, you needn't participate in the Betelgeuse project to put them to use. Try them out and see how you do!

A final note: the Hercules red/blue calibration star pair is now accessible. There will be no other bright calibration stars available until the Perseus pair starts transiting just before twilight begins in mid-September.

Constant PEP targets

*Star**	*V*	*Comp*	*V*	*Δ(B–V)*	*Check*
alf Cas	2.225	HD 5395	4.629	0.212	HD 9927
RU Cas	5.558	HD 6960	5.551	–0.025	HD 5015
RR Ari	5.750	HD 13174	4.989	0.853	HD 13363
NSV 16300 (Ori)	5.695	HD 34658	5.340	–0.626	HD 36134
niu Aur	3.960	HD 38656	4.510	0.182	HD 41357
1 Gem	4.158	HD 38751	4.877	–0.192	HD 43039
NSV 2877 (Aur)	4.338	HD 40588	6.190	0.939	HD 42471
SY UMa	5.28	HD 82328	3.175	–0.392	HD 82621
alf Com	4.318	SAO 82650	5.990	0.064	SAO 82692
NSV 6687 (UMi)	4.275	HD 136726	5.013	0.065	HD 142105
VW Dra	6.319	SAO 17360	6.7	0.494	SAO 17312
NSV 24912 (Aql)	5.118	HD 185018	5.978	–0.330	HD 188310
51 Peg	5.467	HD 218235	6.157	0.214	HD 215510

** These are the PEP designations for submitting data. NSV 16300 is HD 35299, NSV 2877 is HD 43039, NSV 6877 is HD 127700, NSV 24912 is HD 187691, and niu Aur is the PEP id for nu. Aur (HD 39003).*

OBSERVING CAMPAIGNS UPDATE

The detailed report on observing campaigns and novae discoveries given in earlier issues of the *AAVSO Newsletter* has been discontinued. Observers may read about the observing campaigns underway and recent novae via the list below of the *AAVSO Alert Notices* issued for these targets. (Also included are two *AAVSO Special Notices* for which no related *Alert Notice* was issued.) Links to *AAVSO Special Notices* associated with an *Alert Notice* may be found by clicking on the *Alert Notice* link.

Also, the stars which are targets of observing campaigns are given in the Alerts/Campaigns list of the AAVSO Target Tool.

Current and ongoing observing campaigns

Date *Name* *Subject*

20180703 *Alert Notice 639*—CH Cyg coverage requested
20180702 *Alert Notice 638*—Nova in Scutum—N Sct 2018 = TCP J18292290-1430460
20180605 *Alert Notice 637*—Nova in Lupus—N Lup 2018 = PNV J15384000-4744500
20180601 *Alert Notice 636*—SDSS J141118.31+481257.6 rebrightening—photometry requested
20180525 *Alert Notice 635*—Monitoring of SDSS J141118.31+481257.6 requested
20180511 *Alert Notice 634*—Nightly monitoring requested for V1280 Sco = N Sco 2007
20180430 *Alert Notice 633*—Nova outburst of V392 Per = TCP J04432130+4721280
20180425 *Alert Notice 63*2—Fast photometry of symbiotic candidates requested
20180424 *Alert Notice 631*—Coverage requested for current outburst of AG Dra
20180411 *Alert Notice 629*—Nova in Sagittarius—N Sgr 2018 = PNV J18040967-1803581
20180326 *Alert Notice 627*—Nova in Canis Major = N CMa 2018 = TCP J07134590-2112330
20180321 *Alert Notice 626*—Nova in Carina = ASASSN-18fv
20180321 *Alert Notice 625*—ASASSN-18ey = MAXI J1820+070 coverage needed for VLT and XMM
20180319 *Alert Notice 62*4—Observations requested for MAXI J1820+070 = ASASSN-18ey
20180315 *Alert Notice 622*—N Oph 2018 No. 2 = TCP J17140253-2849233 = PNV J17140261-2849237
20180315 *Alert Notice 621*—Optical monitoring of NSV 24045 = HD 163296
20180306 *Alert Notice 619*—Nova Ophiuchi 2018 = PNV J17244011-2421463
20180305 *Alert Notice 618*—Monitoring SDSS J153817.35+512338.0 for HST observations
20180305 *Alert Notice 617*—Multiwavelength observations of YZ Cnc, SU UMa, and CR Boo outbursts
20180213 *Alert Notice 616*—Nova Sco 2018 No. 2 = PNV J16484962-4457032
20180131 *Alert Notice 613*—Nova Cir 2018 = PNV J13532700-6725110
20180131 *Alert Notice 612*—Nova Sco 2018 = PNV J17180658-3204279
20180126 *Alert Notice 611*—Flaring of Blazar 3C 279
20180115 *Alert Notice 609*—Nova Muscae 2018 = PNV J11261220-6531086
20171116 *Alert Notice 606*—Observing campaign on nova in Vela—ASASSN-17mt
20171017 *Alert Notice 602*—CE Tau observations requested to supplement BRITE-Constellation
20170906 *Alert Notice 598*—Intermediate polar FO Aqr fading and photometry needed now
20170816 *Alert Notice 593*—VV Cep eclipse monitoring requested
20170807 *Alert Notice 590*—V1117 Her observations requested
20170804 *Alert Notice 589*—R Aqr coverage needed for Chandra and HST observations
20170721 *Alert Notice 588*—Long-term CCD monitoring of ER UMa-type variable DDE 48 in Vulpecula
20170630 *Alert Notice 585*—Monitoring of Evryscope targets requested for follow-up
20170621 *Alert Notice 584*—Monitoring of PDS 110 requested to cover upcoming eclipse by exoplanet
20170616 *Alert Notice 583*—Photometry requested for Red Dots campaign
20170516 *Alert Notice 577*—SN 2017eaw in NGC 6946 (PSN J20344424+6011359)
20170428 *Alert Notice 575*—Monitoring of Swift J1357.2-0933 (CRTS J135716.8-093238) requested
20170425 *Alert Notice 574*—Monitoring of EPIC 204278916 requested

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20170403 *Alert Notice 572*—AG Dra monitoring requested
20170316 *Alert Notice 571*—Observations Requested of Exoplanet Proxima Centauri b
20170131 *Alert Notice 566*—Beta Pic observations requested for BRITE-Constellation
20161028 *Alert Notice 561*—Nova in Sagittarius = ASASSN-16ma = PNV J18205200-2822100 [V5856 Sgr]
20161024 *Alert Notice 560*—TCP J18102829-2729590 = Nova in Sagittarius [V5855 Sgr]
20161004 *Alert Notice 556*—Monitoring of V2487 Oph requested
20160927 *Alert Notice 553*—Nova Lup 2016 = PNV J15290182-4449409 = ASASSN-16kt [V407 Lup]
20160803 *Alert Notice 546*—Campaign on V1687 Cyg (WR 140)
20160408 *Alert Notice 542*—Continuing observations requested for KIC 08462852
20170502 *Special Notice #429*—V694 Mon (MWC 560) spectroscopy requested
20160119 *Alert Notice 535*—R Aqr observing campaign
20160408 *Special Notice #415*—T CrB brighter and bluer—monitoring requested
20150618 *Alert Notice 520*—X-ray nova and LMXB V404 Cyg in rare outburst
20150415 *Alert Notice 518*—Observations of 2MASS J06593158-0405277 needed
20150324 *Alert Notice 514*—RW Aur monitoring requested
20150313 *Alert Notice 511*—Monitoring requested for developing planetary systems dust production study
20150305 *Alert Notice 510*—Observations of the symbiotic nova ASAS J174600-2321.3
20140917 *Alert Notice 504*—Epsilon Aur monitoring during predicted pulsation phase
20140806 *Alert Notice 503*—Request for regular monitoring of the symbiotic variable RT Cru
20140709 *Alert Notice 502*—EE Cep observations requested for upcoming eclipse
20120625 *Alert Notice 462*—Monitoring of J1407 for next extrasolar ring system transit
20120302 *Alert Notice 454*—Monitoring of CH Cyg requested for Chandra and HST observations
20110517 *Alert Notice 440*—PEP Observing Campaign on P Cygni
20070711 *Alert Notice 353*—Monitoring of Blazars requested for VERITAS/XMM TOO
20070406 *Alert Notice 348*—Observe HMXBs; monitor AR UMa; update on *Alert Notice* 345
20080502 *Alert Notice 377*—Request extended to observe HMXBs in support of radial velocity observations
20070813 *Alert Notice 354*—Extending Request to Observe HMXBs in Support of Radial Velocity Observations
20070813 *Alert Notice 355*—Correction to Subject Title of *Alert Notice 354*