AAVSO

The American Association of Variable Star Observers

Annual Report
2014–2015

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On the cover...

Stella Kafka and Sara Beck leading a seminar at Girls Inc., Lynn, Massachusetts. Vina Hing and Linh Thuy Nguyen with their mentor Giorgio De Scala, Prairiewood High School, New South Wales, Australia. These students won first prize at SciCon15. Michael Cook, Andrew Pearce, Doug Welch, and Bill Goff at the Ball State University Observatory during the 2015 Spring Meeting.

Picture credits

In additon to images from the AAVSO and its archives, the editors gratefully acknowledge the following for their image contributions: Glenn Chaple, Michael Cook, Giorgio De Scala, Shawn Dvorak, Mary Glennon, Bill Goff, Barbara Harris, Carl Knight, Mario Motta, NASA, Gary Poyner, Msgr. Ronald Royer, the Mary Lea Shane Archives of the Lick Observatory, Chris Stephan, and Wheatley, et al. *2003,* MNRAS, *345, 49. Thanks to Al Holm, Carol Beaman, Rebecca Turner, and Sara Beck for the meeting photos*

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Participants in the AAVSO's 102nd Annual Meeting, 2015

AAVSO Vision

Discovering the Universe through variable stars.

The AAVSO's Mission

The AAVSO is an international non-profit organization of variable star observers whose mission is to enable anyone, anywhere, to participate in scientific discovery through variable star astronomy. We accomplish our mission by carrying out the following activities:

- observation and analysis of variable stars
- collecting and archiving observations for worldwide access
- forging strong collaborations between amateur and professional astronomers
- promoting scientific research, education, and public outreach using variable star data.

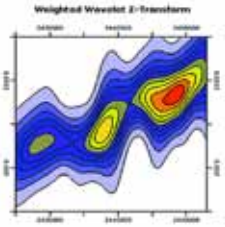
About the AAVSO

The American Association of Variable Star Observers (AAVSO) is a non-profit worldwide scientific and educational organization of amateur and professional astronomers who are interested in stars that change in brightness—variable stars.

The AAVSO was founded in 1911 to coordinate variable star observations—made largely by amateur astronomers—for Harvard College Observatory. The AAVSO was incorporated in the Commonwealth of Massachusetts in 1918 as a non-profit scientific and educational organization. Today, as an independent, private research organization headquartered in Cambridge, Massachusetts, with active participants in 108 countries, and an archive of over 30 million variable star observations, it is the world's largest association of variable star observers.

1. About the AAVSO

Membership in the AAVSO is open to anyone—professionals, amateurs, and educators alike—interested in variable stars and in contributing to the support of valuable research. Professional astronomers have neither the time nor the telescopes needed to gather data on the brightness changes of thousands of variables, and amateurs make a real and useful contribution to science by observing variable stars and submitting their observations to the AAVSO International Database.



What We Do

The AAVSO coordinates, evaluates, compiles, processes, publishes, and disseminates variable star observations to the astronomical community throughout the world.

Observers send their data to Headquarters, where they are checked, processed, and added to the AAVSO International Database. The AAVSO and its observers frequently provide the professional community with archival data, intensive monitoring of interesting variable stars, and target-of-opportunity event notification for coordinated observing campaigns and satellite observations.

AAVSO publications provide the astronomical community with valuable information. The type of published information is diverse, and includes *The Journal of the AAVSO*, a peer-reviewed collection of scientific papers focused on variable stars, the *Manual for Visual Observing*, now available in thirteen languages, the *CCD Observing Manual*, the quarterly *AAVSO Newsletter*, the *AAVSO Bulletin*, the *Eclipsing Binary and RR Lyrae Ephemerides*, and the A*AVSO Annual Report*.

Additionally, the AAVSO is actively involved in education and outreach. We have several programs designed to assist with disseminating information to educators and the public.

The AAVSO has an active Mentor Program that is available to any observer requesting personal instruction in observing techniques and methods.

The Speakers Bureau is a service established for people and groups looking for enthusiastic, knowledgeable speakers.

Our Presentation Library offers free POWERPOINT™ presentations on variable stars, observing techniques, and other astronomical topics.

Variable Star Astronomy (VSA) is a flexible set of hands-on educational materials, activities, and investigations, based on the AAVSO's unique electronic database of variable star measurements.

Members and observers have a unique opportunity to present and exchange ideas at the AAVSO meetings. The AAVSO organizes two meetings a year, one in October-November and one in April-July. The October-November meeting is the official AAVSO annual meeting that is always held at or near the AAVSO Headquarters in Cambridge, Massachusetts. The April-July meeting is held outside of the state of Massachusetts with the intention of attracting more members and observers to attend. Everyone interested in the AAVSO and its activities is invited and encouraged to participate in these exciting events.

What Are Variable Stars?

Variable stars are stars that change in brightness. The brightness changes of these stars can range from a thousandth of a magnitude to as much as twenty magnitudes over periods of a fraction of a second to years, depending on the type of variable star. Over 394,000 variable stars are known and catalogued, and many thousands more are suspected to be variable.

The variable star U Geminorum in its faint state (left) and its bright state (right)

There are a number of reasons why variable stars change their brightness. Pulsating variables, for example, swell and shrink due to internal forces. An eclipsing binary will dim when it is eclipsed by a faint companion, and then brighten when the occulting star moves out of the way. Some variable stars are actually extremely close pairs of stars, exchanging mass as one star strips the atmosphere from the other.

The different causes of light variation in variable stars provide the impetus for classifying the stars into different categories. Variable stars are classified as either intrinsic, wherein variability is caused by physical changes such as pulsation or eruption in the star or stellar system, or extrinsic, wherein variability is caused by the eclipse of one star by another, the transit of an extrasolar planet, or by the effects of stellar rotation.

Why Observe Variable Stars?

Variable stars need to be systematically observed over decades in order to determine their long-time behavior. Professional astronomers have neither the available time nor the unlimited telescope access needed to gather data on the brightness changes of thousands of variable stars. Thus, it is amateur astronomers utilizing visual, photographic, photoelectric, and CCD techniques who are making a real and highly useful contribution to science by observing variable stars and submitting their observations to the AAVSO International

Database. These important data are needed to analyze variable star behavior, to schedule satellite observations of certain stars, to correlate data from satellite and ground-based observations, and to make computerized theoretical models of variable stars possible.

Research on variable stars is important because it provides information about stellar properties, such as mass, radius, luminosity, temperature, internal and external structure, composition, and evolution. Some of this information would be difficult or impossible to obtain any other way. In many cases, it is the nature of the variability that provides the clues to the answers. This information can then be used to understand other stars.

Variable stars continue to play a crucial role in our understanding of the universe. Cepheid variables have played a major part in determining distances to far-away galaxies and determining the age of the Universe. Mira variables give us a glimpse into the future evolution of our own star, the Sun. Accretion disks in cataclysmic variables help us to understand larger scale disk behavior, such as the activity inside active galaxies with super-massive black holes. Supernovae have led us to the surprising realization that the expansion of the Universe is accelerating. Even the search for extra-terrestrial life is illuminated by variable stars. Transiting extrasolar planets provide clues into the processes of planetary formation, and the very stuff of life as we know it comes from the hearts of stars that explode in the final stages of their evolution.

The AAVSO International Database

The AAVSO International Database has over 30 million variable star observations going back over one hundred years. It is the largest and most comprehensive digital variable star database in the world. Over 1,000,000 new variable star brightness measurements are added to the database every year by over 800 observers from all over the world.

Quality

The AAVSO International Database is not only the largest but also the highest quality variable star database available to researchers. The AAVSO and its technical staff spend more time and resources on database maintenance and quality control than any other organization of its kind.

Quality control begins before the observation is even made. Extensive training materials are sent to new AAVSO observers and a large section of the AAVSO website is designed specifically for observing techniques. We also have a thriving group of volunteers devoted to revising and developing new sequences for variable stars. The AAVSO holds two meetings per year where members come together to discuss their observing strategies, compare

results, and much more. Workshops are routinely held at these meetings, bringing the best professionals in the field in contact with the observers. Since 2000, workshops have been held on CCD imaging, Eclipsing Binary star observing, GRB afterglow hunting, data mining, data analysis, and spectroscopy. The AAVSO also has an active mentoring program for new observers.

We have data entry error checks at every stage in the process. Our on-line data entry tool WebObs runs error checking routines which automatically identify the most common data entry errors. In addition, we frequently review observations using both human scrutiny and automated programs to look for misidentifications, typos, and any other errors. The best check, however, is the observers themselves who check their own submitted data by using the many tools the AAVSO makes available: Light Curve Generator, WebObs Search, and our Zapper application which lets volunteers highlight questionable observations and bring them to the attention of AAVSO staff. All revisions to the database are themselves tracked, and no observation is ever marked discrepant without thorough checking. Observations requested to be deleted by the observer or discovered to be a duplicate are removed to a separate data table but are not physically deleted.

Observers

The AAVSO International Database would not exist without the dedication, tireless effort, and enthusiasm of thousands of variable star observers. Our observers come from all over the world. Over two-thirds of AAVSO observers contributing data come from outside of the United States.

Mary Glennon, AAVSO member-observer since 1999

Thanks to this broad network of observers we have coverage across most time zones and latitudes regardless of weather or other regional disruptions.

To make it easier for the widely-scattered AAVSO members and observers to gather together in person, the AAVSO meeting held every April-July takes place in different parts of the United States or, as often as possible, in different countries.

The AAVSO receives observations from members of other variable star observing associations around the world for inclusion in the AAVSO International Database and dissemination to the astronomical community worldwide. These observations are sent regularly by the group leader/representative or directly by the group members themselves. The AAVSO values

these fruitful, mutually beneficial collaborations, and truly appreciates the ongoing efforts of everyone involved in working together for the benefit of the astronomical community.

Access

Observations from the AAVSO International Database are available to anyone at anytime, a free resource for the global scientific community. For raw observations, simply fill out our online request form. For access to light curves, use our Light Curve Generator which works in all browsers (you do not need JAVA or any special plug-ins), and for really quick access to recent data, use the QuickLook utility on our website. Our online systems are instantly updated every time data are submitted to the AAVSO.

Observing Variable Stars

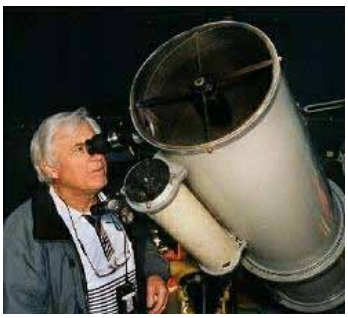
Astronomy is a unique science that cannot be studied in a typical laboratory setting here on Earth. Instead, astronomers turn their attention and telescopes to the sky in order to study their subjects. Since professional astronomers often do not have the telescope time needed to follow a particular star or group of stars, the dedication of amateur astronomers is often an invaluable means of collecting information. Nowhere is this more true than in the field of variable star astronomy. Since 1911, thousands of amateur astronomers from all over the world and from all backgrounds have contributed observations, one at a time, to make up the over 30 million data points housed in the AAVSO International Database!

Anyone can be a variable star observer. All you really need to begin observing are:

- your unaided eyes, a pair of binoculars, or a telescope
- some variable star charts to help you navigate your way through the sky
- some basic instructions
- a little patience

For those interested in observing activity on our closest star, the Sun, or a particular type of variable, such as the Eclipsing Binary or RR Lyrae type stars, or if hunting for novae, supernovae, or optical counterparts to energetic Gamma-Ray Bursts strikes your fancy, we have observing programs designed to help satisfy your appetite.

The AAVSO Mentor Program is available to all observers to assist newcomers in the methods and techniques of visual variable star observation, as well as CCD, PEP, and DSLR observation.



Msgr. Ron Royer, AAVSO member observer since 1953

Services to Astronomy

The AAVSO provides a wide range of services to the astronomical community. AAVSO International Database data are disseminated extensively to astronomers around the world, upon request, and are freely available from the AAVSO website. AAVSO data and services have been used, referenced, and acknowledged in hundreds of professional astronomical publications.

Mario Motta, M.D., former AAVSO President, and an AAVSO member-observer since 1985, at his 32-inch telescope in Gloucester, Mass.

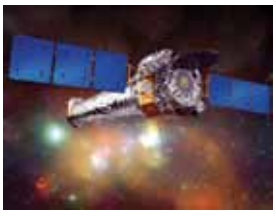
Services to Astronomers

AAVSO services are sought by astronomers for the following purposes:

- real-time, up-to-date information on unusual stellar activity
- scheduling of variable star observing programs coordinating earth-based large telescopes and instruments aboard satellites
- simultaneous optical observations of program stars and immediate notification of their activity during earth-based or satellite observing programs
- correlation of AAVSO optical data with spectroscopic, photometric, and polarimetric multi-wavelength data
- collaborative statistical analysis of stellar behavior using long-term AAVSO data

Collaboration between the AAVSO and professional astronomers for real-time information or simultaneous optical observations has enabled the successful execution of hundreds of observing programs using satellites such as:

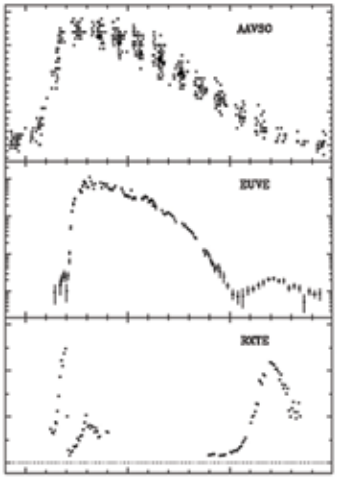
- Hubble Space Telescope
- Chandra X-Ray Observatory
- Spitzer Space Telescope
- XMM-Newton X-Ray Observatory
- Herschel Space Observatory
- Extreme Ultraviolet Explorer
- High Energy Astronomical Observatories 1 and 2
- International Ultraviolet Explorer
- Roentgen Satellite
- European X-Ray Observatory Satellite
- High Precision Parallax Collecting Satellite (HIPPARCOS)



AAVSO services have been used by researchers affiliated with such satellites as Chandra, XXM, RXTE, FUSE, HST, Spitzer, and many more

A significant number of rare events have been observed with these satellites as a result of timely notification by the AAVSO.

In recent years, the SWIFT satellite has been sending real-time notification to ground-based observers in the AAVSO High-Energy Network to alert them of Gamma-Ray Bursts (GRBs). Several GRB optical afterglows have been detected by AAVSO observers. In this way, AAVSO observers are contributing to cutting-edge, high-energy astrophysics.

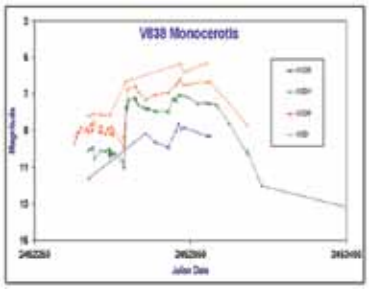


With the outburst detected by AAVSO Observers, simultaneous AAVSO visual, EUVE, and RXTE observations of SS Cygni were triggered, providing astronomers with important information about the behavior of dwarf novae (from Wheatley et al. *2003, MNRAS, 345, 49)*

Services to Observers and Members

The AAVSO enables variable star observers to contribute vitally to variable star astronomy by accepting their observations, incorporating them into the AAVSO International Database, publishing them, and making them available to research astronomers. Incorporating an observer's observations into the AAVSO archives means that future researchers will have access to those observations, so the observer is contributing to the science of the future as well as the present.

The AAVSO coordinates observing campaigns between professional and amateur astronomers, in which observations from amateur astronomers play an important role in correlating observations obtained with special instruments at earth-based observatories or aboard satellites.



On request, the AAVSO will help set up an appropriate observing program for an individual, an astronomy club, an elementary school, a high school, college, and so forth. In this way observers, students, and faculty are able to make the best use of their resources to do valuable science. The AAVSO can also assist in teaching observing techniques and in suggesting stars to be included in a program through the AAVSO Mentor Program.

Education and Outreach

The AAVSO believes that Education and Outreach are important to our mission:

- to attract, train, and retain new variable star observers and members of all ages
- to increase awareness, understanding, and appreciation of variable star astronomy and variable star observing among amateur and professional astronomers, educators, students, and the general public
- to improve science education and literacy through the unique power of variable stars and variable star observing to motivate students young and old.

Projects, Programs, and Activities

The AAVSO Mentor Program connects experienced observers with new observers to assist them in observing, recording, and reporting observations of variable stars to the AAVSO International Database.

The AAVSO has much experience in hosting successful educational lectures such as the series of High-Energy Astrophysics Workshops for Amateur Astronomers

The Speakers Bureau is a service established for people and groups looking for enthusiastic, knowledgeable speakers to provide informative presentations for astronomy clubs, star parties, banquets, Scout Troops, Astronomy Day activities, and other public and private astronomy functions.

Our Presentation Library contains POWERPOINT™ presentations on variable stars, observing techniques, and other astronomical topics. These are available free to the public to use in making your own presentations.

Gary Poyner, AAVSO member-observer since 1991, with his 14-inch telescope

Variable Star Astronomy (VSA) is an AAVSO educational project, originally developed as *Hands-On Astrophysics* (HOA) with funds from the National Science Foundation. It is a flexible set of hands-on educational materials, activities, and investigations based on the AAVSO's unique electronic database of variable star measurements. Students will be able to experience the excitement of doing real science with real data! By carrying out all aspects of the research process, they can develop and

integrate skills in science, math, computing, and other areas. VSA has been converted to a web-based format and is available via the AAVSO website (http://www.avso.org/education/vsa).

VStar is the Java software that accompanies the activities for VSA. Developed by volunteer David Benn as part of the Citizen Sky project, which had funding from the National Science Foundation, to replace the HOA DOS software, multi-platform VStar has evolved into a very

On January 28, 2010, AAVSO member-observers Barbara Harris (left) and Shawn Dvorak (right) detected a rare outburst of the recurrent nova U Scorpii, which set in motion satellite observations by the Hubble Space Telescope, Swift gamma-ray satellite, and the Spitzer Space Telescope.

powerful yet easy-to-use variable star data visualization and analysis tool. Data for a star can be read from the AAVSO database, from a text file of your own creation, or from other databases via a plug-in.

Glenn Chaple, AAVSO member-observer since 1980

Chris Stephan, AAVSO member-observer since 1975

Bill Goff, an AAVSO observer since 1981. His telescope is a Planewave 20" CDK with an Apogee U9 camera.

2. The Year in Review

Introduction

Each year the AAVSO holds two meetings of the membership and four meetings of the Council. The Spring meeting of the Association is held outside of Massachusetts during April–June and the Annual meeting of the Association is held in Massachusetts during October–November. The Council meets in person prior to each membership meeting and electronically between meetings.

Spring and Annual Council meetings are attended in person by the entire Council, if at all possible. The Winter and Summer Council e-meetings are usually attended in person by Council members living near Headquarters. At all meetings, those unable to attend in person participate via internet meeting software (GoToMeeting) which allows everyone to observe who is in attendance at any moment. All votes are taken via roll call and recorded as such.

In 2015, the 104th Spring Meeting was held June 5–7 at Ball State University in Muncie, Indiana, with the Spring Council meeting held there on June 4. The 104th Annual Meeting was held November 13–15 at the Woburn-Hilton Hotel in Woburn, Massachusetts, with the Council meeting held there on November 12. The Winter Council e-Meeting was held on February 22, and the Summer e-Meeting was held on September 27.

Winter Council e-Meeting

The Council met electronically via GoToMeeting on Saturday, February 22, at 1:00 p.m. EST. The council voted to adopt the minutes posted by the secretary for the Annual Meeting. Director Dr. Stella Kafka gave an update on the impact of the snowstorms on HQ. The 80 inches of snow over the three-week period of late January-early February was a new record for Boston and caused major interruptions at HQ. Council addressed a second reading of motions from the prior meeting, eligibility for the AAVSO's Merit and Olcott Awards, nomination of the current slate of officers, and the nomination of Dr. Roger Kolman for 2nd Vice President. Treasurer Bill Goff gave a general history update on the budgeting process for the benefit of new members. Council reviewed budget vs. actual expenses for first quarter; everything was on track, but we expect some extraordinary expenses from the snowstorms. Stella talked about the 2014 end-of-year

fundraising campaign, during which $34K in restricted and non-restricted funds was raised. President Dr. Jennifer (Jeno) Sokoloski adjourned the meeting at 5:03 p.m. EST.

Spring Council Meeting

The Council met at Ball State University, Muncie, Indiana, on Thursday, June 4, 2015. Along with the ordinary business items including the Secretary's and Treasurer's Reports, the agenda included a short version of the Director's Report to be given at the membership meeting on June 6 (see details below).

Director Dr. Stella Kafka gave a report on deceased members, observers, and friends: J. Robert Andress, Lennart Dahlmark, Walter H. Haas, Howard J. Landis, Donald C. Parker, Jerzy Speil, Robert V. Stachnik, and Nobel Laureate Charles Townes. Council stood for a moment of silence.

Mike Simonsen gave a report as Development and Membership Officer. He gave details of the Annual Campaign, which was started May 1, 2015.

Stella reported on a number of topics: Owen Tooke joined the HQ staff in June as administrative assistant. Job descriptions at HQ were updated. Our HR company (Paychex) has seminars for managers and staff, and Stella and some staff members will take senior management courses on staff, time, and task management, diverse environment in the workplace, and termination, as appropriate. As a result of some members having indicated that they felt isolated, Stella suggested a "who is around me" feature on our web homepage to see which AAVSOers are located near a person. All communication is through our website so no contact or personal information would be distributed—similar to how the existing feature "who is online" works. It would be a member-only benefit. The Council discussed what to do about data from AAVSOnet. Mt. John Observatory in New Zealand is in danger of closing—they have funding for the 1.8-m telescope from the Japanese, but our AAVSOnet 0.6-meter telescope is in danger of being closed down as a result of lack of funding. Stella has had numerous discussions with groups and individuals in the US and internationally regarding educational and outreach activities and how the AAVSO can participate, including Partners in Education, the International Olympiad on Astronomy and Astrophysics (IOAA) team, Girls Inc., Roof

The AAVSO Council

Top Variables, the Society of Physics Students, and the Astronomy Education Forum, and internationally, Variable Stars South in New Zealand, the General Catalogue of Variable Stars (GCVS) team in Russia, the team for the European Space Agency's Gaia satellite, the team for the Large Synoptic Survey Telescope (LSST) under construction in Chile, and groups and individuals in Argentina, India, Tasmania, and Israel. She observed that people may become active in astronomy early in life, but then life's events and responsibilities often crowd astronomy activities out until children are grown and retirement occurs, etc., when they often return to astronomy. The goal is to keep them engaged after their initial interest as much as possible despite the complications of life from college to retirement.

For the benefit of new council members, Treasurer Bill Goff gave a general history update on the budgeting process. The Council then reviewed budgeted vs. actual expenses through May 2015. Expenses were slightly ahead of budget because of some travel money that was in a grant but had not been included in the budget; this travel money will be recovered before the end of the year. In addition, a special withdrawal was made for expenses related to the massive, unprecedented snowfall in January and February that significantly affected Headquarters. The Association is expected to be on budget by the end of the year. The Council then reviewed a draft version of the 2016 Budget Committee's plan. The new 5-year average of the investments is $13,372,321. The 5% withdrawal from this has a small shortfall that is expected to close by the end of the year

Summer Council e-Meeting

The Council met electronically on Saturday, September 27, 2015, at 1 p.m. The meeting was hosted at AAVSO Headquarters by Director Dr. Stella Kafka, and Council members called in via GoToMeeting software. The Council voted to accept the minutes from the Secretary for the Spring 2015 meeting held in Muncie, Indiana. Gold and Company was ratified to be the official auditor for the year 2015. Bill Goff gave his Treasurer's report and the Budget Committee requested a one-time $42K withdrawal from the investments accounts to be repaid in 2016. This withdrawal was needed due to a delay in grant payment to the AAVSO for APASS work completed, billing and payment slowdown from Donna Young's Chandra grant, and an unexpected replacement of air conditioning equipment. An expenditure from the Diedrich Bequest was approved to fund a 3% staff bonus. The Treasurer recommended a $628K withdrawal from the investments (<5% of 5-year backward average) to fund the 2016 operating expenses. The Governance committee reported on progress on the mid-term review of the Director along with a staff survey. The Council also voted to elevate fundraising to a standing committee, with the Development Officer on the committee.

Attendees at the 2015 AAVSO Spring Meeting, held at Ball State University, Muncie, Indiana (photos courtesy of Roger Kolman)

Annual Council Meeting

The Council met at The Woburn Hilton on Thursday, November 12, 2015. Along with the regular business items including the Secretary's Report and the Treasurer's Report, the agenda included a short Director's Report—the full details were given at the Membership Meeting.

Director Dr. Stella Kafka, reported on deceased members, observers, and friends for the year: J. Robert Andress, Lennart Dahlmark, João Rui Givelho Correia, Walter Haas, Jeffrey Hopkins, Howard J. Landis, Donald C. Parker, Kevin B. Paxson, Leroy Snyder, Jerzy Speil, Robert Stachnik, Raymond R. Thompson, and Charles Townes. Council stood for a moment of silence.

The Director's Annual Report to Council included details regarding current membership, observation totals for the International Database, updates on AAVSOnet assets and their deployment, a Development report, status of Bright Star Monitor (BSM) projects, current APASS and 2nd Generation Synoptic Survey (2GSS) progress, outcomes from recent collaborations, future travel plans, and many other projects.

Stella updated the status of grants. The National Science Foundation agreed on a 44.5% overhead rate and 37% on fringe for the APASS grant. This rate is lower than requested, but it is grant-specific, not for all future AAVSO grants, so it will be re-negotiated for each grant in the future. A substantial multi-year proposal has been submitted for expanding the AAVSO's Hands-On Astrophysics curriculum, making it digital and interactive. A proposal has been submitted to the Dunham Foundation for a computer to be used for data quality control work and for a computer to be used as a VPHOT development Server. We are teamed with the National Solar Observatory (NSO) on an Advancing Stem

Learning (ASL) grant proposal for a Solar Eclipse Project. This project is about reaching US rural learners, the emphasis on delivering solar observing training to a wide remote audience. Stella also gave the Development Report. The Annual Campaign in April and May, with a goal of $40K, raised $36K. The Adopt-a-Star program was initially popular, but has faded. There is promise for the Giving Tuesday campaign planned for December.

Bill Goff gave the Treasurer's Report. The budget vs. actuals for fiscal year 2015 was $1,258,246 budget and $1,311,247 actuals. The endowment withdrawal was $741K, with $648K having been authorized. Of this difference, most was considered acceptable and, as described above, was caused mostly by timing issues. Much of the difference is expected to be returned to the endowment over the current year. The investments showed gains for October. The council voted to increase the endowment withdrawal. The Council spent considerable time discussing the current grant climate and the effect at HQ.

Council held an election of officers: Dr. Kristine Larsen was elected President, Dr. Roger S. Kolman was elected First Vice President, Dr. Kevin Marvel was elected Second Vice President, William Goff was elected Treasurer, and Gary Walker was elected Secretary. Elizabeth Waagen was appointed resident agent.

The Spring 2016 meeting was scheduled for April 21–24, 2016, at the Crowne Plaza hotel, St. Louis, Missouri [later rescheduled to May 5–7 because of religious holidays]. The 2016 Annual meeting will be in Woburn, Massachusetts in November. The 2017 Spring Meeting is tentatively scheduled to be held in conjunction with SAS in May 2017.

Michael Cook (L), Andrew Pearce (C), and Doug Welch (R) in Ball State Observatory at AAVSO 2015 Spring Meeting

Michael Cook (L) and Bill Goff (R) in Ball State Observatory at AAVSO 2015 Spring Meeting

Council exercised a second reading on 5 motions passed at the Summer eMeeting. The motions were were to pay a staff bonus with part of the Diedrich Bequest, return the Diedrich remainder to the investment funds, always to put unrestricted bequests into the unrestricted fund, to take $628,738 from the investments income to fund operations (5% of the 5-year backward average of the $12,574,740 balances), and to elevate Fundraising to a standing committee with Development Director Mike Simonsen as a member.

104th AAVSO Spring Meeting

After attendees were shuttled from the hotels to the Ball State University campus, the meeting was opened at 9 a.m. on Friday, June 5, and attendees were welcomed. The first paper session began with Dr. Horace Smith's presentation on Type II Cepheids in M13. Dave Cowall gave his presentation on multiband photometry of CY Aqr using the AAVSOnet, and then poster authors introduced their posters. Posters were available for viewing for the rest of the meeting. Paper presentations as shown on the accompanying schedule continued during the day. At 4 p.m. a presentation was held in Brown Planetarium on the Ball State University campus. The evening was free and much conversation and discussion took place.

The Membership meeting, which was open to all attendees, was convened on Saturday, June 6, at 9 a.m. by Rebecca Turner. President Dr. Jennifer (Jeno) Sokoloski greeted attendees. Gary Walker gave the Secretary's Report and a Council meeting report. Bill Goff gave the Treasurer's Report and reported that we were pretty much on budget, but there were and would be some expenses from the extraordinary snowstorms at Headquarters in January and February. He also reported that donations totaling $74K

Joe Patterson (L) and Michael Cook (R) at AAVSO 2015 Spring Meeting

Tending the raffle table are Gary Walker, Mike Simonsen, and Doug Welch

had been received, the $30K APASS grant payment that had been frozen due to federal sequestration finally was released by the government, and that as grant money is spent and cash reimbursement requests are made by Headquarters, that income is received.

Director Dr. Stella Kafka gave her first Director's Report, first telling of members, observers, and other friends lost: J. Robert Andress, Lennart Dahlmark, Walter Haas (founder of ALPO), former longtime AAVSO Photoelectric Photometry program Chair Howard J. Landis, Donald C. Parker, Jerzy Speil, Robert V. Stachnik, and Nobel laureate Charles Townes. Everyone stood for a moment of silence in their memory.

Stella then reiterated our mission that anyone, anywhere, should be actively involved in scientific discovery through variable star astronomy. Stella introduced the Council members present, who stood so attendees could connect the individuals with their names. Her membership report included that the AAVSO has 922 members from 51 countries, of which the US, Canada, and Australia provide the most members. We have about 1,400 active observers from 68 countries, with the US, Hungary, Canada, Spain, UK, Germany, Brazil, France, Italy, and Australia being the most active.

So far this year 61% of the observations we have received were made visually, 30% via charge-coupled device (CCD) observing, 1% photoelectric photometry (PEP), 6% digital single lens reflex (DSLR), 1% visual estimates from digital images (VISDIG), and 1% photographic. Stella reported that the AAVSO International Database currently has a total of 28.3 million variable star observations, going back over 100 years for many stars.

Stella gave a fond farewell to Dr. Arne Henden, who retired as the AAVSO's Director on January 31. She then talked about the local Little Ice Age, a.k.a. "Snowmageddon", that occurred at Headquarters in late January to mid-February—over five feet of snow in three weeks—and its impact on the organization.

Stella reported that twelve *AAVSO Alert Notices* and ten *AAVSO Special Notices* on stellar activity and/or observing campaigns were issued by Headquarters in 4 months. She then announced *AAVSO Communications*, a new monthly electronic publication designed to give a short update on AAVSO activities and events. Stella then spoke about exciting, major revisions to the *Journal of the AAVSO*, which include expansion of the editorial board, reorganization of an issue's content into major categories, the creation of a *JAAVSO* interface for the website that serves two audiences (authors, reviewers, and the editorial staff, and researchers and other readers), the creation/revision of templates and instructions in Word and LaTeX, and the searchability of *JAAVSO* by author, title words, or subject.

Stella talked about the Transform Project underway to educate observers about transforming their multicolor data to the Standard system to make them more useable by researchers, and issued a strong request for observers to transform their data.

Following Stella's report, a discussion was begun regarding the photometry image reduction program VPhot and slowdowns being experienced in the upload queue; a working group was established to investigate and find a solution. A short meeting was held later, and action items taken, and an exchange of email addresses done. The group worked electronically after that with the lead being taken by George Silvis, Ken Menzies, and Gordon Meyers.

AAVSO Observer Awards were presented to the following observers attending the meeting who had reached milestones in their lifetime contribution of variable star observations to the AAVSO International Database through September 30, 2014: Michael Cook for contributing over 10,000 variable star observations made using a CCD, Gordon Myers for over 50,000 CCD observations, Joe Ulowetz for over 100,000 CCD observations, and Gerry Samolyk for over 300,000 CCD observations. Award certificates for visual, CCD, photoelectric photometry, DSLR, photographic, and/or visual-estimate-from-digital-image observing were mailed to the 96 other observers who had earned them but were not at the meeting.

The membership meeting was then adjourned. After a coffee break, Donna Young gave a presentation on the extensive education efforts she is involved in through her Chandra grant and that involve variable stars and the AAVSO. A tour of the very interesting facilities of the BSU observatory was then offered.

After lunch, the rest of the papers on the accompanying list were presented and discussed, with the scientific portion of the meeting concluding at 4:30.

Attendees who wished to do so went back to the hotels for a brief break, and the shuttles returned everyone to the campus by 6:30, when the cash bar opened. The banquet festivities began at 7:00, with attendees taking their seats to play the now-traditional trivia game (teams by table). While the team answers were being tallied, the many raffle prizes that had been solicited from astronomical vendors by Mike Simonsen and generously donated were drawn and given to the happy winners. A delicious and very convivial dinner was enjoyed by everyone, and the meeting was adjourned.

104th AAVSO Annual Meeting

An informal gathering of first-time attendees was hosted by Mike Simonsen on Thursday evening, November 12.

Following a hot breakfast buffet which was included in the registration fee, President Dr. Jeno Sokoloski called the official start of the meeting to order at 9:00 am on Friday, November 13, and welcomed everyone. AAVSO Director Dr. Stella Kafka also welcomed attendees and started the first scientific paper session with her presentation on AAVSO research highlights on cataclysmic variable research. The rest of the day, with a break for lunch, was devoted to science, and all but the last six of the titles shown on the accompanying list were presented. Friday evening was free, and many small meetings were held and much conversation enjoyed.

On Saturday, November 14, Jeno called the membership meeting to order at 9:00 a.m.. Attendees were either present in the room or participating via web broadcast (with the possibility to ask questions remotely). Secretary Gary Walker successfully circulated a form to obtain 25 signatures to indicate that the quorum requirements had been met and thus the meeting was an official one. He also gave a report on the highlights of the Muncie meeting and a summary of Council actions at this meeting. Bill Goff gave the Treasurer's Report, indicating a $748K draw on investments income for 2015, receipts $1.314M, and expenses of $1.311M. Current investments including the Endowment Fund total $13M.

Director Dr. Stella Kafka gave her second Director's Report and First Annual Report. She reported on deceased members and friends: J. Robert Andress, Lennart Dahlmark, Joao Rui Givelho Correia, Walter Haas, Jeffrey Hopkins, Howard J. Landis, Donald C. Parker, Kevin Paxson, Leroy Snyder, Jerzy Speil, Robert Stachnik, Raymond Thompson, and Charles Townes. Stella opened up the floor to everyone, who shared stories about their interactions with Kevin, a former councilor, observer, hard-working member of Council committees, data digitization volunteer, and mentor to new observers, who had passed away just a few days earlier. Attendees stood for a moment of silence to remember all our members, observers, and friends lost this year.

Stella showed metrics on the frequency of web page downloads, four novae campaigns, additions and updates to the AAVSO's International Variable Star Index (VSX), the Spanish and Greek translations of the *AAVSO CCD Photometry Handbook*, and the translations of the manuals for *Visual Observing* and *DSLR Observing*. She also showed information on attendance of the AAVSO's continuing education CHOICE Courses.

Stella reported highlights of numerous conferences she attended as an invited speaker or to speak about the AAVSO and its resources and to connect with professional astronomers, amateur astronomers, and members. Among them were Mt. John University (New Zealand) Observatory's 50th Anniversary (MJO hosts the OC61 telescope and camera as part of the AAVSOnet network of remote telescope-camera assemblies); the Landolt Standards and 21st Century Photometry conference—"Arlofest", the celebration held at Louisiana State University in honor of Dr. Arlo Landolt and his many fundamental contributions to astronomy; the Golden Age of Cataclysmic Variables and Related Objects III in Palermo, Italy, at which half of the papers included AAVSO light curves; and the BRITE-Constellation Science Conference. Stella also highlighted the video extract (available on the AAVSO's website) of National Science Foundation Director Dr. France Cordova's talk on citizen science that cited the importance of AAVSO to her career; this talk was part of a live-webcast forum hosted by the White House Office of Science and Technology Policy and the Domestic Policy Council.

Following Stella' report, it was announced that Drs. Joyce Guzik, Aaron Price, Richard Sabo, and William Stein were elected to serve on the AAVSO Council. It was also announced that the 105th Spring meeting of the Association would be held in St. Louis, Missouri, April 21–24, 2016 [later rescheduled to May 5–7 because of religious holidays].

Council members elected by the Council to serve as officers for the ensuing year were announced as follows: Dr. Kristine Larsen, President; Dr. Roger S. Kolman, First Vice President; Dr. Kevin Marvel, Second Vice President; William Goff, Treasurer, and Gary Walker, Secretary. AAVSO staff member Elizabeth Waagen was appointed resident agent.

AAVSO Solar Observer Awards and AAVSO Digitizer Awards are presented at the Annual meeting for work done through the fiscal year just completed. AAVSO Solar Awards for Sunspots at different levels of achievement were awarded to 58 observers, with Jessica M. Johnson and John O'Neill present to receive their awards for 100 sunspot reports. Solar Awards for Sudden Ionospheric Disturbances (SIDs) were awarded to five observers. AAVSO Digitizer Awards were awarded to Christian Froeschlin for his digitization of over 10,000 published variable star observations, Bruno Billiaert for over 15,000 observations, and posthumously to Kevin Paxon for over 100,000 observations. Roger Kolman took Kevin's award to present to his family after the meeting.

An AAVSO 25-year membership pin was presented to incoming President Kris Larsen to a round of hearty applause.

2015 Annual Meeting attendees

The membership meeting was adjourned and a group photograph was taken. Following lunch, the remainder of the papers on the accompanying list were presented and discussed until 5pm, when the scientific part of the meeting concluded.

The AAVSO Banquet was held Saturday evening at the Hilton-Woburn Hotel. Attendees took their seats, and several awards were announced and presented.

The 46th AAVSO Merit Award, the Association's highest award, was presented to Richard Berry "for his tireless devotion to the support of the amateur digital imaging and photometric communities, from the pioneering CCD Cookbook Camera (the first camera for many AAVSOers), the immense Handbook of Astronomical Image Processing, the acclaimed software package AIP4WIN, his support of AAVSOnet with the funding of a Bright Star Monitor system (BSM-Berry), his CCD workshops at Pine Mountain, to his many donations throughout his AAVSO membership."

The twelfth William Tyler Olcott Distinguished Service Award was presented to Dr. Edward F. Guinan "for his promotion of variable star research and astronomy education globally; his tirelessly empowering generations of scientists of various backgrounds; his own ongoing cutting-edge variable star research, promoting the AAVSO; his dedicated student and peer mentoring; his demonstration of and advocacy for best practices; and his leadership and service within the AAVSO and the astronomy communities."

Staff recognition awards were presented to Web Designer Will McMain for 5 years of service and to Sara J. Beck, Technical Assistant for Special Projects (Science Operations), for 25 years of service.

Also before dinner, the popular AAVSO trivia contest was held and the excellent raffle prizes solicited by Mike Simonsen and donated by astronomical vendors were drawn. At the end of the evening and following tradition, President Jeno Sokoloski passed the Presidential gavel to our new President, Dr. Kristin Larsen, who adjourned the meeting. Everyone said the meeting had been a very satisfying one, and a wonderful time had been had by all.

Papers Presented; Deceased Members, Observers Colleagues; Awards

Papers and Posters Presented at the 104th Spring Meeting of the AAVSO, Held in Muncie, Indiana, June 4–6, 2015

General Paper Session Part I

"Lightcurves and Period Changes for Type II Cepheids in the Globular Cluster M13"
Horace A. Smith, Mary Anderson, Wayne Osborn, Andrew Layden, Grzegorz Kopacki, Barton Pritzl,
Andrew Kelley, Keith McBride, Michael Alexander, Charles Kuehn, Aron Kilian, Eric King, David Carbajal,
R. Lustig, Nathan De Lee

"Multiband CCD Photometry of CY Aquarii using the AAVSOnet"
Dave Cowall

"The BSU Short Period Variable Stars Progam (poster)"
Robert Berrington, Thomas Jordan, Erin Tuhey

"Adventures in Transformations: TG, TA, Oh My! (poster)"
Marco Ciocca

"Sunlight in the Spotlight in the International Year of Light (poster)"
Kristine Larsen

"Variable Star Projects—A Southern Perspective (poster)"
Andrew Pearce, Stan Walker

"The SIDdatagrabber (poster)"
George Silvis

"Transforms Explained (poster)"
George Silvis

General Paper Session Part II

"Double Trouble"
Mike Simonsen

"Standard Stars for the BYU H-alpha Photometric System"
Michael Joner, Eric Hintz

continued on next page

papers and posters, cont.

"Rolloff Roof Observatory Construction"
Joseph H. Ulowetz

General Paper Session Part III

"Thomas Cragg Proves to Be a Good Observer"
Rodney Howe, Frédéric Clette

"Searching for Motion within the Solar Atmosphere"
Susan N. Oatney

"Study of Eclipsing Binary Systems NSVS 732240 and NSVS 5726288 "
Matthew Knote

"A Search for Exoplanets in Short-Period Eclipsing Binary Star Systems"
Ronald Kaitchuck, Garrison Turner, Joseph Childers

"Stellar Presentations"
Donna Young

General Paper Session Part IV

"The Nature of Z Cam Standstills"
Mike Simonsen

"The Lyncis Two for One Special"
Michael Joner, Eric Hintz

"Automated Supernova Discovery"
Richard S. Post

General Paper Session Part V

"IM Normae: A Second T Pyx? "
Joe Patterson, Berto Monard, Paul Warhurst, Gordon Myers

"Globular Cluster Variable Stars—Atlas and Coordinate Improvement using AAVSOnet Telescopes"
Doug Welch, Arne Henden, Taylor Bell, Cissy Suen, Ian Fare, Alison Sills

"A LARI Experience"
Michael Cook

Deceased Members, Observers, Colleagues, and Friends

Members and Observers

Dahlmark, Lennart *Gävle, Sweden*
Haas, Walter H. *Las Cruces, New Mexico*
Landis, Howard J. *Jonesboro, Georgia*
Speil, Jerzy *Walbrzych, Poland*
Townes, Charles H. *Oakland, California*

Colleagues and Friends

Parker, Donald C. *Miami, Florida*
Stachnik, Robert V. *Newark, Delaware*

AAVSO Observer Awards (presented or announced at the ***104th Spring Meeting, Muncie, Indiana, June 4–6, 2015***

Award/recipient	*Affiliation***	*Country*	*Interval*	*Total*
Over 200,000 Visual Observations*				
Gary Poyner	20	England	1991–2014	201,083
Over 175,000 Visual Observations*				
Warren C. Morrison		Canada	1975–2014	176,222
Over 150,000 Visual Observations*				
Peter Williams	29	Australia	1988–2014	154,931
Over 75,000 Visual Observations*				
Alfredo Glez–Herrera		Spain	1990–2014	75,437
Over 25,000 Visual Observations*				
Tibor Asztalos	03	Hungary	2003–2014	27,955
Brian Cudnik		USA	1993–2014	25,158
Alexandre Amorim	36	Brazil	2000–2014	25,003
Over 10,000 Visual Observations*				
Tony Markham	20	England	2009–2014	13,341
Balazs Bago	03	Hungary	1986–2014	12,868
Alexandr S. Maidik		Ukraine	1998–2014	11,857
Carey Chiselbrook		USA	2004–2014	11,681
Dean Chantiles		USA	1970–2014	10,250
Marcin P. Rzepka		Poland	1992–2014	10,038
Over 5,000 Visual Observations*				
David L. Blane	10	South Africa	1978–2014	8,156
Bruno Billiaert	05	Belgium	1998–2014	6,425
Klaus Wenzel	02	Germany	2004–2014	5,698
Richard Campbell		USA	1989–2014	5,554
Sebastian A. Otero		Argentina	1998–2014	5,469
Jean–Jacques Castellani	01	France	2001–2014	5,329
Eigil Pedersen	11	Denmark	1977–2014	5,298
Matthias Schubert	02	Germany	2003–2014	5,173

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Observer Awards, cont.

Award/recipient	*Affiliation***	*Country*	*Interval*	*Total*
Over 1,000 Visual Observations*				
Jon F. M. Brandie		China	2011–2014	3,678
Pere Closas		Spain	1985–2014	1,785
Andreas Abe	02	Germany	2001–2014	1,523
Paul J. Camilleri		Australia	1990–2014	1,316
David Scanlan		England	2005–2014	1,015
Over 100 Visual Observations*				
Andrzej Balcerek		Poland	1999–2014	507
Gabor Zvara	03	Hungary	2011–2014	466
Jordi Marco		Spain	2014–2014	390
Edward Sawyer		Canada	2014–2014	334
Marcin Biskupski		Poland	2014–2014	194
Matthew Zbrudzewski		USA	2013–2014	184
Timothy J. Kostelecky		USA	2013–2014	178
Erhan Ozturk		Turkey	2009–2014	176
Bernd Schwarz	02	Germany	2013–2014	157
Gary L. Wood		USA	2006–2014	119
Duane A. Dedrickson		USA	2013–2014	117
Manuel Talero		Spain	2012–2014	116
Gianluca Paone		Italy	2013–2014	115
Ivan Shpalau		Belarus	2014–2014	115
Balazs Fodor	03	Hungary	2004–2014	111
Michael Geldorp	04	Netherlands	2000–2014	103
Takeshi Soejima		Japan	2009–2014	101
Stephen A. Tzikas		USA	2013–2014	101
Raffaello Braga		Italy	2010–2014	100
Over 300,000 CCD Observations*				
Gerard Samolyk		USA	1975–2014	357,195
Over200,000 CCD Observations*				
Teofilo Arranz		Spain	2005–2014	235,590
James L. Jones		USA	2003–2014	227,203

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Observer Awards, cont.

Award/recipient	*Affiliation***	*Country*	*Interval*	*Total*
Over 100,000 CCD Observations*				
David Cejudo Fernandez		Spain	2010–2014	135,359
Joseph H. Ulowetz		USA	2010–2014	119,020
Colin Littlefield		USA	2009–2014	100,752
Pierre de Ponthiere	05	Belgium	2003–2014	100,352
Over 50,000 CCD Observations*				
Dale Mais		USA	2003–2014	82,351
Timo J. Kantola		Finland	2009–2014	62,641
Gordon Myers		USA	2007–2014	56,109
Yenal Ogmen		North Cyprus	2004–2014	55,252
Over 10,000 CCD Observations*				
Jonathan Powles	29	Australia	2013–2014	21,909
Michael J. Cook		Canada	2010–2014	20,057
James B. McMath		USA	1992–2014	13,044
Ivan Sergey		Belarus	2004–2014	11,831
Jeroen Van Wassenhove	05	Belgium	1983–2014	10,710
Over 1,000 CCD Observations*				
John J. Ott		USA	1998–2014	9,750
Paul Benni		USA	2014–2014	7,593
Anthony E. Rodda		England	2012–2014	4,893
Donald F. Collins		USA	2006–2014	4,527
Joe Garlitz		USA	2002–2014	4,165
John A. Blackwell		USA	1986–2014	4,069
James G. Cottle		USA	2013–2014	2,948
Joao Rui Givelho A. Correia		Portugal	2014–2014	2,899
Fanie De Villiers	10	South Africa	1992–2014	2,610
Tonis Eenmae		Estonia	2014–2014	2,593
Velimir Popov		Bulgaria	2013–2014	2,494
Diego Rodriguez Perez	06	Spain	1989–2014	2,242
Douglas E. Barrett		France	2007–2014	1,961
Jean Francois Coliac		France	2007–2014	1,750
Iakovos Marios Strikis		Greece	2013–2014	1,471
Ramon N. Naves		Spain	2013–2014	1,417

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Observer Awards, cont.

Award/recipient	*Affiliation***	*Country*	*Interval*	*Total*
Richard H. Stanton		USA	1959–2014	1,344
Robert B. Jenkins	34	Australia	2013–2014	1,228
Maarten Vanleenhove	05	Belgium	2014–2014	1,024
John C. Martin		USA	2013–2014	1,018
Bradley S. Walter		USA	2002–2014	1,013
Over 2,500 PEP Observations*				
Gerald Persha		USA	2013–2014	2,928
Over 100 PEP Observations*				
Glenn M. Thurman		USA	2014–2014	293
Tom Calderwood		USA	2013–2014	167
Over 1,000 DSLR Observations*				
Neil Butterworth		Australia	2002–2014	3,094
Thomas Karlsson	19	Sweden	2010–2014	2,092
Roy A. Axelsen		Australia	2001–2014	1,588
Tiziano Colombo		Italy	1970–2014	1,095
Over 500 DSLR Observations*				
Giuseppe Frustaci	18	Italy	2010–2014	935
Penko G. Jordanov		Bulgaria	2009–2014	915
Over 100 DSLR Observations*				
Erik Wischnewski	02	Germany	2014–2014	469
Roger Pieri		France	2009–2014	442
Steven Sharpe		Canada	1973–2014	322
Michael P. Durkin		USA	2009–2014	116
Over 1,000 Visual Observations from Digital Image Observations*				
Ivan S. Bryukhanov	16	Belarus	2013–2014	1,341
Over 500 Visual Observations from Digital Image Observations*				
Robert J. Kaufman		Australia	2007–2014	921

continued on next page

Observer Awards, cont.

* Years include total AAVSO observing interval (not only PEP/CCD observing).
Total includes only visual or PEP/CCD observations, depending on award.

A number preceding a name indicates observer is also affiliated with the group below:

01 Association Française des Observateurs d'Étoiles Variables
02 Bundesdeutsche Arbeitsgemeinschaft für Veränderliche Sterne e.V.(Germany)
03 Magyar Csillagàszati Egyesület, Valtozócsillag Szakcsoport (Hungary)
04 Koninklijke Nederlandse Vereniging Voor Weer–en Sterrenkunde, Werkgroep Veranderlijke Sterren (Netherlands)
05 Vereniging Voor Sterrenkunde, Werkgroep Veranderlijke Sterren (Belgium)
06 Madrid Astronomical Association M1 (Spain)
10 Astronomical Society of Southern Africa, Variable Star Section
11 Astronomisk Selskab (Denmark)
16 Association of Variable Star Observers – Pleione (Russia)
18 Unione Astrofili Italiani (Italy)
19 Svensk Amator Astronomisk Forening, variabelsektionen (Sweden)
20 British Astronomical Association, Variable Star Section
29 Variable Stars South
34 Astronomical Society of South Australia
36 Nucleo de Estudo e Observacao Astronomica – Jose Brazilicio de Souza (Florianopolis, Brazil)

Papers Presented at the 104th Annual Meeting of the AAVSO, Held in Woburn, Massachusetts, November 13-14, 2015

General Paper Session Part I

"AAVSO Research Highlights on CV Research"
Stella Kafka

"The Great UXOR Hunt--an Update"
Michael Poxon

"The First Results from the DESK Survey"
Joey Rodriguez (The KELT Team)

"Revisiting Caroline Furness's *An Introduction to the Study of Variable Stars* on its Centenary" (Poster)
Kristine Larsen

"Identifying SRD Variables Among 'Miscellaneous' ASAS Stars" (Poster)
Michael Quinonez, Kristine Larsen

"How Accurately Can We Predict Eclipses for Algol?" (Poster)
David Turner

"Searching for Atmospheric Signatures of Other Worlds"
Mercedes Lopez-Morales

"Hubble Exoplanet Pro/Am Collaboration"
Dennis M. Conti

"The Quest for Identifying BY Draconis Stars within a Data Set of 3,548 Candidate Cepheid Variable Stars"
Jessica Johnson

General Paper Session Part II

"An Update on the Status of RR Lyrae Research—Report of the RRL2015 Meeting (October, Hungary)"
Katrien Kolenberg

continued on next page

papers and posters, cont.

"Observing RR Lyrae Variables in the M3 Globular Cluster with the BYU West Mountain Observatory"
Michael D. Joner

"Time Series Observations of the 2015 Eclipse of b Persei (not beta Persei)"
Donald F. Collins

"Astronomical League Observing Programs Supported by the AAVSO"
Mike Simonsen

"Mr. Birmingham and His New Star"
John O'Neill

"Impacts of Extended Periods of Low Solar Activity on Climate"
Bill Denig, NOAA (presented by Rodney Howe)

"Should We Try to Re-Construct the American Relative Sunspot Index (Ra)?"
Rodney Howe

"Why are the Daily Sunspot Observations Interesting? One Observer's Perspective"
Frank Dempsey

General Paper Session Part III

"Last Rites for Cataclysmic Variables: Death by Fire, or Ice?"
Joseph Patterson

"APASS as a Tool for Calibrating the Cepheid Period-Luminosity Relation"
David Turner

"New Release of the BSM Epoch Photometry Database"
Arne Henden

"A Chart Display and Reporting App for Windows"
Michael Poxon

"Finding New Variable Stars"
Michael D. Joner

"The AAVSO Hall of Fame"
Mike Simonsen

Deceased Members, Observers, Colleagues, and Friends

Members and Observers

Andress, J. Robert *Green Valley, Arizona*
Correia, João Rui Givelho Alveirinho *Amadora, Portugal*
Hopkins, Jeffrey L. *Phoenix, Arizona*
Paxson, Kevin B. *Centerville, Ohio*
Snyder, Leroy F. *Carson City, Nevada*
Thompson, Raymond Ramsay *Halifax, Canada*

Colleagues and Friends

Alexander, Claudia Joan *Pasadena, California*
Boyarchuk, Alexander A. *Moscow, Russia*
Erickson, William C. *Hobart, Tasmania*
Houck, James R. *Ithaca, New York*
Hurless, Don *Lima, Ohio*
Murray, Stephen S. *Lexington, Massachusetts*

AAVSO Merit Award Recipient (presented at the 104th Annual Meeting in Woburn, Massachusetts, November 14, 2015)

Richard Berry was awarded the 46th AAVSO Merit Award "for his tireless devotion to the support of the amateur digital imaging and photometric communities, from the pioneering *CCD Cookbook Camera* (the first camera for many AAVSOers), the immense *Handbook of Astronomical Image Processing*, the acclaimed software package AIP4WIN, his support of AAVSOnet with the funding of a Bright Star Monitor system (BSM-Berry), his CCD workshops at Pine Mountain, to his many donations throughout his AAVSO membership."

Richard Berry receives the AAVSO Merit Award from Director Stella Kafka and President Kristine Larsen.

AAVSO William Tyler Olcott Award Recipient (presented at the 104th Annual Meeting in Woburn, Massachusetts, November 14, 2015)

Edward F. Guinan received The William Tyler Olcott Distinguished Service Award "...for his promotion of variable star research and astronomy education globally; his tirelessly empowering generations of scientists of various backgrounds; his own ongoing cutting-edge variable star research, promoting the AAVSO; his dedicated student and peer mentoring; his demonstration of and advocacy for best practices; and his leadership and service within the AAVSO and the astronomy communities."

AAVSO Solar Observer Awards (presented and announced at the 104th Annual Meeting in Woburn, Massachusetts, November 14, 2015)

Sunspot Observers

100 observations

Eric Anderson, New York
Raymund Ang, Philippines
Antonio Attanasio, Italy
Diego Bastiani, Brazil
Michael Begbie, Zimbabwe
Piotr Bojda, Poland
Paul Campbell, Canada *27
Ioannis Chouinavas, Greece
Susan Delaney, Connecticut
Tadeusz Figiel, Poland
Franck Gobet, France *01
Martin Goetz, Denmark
David Jackson, Ohio
Jamey Jenkins, Illinois
Simon Jenner, United Kingdom
Gerardo Jimenez Lopez, Spain *06
Jessica Johnson, Connecticut
Mikhail Kuzmin, Russia *16
Robert Little, Florida
Tom Lizak, Rhode Island
Thomas Lubbers, Minnesota
Walter Maluf, Brazil *13
Gael Mariani, Wales
Fabio Mariuzza, Italy *18
Euan Mason, New Zealand *14
Dmitry Matsnev, Russia
Miguel Menegotto, Argentina
Heikki Nylander, Finland *17
John O'Neill, Massachusetts
Norman Parker, California
Riza Pektas, Turkey
Mat Raymonde, France
Monika Sidor, Poland
Michael Stephanou, Greece
Russell Wheeler, Oklahoma
Piotr Wirkus, Poland

500 observations

Santanu Basu, India
Jorge del Rosario, Spain

1,000 observations

Jose Carvajal Martinez, Spain
Dean Chantiles, California
Kandilli Observatory, Turkey

1,500 observations

Jay Miller, Maryland
Dan Vidican, Romania

2,000 observations

Jose Berdejo, Spain *23

continued on next page

Solar Observer Awards, cont.

Sunspot Observers

2,500 observations

Gerald Dyck, Massachusetts

3,000 observations

Javier Ruiz Fernandez, Spain

3,500 observations

A. Gonzalo Beltran, Bolivia
John Kaplan, Minnesota
Jim Knight, South Africa
Gerd-Lutz Schott, Germany *02
Piotr Urbanski, Poland

4,000 observations

Ervin Fleming, Texas
Miyoshi Suzuki, Japan

4,500 observations

Gema Araujo, Spain

5,000 observations

Brenda Branchett, Florida
German Morales, Bolivia

SID Reports

Ralph Rogge, Germany
Igor Ryumshin, Russia
Rod Green, Australia
Jan Karlovsky, Slovakia
Radovan Mrllak, Czech Republic

**These observers' group affiliations are as follows: 01 Association Française des Observateurs d'Étoiles Variables (AFOEV); 02 Bundesdeutsche Arbeitsgemeinschaft für Veränderliche Sterne e.V. (BAV) (Germany); 05 Vereniging Voor Sterrenkunde, Werkgroep Veranderlijke Sterren (VVS Belgium); 06 Madrid Astronomical Association M1 (Spain); 13 Rede de Astronomia Observacional (Brazil); 14 Royal Astronomical Society of New Zealand, Variable Star Section; 15 Agrupacion Astronomica de Sabadell (Spain); 16 Association of Variable Star Observers "Pleione" (Russia); 17 URSA Astronomical Association, Variable Star Section (Finland); 18 Unione Astrofili Italiani (Italy); 23 Grupo Astronomicao Silos (Spain); 27 Royal Astronomical Society of Canada (RASC)*

AAVSO Membership Awards (announced at the 104th Annual Meeting in Woburn, Massachusetts, November 14, 2015)

50 Years

Christine Clement	Toronto, Ontario, Canada
Mike Mattei	Littleton, Massachusetts (presented at AAVSO Headquarters, December)

25 Years

Kristine Larsen	New Britain, Connecticut
Farouk Mahmoud	Cairo, Egypt
Koji Mukai	Bowie, Maryland
Henri Van Bemmel	Keswick, Ontario, Canada
Stan Walker	Awanui, New Zealand

AAVSO Special Recognition Awards (presented and announced at the 104th Annual Meeting in Woburn, Massachusetts, November 14, 2015)

Special recognition awards were made to:

James H. Fox "...in grateful recognition of his dedicated service to the AAVSO as Chair of the AAVSO Photoelectric Photometry Committee and Section since 2006...."

Tessa Hiscox of Palmerston North, New Zealand, "...in recognition of her accomplishment as the recipient of a unique Distinction Award for her Astronomy science fair project Star Light Star Bright on UU Muscae at Freyberg High School...."

Carl Knight "...for his contributions as a mentor to Tessa Hiscox, helping her to achieve her goals for her Astronomy science fair project...."

AAVSO Staff Recognition Awards (presented at the 104th Annual Meeting in Woburn, Massachusetts, November 14, 2015)

Sara J. Beck—25 years
Will McMain—5 years

The full text of citations, and more information about other awards made over the years, can be found on the AAVSO's Awards and Honors page at https://www.aavso.org/honors-and-awards

New Members 2015

	Allen, Chris, Sweden
	Anoch, Jebin, Zambia
	Armstrong, Drew, Ohio
	Asim, Umair, Pakistan
J	Baltz, Karl, Texas
	Bauer, Thilo, Germany
	Bennett, Gerald, Switzerland
	Bloomer, Ray, Tennessee
S	Bottorff, Mark, Texas
	Boyce, Grady, California
J	Brongl, Robert, Pennsylvania
	Brooks, John, Virginia
J	Buning, Willie, Netherlands
J	Butterfield, Michael, Virginia
J	Cao, Wenrong, California
	Cejudo Fernandez, David, Spain
	Chanover, Nancy, New Mexico
J	Chen, Xin Sheng, Texas
	Choynowski, John, Maryland
	Conti, Dennis, Maryland
	Cotar, Klemen, Slovenia
	Craig, Matthew, Minnesota
	Crast, Jack, New York
	Crinklaw, Greg, New Mexico
J	DeBlackmere, Eric, Tennessee
	Desrosiers, Jean-Bruno, Canada
	Donnell, Scott, Colorado
	Dowdle, Gary, USA
	Dutt, Aman, Canada
S	Ehlert, Steven, Alabama
	Fairchild, Mark, Nebraska
	Falcon, Javier, Spain
	Field, Tom, USA
J	Flood, Dennis, Massachusetts
	Fournier, Ronald, Ohio
	Freed, Rachel, California
	Fuqua, Alvah, Georgia
J	Garvey, Dennis, Rhode Island
	Gimple, Herman, California
	Goldbaum, Jesse, California
	Gottfried, Hal, Kansas
	Grindlay, Jonathan, Massachusetts
	Grocaut, Patrick, France
	Grossi, Victor, Illinois
	Gurban, Lucian, Canada
J	Hahs, Gage, Missouri
	Haig, Colin, Canada
J	Hall, John, Colorado
	Hallman, Steve, California
J	Hamilton, James, New Mexico
	Harasimovitch, Wayne, Canada
J	Harlow, Scott, Canada
	Harvey, Richard, Canada
	Heyndrickx, Bruno, Belgium
	Hibbs, Mike, Texas
	Hills, Kevin, Great Britain
	Hintz, Eric, Utah
	Hintz, Maureen, Utah
	Hodar Munoz, Juan, Brazil
	Howard, Jack, North Carolina
J	Jackson, David, Ohio
	Jahanbani, Hooman, Iran
S	Jay, Karen, Texas
	Jiwaji, Noorali, Tanzania
	Johnson, Michael, Georgia
	Johnston, Steve, Great Britain
	Kawaler, Steven, Iowa
J	Kay, Marjory, Great Britain
J	Kimball, Logan, Illinois
	Knapp, Wilfried, Austria
	Kneipp, Paul, Louisiana
J	Koh, Joewie, Oregon
	Kotnik, Clifford, Colorado
J	Lara, Pamela, Utah
	Laurent, Jean-Luc, France
	Lester, Robert, Australia

continued on next page

new members, cont.

Lutz, Julie, Washington
Maitra, Dipankar, Massachusetts
Mallory, Kendall, California
J Mannard, Marissa, Utah
Maroney, James, New York
McClunn, Jack, New Jersey
McQueen, Stanley, Utah
Mills, Joseph, Texas
Mishevskiy, Nikolay, Ukraine
J Mitchell, Gary, Australia
Moody, Joseph, Utah
J Mullaney, Campbell, Massachusetts
Neylon, Barry, Australia
Oates, Thomas, Georgia
Ojanpera, Juha, Finland
Paunzen, Ernst, Czech Republic
Pavlov, Hristo, Australia
Pica, Andrew, Maryland
J Podvin, Anthony, Washington
Pontes, Juliana, Brazil
Poxon, Michael, Great Britain
Prasad, Gowri, Zambia
Price, Don, Massachusetts
Purves, Alexander, Maryland
S Rafalovsky, Igor, Ukraine
Rea, William, New Zealand
Reiss, Pierre, France
Ritz, Dennis, California
Rivard, Normand, Canada
Rodda, Anthony, Great Britain
Rollin, Etienne, Canada
Ruiz, Victor, Spain
Ruscitti, Paolo Maria, Italy
J Sabino, Michael, Illinois
Saillot, Patrick, France
Salas, Javier, Spain
Sankrit, Ravi, California
Sblewski, Martin, Germany
Scarborough, Johnny, Texas
Schmidt, Wim, Netherlands
Schroefl, Thomas, Austria
Schwartz, Abe, Puerto Rico
Shara, Michael, New York
Shaw, Lance, California
Simpson, John, Great Britain
Smith, Edwin, Georgia
Smolin, Alexey, Russia
J Sourwine, Regina, New York
Spital, Peter, Great Britain
J Stamp, Will, Australia
Stiewing, Albert, Arizona
S Strosnider, Vinny. Ohio
Torres, Stephen, Texas
J Tracy, Bob, Texas
Traverse, Pierre, France
Trilles Olaso, Alejandro, Spain
Tse, Tommy, Hong Kong
Verveer, Arie, Australia
Vilalta, Josep, Spain
J Walkau, Niels, Canada
S Walter, Frederick, New York
Walters, Stephen, Pennsylvania
West, Doug, Missouri
White, Albert, Ireland
Wiersma, Robert, Montana
Wollenhaupt, Guido, Germany
Woodrow, Tom, Australia
Yoshida, Hirofumi, Japan
Young, Craig, New Zealand
Young, Tricia, Minnesota
Zavala, Robert, Arizona
Zhang, Yingcai, China
Zhongke, Beijing, Great Britain

J = junior membership
S = Sustaining membership

Annual Report of the Director for Fiscal Year 2014–2015

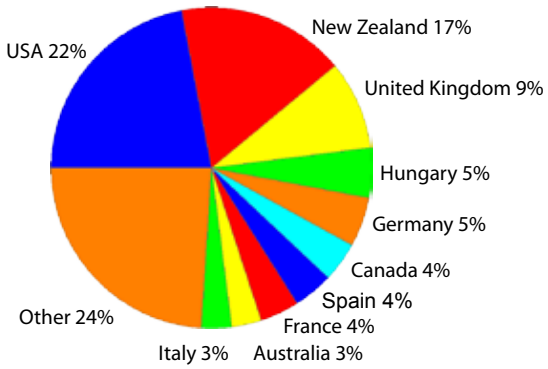
Stella Kafka, Director

AID-the core of our program

During the last three years, 2,760 observers representing 51 countries have been added to the AAVSO International Database (AID). The top three countries contributing observations are: the USA (607 observers), New Zealand (470 observers) and the UK (248 observers). The figure below presents a breakdown of the top 10 countries having contributed to the AID, demonstrating the international character of our observers.

In 2015 we completed a project, begun in 2014, to add to the AID digitized variable star observations received from the British Astronomical Association-Variable Star Section (BAA-VSS). The dataset comprises over 1.6 million observations made by 879 observers of the BAA-VSS, and spanning in time from September 23, 1862, to January 1, 2016. This is an ongoing collaboration, as we expect to continue to receive quarterly updates from the BAA-VSS consisting of additions and corrections. We thank the BAA for their willingness to share their organization's variable star database with the AAVSO for dissemination through the AAVSO website. (See our webpage for more information about this important project: https://www.aavso.org/baavss-data-now-available-through-aavso).

At about the same time, we completed a project to add to the AID digitized variable star observations received from the Variable Star Section of the Royal Astronomical Society of New Zealand (RASNZ-VSS). This project, begun in 2007, comprised a raw total of over 1.5 million observations, of which over 1.05 million observations were added to the AID. The data span a time interval of 1918 to 2002, and contain observations of 1,199 stars made by 522 observers.



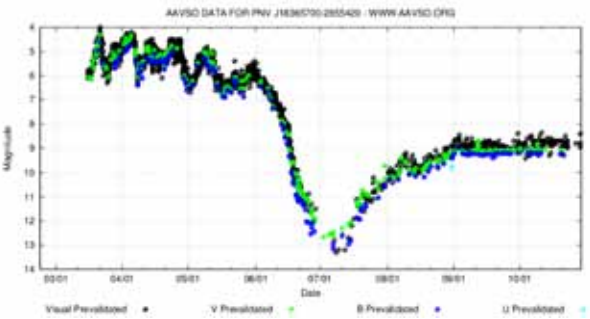
AAVSO observers by country

A third project involving observations of southern stars is the digitization of paper reports of observations collected in the archives of the RASNZ-VSS director, the late

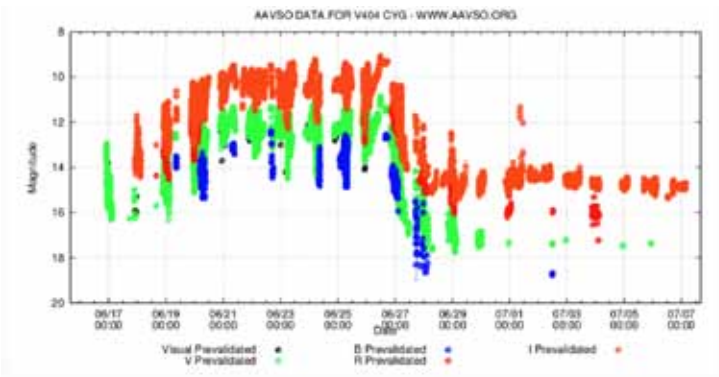
Frank Bateson. This ongoing, labor-intensive project was begun in 2014. So far, a total of 16,573 observations of 261 stars by 94 observers has been added to the AID. We thank the RASNZ and its archivist Ranald McIntosh for providing us with both of these valuable RASNZ archival datasets.

With these data sets, and with the tireless contribution of our observers, we have crossed two significant milestones in 2015: the 28 millionth observation was reached on March 31 by David Cejudo Fernandez (CDZ; Madrid, Spain) observing EI UMa at V=15.184, and the 29 millionth data point was uploaded to our database by AAVSO staff member Sara Beck as part of the BAA-VSS Database Archive project. The relevant observation for the latter was acquired by E. Metson (METE) of the BAA on October 20, 1998, and it was a data point on the Be eruptive variable gamma Cas. Also worth noting is the 30 millionth observation milestone, which occurred on December 4, 2015, with an observation made by Josch Hambsch (HMB) of Mol, Belgium.

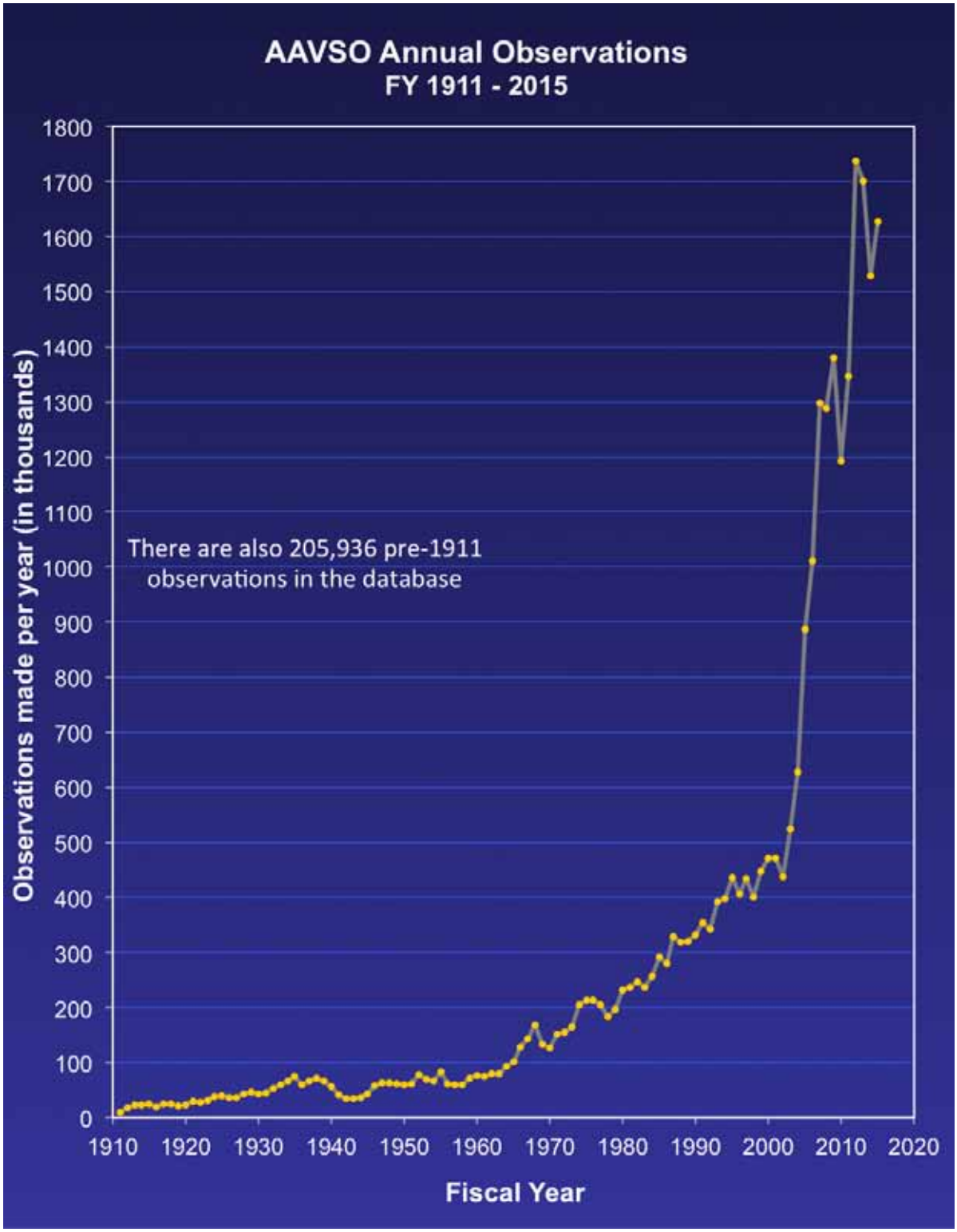
Our science program

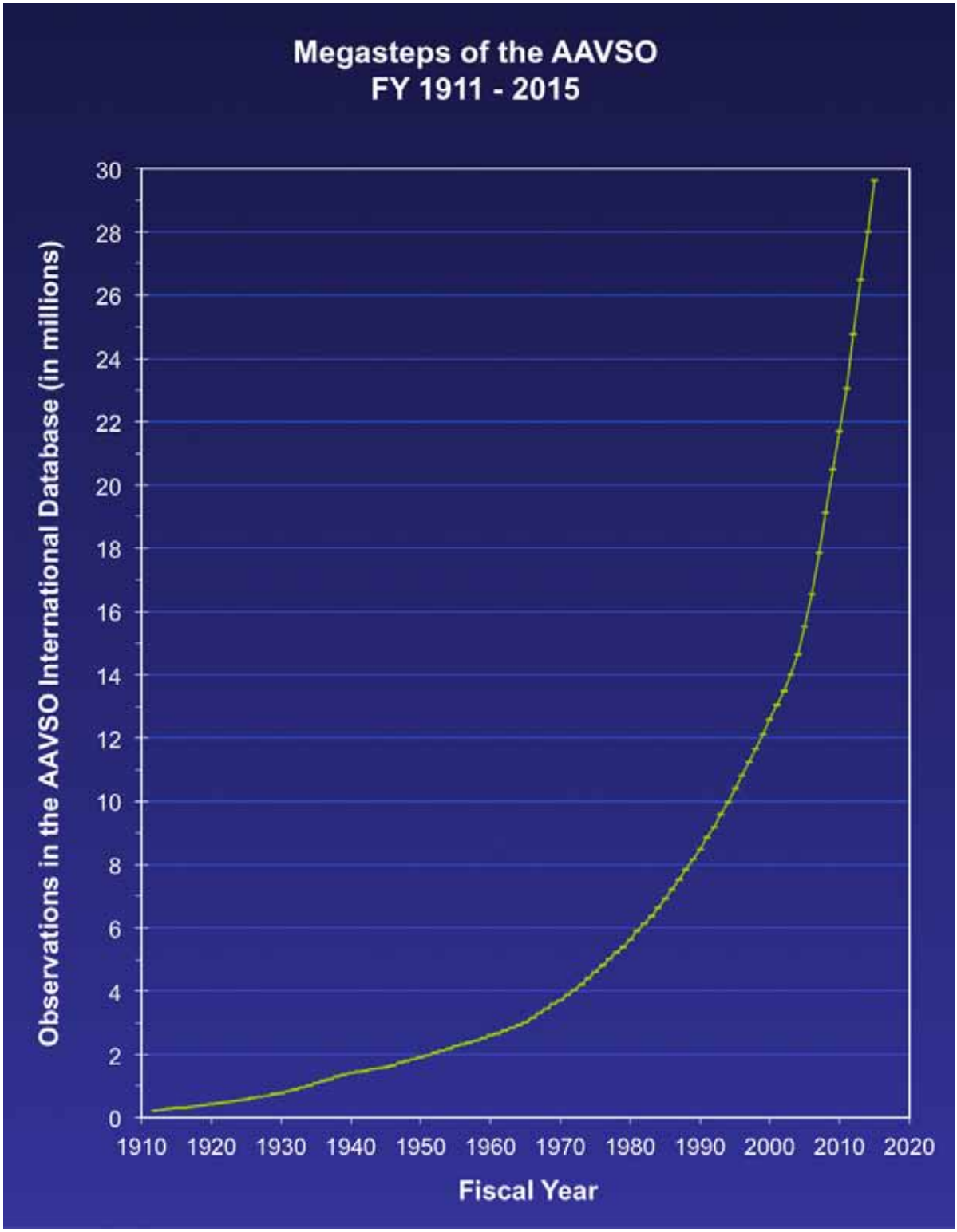


This year held a lot of exciting campaigns for us. To the end of September 2015, we issued a total of 24 *AAVSO Alert Notices* and 20 *AAVSO Special Notices* of a variety of objects—novae, symbiotics, Cepheids, and Kepler targets. A noteworthy example, Nova Sagittarii 2015 Number 2, is shown in the figure on the right. (Surprisingly, we had four novae in Sagittarius this year!) N Sgr 2015 No. 2 was first detected at the beginning of January (*AAVSO Alert Notice 509*) and entered a deep dust forming phase in June, requiring observations during that phase (triggering *AAVSO Alert Notice 519*).



Another example is the black hole binary, V404 Cyg, which exhibited a rare flaring event at the beginning of summer 2015. Our alert (*AAVSO Alert Notice 520*) was part of an international effort aiming at acquiring multi-wavelength observations of the object. This target was also a test case for SKA (radio) and ALMA, which both showcased their science capabilities by building


AAVSO Annual Observations
FY 1911 - 2015
Observations made per year (in thousands)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
There are also 205,936 pre-1911 observations in the database
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
Fiscal Year


Megasteps of the AAVSO
FY 1911 - 2015
Observations in the AAVSO International Database (in millions)
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
Fiscal Year

light curves alongside other ground and space-based observations. Part of the AAVSO light curve is presented in the accompanying figure. More than 60 observers submitted data to the AID, in visual, V, B, R, and I wavelengths, building a complete long-term light curve of the object during the flaring event. Part of the data were used in a *Nature* paper (with AAVSO observers as co-authors) (http://www.nature.com/nature/journal/v529/n7584/full/nature16452.html) and a relevant press release from both the AAVSO and the AAS. We are all looking forward to the new science that will emerge from the analysis of all relevant data sets.

CCD Transformation project—Creating data ready for publications

In March 2015, with the help of our volunteers George Silvis, Gordon Myers, and Ken Menzies, we initiated a CCD transformation project, aimed at encouraging our CCD observers to transform their data to a standard filter. Transformations are necessary since differences in filter response functions (depending on the manufacturer) can produce different values of the measured magnitudes. Transformed data allow for the generation of a uniform light curve from data acquired by different telescope/instruments (and filters), deeming them appropriate for use to the scientific community. As part of the campaign, we created a web page to provide the necessary resources for our observers to make such transformations. Transform Generator (TG) is software that allows the computation of transformation coefficients necessary to transform data from a specific telescope/instrument system to a standard system. From there, the Transform Applier (TA) tool enables application of the transformed coefficients to the relevant photometric data, making them appropriate for incorporation to the AAVSO International Database, and for further study of the relevant light curves. Links to both TG and TA are provided in the campaign's we page (https://www.aavso.org/transform).

Strengthening our Community

Keeping us informed: *AAVSO Communications*

In March 2015, we launched a new informational email, called *AAVSO Communications*. Delivered on first Tuesday of each month, the purpose of this email is to highlight different aspects of the Association, celebrate accomplishments, and inform our community about ongoing events and new projects.

The AAVSO Membership tool

We created a tool to allow our members to connect with AAVSO observers and members in their neighborhood or at a location of interest. The membership tool enables secure communications through our web page portal. I hope you are taking advantage of this new feature, making new friends/collaborators and sharing observing tips and targets. You never know—there may be an AAVSOer in a neighborhood next to yours!

Publications

The Journal of the American Association of Variable Star Observers (*JAAVSO)* was enhanced in several ways this year, as we strived to make it a go-to place for presentations of data and new results for the variable stars community. The Editor-in-Chief, Dr. John R. Percy, worked hard with HQ staff to ensure that all changes better served our community and made this journal an attractive publishing venue for new authors, students, and scientists, and a resource for the variable star community.

To that end, we refined the scope of the journal and its editorial policies. We also introduced clear instructions to authors and manuscript templates, showcasing the appropriate presentation of observing procedures and data in a journal manuscript. To clarify the content of the journal and clearly separate research articles from Editorial Content, we introduced various article types according to the manuscripts we were accepting in the journal (Review papers; Variable Star Research; New Instruments, Methods, and Techniques; Education and Outreach; Solar Astronomy; History and Biography; Dissertation Summaries). We also introduced a Reviews Collection: these are review manuscripts on specific variable star types (young stellar objects, eclipsing binaries, pulsating variables, cataclysmics, novae and supernovae) that can be used for educational purposes or as a refresher to researchers worldwide.

A screen shot of part of the new JAAVSO user interface

As the journal is aspiring to involve more members of our community, we recruited an international team of new editorial board members (https://www.aavso.org/jaavso-editorial-staff-and-editorial-board) whose role is to boost our visibility in their local

community and help attract more international papers to our journal. We revised (and tightened) our instructions to reviewers, ensuring that reviews are constructive and improve each paper so that it presents content in a clear and unambiguous manner. We also introduced a double-blind referee procedure: reviewers no longer know of the author's identity. This latter feature should remove any unconscious biases and focus the refereeing process on the quality and procedures of the manuscripts in hand.

This journal is a work in progress, and we appreciate your insight as we strive to improve it further. If you publish a paper in the journal, please take the time to fill out the author survey when it comes to your hands. ***This is your journal, so your voice is key to ensure it serves you best.***

Outreach and education

This year we have slowly explored opportunities of introducing variable star astronomy to our younger researchers. We hosted the International Science Olympiad team, a group of USA high-achievement high-school scientists who aspired to face the ultimate competition challenge and participate in the International Astronomy Competition. This year (Summer of 2015), they returned to the USA placing 7th among 39 countries, with their first silver medal, two bronzes, and one honorable mention. The AAVSO's contribution to their work was to assist with their accounting and scientific needs, as they conducted and presented a poster paper with results of a science project as part of their international competition. Upon returning to their schools from the competition, they aspired to start astronomy clubs, training their fellow classmates in astronomical observations and joining the AAVSO as observers. Our collaboration with the team is still young, and I have high expectations from them. These are the science leaders of the (not so far) future.

Reaching out to our local communities, we conducted a pilot seminar at Girls Incorporated (Girls Inc.) in July. Girls Inc. is a nationwide non-profit association "dedicated to inspiring all girls to be Strong, Smart, and Bold." A team from HQ (namely, Sara Beck, Rebecca Turner, Donna Young, and yours truly) went to Girls Inc. of Lynn, Massachusetts, for a workshop on variable stars and observations. The Lynn chapter is serving mostly low-income and minority

Stella Kafka and Sara Beck leading a seminar at Girls Inc.

families from their local community, so this was an opportunity for the AAVSO to approach a community that is in need of positive role models and actively seeks new scientific activities. Our two-hour seminar focused on light, variable star observing, and light curves. Working with such communities is a very fulfilling experience, and we are brainstorming on how we can further our collaborations with the Lynn chapter, and engage more of their members in data-based learning activities.

Vina Hing and Linh Thuy Nguyen with their mentor Giorgio De Scala

Furthermore, our software and data products routinely participate in award-winning student projects introducing data acquisition and analysis to younger generations of scientists. Those awards are not only a testimony to our young astronomers' efforts, but also their dedication and desire to learn more about the night sky and be actively involved in scientific discovery. An example of such activities is work conducted by Vina Hing and Linh Thuy Nguyen from Prairiewood High School (New South Wales, Australia), who worked with their mentor Giorgio Di Scala on SZ Scl (a W UMa system). B and V light curves of the binary system were acquired with iTelescope and were reduced using VPhot. The team presented their research at SciCon15 (April 30, 2015), where their earned the first prize for their work.

A second excellent example comes from New Zealand. High school student Tessa Hiscox and her AAVSO mentor, Carl Knight, worked on acquiring new data on the Cephid variable UU Mus, aiming at refining its pulsation period using the AAVSO's data plotting and analysis software VStar. The project was presented in the local science fair, where Tessa's project earned an honorable mention (no level of higher distinction was available in astronomy). Tessa's project and good work inspired students and teachers in her area, who aspire to follow her example and work on original science projects with AAVSO members using the AID or original data.

Projects like these—and many more—became possible with the guidance of competent mentors. The AAVSO's peer-mentoring program is key to training new observers and providing advice to those who need personalized attention and observing hints from seasoned observers/researchers. I invite you all to consider becoming a mentor.

Carl Knight and Tessa Hiscox

Educating our communities

Our observing manuals are excellent starting points for citizen astronomers worldwide who wish to start developing their observing program or want to switch observing mode (e.g. from visual to DSLR). Translating our manuals enables us to reach more citizens in non-English speaking countries. In 2015, our *CCD Photometry Manual* was translated into Spanish thanks to a team of volunteers from Spain (Juan-Luis González Carballo, Josep Lluís Salto González, Rafael Benavides Palencia, David Cejudo Fernández, Antonio Celiá Miró, Fernando Limón Martínez, Miguel Rodríguez Marco) and with the help of AAVSO staff member Sebastián Otero. The manual was featured in the September 2015 issue of *Astronomia*, which is the equivalent of *Astronomy* magazine in Spain. Furthermore, the visual, DSLR, and CCD manuals were translated into Greek, thanks to the dedication and hard work of Stelios Kleidis, and are now available online.

In 2015 we completed the CCD School online series, which consists of a number of video recordings from Arne Henden's 2014 summer CCD School. The project, which was funded through the generosity of an anonymous donor, is now available for streaming online (https://www.aavso.org/2014-aavso-ccd-school). One can purchase the package of 18 chapters, or individual chapters, depending on individual interests and available time. It is a detailed course on CCD photometry, covering the mechanics of CCD detectors, photometric calibrations, statistics, and data reduction procedures. As such, it is highly recommended for those who are interested in brushing up their knowledge on CCD photometry or are planning to start their own CCD program. For more information, please visit: https://www.aavso.org/2014-aavso-ccd-school

Participation in conferences

Conference participation is a great way to keep in touch with the international astronomical community, ensuring that the AAVSO serves researchers worldwide by being an excellent resource for their data needs. It is also an excellent means of communication with our community of observers who are scattered around the world, a way of building new international collaborations, obtain feedback on existing services, and listen to expectations for our future direction. My 2015 travel focused on fostering new collaborations within our community and reaching out to as many non-professional members as I could. To that end, I broke a personal record: during this year, I gave 16 different talks (most of them on different subjects), introducing variable stars, discussing the AAVSO's services, and presenting aspects of my own research using AAVSO data.

Some highlights from my international trips are:

Trip to NZ I had the opportunity to travel to New Zealand for the 50th Anniversary of the Mt. John Observatory and the annual meeting of the Royal Astronomical Society of New Zealand (RASNZ). The historical Mt. John Observatory also hosts one of the AAVSOnet telescopes, OC61. Other than giving presentations in both meetings, I had the opportunity to meet in person with our sister society in the South, Variable Stars South. We discussed common goals and research directions, aligning our work to better serve our communities. During my time in NZ, I also visited the Astronomical Societies of Auckland and Wellington, where I gave presentations to members of the societies and had the chance to interact with variable star observers. I am gratified by the warm welcome from our southern hemisphere members and observers and I am very keen on continuing those interactions to our mutual benefit. As the southern hemisphere's pristine skies will be explored by LSST in the near future, we are in need to increase our observer's workforce in the southern hemisphere, and such visits ensure strengthening our ties with those communities.

"The Golden Age of Cataclysmic Variables and Related Objects III" The aim of this workshop was to bring together experts working on Cataclysmic Variables (and related objects) to discuss cutting-edge research. I was invited to talk about the AAVSO and its services to the community, and was pleased to see AAVSO data presented in most of the observational papers at the meeting. I was also delighted to meet with many of our professional astronomy colleagues who actively request AAVSO data through alerts and observing campaigns or download them from our database. As new surveys are being designed and executed worldwide, it was clear that professional astronomers are in need of ground-based optical data to support and complement their work. Our presence in these conferences conveys the relevance of the AAVSO to the community and is an opportunity to inform professional astronomers about new developments at the AAVSO.

Science with BRITE-Constellation The BRITE satellites are part of the "The Space photometry revolution" which includes projects such as the MOST and Kepler satellites. The BRITE collaboration consists of scientists from Poland, Austria, and Canada who focus their work on understanding the physics of stars brighter than magnitude 6.5. As such, variables of interest include O, B, and Be stars, beta Cephei stars, hot Supergiants, delta Scuti variables, gamma Doradus pulsators, roAp / CP stars, red Giants, and eclipsing binaries. At the First BRITE Science Conference, I gave another talk about the AAVSO and its services to the community, and discussed possibilities for collaboration with the BRITE team. As a result, we are joining the Ground Based Observing Team (GBOT) of BRITE, providing long-term light curves for targets of interest to the BRITE team. A first

list of targets is already online (https://www.aavso.org/aavso-brite-targets). As some of those targets are variable at the 1% level, this is a new challenge for our visual/PEP/DSLR observers.

2015: Celebrating The International Year of Light (IYL)

2015 was also the International Year of Light. This is a UNESCO global Initiative, "highlighting to the citizens of the world the importance of light and optical technologies in their lives, for their futures, and for the development of society. "

At the AAVSO, we celebrated more than 100 years of collecting photons by inviting our community to participate in a variety of activities. We invited art and essay contributions from our young community members in a competition themed "Cosmic light: from the solar system to our favorite stars." We celebrated our observers and their love for data collection by requesting testimonials from all over the world, and we invited stories and research manuscripts in our journal.

Winners of our youth competition are:

• Video Category: "A Holiday Tour to the Planet Saturn"—created by Jashleen Kaur and Low Mun Shuen from Singapore.

• Essay Category: "A Quantum Thinking"—by Anwesha Sahu (Grade 10) from India, residing in Dar es Salaam, Tanzania.

• Drawing/Painting Category: "A Personal Planet"—Art and astronomy by children in Shiraz, Iran.

These winning entries can be found on our website (https://www.aavso.org/iyl-youth-contest).

Our observer testimonials are found under: https://www.aavso.org/tribute-observers.

Finally, Prof. Virginia Trimble wrote an excellent review manuscript entitled "As International as They Would Let Us Be" (*JAAVSO*, 2015, Vol. 43, No. 2, p. 244) , which is an outstanding overview of the variable star community's contributions to research.

Table 1. AAVSO Observer Totals 2014–2015 by Country.*

Country	No. Observers	No. Obs.	Country	No. Observers	No. Obs.	Country	No. Observers	No. Obs.
Argentina	9	193	Greece	3	1207	Slovenia	2	373
Austria	6	4229	Croatia	1	8	Slovakia	3	2156
Australia	34	67674	Hungary	34	17186	Turkey	3	12786
Belgium	14	196156	Ireland	2	45	Taiwan	1	89
Bulgaria	2	2779	India	3	383	Ukraine	12	11913
Bermuda	1	279	Italy	29	12876	United States	245	687955
Bolivia	1	104	Japan	4	13141	Venezuela	1	1
Brazil	23	2289	Malta	1	4869	South Africa	3	554
Belarus	4	773	Mexico	1	544			
Canada	35	49617	Netherlands	10	2096	TOTAL	769	1585310
Switzerland	4	157	Norway	1	194			
China	8	1922	New Zealand	8	30429			
Germany	43	27867	Philippines	1	337			
Denmark	5	1292	Pakistan	1	301			
Algeria	1	1	Poland	28	8587			
Estonia	1	2656	Portugal	5	1723			
Spain	50	210020	Romania	7	5968			
Finland	12	22264	Serbia	1	825			
France	33	72904	Russian Federation	9	1136			
United Kingdom	56	96299	Sweden	8	8153			

Table 2. AAVSO Observer Totals 2014–2015 USA by State or Territory.*

State	No. Observers	No. Obs.	State	No. Observers	No. Obs.	State	No. Observers	No. Obs.
Alabama	1	3	Maine	5	158	Oregon	5	68800
Arizona	11	2217	Maryland	6	5034	Pennsylvania	5	2157
Arkansas	8	11096	Massachusetts	14	64805	South Carolina	3	333
California	29	115684	Michigan	8	6009	Texas	19	6054
Colorado	7	3732	Minnesota	4	502	Utah	2	326
Connecticut	5	44251	Mississippi	1	117	Vermont	4	549
Delaware	1	86	Missouri	3	701	Virginia	9	15624
Florida	7	59732	Montana	1	29874	Washington	4	357
Georgia	4	2628	Nebraska	1	73	West Virginia	1	1370
Hawaii	1	605	New Hampshire	5	25440	Wisconsin	4	82121
Illinois	11	47589	New Jersey	1	9	Wyoming	4	461
Indiana	6	2971	New Mexico	6	67078	*unknown*	2	10
Iowa	2	216	New York	14	7826			
Kansas	1	95	North Carolina	3	8777	TOTAL	245	687955
Kentucky	3	920	Ohio	11	1327			
Louisiana	1	24	Oklahoma	2	214			

** Totals reflect observations made during fiscal 2014–2015 and do not include historical data (data preceding fiscal 2014–2015) submitted during fiscal 2014–2015.*

Table 3. AAVSO Observers, 2014–2015.*

Code	Org.	Name	No. Obs.	Code	Org.	Name	No. Obs.
AAN	02	A. Abe, Germany	180	BADA		A. Bielawny, Poland	62
APGA		P. Abel, United Kingdom	22	BRIA		R. Biernikowicz, Poland	237
ACN	13	C. Adib, Brazil	276	BBI	05	B. Billiaert, Belgium	908
AHM		H. Adler, Massachusetts	1011	BLOA		L. Bing, China	1
ASA		S. Aguirre, Mexico	544	BPAE		P. Bishop, United Kingdom	15
AJT	13	J. Agustoni, Brazil	2	BMAH		M. Biskupski, Poland	307
ASW	20	S. Albrighton, United Kingdom	1152	BXT	08	T. Bjerkgaard, Norway	194
ARL		R. Alencar Caldas, Brazil	5	BRAC		R. Black, Oklaho	56
AFSA		F. Alfarp, Spain	7487	BMGA		M. Blackford, Australia	39
ACO	20	C. Allen, Sweden	1863	BKL		J. Blackwell, New Hampshi	38
AJWA		J. Allen, Connectic	8	BVZ		J. Blanco Gonzalez, Spain	13
AJC	13	J. Almeida, Brazil	13	BLD	10	D. Blane, South Africa	486
ADMA	12	D. Alonso, Spain	210	BWZ		E. Blown, New Zealand	624
AJV	15	J. Alonso, Spain	717	BJAA		J. Boardman, Wiscons	40666
AAX	13	A. Amorim, Brazil	1489	BOH	02	D. Boehme, Germany	11
AMG	13	M. Amorim, Brazil	4	BHQ	29	T. Bohlsen, Australia	404
AMIA		M. Anderlund, Sweden	42	BPAF		P. Bonifacio, Argentina	12
ACDA		C. Andrione, Argentina	1	BRJ		J. Bortle, New Yo	3845
AADA	12	A. Anunziato, Argentina	2	BMF	27	M. Boschat, Canada	31
AJN	27	J. Appleyard, Canada	99	BDLA		D. Boulet, Delawa	86
AAM		A. Armiński, Poland	1777	BMU	04	R. Bouma, Netherlands	29
ARJ		J. Arnold, Texas	132	BSHB		S. Bourke, Australia	1
ATE		T. Arranz, Spain	98094	BDG	20	D. Boyd, United Kingdom	15697
AALB		A. Arranz Lázaro, Spain	709	BALC		A. Boyer, France	1
AUMA		U. Asim, Pakistan	301	BMK		M. Bradbury, India	14
ATI	03	T. Asztalos, Hungary	311	BRAF		R. Braga, Italy	17
ATDA		T. Atwood, Louisia	24	BJFA		J. Brandie, China	1809
AAUA		M. Audejean, France	3588	BNW	02	W. Braune, Germany	24
ADI	02	D. Augart, Germany	324	BHOB	02	H. Braunwarth, Germany	11
BOZ	03	B. Bago, Hungary	281	BQC	01	J. Breard, France	21
BBRC		B. Bahamida, Algeria	1	BTB		T. Bretl, Minneso	55
BJMB		J. Baker, Michig	4	BHA	02	H. Bretschneider, Germany	363
BWW		W. Bakewell, California	12	BMI		M. Brewster, Texas	1
BFO	03	J. Bakos, Hungary	1595	BQE	27	E. Briggs, New Yo	5
BFU	18	F. Baldanza, Italy	2	BSM		S. Brincat, Malta	4869
BALJ	14	A. Baldwin, New Zealand	193	BJFB		J. Briol, Minneso	33
BGZ		G. Banialis, Illino	205	BLP	03	P. Brlas, Hungary	1
BTAD		T. Banys, Poland	2	BLUA		L. Brooks, Virgin	173
BSBB		S. Baranowski, Poland	23	BOA	01	A. Bruno, France	10709
BMAI		M. Barlazzi, Italy	166	BYQ		T. Bryant, Maryland	35
BSR	18	S. Baroni, Italy	99	BISA	16	I. Bryukhanov, Belarus	453
BPO		D. Barrett, France	21553	BHAF		H. Bu, China	2
BARM	20	M. Barrett, United Kingdom	540	BHU		R. Buchheim, California	21
BWAA		W. Basso, Canada	1	BNBA		N. Buchholz, Germany	490
BBA		B. Beaman, Illino	1738	BWIA		W. Buning, Netherlands	2
BWX	27	A. Beaton, Canada	123	BSO		S. Burgess, Mai	5
BSJ		S. Beck, Massachusetts	5	BANH		A. Busato, Italy	3
BDQ		A. Bedard, Washingt	236	BIW	29	N. Butterworth, Australia	5138
BJS		J. Bedient, Michig	11	CTOA		T. Calderwood, Oreg	9
BTJB		T. Bell, Canada	8	CFJA	06	F. Caleya Salamanca, Spain	9
BZX		A. Beltran, Bolivia	104	CCB		C. Calia, Connectic	171
PNQ		R. Benavides Palencia, Spain	1177	CLUB	36	L. Camargo Da Silva, Brazil	24
BHS		H. Bengtsson, Sweden	483	CMN		R. Cameron, Australia	3
BDJB	34	D. Benn, Australia	65	CMQ		P. Camilleri, Australia	54
BTY		T. Benner, Pennsylvan	494	CAMA		A. Campbell, United Kingdom	2
BPAD		P. Benni, Massachusetts	5815	CPN	27	P. Campbell, Canada	29
BEB		R. Berg, India	23	CMP		R. Campbell, Florida	3275
BGMB	18	G. Bertani, Italy	214	CSHA		S. Campbell, Canada	33
BDHA		D. Bhattacharyya, Australia	1	CFRA		F. Campos, Spain	2825

Table 3. AAVSO Observers, 2014–2015, cont.*

Code	Org.	Name	No. Obs.	Code	Org.	Name	No. Obs.
CWEA		W. Cao, California	9	DDAA		D. Dedrickson, Oreg	3
CQP		A. Capetillo Blanco, Spain	246	DDRB		D. Dehne, Michig	19
CMAE		M. Cappellini, Italy	15	DFR	27	F. Dempsey, Canada	25
CADA	36	A. Cardoso, Brazil	12	DDE		D. Denisenko, Russian Federation	4
CALB		A. Carreno, Spain	100	DAT		A. Derdzikowski, Poland	1483
CROA	29	R. Carstens, New Zealand	28834	DNO		O. Deren, Poland	827
CNY		A. Cason, Georgia	21	DSSA		S. Deshmukh, India	63
CLQ		L. Cason, South Carolina	65	DAND		A. Deshpande, India	319
CLAC		L. Cassignard, France	8	DSI		G. Di Scala, Australia	4043
CJE	01	J. Castellani, France	406	JNDB		N. Dias Cavalcante, Brazil	2
CWO		W. Castro, Florida	4	DRD		R. Dietz, Colorado	2
CDZ		D. Cejudo Fernandez, Spain	67699	DMIC	34	M. Doherty, Australia	13
CQJ		J. Centala, Iowa	194	DXAA	15	X. Domingo Martínez, Spain	3726
CNT		D. Chantiles, California	271	DSN		S. Donnell, Colorado	132
CGF		G. Chaple, Massachusetts	503	DROD		R. Donner, New Yo	68
CXIA		X. Chen, Texas	16	DRHA		R. Douglas, New Mexi	1
CCY		C. Chiselbrook, Georgia	2149	DDJ		D. Dowhos, Canada	456
CMF	02	M. Chudy, Germany	54	DRCA	20	R. Dryden, United Kingdom	380
CMAA		M. Ciocca, Kentucky	800	DSE		S. Du, Alaba	3
CWP		W. Clarke, Arizona	1031	DMMA		M. Dubay, Massachusetts	98
CABB		A. Clevenson, Texas	22	DUBF	05	F. Dubois, Belgium	8547
CPE		P. Closas, Spain	650	DPV	09	P. Dubovsky, Slovakia	2027
CSAA		S. Coe, United Kingdom	15	DROB		R. Dudley, Vermo	3
CPP		P. Coker, Colorado	12	DMO	01	M. Dumont, France	560
CDK		D. Collins, North Carolina	8587	DGTA		G. Duranko, New Hampshi	20
CJOB		J. Collins, United Kingdom	7	DMPA		M. Durkin, New Yo	96
CME	18	E. Colombo, Italy	216	DKS		S. Dvorak, Florida	54193
CTIA		T. Colombo, Italy	604	DGP		G. Dyck, Massachusetts	93
CDSA	20	D. Conner, United Kingdom	1467	DMAC	06	M. Díaz, Spain	46
CEMB	01	E. Conseil, France	1	ELYA		L. Easley, Texas	4
COO		L. Cook, California	24592	EVIA		V. Eaton, Arkans	2
CMJA		M. Cook, Canada	10221	ETOA		T. Eenmae, Estonia	2656
CK		S. Cook, Arizona	366	EHEA		H. Eggenstein, Germany	42
CRMB		R. Cooney, Canada	4	EMA		M. Eichenberger, Switzerland	23
CLZ		L. Corp, France	5813	EPE	01	P. Enskonatus, Germany	177
CAI		A. Correia, Portugal	834	EJO	03	J. Erdei, Hungary	290
CJGB		J. Correia, Portugal	3	EEY		E. Erdelyi, California	1374
CNQ		N. Costa, Portugal	21	EALA		A. Escartin, Spain	18
CMM		M. Costello, California	6704	ELTA	06	L. Espasa, Spain	27
CKLA		K. Cotar, Slovenia	233	EKIA		K. Ethan, unknown	9
CJGA		J. Cottle, California	1166	ERW	14	R. Evans, New Zealand	18
COV		V. Coulehan, New Yo	11	FRP	02	R. Fabricius, Germany	39
CWD		D. Cowall, Maryland	4468	DEFA		E. Faustino, Brazil	2
CTX		T. Crawford, Oreg	2133	FFAD		F. Feijo, Brazil	23
CMY		M. Crook, United Kingdom	26	FOM	15	M. Fernandez Ocana, Spain	300
CBLA		B. Crosby, South Carolina	248	FRF	03	R. Fidrich, Hungary	19
CMDB		M. Crow, Oh	1	FWH		W. Finlay, Canada	1
CSM	03	M. Csukas, Romania	1114	FSJ	01	J. Fis, France	186
CKB		B. Cudnik, Texas	3228	FMIB		M. Fisher, Oh	18
DMIA		M. Dadighat, California	172	FANB		A. Fitzgerald, Texas	1
DGSA	20	G. Darlington, United Kingdom	865	FDA	03	A. Fodor, Hungary	493
DAM	06	A. Darriba Martinez, Spain	877	FBZ	03	B. Fodor, Hungary	25
DMA		M. Davis, South Carolina	20	FJQ		J. Foster, California	7185
DENA		E. De Miguel, Spain	2764	FRL		R. Fournier, Oh	418
DPP		P. De Ponthiere, Belgium	1410	FDU		D. Fowler, Oh	54
SWQ	13	W. De Souza, Brazil	82	FXJ		J. Fox, New Mexi	134
DSJA		S. Dean, United Kingdom	2	FGIA	18	G. Frustaci, Italy	685
DEDA		E. Decamp, Illino	1	FFRA		F. Fu, China	2
DMIB		M. Deconinck, France	160	FMG		G. Fugman, Nebras	73

Table 3. AAVSO Observers, 2014–2015, cont.*

Code	Org.	Name	No. Obs.
FRTA		R. Fuller, Texas	2
FRIC		R. Furgoni, Italy	7960
GSTB		S. Gagnon, Virgin	36
GMQA	20	M. Gainsford, United Kingdom	1199
GGHA		G. Galletti, Argentina	4
GTN		T. Gandet, Arizona	2
GFDB	06	F. Garcia, Spain	1008
GME		J. Gardner, California	3
GAA		P. Garey, Illino	22
GJP		J. Garlitz, Oreg	59
GALB		A. Garofide, Romania	132
GTTA		T. Gause, Arkans	6
GJCA		J. Geary, Arkans	5
GKI		K. Geary, Ireland	28
GMD		M. Geldorp, Canada	4
GAO		A. Giambersio, Italy	1
GGU	04	G. Gilein, Netherlands	819
GSEB		S. Girard, Oklaho	158
GRIB		R. Glassner, Missou	15
GATH		A. Glazier, Ireland	17
GZN		A. Glez-Herrera, Spain	7200
GLG		G. Gliba, Maryland	101
GFB	31	W. Goff, California	18804
GED		E. Goncalves, Brazil	6
GFDA	27	F. Gonzalez, Canada	1
GJGA		J. Gonzalez, Spain	192
GCJ		J. González Carballo, Spain	740
GDIA		D. González GarcíA, Spain	4
GGC		G. Gotta, Italy	26
GKA		K. Graham, Illino	1207
GVD	16	V. Grigorenko, Russian Federation	55
GVIA		V. Grossi, Illino	37
GPI		P. Grudniewski, Poland	4
GELB		E. Gryshchenko, Ukraine	454
GCO		C. Gualdoni, Italy	90
GFRB		F. Guenther, Maryland	193
GLUA	27	L. Gurban, Canada	1
GARB		A. Gutcher, United Kingdom	3
GPIA		P. Guzik, Poland	9
GGX	01	G. Guzman, France	189
HCS	03	C. Hadhazi, Hungary	884
HDH	03	S. Hadhazi, Hungary	386
HTY		T. Hager, Connectic	4
HIVB		I. Hajdinjak, Croatia	8
HJW		J. Hall, Colorado	396
HMB	05	F. Hambsch, Belgium	153135
HHAB	02	H. Hammerl, Germany	70
HPL		P. Hansen, Denmark	1
HBB		B. Harris, Florida	1600
HMQ		M. Harris, Georgia	220
HCOB		C. Hart, unknown	1
HHU	05	H. Hautecler, Belgium	3
HAB		R. Hays, Illino	705
HMH		M. Heald, Virgin	14570
HRZ		R. Hegenbarth, Germany	1
HGBA	03	G. Heitler, Hungary	3
HQA		A. Henden, New Hampshi	1489
HJVA		J. Hernandez-Santisteban, United Kingdom	4
HMV		M. Hessom, California	61
HNDA		N. Hewitt, United Kingdom	7
HEY	05	B. Heyndrickx, Belgium	9
HIM		W. Hill, Massachusetts	4
HKEB		K. Hills, United Kingdom	1604
HVIA		V. Hing, Australia	37
HDHA		D. Hinzel, Virgin	26
HTCA		T. Hiscox, New Zealand	45
HJX	13	J. Hodar Munoz, Brazil	5
HEK	11	E. Hoeg, Denmark	4
HFF		T. Hoffelder, Mai	1
HXA		A. Hollander, California	1
HGUA	19	G. Holmberg, Sweden	1644
HKAB	19	K. Holmquist, Sweden	30
HOO	04	G. Hoogeveen, Netherlands	26
HGYA	03	G. Hostak, Hungary	2
HSP	14	S. Hovell, New Zealand	653
HSW		S. Howerton, Kans	95
HJA		J. Hudson, California	21
HQV	20	V. Hull, United Kingdom	129
HUR	20	G. Hurst, United Kingdom	692
HDR	02	D. Husar, Germany	4071
HTN		K. Hutton, California	39
HUZ		R. Huziak, Canada	55
ILE	03	E. Illes, Hungary	22
ILUA		L. Izzo, Italy	5
JDAC		D. Jackson, Oh	45
JPM	10	P. Jacobs, South Africa	15
JMA		M. Jacquesson, France	34
JTP	01	P. Jacquet, France	398
JDAA		D. Jakubek, Poland	50
JNDA		N. James, United Kingdom	2160
JM		R. James, New Mexi	37033
JZO	03	Z. Jankovics, Hungary	46
JDAB		D. Jarkins, Missou	147
JRBA	34	R. Jenkins, Australia	2325
JSI		S. Jenner, United Kingdom	4
JGE	06	G. Jimenez Lopez, Spain	80
JSJA	20	S. Johnston, United Kingdom	64
JJI		J. Jones, Oreg	66596
JSGA		S. Jones, Texas	1
JOT	20	T. Jones, United Kingdom	4
JJNA		J. Jose, Spain	1
JLZ	03	L. Juhasz, Hungary	140
KMY		M. Kaczmarech, Brazil	1
KB		W. Kaminski, New Mexi	15
KAM	02	A. Kammerer, Germany	12
KTU		T. Kantola, Finland	13200
KSF		S. Karge, Germany	40
KTHA	19	T. Karlsson, Sweden	1717
KEI		E. Kato, Australia	136
KBJ		R. Kaufman, Australia	27
KJMB		J. Kay, Vermo	130
KMQ	06	M. Kearns, Spain	1
KJSA		J. Kendall, New Yo	166
KHEA		H. Kerner, Germany	175
KSH	29	S. Kerr, Australia	14
KSZ	03	S. Keszthelyi, Hungary	176
KAYA		A. Khrushchev, Russian Federation	66
KRB		R. King, Minneso	74

Table 3. AAVSO Observers, 2014–2015, cont.*

Code	Org.	Name	No. Obs.
KRAA		R. King, Virgin	121
KMM	09	M. Kititsa, Ukraine	3
KKJ	03	K. Klajnik, Hungary	1
KKAA		K. Klindt-Jensen, Denmark	521
KCD	20	C. Knight, New Zealand	60
KGT		G. Knight, Mai	16
KSP		S. Knight, Mai	135
KLO		L. Kocsmaros, Serbia	825
KRV		R. Koff, Colorado	3161
KHL		M. Kohl, Switzerland	120
KTAA	03	T. Komaromi, Hungary	13
KMA		M. Komorous, Canada	1890
KOS	03	A. Kosa-Kiss, Romania	4565
KTJA		T. Kostelecky, Washingt	25
KAF	03	A. Kovacs, Slovakia	128
KFK		F. Krafka, Texas	3
KJGB		J. Kras, Netherlands	10
KJOA		J. Kribbel, Austria	5
KWO	02	W. Kriebel, Germany	1012
KIS	02	G. Krisch, Germany	2467
KNAA		N. Krumm, California	193
KTZ		T. Krzyt, Poland	314
KROB	02	R. Kubala, Germany	14
KBA		B. Kubiak, Poland	1431
KUC	01	S. Kuchto, France	838
KBO		R. Kuplin, Arizona	6
KSQ		S. Kuznetsov, Russian Federation	104
KJAF		J. Kvapil, Sweden	140
KWD		C. Kwadrat, Virgin	2
LCR	15	C. Labordena, Spain	723
LHS		H. Lacombe, Canada	6
LSA	17	S. Lahtinen, Finland	23
LPAB		P. Lampens-Vancauteren, Belgium	59
LPEA		P. Lancaster, Australia	12
LMIB		M. Landl, Austria	40
LDJ	27	D. Lane, Canada	456
LTO	02	T. Lange, Germany	91
LKR		K. Larsen, Connectic	48
LZT		T. Lazuka, Illino	705
LMT		M. Legutko, Poland	120
LYAB		Y. Leho, France	10
LCLA		C. Lemaire, Germany	2072
LMA	27	D. Lemay, Canada	1072
LVY		D. Levy, Arizona	30
LMI		M. Lierl, Kentucky	2
LFEA		F. Limón Martínez, Spain	3
LMK		M. Linnolt, Hawa	605
LCO		C. Littlefield, Connectic	44020
LJX	01	J. Llapassat, France	12
LMAB		M. Locke, New Zealand	2
LGV		G. Lopatynski, California	62
LRD		D. Loring, Ut	20
LDS	20	D. Loughney, United Kingdom	63
LIRB		I. Lubiszewski, Poland	18
LWHA		W. Ludington, North Carolina	177
LMJ	17	M. Luostarinen, Finland	412
MDW		W. MacDonald, Canada	325
MRGA		R. MacPhail, Canada	187
MATA	03	A. Madai, Hungary	209
MQA		A. Maidik, Ukraine	4164
MLI		L. Maisler, New Yo	7
MDAV		D. Majors, California	20
MVO	17	V. Makela, Finland	292
MEGA		E. Maleev, Ukraine	395
MJHN	20	J. Mallett, United Kingdom	15
MCPA		C. Maloney, Arkans	2410
MJED		J. Manjón, Spain	112
MKE		B. Manske, Wiscons	984
MJOE		J. Marco, Spain	883
MMAL		M. Marhefka, Slovakia	1
MTON	20	T. Markham, United Kingdom	5989
MCHB		C. Marlot, France	29
MJAJ		J. Maroney, New Yo	6
MXS	03	S. Marosi, Hungary	12
MMN	18	M. Martignoni, Italy	449
MCHR		C. Martin, Colorado	5
UIS01		J. Martin, Illino	234
MJOD		J. Martin, Spain	768
MLUB		L. Martinez, Arizona	393
MVIA		V. Marttila, Finland	93
MAV		D. Matsnev, Russian Federation	439
MTH		H. Matsuyama, Japan	9449
MPR		P. Maurer, Germany	144
MJHA		J. McCammon, Colorado	24
MCOA		C. McCann, Arkans	77
MJAI		J. McClunn, New Jers	9
MDP	27	P. McDonald, Canada	1591
MCOB		C. McKenzie, Canada	146
MJB		J. McMath, Arkans	8592
MMAE		M. McNeely, India	4
MED		K. Medway, United Kingdom	2003
MSQ		S. Meister, Switzerland	13
MFR		F. Melillo, New Yo	7
MYAA		Y. Melnikov, Austria	17
MQG		M. Menegotto, Argentina	99
MZK		K. Menzies, Massachusetts	54097
MDEN		D. Merrill, California	112
MVH		V. Mihai, Romania	77
MIW	20	I. Miller, United Kingdom	20977
MMGA		M. Miller, Texas	12
MMEA		M. Millward, Australia	177
MFEA		F. Mina, Argentina	6
MJEF		J. Minda, Poland	18
MNIC		N. Mishevskiy, Ukraine	2713
MZS	03	A. Mizser, Hungary	50
MOBM	20	M. Mobberley, United Kingdom	3
MRV		R. Modic, Oh	35
MHH		J. Moehlmann, Pennsylvan	943
MOD		D. Mohrbacher, Oh	2
MMIE		M. Moiseenko, Ukraine	377
MISA		I. Monks, United Kingdom	5
MPAA		P. Montague, Australia	449
MDPA		D. Monteiro, Portugal	30
MJWA		J. Moody, Ut	306
MROC		R. Moonen, Netherlands	1
MEV	01	E. Morelle, France	15242
MNEA		N. Morley, United Kingdom	1
MAEA		A. Morozov, Russian Federation	59

Table 3. AAVSO Observers, 2014–2015, cont.*

Code	Org.	Name	No. Obs.
MJLA		J. Morris, Maryland	2
MOW		W. Morrison, Canada	5275
MPS	27	P. Mozel, Canada	61
MMH		M. Muciek, Poland	398
MGAB		G. Murawski, Poland	57
MJEE		J. Murphy, Texas	25
MUY	05	E. Muyllaert, Belgium	11175
MGW		G. Myers, California	54597
NMA	03	A. Nagy-Melikuti, Hungary	64
NDQ	01	D. Naillon, France	94
NRNA		R. Naves, Spain	1110
NLX		P. Nelson, Australia	9164
NLZ	03	L. Nemeth, Hungary	560
NBB		B. Neuman, Vermo	2
NJO	02	J. Neumann, Germany	1540
NBMA		B. Neylon, Australia	4
NLIA		L. Nguyen, Australia	209
NMI		M. Nicholas, Arizona	249
NOT	02	O. Nickel, Germany	3261
NHS	11	H. Nielsen, Denmark	1
NMT	17	M. Nissinen, Finland	27
NCH		C. Norris, Texas	149
NLYA		L. Norton, Arkans	2
NAO		A. Novichonok, Russian Federation	53
OCN		S. O'Connor, Bermuda	279
ONJ		J. O'Neill, Massachusetts	858
OYE		Y. Ogmen, Turkey	12767
OJMA	17	J. Ojanpera, Finland	165
OAR	17	A. Oksanen, Finland	6247
OPR		P. Ossowski, Poland	5
OSE		S. Otero, Argentina	6
OCR	05	C. Otten, Belgium	661
OEH		E. Ozturk, Turkey	16
PLA	13	A. Padilla Filho, Brazil	172
PSD		S. Padovan, Spain	1702
PLP		L. Palazzi, Italy	362
PGIA		G. Paone, Italy	16
PTFA		T. Papadimitriou, Greece	94
PPS	03	S. Papp, Hungary	1055
PGC		G. Pappa, Italy	1
PMAG	27	M. Park, Canada	1
PTQ		T. Parson, Minneso	340
PST		S. Parsons, Florida	2
PJJ	15	J. Pastor, Spain	47
PTT		R. Paterson, United Kingdom	565
PGRA		G. Patrick, France	1914
PYAB		Y. Pavlenko, Ukraine	939
PKV		K. Paxson, Oh	397
PEX		A. Pearce, Australia	13835
PRCA		R. Pearce, United Kingdom	270
PEI	11	E. Pedersen, Denmark	765
PEG	01	C. Peguet, France	1244
PWD		W. Pellerin, Texas	1209
PJED		J. Penninckx, France	388
PRVA		R. Pereira, Brazil	20
PCX	15	C. Perello, Spain	2
PEJ	01	J. Perrard, France	68
PWL		W. Perry, Arizona	24
PGD		G. Persha, Michig	2068
PVA	27	V. Petriew, Canada	24445
PXR	20	R. Pickard, United Kingdom	16487
PROC		R. Pieri, France	152
PLU		L. Pirozzi, Italy	191
PWMA		W. Pittendreigh , Florida	8
PPL		P. Plante, Oh	268
PAW	29	A. Plummer, Australia	1912
PANA		A. Pocora, Romania	27
AST	12	R. Podesta, Argentina	21
PRAA		R. Poltz, Germany	10
PJGA		J. Pontes, Brazil	53
PVEA		V. Popov, Bulgaria	2771
PJTA	17	J. Porio, Finland	188
PCT	20	C. Potter, United Kingdom	1
PRV		R. Potter, Michig	937
PWR		R. Powaski, Oh	9
PJOC	29	J. Powles, Australia	1377
POX		M. Poxon, United Kingdom	457
PYG	20	G. Poyner, United Kingdom	10227
PEMB		E. Primucci, Argentina	42
PVAA		V. Prodanets, Ukraine	846
PAI		A. Prokopovich, Belarus	15
PMB		M. Prokosch, Texas	67
PUJ	06	F. Pujol-Clapes, Spain	633
PARA		A. Purroy, Spain	21
PHG		H. Purucker, Germany	122
PALE		A. Purves, Maryland	235
QYIA		Y. Qiu, China	26
QCHA		C. Quesada, Arizona	11
RKE	02	K. Raetz, Germany	409
RJOC		J. Rallo, Spain	88
RMAF		M. Rana, Virgin	539
RMW		M. Rapp, Texas	14
REP	24	P. Reinhard, Austria	415
RFP	13	P. Reis Fernandes, Brazil	64
PREB		P. Reiss, France	87
RJG		J. Ribeiro, Portugal	835
RMP		M. Ricard, Canada	2
RCAB		C. Rice, Wyomi	2
RATA	18	A. Ricerca, Italy	12
RDF		D. Rich, Mai	1
RIX	29	T. Richards, Australia	2626
RHM		M. Richmond, New Yo	2456
RCCA		C. Riou, France	4
OJR		J. Ripero Osorio, Spain	4455
RIZ		J. Ritzel, New Yo	938
REE		E. Robinson, United Kingdom	11
RAEA		A. Rodda, United Kingdom	1614
RFC		F. Rodriguez Bergali, Spain	6
RMU	06	M. Rodriguez Marco, Spain	32
RZD		D. Rodriguez Perez, Spain	417
ROE		J. Roe, Missou	539
RANC		A. Roerig, Germany	51
RDAC		D. Romeuf, France	1649
ROG		G. Ross, Michig	237
RGN		G. Rossi, Italy	20
RJV		J. Ruiz Fernandez, Spain	1455
RPAA		P. Ruscitti, Italy	4
RZM		M. Rzepka, Poland	77

Table 3. AAVSO Observers, 2014–2015, cont.*

Code	Org.	Name	No. Obs.	Code	Org.	Name	No. Obs.
SRIC		R. Sabo, Monta	29874	SPGA		P. Spital, United Kingdom	82
SJQ		A. Sajtz, Romania	51	SXR	03	M. Sragner, Hungary	5
SSU		S. Sakuma, Japan	571	SBL		B. Staels, Belgium	5974
SDAA		D. Sala Tapias, Spain	18	SVAE		V. Stanimirov, Bulgaria	8
SJOB		J. Salas, Venezuela	1	STR		R. Stanton, California	19
SJGA	06	J. Salto González, Spain	547	SDB		D. Starkey, India	2882
SBAH		B. Salwiczek, Poland	283	SPET		P. Starr, Australia	20619
SAH		G. Samolyk, Wiscons	35003	SYO		T. Steck, India	8
SGE	27	G. Sarty, Canada	9	SABB		A. Steenkamp, United Kingdom	41
SDAD		D. Saunders, Australia	1	STI		P. Steffey, Florida	650
SEDB		E. Sawyer, Canada	387	SWIL		W. Stein, New Mexi	29867
SMAI		M. Sblewski, Germany	245	SET		C. Stephan, Oh	80
SDAV		D. Scanlan, United Kingdom	144	SRB		R. Stine, California	2
SJAG		J. Schaffer, Wyomi	1	SDI	20	D. Storey, United Kingdom	17
SFS		S. Schiff, Virgin	154	SWIA		W. Strickland, Texas	120
SRBR		R. Schippers, Netherlands	624	SIAK		I. Strikis, Greece	18
SPK	01	P. Schmeer, Germany	9	SNJ		N. Stritof, Slovenia	140
SRAB	02	R. Schoenfeld, Germany	14	SHZ	02	H. Struever, Germany	18
SFRA		F. Schorr, Georgia	238	SMAE		M. Stuart, United Kingdom	1
SGLE		G. Schrader, Australia	6	SRX	14	R. Stubbings, Australia	87
SYU	02	M. Schubert, Germany	608	SAC	02	A. Sturm, Germany	283
SBEA	02	B. Schwarz, Germany	271	SUS	02	D. Suessmann, Germany	446
SJEA	01	J. Sciolla, France	508	SPP		P. Sullivan, California	132
SJIA		J. Seargeant, New Mexi	28	SJAR		J. Suomela, Finland	860
SDMA		D. Selmo, Brazil	12	SWV		D. Swann, Texas	242
SSAB		S. Sementsov, Russian Federation	1	SSW		S. Swierczynski, Poland	78
SIV		I. Sergey, Belarus	284	SJME		J. Sykes, Washingt	87
SMRC	01	M. Serreau, France	5	SAO	03	A. Szauer, Hungary	44
SSTA	27	S. Shadick, Canada	70	SXB		M. Szczerba, Poland	1
SSHA		S. Shaffer, Wyomi	457	SLY	03	L. Szegedi, Hungary	178
SJDA	20	J. Shanklin, United Kingdom	185	TUO		U. Tagliaferri, Italy	60
SHS		S. Sharpe, Canada	2015	TMAA		M. Talero, Spain	65
SDP		D. Sharples, New Yo	1	TJOB		J. Tapioles, Spain	3
SQN		L. Shaw, California	31	TCGA	20	C. Taylor, United Kingdom	97
SFY	20	J. Shears, United Kingdom	3931	TDB	27	D. Taylor, Canada	419
SLH		L. Shotter, Pennsylvan	618	TNDB		N. Telrandhe , India	1
SIVA		I. Shpalau, Belarus	21	TPS	03	I. Tepliczky, Hungary	450
SLUC		L. Siekielewski, Poland	41	TTU		T. Tezel, Turkey	3
SGQ		C. Sigismondi, Italy	331	TGMB		G. Thurman, California	10
SFLB		F. Signoret, France	1460	TALA		A. Tieppo, Italy	883
SPAO	18	P. Siliprandi, Italy	440	TIA	03	A. Timar, Hungary	454
SJCA		J. Silva, Brazil	2	TLEB		L. Tkachook, Ukraine	393
SBN	13	A. Silva Barros, Brazil	17	TRL		R. Togni, Arkans	2
SGEO		G. Silvis, Massachusetts	458	TRE		R. Tomlin, Illino	545
SNE		N. Simmons, Wiscons	5468	TOO	20	J. Toone, United Kingdom	4494
SXN		M. Simonsen, Michig	1999	TRT	03	T. Tordai, Hungary	8734
SANG		A. Sing, Philippines	337	TWA		W. Travis, Massachusetts	1
SHRA		H. Sipes, Kentucky	118	TKYA		K. Trees, Wyomi	1
SGOR		G. Sjöberg, Massachusetts	1293	TYGA		Y. Tsao, Taiwan	89
SDN		D. Slauson, Iowa	22	TSJ		S. Tsuji, Japan	3114
SDAB		D. Smales, United Kingdom	367	TDG		D. Turner, Canada	168
STAC		T. Smela, Poland	355	TYS		R. Tyson, New Yo	187
SDZ		D. Smith, Arizona	43	TSAA		S. Tzikas, Virgin	3
SHA		H. Smith, Michig	734	UJHA		J. Ulowetz, Illino	42190
SJE		J. Smith, California	49	UKAA		K. Uryga, Poland	3
STAK		T. Soejima, Japan	7	VTY	20	T. Vale, United Kingdom	262
SBX		A. Sonka, Romania	2	VJXA		J. Valle, Brazil	3
SZOL	03	Z. Sonkoly, Hungary	8	VADA		A. Valvasori, Italy	1
SJZ		J. Speil, Poland	538	BVE	04	E. Van Ballegoij, Netherlands	387

Table 3. AAVSO Observers, 2014–2015, cont.*

Code	Org.	Name	No. Obs.
VDE	04	E. Van Dijk, Germany	63
VNL	05	F. Van Loo, Belgium	242
VUG	04	G. Van Uden, Netherlands	54
VWS	05	J. Van Wassenhove, Belgium	1733
VMAE	05	M. Vanleenhove, Belgium	12290
VSD	05	D. Vansteelant, Belgium	10
VVPA		V. Vazquez, Spain	10
VED	01	P. Vedrenne, France	5573
VRUB		R. Velikazov, Ukraine	340
VARA		A. Verveer, Australia	176
VFA	18	F. Verza, Italy	3
VBPA		B. Vietje, Vermo	414
VII	03	I. Vincze, Hungary	500
VJA	17	J. Virtanen, Finland	704
VGK		G. Vithoulkas, Greece	1095
VPZ	03	P. Vizi, Hungary	13
VDAA		D. Vogel, New Yo	33
VFK	02	F. Vohla, Germany	7444
VOL		W. Vollmann, Austria	3708
WEO		E. Waagen, Massachusetts	1
WLY		L. Wade, Mississip	117
WGR		G. Walker, New Hampshi	22868
WBY		B. Walter, Texas	806
WZIB		Z. Wang, China	80
WAU		A. Wargin, Poland	69
WCB		C. Webster, Pennsylvan	29
WPT		P. Wedepohl, South Africa	53
WRCA		R. Weir, New Hampshi	1025
WKL	02	K. Wenzel, Germany	961
WJAA		J. Whinfrey, United Kingdom	68
WNIB		N. White, United Kingdom	30
WBOA		B. Wichert, Germany	132
WFOA		F. Wierda, Finland	53
WTHB	19	T. Wikander, Sweden	2234
WPX	29	P. Williams, Australia	4378
WAJA	20	A. Wilson, United Kingdom	6
WWJ		B. Wilson, United Kingdom	331
WBH		R. Wilson, Arizona	62
WSN		T. Wilson, West Virgin	1370
WERB	02	E. Wischnewski, Germany	78
WKM		M. Wiskirken, Washingt	9
WPB	20	P. Withers, United Kingdom	1495
WTW	01	J. Wittwer, Switzerland	1
WGI	02	G. Wollenhaupt, Germany	18
WGO		G. Wood, North Carolina	13
WTOA		T. Woodrow, Australia	15
WUB	04	E. Wubbena, Netherlands	144
WCG		C. Wyatt, Australia	7
XYUA		Y. Xing, China	1
YBRA		B. Yang, China	1
YIGA		I. Yatsenkov, Russian Federation	355
YDG		D. Young, Australia	320
YDV		D. Young, Massachusetts	568
YON		R. Young, Pennsylvan	73
ZMAD		M. Zabaluy, Ukraine	262
ZMAC		M. Zbrudzewski, California	16
ZPA		P. Zeller, India	40
ZGEA		G. Zhao, California	6
ZBOA		B. Zhuravlova, Ukraine	1027
ZGA	03	G. Zvara, Hungary	162
ZTH		T. Zwach, Austria	44

** Totals reflect observations made during fiscal 2014–2015 and do not include historical data (data preceding fiscal 2014–2015) submitted during fiscal 2014–2015.*

These codes, which appear in the Table (AAVSO Observers 2014–2015), indicate observers are also affiliated with the groups below:

01 Association Française des Observateurs d'Étoiles Variables (AFOEV)
02 Bundesdeutsche Arbeitsgemeinschaft für Veränderliche Sterne e.V. (BAV) (Germany)
03 Magyar Csillagàszati Egyesület, Valtózocsillag Szakcsoport (Hungary)
04 Koninklijke Nederlandse Vereniging Voor Weer-en Sterrenkunde, Werkgroep Veranderlijke Sterren (Netherlands)
05 Vereniging Voor Sterrenkunde, Werkgroep Veranderlijke Sterren (Belgium)
06 Madrid Astronomical Association M1 (Spain)
08 Norwegian Astronomical Society, Variable Star Section
09 Ukraine Astronomical Group, Variable Star Section
10 Astronomical Society of Southern Africa, Variable Star Section
11 Astronomisk Selskab (Scandinavia)
12 Liga Iberoamericana de Astronomia (South America)
13 Rede de Astronomia Observacional (Brazil)
14 Royal Astronomical Society of New Zealand, Variable Star Section
15 Agrupacion Astronomica de Sabadell (Spain)
16 Association of Variable Star Observers "Pleione" (Russia)
17 URSA Astronomical Association, Variable Star Section (Finland)
18 Unione Astrofili Italiani (Italy)
19 Svensk Amator Astronomisk Förening, Variabelsektionen (Sweden)
20 British Astronomical Association, Variable Star Section
24 Astronomischer Jugendclub (Austria)
27 Royal Astronomical Society of Canada
29 Variable Stars South (New Zealand)
31 Center for Backyard Astrophysics
34 Astronomical Society of South Australia
36 Nucleo de Estudo e Observacao Astronomica--Jose Bazilicio de Souza (Florianopolis, Brazil)

Table 4. Observation statistics for fiscal year 2014–2015.*

Observations (increments of 1000)	*No. Observations per increment*	*% of All Observations*	*No. Observers per increment*
0 – 999	97291	7	625
1000 – 1999	71398	5	50
2000 – 2999	47756	3	20
3000 – 3999	34837	2	10
4000 – 4999	39507	2	9
5000 – 5999	45045	3	8
6000 – 6999	12951	1	2
7000 – 7999	37276	2	5
8000 – 8999	34460	2	4
9000 – 9999	18613	1	2
10000+	1146176	72	34

** Totals reflect observations made during fiscal 2014–2015 and do not include historical data (data preceding fiscal 2014–2015) submitted during fiscal 2014–2015.*

Variable Star Observing Campaign Highlights

Elizabeth O. Waagen

The AAVSO participates in many observing campaigns on variable stars. These campaigns arise from the request for assistance by an astronomer, or from the AAVSO itself in response to unusual stellar activity. Campaigns may run from a few days to weeks or months, or may be ongoing. A complete list may be found at https://www.aavso.org/observing-campaigns. Below are some highlights.

Deanne Coppejans' campaign to observe five cataclysmic variables (CVs) in outburst to search for radio jets began in late October 2014 and continued into 2015. Of her nine possible targets, RX And, YZ Cnc, Z Cam, SU UMa, and U Gem were successfully observed and radio emission was detected from them all!

In January, we initiated Dr. Robert Zavala's (USNO Flagstaff) campaign on the triple system b Per [not beta] to try to observe the eclipse of the close ellipsoidal binary by the third component of the system (January 2015 *AAVSO Newsletter*, *AAVSO Alert Notice 507*). It was successfully carried out. This was a follow-up to an AAVSO campaign in 2013 to observe the eclipse of the main components, which was also successfully carried out by AAVSO observers.

In March, we announced Dr. George Rieke (University of Arizona) and colleagues' campaign on four stars with developing planetary systems (*AAVSO Alert Notice 511*, April 2015 *Newsletter*)—RZ Psc, HD 15407A, V488 Per, and HD 23514. They were to be monitored extensively in 2015 with the Spitzer Space Telescope. The purpose of monitoring by AAVSO observers was to rule out variability in the stars themselves, so that any changes seen in the Spitzer infrared data could be attributed to changes in the structure or dust content of the debris disk. AAVSO observers provided good coverage of these stars. This campaign was the second one like this for which Dr. Rieke requested AAVSO assistance.

In April, Dr. Paula Szkody (University of Washington) requested our help in monitoring the cataclysmic variable GW Lib for upcoming Hubble Space Telescope observations (*AAVSO Alert Notice 513*, *AAVSO Special Notice #403*). AAVSO observations were needed to ensure that the object was NOT in outburst when observed with HST. This campaign is part of an ongoing study of the white dwarf in cataclysmic variable; Dr. Szkody also observed GW Lib with HST in March 2011 and March 2010 (AAVSO observers provided similar support in those campaigns).

On June 15, the X-ray black hole binary V404 Cyg had a spectacular outburst, its first X-ray and optical outburst since 1989 (*AAVSO Alert Notice 520, 522*). Observations obtained by the professional and amateur communities across the spectrum from X-ray to radio showed it varying dramatically in all wavelengths and on timescales from seconds to hours to days. Multiwavelength satellite and ground-based observations were carried out throughout the outburst, which lasted beyond its return to minimum in late August. AAVSO observers contributed over 70,000 excellent multi-color photometry as well as visual observations (Figure 1: 13 June–2 October 2015; Figure 2: 15 June–1 July 2015; Figure 3: night of 2015 June 26–27).

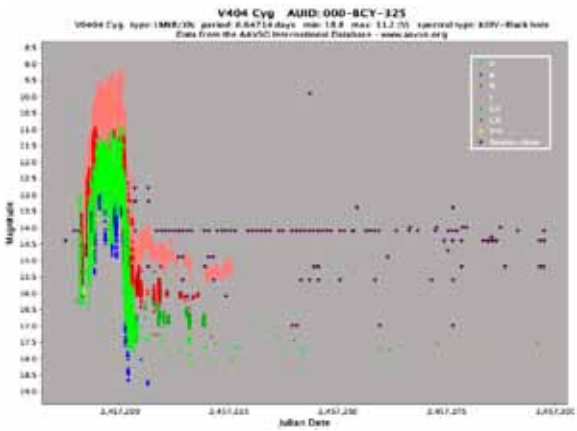


Figure 1. V404 Cyg, 13 June—2 October 2015

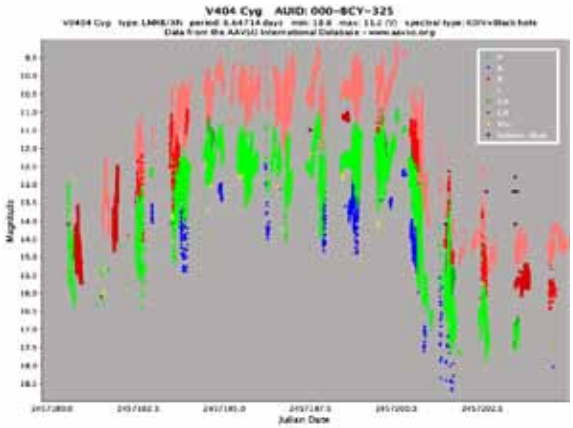


Figure 2. V404 Cyg, 15 June—1 July 2015

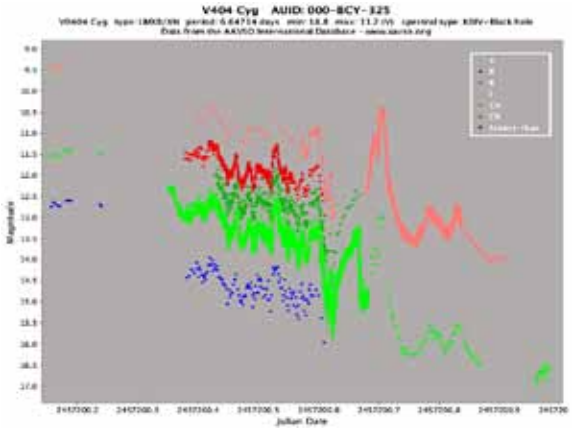


Figure 3. V404 Cyg, night of 2015 June 26–27

In August, Prof. Simon Jeffery (Armagh Observatory; Trinity College Dublin) requested photometric monitoring of the pulsating helium and zirconium-rich hot subdwarf LS IV -14 116 in support of upcoming HST and VLT/UVES spectroscopy.

Other observing campaigns AAVSO successfully participated in during FY 2015 include:

Monitoring Cepheids X Cyg, SZ Cyg, TX Cyg, VX Cyg, and RV Tau star MZ Cyg for correlation with spectra to be obtained during radial velocity studies—Dr. George Wallerstein (University of Washington)

Monitoring the enigmatic variable object KIC 8462852, discovered in October, to further characterize the star's variability—AAVSO

Monitoring T Tauri star RW Aur (component A) to support multiwavelength study investigating whether dimming of star, when component B has no accretion disk, may have been caused by RW Aur B passing by A and pulling matter out of the disk around A. (ongoing study)—Dr. Hans Moritz Guenther (MIT)

Monitoring the rare FU Ori object 2MASS J06593158-0405277 as part of a multiwavelength campaign to observe it from the optical to the infrared; only about two dozen of these objects are known, poorly understood, one of the brightest such objects seen in recent times—Dr. Fabienne A. Bastien (Hubble Postdoctoral Fellow, Pennsylvania State University). Monitoring resuming November 2015

Monitoring the T Tauri star BP Tau during 2013–2014 and 2014–2015 for correlation with Chandra observations, and to help to clarify the rotational modulation and the average fluctuation in the light curve, essential for their X-ray study—Dr. Hans Moritz Guenther (Harvard-Smithsonian Center for Astrophysics, CfA). Very successfully concluded, vital contributions to study, analysis underway

Monitoring the magnetic variable AM Her in support of XMM-Newton and NuSTAR (Nuclear Spectroscopic Telescope Array) observations—Dr. Axel Schwope (Leibniz Institute for Astrophysics Potsdam, Germany)

Observing the symbiotic nova candidate ASAS J174600-2321 before, during, and after its upcoming eclipse—S. Otero, P. Tisserand, K. Bernhard, and S. Hummerich.

Providing images of two sets of 17 CVs (two campaigns a month apart) to schedule Herschel observations—Roque Ruiz-Carmona (Radboud University Nijmegen, The Netherlands)

Obtaining time-series observations of the eclipsing binary system KIC 02856960, a possible triple system that exhibits enigmatic behavior—Dr. Thomas Marsh (University of Warwick)

Monitoring campaign on J1407 (1SWASP J140747.93-394542.6) ongoing since 2012, looking for eclipses (to explain dips in light curve) in this possibly multi-body system —Dr. Eric Mamajek (CTIO, U. Rochester)

Ongoing multicolor monitoring of the semiregular variable CH Cyg—Dr. Margarita Karovska (CfA)

Multicolor monitoring of symbiotic star RT Cru in support of Chandra observations to be scheduled next year—Dr. Margarita Karovska (CfA)

Post-eclipse monitoring of epsilon Aur to look for expected coherent pulsation—Dr. Robert Stencel (University of Denver). Pulsation observed

International campaign to monitor eclipse of long period eclipsing variable EE Cep (Be star w/orbiting dusty disk belonging to unseen companion)—successfully observed

Ongoing monitoring of the S Dor (Luminous Blue Variable) P Cyg—Ernst Pollmann (Active Spectroscopy in Astronomy)

Ongoing monitoring of HMXBs and SFXTs—Dr. Gordon Sarty (University of Saskatchewan)

Ongoing monitoring of faint Mira QX Pup—Dr. Arne Henden

Ongoing monitoring of Blazars—Dr. Markus Boettcher (Ohio University)

Novae

In addition to the above campaigns on established variable stars, observing campaigns were carried out on the five galactic novae discovered in FY 2015 and the three discovered since:

Nova Sgr 2015 No. 4 (PNV J18225925-1914148): Independently discovered 2015 October 31 UT by H. Nishimura, M. Yamamoto, and S. Fujikawa at unfiltered magnitude 11.5–11.8.

V2949 Oph (Nova Oph 2015 No. 2 = TCP J17344775-2409042): Highly reddened classical nova. Independently discovered by K. Nishiyama and F. Kabashima and by S. Fujikawa on 2015 October 11 at unfiltered magnitude 11.8–12.1 (*AAVSO Alert Notice 531*).

V1831 Aql (Nova Aquilae 2015 = ASASSN 15-qd = PNV J19215012+1509248): Highly

reddened classical nova. Independently discovered 2015 October 5 at unfiltered magnitude 12.4 by K. Itagaki, and on 2015 October 1 at V=15.2 by ASAS-SN as reported by B. J. Shappee (Hubble Fellow, Carnegie Observatories) et al. (*AAVSO Alert Notice 530*). (Itagaki is considered the first discoverer because he reported his discovery much earlier, even though his date of discovery is later than that of Shappee et al.).

V5669 Sgr (Nova Sgr 2015 No. 3 = PNV J18033275-2816054): Classical Fe II nova. Independently discovered by K. Itagaki, by A. Takao , and by Y. Nakamura on 2015 September 27 UT at unfiltered magnitude 9.9-10.5 (*AAVSO Alert Notice 528*). Reached maximum about October 4 at visual magnitude ~8.8, faded, with one rebrightening around October 12, faded and rebrightened again, and is fading.

V1535 Sco (Nova Scorpii 2015 = PNV J17032620-3504140): Discovered by T. Kojima on 2015 February 11.837 UT (*AAVSO Alert Notice 508*). Reached maximum on February 13 at visual magnitude 9.2.

V5668 Sgr (Nova Sagittarii 2015 Number 2 = PNV J18365700-2855420): Discovered by J. Seach on 2015 March 15 UT (*AAVSO Alert Notice 512*). Dust production began and magnitude plummeted, then recovered (Figure 4). Subject of campaign to monitor in order to approve HST observations scheduled for November 2015, which were successfully carried out.

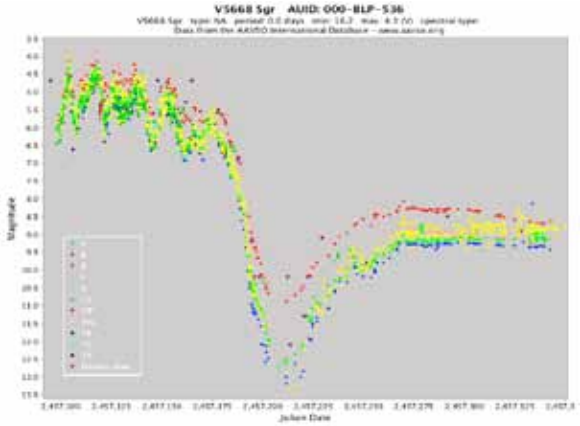


Figure 4. V5668 Sgr, 12 March–22 October 2015

V5667 Sgr (Nova Sagittarii 2015 = PNV J18142514-2554343): Independently discovered by H. Nishimura and by K. Nishiyama and F. Kabashima on 2015 February 12 UT (*AAVSO Alert Notice 509*). Reached maximum on February 24 at V magnitude 9.1–9.2.

V2944 Oph (Nova Ophiuchi 2015 = PNV J17291350-1846120): Discovered by Y. Sakurai in March at unfiltered magnitude 12.2, and reached maximum on April 14 at magnitude V=9.2. Interesting behavior (Figure 5).

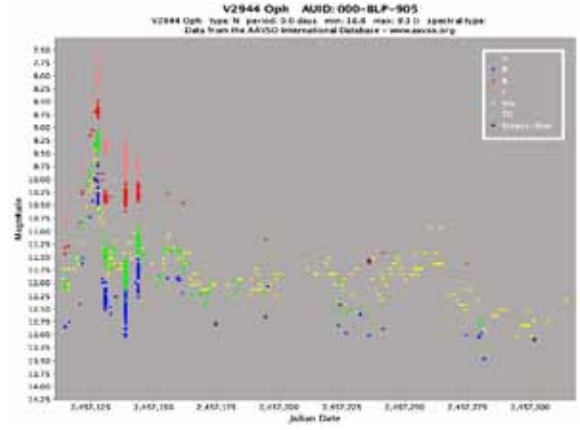


Figure 5. V2944 Oph, 30 Marc–22 October 2015

The International Variable Star Index (VSX)

Sebastián Otero and Patrick Wils

The International Variable Star Index is a continuously evolving database. It grows, thanks to the VSX Team work, and also thanks to the valuable input of individual contributors who revise known variable stars and submit new ones, always keeping a record on all the changes made so they can be traced, validated, and followed up on by those who rely on this information to be accurate and true.

When we initially populated VSX in 2005 with all known variable star lists, we decided to strive for completeness, and as a result we ended up with thousands of duplicate records in our database. Since then, our main goal has been to avoid duplications and give quality the priority.

Sebastián Otero spends a large fraction of his working hours hiding duplicate records and improving the information in VSX so the user can have the latest information available on a given object. Hiding duplicates also helps avoiding confusion when an observer finds two stars at nearly the same position and can't decide if there are actually two variable stars there or they are just one and the same. Software can be fooled by these duplicates too and our International Database may suffer the consequences with spurious reports being submitted. We surely don't want that!

Sebastián is also now adding new stars from alert pages almost in real time. The number of alerts that we need to check grows faster—just think about ASAS-SN, MASTER, CRTS, and Gaia and how popular they are nowadays. We are even correcting some mistakes made by the survey teams as we add those stars to VSX. Collaboration between groups is essential.

This report covers activity from October 1, 2014, to September 30, 2015.

Volunteers

As years go by, more and more new variable stars are being discovered, not only by the growing number of sky surveys but also by amateurs equipped with CCD or DSLR cameras. It is a challenge to keep our database up to date with such a flood of information but we struggle to reach that goal without compromising the quality of the data included in VSX. This is where our volunteers play a major role.

Patrick Wils has dedicated a lot of volunteer work over these years to add new variables

or corrections made on known variables as they are published in journals, alert pages, or even in web resources. Since the number of incoming data grew exponentially, he needed help to keep up with this task. That's why on August 31 we published a call for volunteers (https://www.aavso.org/vsx-call-volunteers). As a result we have now more people working for the VSX Team.

Before we made our call, Tamas Zalezsak had already been working on duplicate record detection and providing us with accurate (UCAC4/PPMXL) positions for ASAS objects. He has continued with this work.

Klaus Bernhard started working on preparing lists for VSX import. It is not something straightforward because each paper or each variable star list comes with its own format and we need to extract the information in a format suitable for our database needs. A very important step in this work is to make sure that the new variables added are not actually duplicates of stars already being included in VSX. Thus, a thorough cross-identification of the new stars with VSX records is always performed. Klaus also checks the reliability of the published data so we can avoid overwriting good information with wrong numbers in the case of revisions and we make sure that we are adding bona-fide new variables in the case of the new entries. Then Sebastian makes some final checks and Patrick uploads them. That is a nice example of team work!

We have to thank David Hinzel, who took up checking Astro-ph, submitting the newly published variables or revising the already known ones based on the recent publications. Unfortunately, due to job priorities, David is leaving at the end of 2015 so we will again need someone to take care of that task for 2016.

With new alert systems like that from Gaia just about to be released, our need for volunteers will only grow.

If you want to join us, your help is welcome. Send a message to vsx@aavso.org

VSX Forum

On February 5, we launched the VSX Forum on the AAVSO website. It is meant to be a forum to discuss any VSX issue and to inform our members of news or improvements we may make to VSX.

If you have a question related to VSX, post it there and not to the other forums, so the discussions can be found more easily. The forum is at (https://www.aavso.org/forums/about-aavso/vsx).

New Variability Types Added

We always try to update our variability types document by adding the most recent variable star types recognized in the literature. Now you can search for Blazhko RR Lyrae stars using the types RRAB/BL or RRC/BL. The type AHB1 (Above Horizontal Branch variables of subtype 1) was also added. These stars were previuosly being confused with CWB or RRAB stars. The type ZZ/GWLIB is now used to list the GW Librae-type white dwarf pulsators. FF is the new VSX type to classify the very rare Final Helium Flash objects.

Number of Submissions and Revisions

We had 1,356 new variables submitted to VSX by individual users during the 2014–2015 period (1,260 in 2013–2014).

The mean number of new submissions per month was 113, as apposed to 105 last year.

The number of new stars increased but the number of average monthly revisions made by users decreased from 34 last year to 16 in 2014–2015.

We currently have 271 different users that have submitted at least one submission or revision to VSX. 25 of them had their first VSX experience this year.

We encourage everyone in the variable star community to submit revisions of VSX stars with up-to-date data from the literature or with new observations both original or obtained from public survey databases.

Sebastian's personal count of revisions per month increased from 131 last year to 164, with 1,968 revisions made over the whole year (1,567 last year).

A great deal of his time is devoted to moderate submissions and revisions and to guide observers through the submission process. Questions about catalogues and data analysis and especially issues concerning variable star classification are continuously being discussed via e-mail as part of the moderation process.

The VSX Team work of importing new catalogues and discoveries/lists coming from published papers resulted in 9,168 new stars added and 16,199 revisions to known variable stars.

This year we added 10,524 stars (the total of the VSX Team and individual submitters) but

with Klaus helping us again with lists, next year this number will have to be multiplied several times!

You can check what's new on VSX by trying one of the special searches (like "Changes since last login") in the VSX search page (https://www.aavso.org/vsx/index.php?view=search.top).

Duplicate Records

VSX has currently more than 387,000 records. We don't call them stars because there are still many duplicate records among them. In the framework of the primary record creation work (which means that all the information available is used to update a star's detail sheet), Sebastian hid 675 duplicate entries this year (almost the same as past year's 683), plus 13 unclassified duplicate objects. 6,108 duplicate records were hidden since the primary record creation work started back in 2011 (6,233 counting the unclassified ones). Patrick hid another 25 records this year after cross-identifications were made while importing new lists.

Tamas Zalezsak and Klaus Bernhard identified new duplicates in the VSX database. Most came from duplicate records in the published CRTS (Catalina Real-Time Transient Survey) lists of variables stars.

A total of 23,160 objects have been hidden since VSX was launched in 2005.

Incorrect Identifications Corrected

More incorrect identifications are being found in the process of cleaning up the VSX database. 34 incorrect cross-identifications in VSX have been corrected this year (usually incorrect identifications made by surveys). 16 GCVS/NSV identifications have also been corrected and reported to the GCVS team (only one of them was incorrectly cross-identified in VSX).

It is nice that observers report incorrect identifications when they find them. Josch Hambsch has been doing so recently.

Cross-identifications (between existing entries) Added

319 new cross-identifications between VSX records were established this year (2,817 in total since 2011) and the 319 resulting duplicates were deleted.

Work on VSX/AID Inconsistencies and Problems with Submitted Data

Work to clean up the AAVSO International Database (AID) from errors caused by duplicate entries in VSX (most of them not visible to the public) has also continued as a by-product of the other VSX tasks.

We still need to merge lots of data from different pairs of duplicates, but if observations are not reported to the wrong records any more that will be a big help so we can do our task without having to check over and over again. (Once Headquarters staff member Sara Beck merges all the observations in the star's primary record, we delete the AUID (the AAVSO Unique IDentification number) so people can't submit data under the wrong name anymore.) We corrected three such records this year.

We have also contacted several observers to modify wrong observations reported to the AID that were found while analyzing AAVSO data to improve the information delivered to VSX. We urge observers to double-check their images to properly identify the stars being reported.

We also periodically update the list of stars with companions that may cause identification or photometry problems. The list may be found here: (https://www.aavso.org/variable-stars-companions).

Work on VSX/VSD: Comparison Stars that Turned Out to be Variable

Finally, we don't want variable stars to be used as comparison stars, but this may happen sometimes.

There were not enough data some years ago to judge if some stars were variable or not and they could have been selected as good comp stars based on color or proximity. Now, with more survey data available or with observations provided by our observers, we can identify that some of those comp stars are actually variable. Work is being done to eliminate these stars from our sequences and find suitable replacements.

VSX is a core application that interacts with almost everything else in the AAVSO universe, from other software tools to the observers submitting data via WebObs. We try to improve it every day, solving inconsistencies and updating the database with the most recent data available.

Patrick Wils is always behind the scenes making minor changes and correcting bugs, things that may go unnoticed but make the VSX process faster and more efficient.

Some examples:

- You can now enter non-English characters in any of the text boxes in the submission and revision forms.
- You can now filter any VSX search so it gives you results only for stars with observations in the AAVSO International Database.
- You can now request a sequence to the AAVSO Sequence Team by clicking on the "Sequence" link in the "Constellation" field.

We thank all the people who submit new discoveries and revisions to VSX and all the AAVSO staff who helps in the cleaning-up process.

The AAVSO Network of Remote, Robotically Controlled, and Automatically Queued Telescopes (AAVSOnet)

Arne A. Henden

The AAVSO Robotic Telescope Network, AAVSOnet, has been in operation since 2005. At first, we had access to a single telescope, SRO35, located in Sonoita, Arizona. We teamed with the University of Canterbury (New Zealand) to refurbish their 61-cm telescope (OC61) at Mt. John, New Zealand, in 2008. In 2009, we added the first Bright Star Monitor at Astrokolkhoz Observatory near Cloudcroft, New Mexico. In quick succession, other telescopes were brought on-line. Currently, there are nine active telescopes: BSM systems (NM, South, Hamren, Berry, and HQ), coker30, SRO50, TMO61, and OC61.

Each of these telescopes uses identical software: MaximDL for image acquisition; ACP and ACP Scheduler for controlling the telescope and camera and scheduling observations; and FocusMax for focusing each system. Each telescope is either at a University or located at a private site. Volunteers perform any local maintenance and operation. AAVSO members, as a free benefit, can propose to observe specific targets, which are then put on the telescope queues. When images are taken, they are transferred back to HQ where they are automatically dark-subtracted and flatfielded. Processed images are then placed on the AAVSO ftp site, or optionally uploaded to the VPHOT cloud analysis program. In the background, we also extract all stars in every image, to be placed into the on-line Epoch Photometry Database at a later date.

Keeping nine telescopes running with an all-volunteer effort at low cost is challenging. Each of our systems has been down for a fraction of the time this year. We continue to consider options to improve the reliability of the AAVSOnet system; to automate and make the entire process more efficient; and to draw more volunteers into the operation and quality control aspects of the network. This year we have many new volunteers to examine the images acquired by the AAVSOnet telescopes, looking for weather- and instrument-related problems. They have been extremely helpful in finding issues early on, so that repairs can be made. Many thanks to Robert Dudley, Damien Lemay, Ken Menzies, Lou Cox, Willie Buning, Dave Hinzel, Duane Dedrickson, JoDee Baker, and Paolo Maria Ruscitti for performing this valuable service. Helmar Adler has taken over operational duties for BSM_HQ, and Bill Stein is now controlling BSM_NM.

During 2015, a total of 11 new proposals were accepted, from professionals as well as amateurs. These included individual research, monitoring of objects for campaigns, and time series observations for some professional members of the AAVSO. One student, Amber Malpais, is completing her thesis at the University of Canterbury, using OC61

to acquire light curves of transiting exoplanets discovered from the KELT survey. The AAVSOnet telescopes collected 185,896 images of over 2,000 targets. Many of these are part of the BSM survey of all variables brighter than 8th magnitude.

Byron Engler, a student at University of Canterbury, worked with Nigel Frost (Mt. John Superintendent) and Malcolm Locke (University of Canterbury) to get the Shelyak eShel spectrograph working on OC61. A new instrument selector was installed, so that you can switch between imaging and spectroscopy in just a few minutes. The focal length on the telescope is a bit long, and so the star profile overfills the small science fiber. This loss of light means we can't go as faint as we would like. A focal reducer specifically for the spectrograph has been ordered to overcome this limitation. We also have a LISA spectrograph for TMO61 in the north, donated by Bart Staels. This spectrograph has been tested on the telescope by Jon Holtzman and Gary Walker and works fine. The intent over the near term is to do instrument swaps on a monthly basis, and then eventually modify the telescope top end to provide a second instrument port so that both imaging and spectroscopy can be available. Other telescopes, such as BSM_NM and BSM_Berry, have diffraction gratings for low-resolution spectroscopy, and have been used to acquire spectra of novae.

The Epoch Photometry Database (EPD) was released to the membership. The first release was exclusively Bright Star Monitor observations, but releases in 2016 will include the archival telescopes such as W28 and K35. The AAVSOnet EPD is available for archival studies of thousands of objects.

The AAVSO Photometric All-Sky Survey (APASS)

Arne A. Henden

APASS started in late 2009 in the north, and about a year later in the south. The goal is to cover the entire night sky, with every object being observed on at least four photometric nights. The main survey covers the magnitude range 10<V<17 in the Johnson B and V and the Sloan g'r'i' passbands. The expected final astrometry will be within 150 milliarcseconds; the photometry should be better than 0.02 magnitude for bright objects. This catalog was designed to do for photometry what the positional catalogs (such as UCAC and USNO-A) did for astrometry: provide calibrated references in every CCD field of view.

The original survey was funded by the Robert Martin Ayers Sciences Fund. In 2014, the National Science Foundation (NSF) awarded the AAVSO a 2-year grant to both complete the observations and produce a final catalog. As part of the NSF proposal, we are extending the catalog with a Bright Star Extension, covering the range 7<V<12 and with BVu'g'r'i'zY passbands.

The equipment at each site is composed of two ASA N8 20cm astrographs, Apogee Aspen CCD CG16m (KAF-16083 sensor) cameras and filter wheels, coaligned on a Paramount ME. The northern system is located at Weed, NM; the southern system is at Cerro Tololo Interamerican Observatory (CTIO) in the Prompt6 clamshell (kindly furnished by Dan Reichart of the University of North Carolina). An improvement this year has been the replacement of the original Alta U16m cameras with Aspen bodies, providing greater cooling capacity and faster readout. However, the southern refurbishment took far longer than we anticipated, so that very little new imagery was obtained at CTIO this year.

To date, over 510,000 images have been taken on about 1400 nights (combined north and south). Nine data releases have been made, with the most recent one occurring in January 2015. In DR9, a total of 60 million objects have a minimum of two observations each, covering about 99% of the sky. DR9 mainly added southern photometry, which was already nearly complete and so only a few million new objects are present. This completed the processing of northern and southern images taken through 2013. The APASS "means catalog" can be searched on-line at the AAVSO web site. The Epoch Photometry (individual measures) can also be searched on-line if you are an AAVSO member. Work on DR10 has begun, to be released in early 2016.

APASS is being used by many groups worldwide, and is also being used by individual researchers for obtaining precise photometry of their favorite targets. We get over a dozen requests annually from professionals who want access to the entire catalog. Within the AAVSO, APASS is being used primarily for the generation of photometric sequences around program stars, and photometric confirmation of new submitted variable stars to VSX. This year we contacted the VizieR group in France, and have given them a copy of DR9 to host publicly.

A great many people have been involved in the APASS development. The PI of the project is Arne Henden; Dirk Terrell has provided computers, software, and analysis; Stephen Levine is the primary astrometry expert; Doug Welch is archiving all images and photometry, serving catalogs, and performing the Sextractor and astrometry.net initial processing; and Ulisse Munari is providing quality control and external comparisons. In addition, there are a large number of volunteers, staff, and students, including at least: Tom Smith, Aaron Sliski, Alan Sliski, Shouvik Bhattacharya, Anisha Sharma, Patrick Wils, John Gross, Sebastian Otero, Matthew Templeton, Doc Kinne, and Sara Beck. The UNC group (especially Kevin Ivarsen and Josh Haislip) has provided on-site support, along with the CTIO telescope operators. We've also had equipment and software contributions from Tom Bisque (Software Bisque), Bob Denny (DC3 Dreams), Doug George (Diffraction Ltd.), Apogee CCD, and Don Goldman (Astrodon). We thank them all—without their support and help, this project would never have happened!

The Journal of the American Association of Variable Star Observers

John R. Percy, Editor

The *Journal of the American Association of Variable Star Observers* (ISSN 0271-9053 print; ISSN 2380-3606 online) is the peer-reviewed research publication of the AAVSO, dedicated to variable star astronomy and a wide range of related scholarly topics across a range of disciplines. Among many other things, it disseminates the scientific content of our meetings; promotes the scientific, educational, and archival value of AAVSO observations; and educates, motivates, and acknowledges the work of AAVSO observers.

This year, spurred on by the interest and expertise of our new Director Stella Kafka, we have made several improvements to *JAAVSO*: we have further internationalized the Editorial Board, added subject classifications for the published papers, made the *JAAVSO* fully searchable, enhanced the *JAAVSO* website, implemented a double-blind refereeing system, created a automated system to streamline the submission and processing of *JAAVSO* manuscripts, and added editorials to *JAAVSO* in which we can keep you updated on *JAAVSO* issues. I thank the AAVSO HQ staff who planned and carried out these improvements. We are happy to receive suggestions about how *JAAVSO* can continue to improve, in order to serve the AAVSO community better. Plans for next year include: to encourage more submissions, especially from overseas, and especially on topics related to education (see my editorial in *JAAVSO* Volume 43, No. 2).

In closing: I am grateful for the help of the Editorial Board for their advice and willingness to serve, and to the *JAAVSO* staff for their judgment and hard work, notably Stella Kafka, Matthew Templeton, and Elizabeth Waagen, and especially Production Editor Michael Saladyga.

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The Director Search Process

Jeno Sokoloski and Kevin Marvel

On June 11, 2014, the Council selected the next Director of the AAVSO.

The AAVSO Council's vote on the new Director took one morning. It was, however, the culmination of a year and a half of work by both Council and the Search Committee. Although the Council typically only selects a new Director once every decade or several decades, the impact of this decision is felt by the organization every day. So, here we will describe the process that we used to select the individual who will lead the organization after Arne Henden retires in early 2015.

The very first step in the process, taken in January 2013 by then-President Mario Motta, was to appoint Kevin Marvel as chair of the Search Committee. Kevin is a former Council member, former Vice President, and the Executive Director of the AAS. The other members of the Search Committee were: Mario Motta (past President, amateur astronomer), Lee Anne Willson (former President, professional astronomer), Richard Sabo (amateur astronomer), Gary Walker (Secretary, former President, amateur astronomer), Ed Guinan (professional astronomer), Aaron Price (former Assistant Director), and Jeno Sokoloski (President, professional astronomer). The Committee's job was to use a fair and rigorous process to find the best possible candidates and rank-order them for Council consideration.

We solicited candidates by posting the job advertisement strategically and by directly encouraging as many promising candidates as possible to apply. Council got the ball rolling in February 2013 by writing a careful description of the job. According to experts on non-profit leadership, a non-profit CEO must: 1) commit to the mission; 2) lead the staff and manage the organization; 3) exercise responsible financial stewardship; 4) lead and manage fund-raising; 5) follow the highest ethical standards, ensure accountability, and comply with the law; 6) engage the board in planning and lead implementation; 7) develop future leadership; 8) build external relationships and serve as an advocate; 9) ensure the quality and effectiveness of programs; and 10) support the board. The Director of the AAVSO must also provide scientific and technical leadership related to astronomical observing and research. In April 2013 the Search Committee began regular telecons, and by mid-2013, the job advertisement and description had been posted on the AAVSO website and in the American Astronomical Society (AAS) job register, with an application deadline of September 30, 2013. We received applications from a strong group of candidates with a wide variety of backgrounds.

In the final months of 2013, most of the Search Committee's work focused on establishing robust criteria by which to assess the applicants. The end result was a list of five well-defined categories:

Management: Internal functions of the organization,

Leadership: Relations with the AAVSO community,

Credentials: Ability to represent the AAVSO in the professional community,

Education/Public Outreach: Education and public outreach,

Fund-raising: Ability to garner resources beyond dues and meetings, and

Other: A grab-bag of skills and experience not covered elsewhere.

We were aware that in each category, there would be candidates who had experience that would allow us to evaluate them on demonstrated competence. There would be others where we would need to make our best judgment as to whether they had the talent and could develop the skills. In their scoring, each member of the Search Committee was free to weight the different categories as they saw fit.

As we worked to finalize these criteria, we also educated ourselves about avoiding conscious and unconscious bias during job searches. Some examples of practices that we used to avoid bias included: defining the assessment criteria before reading the applications, doing a first round of grading individually before discussing the applicants, listing evidence for our scores and referring to this evidence in discussion of our rankings, and adhering strictly to the defined set of criteria. Also important was the clear declaration and discussion of any potential conflicts of interest. We had a round of discussion about conflicts of interest and no substantive conflicts were identified. On January 21, 2014, we submitted a status report to Council describing the above process in detail.

After the first round of scoring and discussion, the Search Committee decided to conduct phone interviews with the top eleven candidates. We undertook a one-hour interview with each candidate, using a standard set of questions, asked in the same way by the same person. A few examples of the questions include:

"What is your vision for what AAVSO will look like, what it will be doing, 5–10 years from now?"

"Looking at your current job [or last job if between positions], how did your work (or leadership) enhance the impact of the organization? We're most interested in the contrast

between what you started with and how you left or might leave the organization after moving to the AAVSO Director position?"

"How would you describe the personal values and philosophy that would guide you as you provide leadership to the AAVSO in this position?"

As not all Search Committee members could participate in each phone call, we used one or two scribes to compile accurate representations of each candidate's answers, and we distributed these summaries to all members of the committee. The final phone interview was completed on February 13, 2014, after which each committee member re-scored and re-ranked each candidate based on our established criteria. On February 23, 2014, the Search Committee held a phone conference during which we discussed any significant differences in scores and rankings from the different committee members. At this time, the Search Committee also submitted a status report to Council describing the phone interview process in detail, including the full list of questions and the number of candidates interviewed by phone.

After lengthy discussion, the Search Committee decided to include the top six candidates in the next steps of the process by phoning the references provided by these candidates. These six candidates constituted our "short list." A subcommittee of the Search Committee formulated a set of questions, and Kevin Marvel was tasked with calling two of the references provided by each candidate. Phone calls averaged thirty minutes per reference. Kevin kept copious notes during the process for each candidate and distributed summaries of the phone calls to the entire Search Committee. No member of the Search Committee felt that the phone calls to references changed their ranking of the candidates; in fact, most committee members stated that the phone calls reinforced their rankings. On March 24, 2014, we submitted a status report to Council describing the process of calling the candidates' references. That report included the ranked list of the top eleven candidates, with scores. Council was advised to maintain the strict confidentiality of this document.

After discussing the phone calls to candidates' references, the Search Committee decided to invite all six of the short-listed candidates to visit AAVSO Headquarters (HQ). On April 9, 10, and 11, 2014, Gary Walker, along with Arne Henden and Kevin Marvel, hosted the six short-listed candidates at HQ. Lee Anne Willson participated by phone for portions of each candidate's visit. Visits took place in the morning and afternoon, with two candidates visiting each day. Each candidate's visit followed an identical schedule, with the candidate meeting first with Arne Henden and then getting a tour of the headquarters building. Following the tour were half-hour, one-on-one visits with senior staff (including Elizabeth Waagen, Rebecca Turner, Matthew Templeton, and Mike

Simonsen) followed by a one-hour meeting with all AAVSO staff. At the conclusion of this meeting, each candidate had a one-hour meeting with Kevin Marvel, Gary Walker, Arne Henden, and, via FaceTime, Lee Anne Willson. The sessions with staff were recorded for the few staff members who were not present. The staff generally asked identical questions of each candidate, but some variation took place as the conversations varied based on the individual. The AAVSO staff met at the end of each candidate's visit to discuss the individual and his or her merits, and again after all the visits concluded to rank the candidates. Rebecca Turner was tasked with writing up the consensus view of the staff members, which they provided to Kevin Marvel. The staff report was subsequently distributed to the Search Committee along with links to the recorded sessions. After discussing the visits to HQ, the members of the Search Committee re-scored and re-ranked the candidates.

On May 9, 2014, the Search Committee delivered its final report to Council. That report contained a ranked list of the six short-listed candidates, with a description of the strengths and weaknesses of each, along with a recommendation that Council interview the top three candidates. The final report to Council also included the resumes and letters of application, summaries of the phone interviews, summaries of the phone calls with each of the candidates' references, and summaries of the visits to HQ for each of the six short-listed candidates. The report closed with a reminder to Council that its contents are confidential.

On June 10, 2014, in Ontario, California, the Council interviewed the three finalists for Director. To prepare both Council and the finalists for the interviews, we sent all parties a report from the Transition Committee (described in the April 2014 *AAVSO Newsletter*) entitled "Legacy Issues and Opportunities Facing the AAVSO and Its New Director." The Council met with each candidate twice—once in the morning and once in the afternoon. The morning interviews were very similar for each candidate, with every councilor who had not been a member of the Search Committee having the opportunity to question the candidates on a pre-arranged set of topics. In the afternoon, the Council asked each candidate questions that were specific to that candidate, and gave the candidates the opportunity to question the Council. Three councilors participated in the interviews electronically, and one councilor (who was very familiar with the candidates due to being a member of the Search Committee) was not able to participate due to a scheduling conflict. On June 11, 2014, using several rounds of voting, and taking into account all of the materials from the Search Committee as well as the final interviews, the Council ranked the three finalists. One additional vote confirmed that the top-ranked candidate had the support of more than 75% of Council, as required by the Bylaws for the hire of a new Director. Every member of Council participated in the voting.

We would like to thank the Search Committee for their hard work. We are also grateful to the excellent slate of candidates, who spent their valuable time submitting careful, thoughtful, and at times visionary applications. Many of the applicants are devoted members of the AAVSO community, and they brought a wonderfully diverse set of skills and ideas to the table. With the search process complete, the Council's vote on June 11, 2014, marks the beginning the transition in earnest from the Henden era to that of the next Director.

Section Reports

Cataclysmic Variable (CV)

Section Leaders: ***Mike Simonsen,*** *2615 S. Summers Road, Imlay City, MI 48444*
Gary Poyner*, 67 Ellerton Road, Kingstanding, Birmingham, B44 0QE, England*

The CV Section website is hosted by Google at:
https://sites.google.com/site/aavsocvsection/Home

The main features on the home page are a left hand news column and navigation box, a center column feature story and recent pre-prints for arXiv on CVs and columns with Activity at a Glance, (outbursts from the past 72 hours), CV outbursts from Catalina Real Time Survey, recent papers on CVs from arXiv, and boxes for the Z CamPaign, Hamburg Survey CVs, and the Long-Term Polar Monitoring Program.

The home page is maintained and updated daily, often several times per day by section co-leaders Simonsen and Poyner. All the remaining content, including the blog, feature articles and interviews, is written, edited and maintained by Simonsen.

Additionally, there is a forum on Cataclysmic Variables on the AAVSO website. We discuss cataclysmic variables, potential targets, observing techniques, recent activity, campaigns, resources for information and more. The forum tends to emulate the CVs themselves, with long periods of quiescence interrupted by brief spells of activity.

The previous Yahoo CVnet Circular proved to be increasingly unstable because of occasional changes to Yahoo's newsgroups and their security and email settings. So a new process was implemented that delivers these circulars via AAVSO email. This allows us to use the AAVSO's internal resources, notably the AAVSO Variable Star Index, to dynamically generate the list of stars, and mail out the circulars each Friday. Now that this work is done, the *CVnet Circular* mail list has been archived and mothballed.

Simonsen and Poyner moderate the remaining two CVnet Yahoo mail lists. The two CVnet lists are:

CVnet Discussion

The discussion list has 275 subscribers. The past few years' activity is best described as

an announcement list. Actual discussion seldom takes place. Notes from *AAVSO Alerts*, *IAU Circulars*, and *The Astronomer's Telegrams* get forwarded here also.

CVnet Outburst

The outburst list has 264 subscribers. This list has daily activity and is used by observers to announce outburst detections and unusual behavior of CVs, as well as Z Cam standstills and time series results.

Charts and Sequences

Section Leader: Tom Bretl, 2400 Garland Lane N, Plymouth, MN 55447

The Charts and Sequences Team is made up of volunteers and staff who work behind the scenes to keep the Variable Star Plotter (VSP), which creates finder charts with comparison star sequences for variable stars, as up-to-date, accurate, and useful as possible. The current members of the team are Arne Henden, Barbara Harris, Bob Stine, Bruce Sumner, John Toone, Robert Fidrich, Keith Graham, Mike Simonsen, Jim Jones, Patrick Wils, Sara Beck, Sebastian Otero, Tim Crawford, Tom Bretl, Natalia Virnina, Brad Walter, Matthew Templeton, Mati Morel, Stella Kafka, and Elizabeth Waagen.

The team was very active during 2015. Although the number of existing sequences in need of revision continued to drop, requests for new sequences significantly increased. The numbers tell the story:

Year	*New/revised Sequences*
2015	695
2014	259
2013	787
2012	860
2011	655
2010	437

The team resolved 68 CHETs (CHart Error Tool reports, used by individuals to report an issue with an AAVSO chart or comparison star sequence), updated 219 existing sequences, and created 408 new sequences during the 2015 calendar year.

CHET submissions are made online at https://www.aavso.org/chet, and requests for new sequences are made via email to compstars@aavso.org. Complete instructions for doing so are given at https://www.aavso.org/request-comparison-stars-variable-star-charts.

The most active team members concentrate on several important tasks: Tim Crawford fulfills almost all of the requests for new sequences, Jim Jones creates sequences for the newly discovered ASAS-SN (All Sky Automated Survey for SuperNovae) objects, Tom Bretl updates old charts and responds to CHET submissions, and Sebastián Otero updates VSX, checks for agreement between VSX and VSP, and advises us on a wide variety of other topics. We all work together to fulfill requests as quickly as possible, often within just a day or two.

SeqPlot continues to serve as the primary tool for sequence creation, and APASS provides an ever-increasing number of appropriate comparison stars covering almost the entire sky. The VSD Admin tool allows experienced team members to access, edit, add, and delete information from the comp star database. Less experienced members send their work to the section leader who checks their submissions before uploading. The team shares its work via the sequence team mail list and by recording each new or revised sequence in a Google spreadsheet accessible to the public at https://docs.google.com/spreadsheets/d/1mR4l7bElFYZl5lwkkVEBwByCNXwiKCMzlPS1lAx0QvQ/edit? hl=en&pref=2&pli=1#gid=317284472

Every few months observers are also made aware of new and revised sequences via the AAVSO website News.

The sequence team has its own website, created by Mike Simonsen, where team members, especially new team members, can find instructions on how to use SeqPlot, guidelines for sequence creation and revision, photometric resources outside of SeqPlot, a tutorial on how to use ASAS data, and a list of current projects and priorities. As priorities change and new photometry becomes available, the team plans to update this site in the coming year.

Eclipsing Binary

Section Leaders: ***Gerard Samolyk,*** *P.O. Box 20677, Greenfield, WI 53220*
Gary Billings*, P.O. Box 263, Rockyford, Alberta T0J 2R0, Canada*

Two papers containing 529 times of minima of 255 stars observed by 13 observers were submitted to the *Journal of the AAVSO* (Vol. 43, Nos. 1 and 2). Observers who would like to contribute data to these papers in the future should upload their observations to the AID and send a copy to Gerard Samolyk (gsamolyk@wi.rr.com).

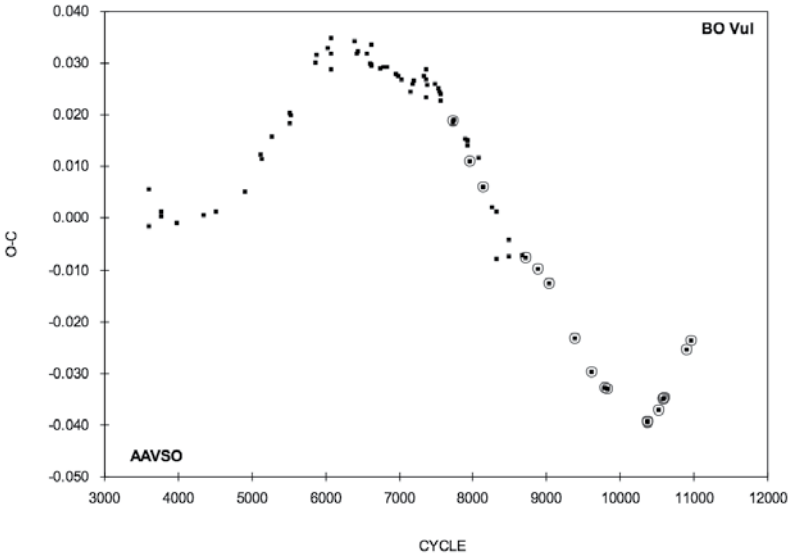
Using observations received in 2015, the light elements of over 60 stars on the AAVSO legacy program have been updated for the 2016 Eclipsing Binary Ephemeris. The 2016 ephemeris has been posted on the EB section website.

Observers are reminded of the list of more than 1000 "Otero+" eclipsing binaries, available on the Section's website. These are stars identified and published by Sebastián Otero and his co-authors in numerous *IBVS* and *OEJV* papers. Many have no published times of minima since the original publication, and only ASAS or NSVS light curves are available. Their elements are based on only a limited time span of observations, so ephemeredes are sometimes several hours "off." New times of minima are needed so the elements can be improved and a baseline established to monitor future variations. There are likely to be some stars with interesting behaviors in this long list.

There continue to be a few stars on the AAVSO legacy program that have not been observed for several years. Observers are encouraged to put a priority on observing these stars:

Not observed since 2010:	AQ Peg
Not observed since 2011:	TX UMa, XZ UMa
Not observed since 2012:	SV Cam, RT CMa, TZ CMa, RW Cap, Z Dra, RW Gem, DI Hya, BO Mon, EQ Ori, Beta Per, Z Vul
Not observed since 2013:	V342 Aql, R CMa, SX CMa, TU CMa, UZ Dra, TZ Eri, CM Lac, SS Lib, delta Lib, AT Mon, TY Peg, V505 Sgr, BH Vir, AX Vul

BO Vul is one of the legacy stars on our program that has a history of period changes. The O–C plot shown on the next page shows the behavior of this star over the past 40 years. The circled points are from CCD observations, the rest from visual observations. A significant change in the period occurred a few years ago.


BO Vul
AAVSO
O-C
CYCLE
0.040
0.030
0.020
0.010
0.000
-0.010
-0.020
-0.030
-0.040
-0.050
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000

Long Period Variable (LPV)

Section Leader: Michael Soukup, 3700 Parsifal Street NE, Albuquerque, NM 87111

Regrettably the LPV Section suffered in 2015 from some neglect by the Section Administrator due to his unexpected heavy business travel schedule and two full household moves. 2016 will see a marked improvement.

Even so, some useful studies and results occurred.

More than a few visual LPV observers are wondering if their observations of these variables are of use in this age of computer-driven telescopes employing CCD photometry and automated sky surveys (amateur and professional). Ironically, visual observations of LPVs were the "bread and butter" of variable star observing from AAVSO's beginning and up to about 20–25 years ago with the advent of relatively inexpensive CCD cameras and small, but powerful, computers. While I have always believed that visual observations of LPVs with their large magnitude ranges in brightness continue to have a great deal of value to astronomy I needed the input of others for their opinions.

I elected to undertake some interviews to learn what a few professional astronomers (whom I know somewhat well or at least have met at one time) who study stellar evolution and pulsating variables think about the value of visual observations in this day and time. I talked with six such astronomers, all of them observational astronomers with the exception of a theorist who models pulsation and evolution.

All told me they believe that visual observations of LPVs continue to be of value despite the numerous sky surveys online and those yet to come online. A great many LPVs are too bright for the deeper surveys but still need to be observed. Ongoing visual observations will likely yield some interesting results about evolution that can be "seen" despite the very slow pace of evolution in general. Most CCD photometry and surveys are best suited for rapid transient behavior in stars.

With this in mind I intend to use the AAVSO LPV section webpages to showcase how all observations (visual and otherwise) taken together can reveal some very interesting behavior in these stars as they age. Papers taken from the literature will be highlighted in the webpages. The use of large binoculars and small telescopes will be emphasized, as many interesting LPVs are rather bright throughout their magnitude range and are well suited for small instruments. Input from observers is, and will be, much solicited.

Nova Search

The Nova Search Section is being redesigned. Information will be available on the AAVSO website as work in this section develops.

Photoelectric Photometry (PEP)

Section Leader: James M. Kay, 26 Steeplebush Road, Shelburne, VT 05482

A hearty thanks goes out to longtime PEP chair James Fox who retired late in 2015. Jim was welcoming to new members and a great mentor. He will continue to be active in PEP observing and we wish him clear skies.

The AAVSO Photoelectric Photometry (PEP) program had 11 active observers during FY 2014–2015 contributing 2,615 observations of 85 stars. Observations included 7 filter bands covering both visual and infrared wavelengths.

The section continues to provide high accuracy photometry of bright stars, and participates in specific campaigns including those on b Per for Dr. Bob Zavala, U.S. Naval Observatory, Flagstaff; CH Cyg for Dr. Margarita Karovska, Harvard-Smithsonian Center for Astrophysics; and P Cyg for Ernst Pollmann, Leverkusen, Germany.

Near-IR photometry increased in 2015, with 2 observers providing 74 observations of 4 stars. At least one additional IR photometer is being put into service in 2016, with the possibility of several more, and the section is equipped to provide coverage of these bands for ongoing monitoring of bright IR stars as well as new campaigns.

In additional to science observations, several members have been active revisiting the methods and stars used to determine the transformation coefficients to ensure the consistency and accuracy of observations. This work is documented in the *AAVSO Newsletter* and the *Journal of the AAVSO*, and will continue in 2016.

A well deserved thanks goes out to all the observers who contributed in 2015, along with Dr. Matthew Templeton, who provided guidance and assistance at AAVSO Headquarters.

We encourage participation from PEP observers of all levels. Additional information is available at the AAVSO PEP webpages at:

http://www.aavso.org/aavso-photoelectric-photometry-pep -program

AAVSO International Database PEP data contributors 2014–2015

CCB	Charles Calia	Connecticut	56
CTOA	Tom Calderwood	Oregon	9
FXJ	James Fox	New Mexico	134
KCD	Carl Knight	New Zealand	60
KJMB	James Kay	Vermont	121
MFR	Frank Melillo	New York	7
NHS	Hans Nielsen	Denmark	1
PGD	Gerald Persha	Michigan	2068
UIS01	John Martin	Illinois	16
BVE	Erwin van Ballegoij	Netherlands	12
SKED	Ken Sikes	USA	131
		Total	2,615

Short Period Pulsator

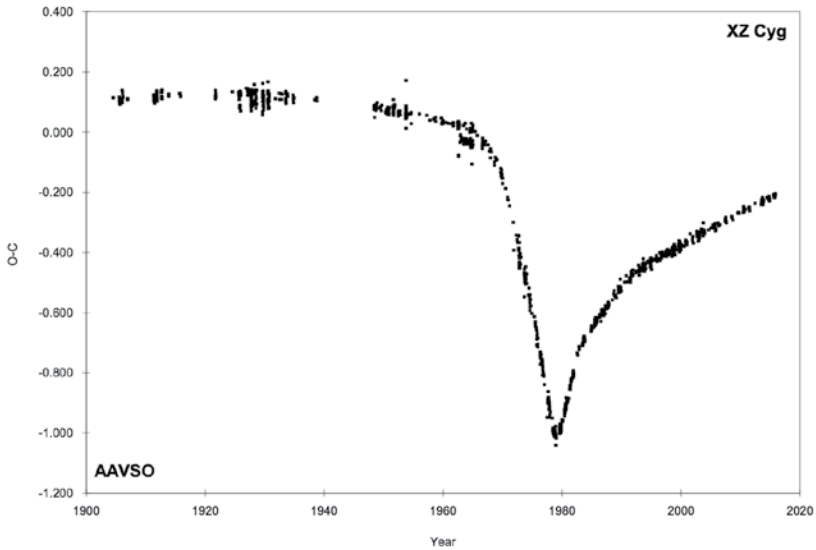
Section Leader: ***Gerard Samolyk****, P.O. Box 20677, Greenfield, WI 53220*
Section Webmaster: ***Shawn Dvorak,*** *1643 Nightfall Drive, Clermont, FL 34711*

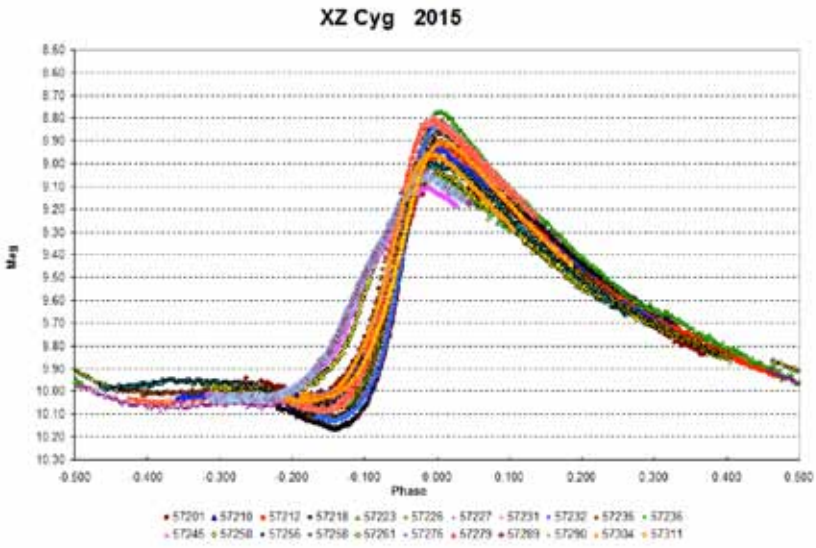
A paper containing 288 times of maxima of 67 stars was published in the *Journal of the AAVSO*, Vol. 43, No. 1. This paper contained the reduction of data sent to the section chair by eight observers in 2015. Any observer who would like to contribute data to these papers in the future should upload their observations to the AID and send a copy to Gerard Samolyk (gsamolyk@wi.rr.com).

In 2015, observations were received on all of the stars on the AAVSO RR Lyr legacy program with the exception of SS Leo. Using these observations, the light elements of 11 stars on the AAVSO legacy program have been updated for the 2016 RR Lyrae Stars Ephemeris. This ephemeris is posted on the AAVSO SPP Section website at https://sites.google.com/site/aavsosppsection/.

XZ Cyg is historically the best observed RR Lyr-type star with continuous coverage for over 110 years. This star has a history of changes in both the fundamental and Blazhko periods. The O–C plot below shows the changes in period that have occurred during that time. There was a slight shortening of the period about a decade ago.

This past season, we had good coverage of XZ Cyg through several Blazhko cycles, as the second figure shows. The coverage near the maximum was very good. The coverage at minimum was pretty good.




XZ Cyg 2015
Mag
Phase
-0.500
-0.400
-0.300
-0.200
-0.100
0.000
0.100
0.200
0.300
0.400
0.500
57201 57210 57212 57218 57223 57226 57227 57231 57232 57235 57236
57245 57258 57256 57258 57261 57276 57279 57289 57290 57304 57311

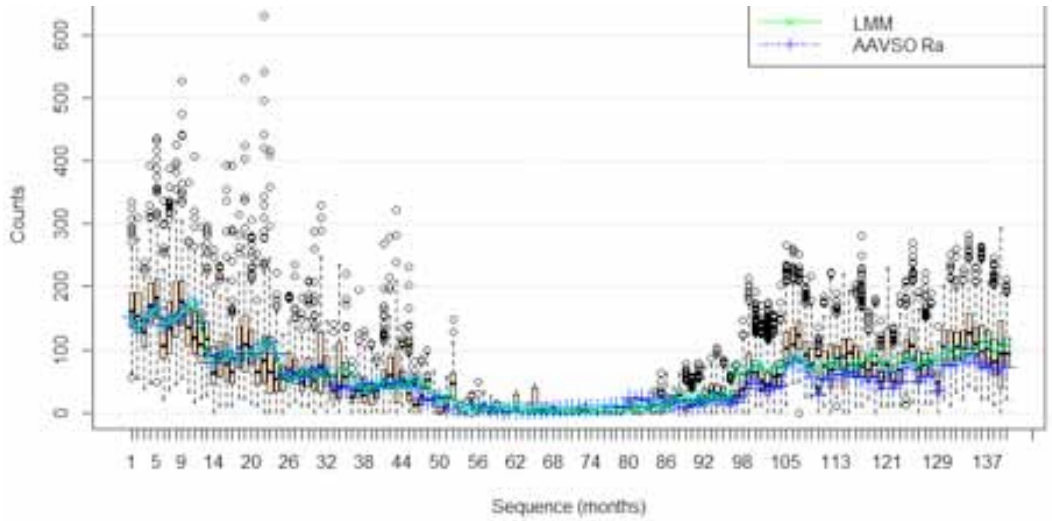
Solar

Section Leader and SID Group Leader: ***Rodney Howe,*** *3343 Rivaridge Drive, Fort Collins, CO 80526*
Sunspot Group Leader: ***Kim Hay,*** *76 Colebrook Road, Yarker, ON K0K 3N0, Canada*

Sunspot Report

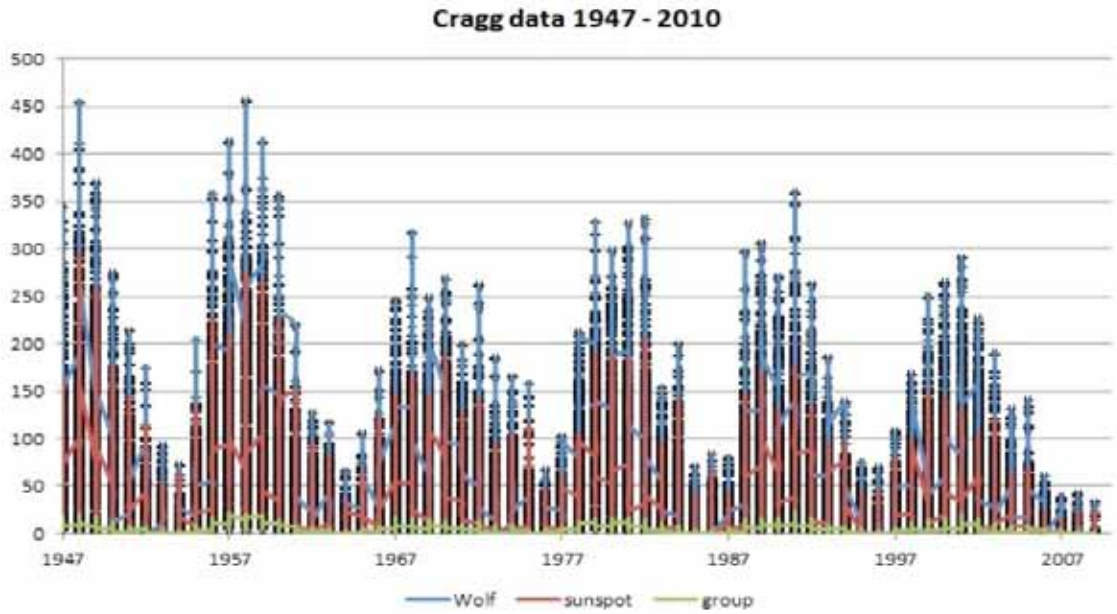
The sun has finally pulled out of the quiet time and is now becoming active. Kim Hay is doing an excellent job of collecting, cleaning, and creating the monthly American Relative numbers for the *Solar Bulletin*. There were a total of 81 sunspot observers who contributed 10,704 observations (September 2014–September 2015). Their efforts should be applauded as they continue to monitor our nearest star. We also have many awards to be given for our sunspot observers based on past certificates, and running numbers for FY 2015, as shown in the table on pages 35–36.

The plot below shows that we now have raw data counts for groups and sunspots going back to 2000 from many observers who have gone through their past records and submitted their data.



Loglinear mixed model fit. AAVSO values 200201 through 201408, by month.

Also, this year Michael Saladyga digitized all of Thomas A. Cragg's handwritten sunspot counts going back to 1947! This means we have continuous data in the AAVSO SunEntry database going from 1947 to now.



Solar Ionospheric Disturbance (SID) Report

For the last 12 months overall SID Activity has been stable. Our observer ranks have remained consistent with around 14 submissions each month. We also added two new observers this year, George Silvis A-141, and Ken Menzies A-146. There were a total of 18 observers submitting reports and a total of 336 reports sent in for fiscal year 2015. Thanks to all observers for their efforts in monitoring, data analysis, and report generation.

SID Observer awards are given to observers after having submitted more than 40 monthly reports (current year inclusive) and increments of 40 reports. Three observers are eligible for an award this year, as shown in the table on page 36.

We have begun a new observer award for those with over 10 observations during 2014 and 2015. Two observers are eligible for an award this year, as shown in the table on page 36.

Young Stellar Object (YSO)

Section Leader: ***Michael Poxon,*** *9 Rosebery Road, Great Plumstead, Norfolk NR13 SEA, England*

Several objects not extensively followed in previous years are now being observed—stars such as V561 Cyg and others. Don't forget that in the "dearth season" of the Northern spring there are still several circumpolar YSOs in Cas and Cep that need monitoring—and such monitoring is important because the more complete and longer timelines we have for these stars the more likely that observations of them will be used to good effect. I can do no better than quote from the abstract of a recent paper on RW Aur describing a hugely important phenomenon which produced the well-recorded fade: "The eclipse was confirmed by archival observations from American Association of Variable Star Observers (AAVSO)." The author of the paper, Joey Rodriguez of the KELT team, was at the AAVSO Annual Meeting in November and we spoke about other stars that he might want to include in future studies. I was further heartened by Gary Walker's (Maria Mitchell Observatory) saying that he would like to have some of his graduate students involved with the "UXOR hunt" campaign, whose goal is to identify this type of YSO from a set of candidate variables of unknown type. These two responses alone justified the air fare!

Several new stars (literally!) have been added to the YSO observing list, so please check the YSO forum on the AAVSO website for announcements. Keep observing!

Treasurer's Report
October 1, 2014–September 30, 2015

Bill Goff, *Treasurer, AAVSO, 49 Bay State Road, Cambridge, MA 02138*

Audited Financial Statements

American Association of Variable Star Observers
Statement of Financial Position
September 30, 2015

Assets	
Current Assets	
Cash and cash equivalents	$ 242,010
Grants receivable	65,560
Prepaid expenses	7,628
Investments	12,083,674
Total Current Assets	12,398,872
Property and Equipment, Net of Accumulated Depreciation	1,397,377
Total Assets	$ 13,796,249
Liabilities and Net Assets	
Current Liabilities	
Accounts payable and accrued expenses	$ 21,792
Prepaid membership dues and meetings	27,257
Total Current Liabilities	49,049
Net Assets	
Unrestricted	10,204,456
Temporarily restricted	189,400
Permanently restricted	3,353,344
Total Net Assets	13,747,200
Total Liabilities and Net Assets	$ 13,796,249

American Association of Variable Star Observers
Statement of Activities and Changes in Net Assets
For the Year Ended September 30, 2015

Changes in Unrestricted Net Assets	
Unrestricted Revenues, Gains, and Other Support	
Contributions and grants	$ 57,769
Investment interest and dividends	280,094
Membership dues and fees	73,472
Sales of publications and related material	13,637
Meeting fees	22,244
Unrealized losses on available-for-sale securities	(1,151,492)
Gain on sale of investments	407,638
	(296,638)
Net assets released by restrictions	495,041
Total Unrestricted Revenues, Gains, and Other Support	198,403
Expenses	
Program Services-research, data collection, publications and meetings	816,084
General and administrative	510,850
Fundraising	101,789
Total Expenses	1,428,723
(Decrease) in Unrestricted Net Assets	(1,230,320)
Changes in Temporarily Restricted Net Assets	
Contributions and grants	450,395
Investment interest and dividends	4,172
Gain on sale of investments	6,071
Assets released from Program restrictions	(495,041)
(Decrease) in Temporarily Restricted Net Assets	(34,403)
Changes in Permanently Restricted Net Assets	
Contributions and grants	4,650
Increase in Permanentely Restricted Net Assets	4,650
(Decrease) in Net Assets	(1,260,073)
Net Assets—Beginning of Year	15,007,273
Net Assets—End of Year	$ 13,747,200

3. Officers, Staff, and Volunteers

AAVSO Officers, Council Members, and Section Leaders for Fiscal Year 2015–2016

You may contact these persons through AAVSO Headquarters.

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AAVSO Volunteers

AAVSO members are very generous with their time and talents. Many of the programs and services we offer would not be possible without the participation of member volunteers: they are regularly involved in teaching new observers; writing articles for our publications; helping to keep the *Variable Star Index* up to date and functional, and submissions vetted; and the creation of charts and comparison star sequences.

We take this opportunity to recognize these special people who volunteered during the fiscal year, and to say *thank you* for another year of valuable contributions of time and expertise.

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Greek translation, *Manual for Visual Observing of Variable Stars, CCD Photometry Guide, and DSLR Observing Manual*
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Spanish translation, *CCD Photometry Guide*
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Josep Lluís Salto González

Spanish translations, *AAVSO Newsletter*
Jaime R. García

3. Officers, Staff, and Volunteers

4. Science Summary: AAVSO in Print

These pages present a partial listing of all literature using AAVSO data or resources. The majority of these listings were taken from the arXiv.org preprint archive, with others contributed directly by the authors themselves. It is intended to show the extent to which the observations of AAVSO observers are used in modern astronomical literature.

AAVSO data contributed by thousands of observers over decades is vital to variable star research. Annually, AAVSO Headquarters receives from 200 to 300 requests for data from researchers, members, observers, and educators. The AAVSO data are used extensively to correlate multi-wavelength observations of variable stars, to schedule ground-based and satellite observations, and for analysis of stellar behavior. Papers using AAVSO data are published by researchers, members, observers, and AAVSO staff. These papers are a testimony to the dedication and contribution of thousands of observers around the world who contribute data to the AAVSO International Database.

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5. Word from the Astronomical Community

Cataclysmic Variables (CVs) were thought to be the only accreting objects that did not launch jets, but recent observations of SS Cyg indicate otherwise. By means of radio observations of CVs on the rise to outburst, we will determine whether CVs launch jets and consequently establish if there is a universal link between accretion and jets. The AAVSO has made this project possible. The type of monitoring needed for this project (long-term and high-cadence) is not possible at professional observatories—the AAVSO, however, excels at it. Thank you so much to all the observers—your enthusiasm and dedication have already helped us to catch three CVs in outburst with the VLA! In particular, through your fast outburst-notifications, we were able to get VLA observations right at the time when we predicted the radio emission to peak. I have really enjoyed working with the AAVSO and am looking forward to working with you in future projects. Clear skies,

Deanne Coppejans
Ph.D. candidate,
Radboud University
Nijmegen (Netherlands)
and University of Cape Town

I am very grateful to the AAVSO for their continuing observations of variable stars and especially for the wonderful campaign and continuous observations of some of the objects that I and my colleagues study using space-based facilities. These include CH Cyg , Mira, RT Cru, and many others.

I am impressed also by the efficiency and the kindness of the Headquarters personnel.

With hope for many great observations to come, and best wishes to all,

Margarita Karovska
Harvard-Smithsonian
Center for Astrophysics

The VSP [Variable Star Plotter, creates finder charts for variable stars] system continues to be an outstanding service that the AAVSO provides. I'm a visual observer and follow a large number of stars and without accurate charts, it would make it very difficult to produce meaningful results. Similarly the chart team are to be commended for their timely response to my requests for sequence for little observed southern stars. Regards,

Andrew Pearce (PEX)
Nedlands, Western Australia

One of my goals this year was to start doing photometry, DSLR in particular.

I decided the VPHOT course would be a good way to get my head into that space and I was right. The course run by Blake Crosby and Mike Simonsen was awesome. I learned so much and was able to help someone in the VPHOT forum, apply it to the DSLR course, and help Mark Blackford with use of VPHOT.

The DSLR course run by Mark Blackford was also superb and I am getting close to being able to do DSLR photometry with my own setup. Again, I learned an enormous amount. I've already expressed my thanks to Mark.

Running the first VStar course was very full-on and also rewarding. Again, I learned from the participants and received much useful feedback. Watching JoDee Baker run the course and seeing how she and Brad Walter are running with it this year is fantastic.

David Benn (BDJB)
Klemzig, South Australia

"Wonderful and friendly staff always there to help. CHOICE courses are a great way to learn new skills. VPhot and VStar provide superb data reduction and analysis. AAVSOnet allows access to telescopes around the world. Best of all is getting together with the other members at meetings where we can share our experiences, learn from each other, and have fun."

Dave Cowall (CWD)
Nanticoke, Maryland

I finally took the plunge and signed up for two CHOICE courses this year (2014). My first experience was with VPhot which was a very through exposure to this valuable AAVSO photometry tool; I not only learned the basics but also how to use the many unique capabilities of this photometry tool. A great Instructor and well thought out.

The next course I signed up for was the delicious "Variable star Classification and Light Curves." I say delicious because what can be more fun than figuring out from looking at a light curve what type of star produced it. It was a challenging course but the rewards were well worth the effort required. This course also had a great Instructor and was well thought out as well.

I found the time demands of these courses to be reasonable and the quiz's reflected the covered chapter materials. If you have yet to sign up for a CHOICE Course I would certainly encourage you to look over the offerings. The courses provide you with the opportunity to increase your knowledge in many different areas.

Tim R. Crawford (CTX)
Arch Cape, Oregon

Are you interested in variable stars? AAVSO. Do you want to share your interest with others? AAVSO. Do you want to observe and contribute to the understanding of variable stars with anything from eyeballs to binoculars to observatories with massive scopes, CCDs, and spectrographs? AAVSO.

In the comfort of my home, I can access AAVSO's website, research a variable star (VSX, etc.), download charts to locate and observe the variable star (Variable Star Plotter), upload my observations to the database (WebObs), and then see how my observations and the observations of others continue to spin the thread of rich photometric history (over 100 years, in some cases, and still going strong!) of the variable star I've observed (Light Curve Generator). I ask: How cool is that?

Bob Stine (SRB)
Newbury Park, California

When I joined the AAVSO, the only way we could get charts was to order the Blue-print copies at $0.25 per chart and then wait until they were sent via snail-mail. A great improvement was made when the charts were available via the CD format, but that did not involve refinements to the charts. Now, thanks to the AAVSO Chart Committee, we can download charts and are made aware of updates.

Going back, my reports needed to be reported via paper copy. Today, we are able to submit data via the Internet—a great improvement. We also have the opportunity to check the quality of our observations in almost real time.

The CHOICE program, in my humble opinion, is one of the AAVSO gems. I have taken two of the courses and have found them to be high quality. Again, IMHO, members of the AAVSO would be missing out on a great benefit if they do not take advantage of one of the best benefits of membership.

Roger Kolman (KRS)
Glen Ellyn, Illinois

The AAVSO has been at the forefront in making astronomical resources available to the public. Put that together with the magazine *Australian Sky and Telescope*, (AS&T, also going to New Zealand), the offspring of the parent *Sky & Telescope*, a supportive editor (crucial) and we have a useful relationship. Both the previous Editor, Greg Bryant, and the current one, Jonathan Nally, are supporters of the AAVSO, and eight issues a year, from 2010 until today, have included a small column on VSOing , and a finder chart for the month's target.

The thinking in starting the column was that this was one of the easiest ways into useful astronomy. The *AAVSO Bulletin* is useful in target selection, if a brightish LPV is selected. It would ideally be picked up at or near maximum light, in a good position in the sky. The more southerly the target, the better. Sometimes I can sneak in a more challenging target, like the dwarf nova BV Centauri. The AAVSO Variable Star Plotter is used with every column to generate a finder chart. The web site generally is used to find papers or features on the target selected. A few Variable Stars of the Season have been utilized—for instance, on pulsating stars, RCBs, or dwarf novas.

With great good luck, I have pre-empted some observing campaigns. I write 3 to 4 months in advance, and to have the issue hit the stands as the *AAVSO Special Notice* is released, is gratifying. These being S Doradus, V854 Cen, and ETA Carinae. Follow ups of *Special Notices* have included T Pyxis, and others. Put simply, this would not be possible if not for the AAVSO on one hand, and AS&T on the other.

Alan Plummer (PAW)
Linden, NSW, Australia

I would like to comment about benefits of the CHOICE courses that I have taken. Besides providing the basic background information about variable stars, the CHOICE courses have given me confidence that I'm doing things the "right way" and not missing significant steps while making observations, as well as allowing me to maximize efficiency in planning and making variable star observations. The photometry-related courses have been especially helpful in allowing me to overcome obstacles that occur with technology and software that I most likely would have found too frustrating to deal with alone, without the excellent instructors and other students in the courses.

Frank Dempsey (DFR)
Locust Hill, Ontario, Canada

5. Word from the Astronomical Community

6. Support for the AAVSO

The Argelander Society

Named for Friedrich Argelander, who is considered to be "the father of variable star astronomy," **The Argelander Society** offers membership benefits to those individuals who have given substantial financial support to the AAVSO over many years. Once a benefactor has donated a cumulative total of $35,000.00 to the AAVSO, they are eligible for a lifetime membership in the organization, free registration to annual meetings, invitations to special events, special awards, and tokens of the association's appreciation.

Friedrich Wilhelm August Argelander
(1799–1875)

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The AAVSO's 75th Anniversary Meeting at Harvard University, 1986

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JAAVSO *Fund* Donations to this fund will be used to support the editorial, publication, and website costs associated with the *Journal of the AAVSO*.

VPHOT Fund Donations to this fund support the cost of cloud computing, maintenance, and development of the AAVSO's online photometric analysis software, VPHOT.

Contributor-Specified Restricted Funds Gifts and contributions made to the Association for restricted purposes as specified by the donor thereof. All such restricted funds of the Association shall be administered in strict accordance with the instructions of the donor. The Association is not obliged to accept any assets so offered.

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