AAVSO

The American Association of Variable Star Observers

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS
A A V S O
FOUNDED 1911

Annual Report
2013–2014

The American Association of Variable Star Observers

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Annual Report 2013–2014

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On the cover...

Longtime AAVSO member and observer Monsignor Ronald Royer was awarded the AAVSO Merit Award; he is shown (top left) in 1954 when he first joined the AAVSO, and more recently at work in the Ford Observatory, California. The next photo shows Professor Kristine Larsen (on right) with Jessica Johnson, one of her students from Southern Connecticut State College at the AAVSO's 2014 Annual Meeting. In the bottom photo are the recipients of the AAVSO 50-year Membership Award: Art Pearlmutter, Barry Beaman, and Roger Kolman, also at the AAVSO 2014 Annual Meeting.

Picture credits

In additon to images from the AAVSO and its archives, the editors gratefully acknowledge the following for their image contributions: Carol Beaman, Sara Beck, Richard Berry, Glenn Chaple, John Chumack, Shawn Dvorak, Mary Glennon, Bill Goff, Barbara Harris, Al Holm, Mario Motta, NASA, Kevin Paxson, Gary Poyner, Msgr. Ronald Royer, the Mary Lea Shane Archives of the Lick Observatory, Chris Stephan, Bob Stevens, Rebecca Turner, and Wheatley, et al. *2003,* MNRAS, *345*, *49*.

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Participants in the AAVSO's 102nd Annual Meeting, 2014

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:

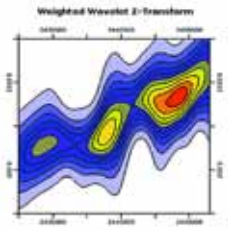
- observation and analysis of variable stars
- collecting and archiving observations for worldwide access
- forging strong collaborations between amateur and professional astronomers
- promoting scientific research, education, and public outreach using variable star data.

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 27 million variable star observations, it is the world's largest association of variable star observers.

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 *AAVSO 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.

Our Writers Bureau offers variable star and topical astronomy content on a monthly basis to editors of astronomy club and society newsletters.

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 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 325,000 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 27 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.

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

Mary Glennon, AAVSO member-observer since 1999

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.

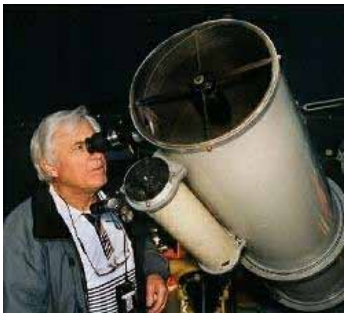
Observing Variable Stars

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 27 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.



Msgr. Ron Royer, AAVSO member observer since 1953

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.

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.

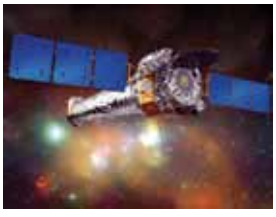
Services to Astronomers

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:

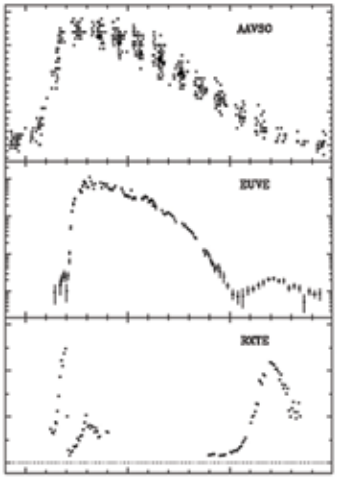
- Hubble Space Telescope
- Chandra X-Ray Observatory
- Spitzer Space Telescope
- XMM-Newton X-Ray Observatory
- Extreme Ultraviolet Explorer
- High Energy Astronomical Observatories 1 and 2
- International Ultraviolet Explorer
- Roentgen Satellite
- European X-Ray Observatory Satellite
- High Precision 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.

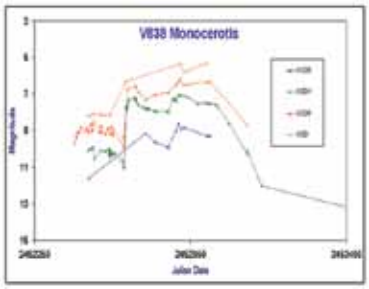


With the outburst detected by AAVSO Observers, simultaneous AAVSO visual, EUVE, and RXTE observations of SS Cygni were triggered, providing astronomers with important information about the behavior of dwarf novae (from Wheatley et al. *2003, MNRAS, 345, 49)*

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 Writers Bureau offers variable star and topical astronomy content on a monthly basis to editors of astronomy club and society newsletters. This gives us the chance to inform the public about the fascinating objects we study, as well as the science and research being done, while providing reliable, accurate information to newsletter editors who may lack the time or expertise to write or vet articles for publication.

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

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 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

1. About the AAVSO

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).

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.

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 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 membership meeting 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 attended in person by Council members living near Headquarters. At all meetings, those unable to attend in person participate via internet meeting software which allows everyone to observe who is in attendance at any moment. All votes are taken via roll call and recorded as such.

In 2014 the 103rd AAVSO Spring Meeting was held June 12–14 at the Ontario Airport Motel, Ontario, California, and the 103rd AAVSO Annual Meeting November 7–8 at the Woburn-Hilton Hotel, Woburn, Massachusetts. The Winter Council e-Meeting was held January 18, the Spring Council meeting in Ontario on June 10–11, the Summer Council e-meeting September 27, and the Annual (Fall) Council meeting in Woburn on November 6.

Winter Council e-Meeting

The Council met via GoToMeeting Saturday, January 18, at 1:00 p.m. EST; the meeting was hosted from AAVSO Headquarters by Director Arne Henden.

The council voted to adopt the minutes posted by the Secretary for the Summer 2013 e-meeting. Council voted to certify the elections from the Annual Meeting.

Burke and Burke LLC were ratified to be the financial auditors for 2013 after the fact. Bill Goff was elected Treasurer to fill the position vacated by Tim Hager, who had resigned. Council voted to increase the draw from the endowment from $616K to $638K to fund an across-the-board bonus for the staff, sans Director. The investment committee recommended that the half of the endowment still managed by Modera be

transferred to Graystone to improve performance. The first half of the endowment had been transferred to The Investment Fund for Foundations last year. Council moved the authority to transfer endowment funds to the Treasurer.

Council also established a fund to defray the meeting fees for students who give papers at the Spring and Annual Meetings.

The meeting was adjourned at 4:40 p.m.

Spring Council Meeting

The Council met at The Ontario Airport Motel on June 10–11, 2014. Secretary Gary Walker gave his report, and the Minutes of the previous Council meeting were accepted.

Council selected Dr. Styliani (Stella) Kafka to be the new AAVSO Director to succeed Arne Henden, who is retiring January 31, 2015. Stella was sent a letter offering her the position, and she accepted the Association's offer.

Development Officer and Membership Director Mike Simonsen gave a report, including details of the Annual Campaign which had begun May 1, 2014.

The AAVSO Council

Director Arne Henden reported that we had not been awarded any new grants. Five grant proposals were still active but no decisions have been made regarding them. The effects of the federal Sequestration were affecting decisions on these awards as well as those to the whole astronomical community. Donna Young's Chandra grant is funded by mission Education/Public Outreach and was extended for two years.

The Director's Semi-Annual Report to Council included details regarding current membership, observation totals for the International Database, updates on AAVSOnet assets and their deployment, Bright Star Monitor (BSM) projects, APASS progress, outcomes from recent travel, future travel plans, observing campaigns, the next Janet Mattei Fellow, and the final CCD School, which he will be teaching and which is scheduled for July.

Treasurer Bill Goff presented the Treasurer's Report. He projected an $11K surplus for the 2014 fiscal year.

The Director also gave his rationale for AAVSOnet, including that it provides training for our non-professional astronomer staff, a research facility for professional staff, and an experimentation facility, demonstrates to the outside community the value of small telescopes, offers a means to allow CCD-interested members to try CCD observing without making an investment, and provides an opportunity for members to use research-grade facilities at no cost. Since it is run at no cost to HQ, volunteers and donations are key to its operation.

Council also discussed Budget options. We are still seeing the effects of the five-year rule, which determines how much money may be used from the Endowment Fund, and 2014 will be a difficult year because recession years are still being included in the calculation. Options were presented and Council gave a sense of their reaction to each of the items.

The Council meeting was adjourned at 6:30 p.m. by President Jennifer (Jeno) Sokoloski.

Summer Council e-Meeting

The Council met electronically via GoToMeeting on Saturday, September 27, 2014, at 1 p.m. The meeting was hosted by Director Arne Henden from his home in Center Harbor, New Hampshire; Past President Mario Motta attended from there. Other Councilors called in via GoToMeeting software.

The Council voted to accept the minutes from the Secretary for the Spring 2014 Council meeting held in Ontario, California.

Burke and Burke LLC was ratified to be the official auditor for the year 2014. Rebecca Turner was elected Registered Agent for the Association to comply with the requirements of the Commonwealth of Massachusetts for non-profit entities.

Bill Goff gave a Treasurer's and Budget Committee report that showed that we were meeting our budget for the year. Council considered a request by the President for incoming Director Dr. Stella Kafka for $30K for marketing of the AAVSO. Council favorably received the request and deferred the vote until the Annual meeting and asked that it be included in the Budget for 2015. Bill Goff was commended for his transition to Treasurer and his outstanding job taking over the financial duties of the Association.

President Jeno Sokoloski led a discussion of the progress on the immigration paperwork for Stella, relative to the transition period of the last two weeks in January 2015 while Dr. Arne Henden will still be responsible for the Association.

The meeting was adjourned at the end of the afternoon.

Annual Council Meeting

The Council met at the Woburn Hilton on Thursday, November 6, 2014. Along with the regular business items including the Secretary's Report and the Treasurer's Report, the agenda included a short Director's Report, with the full details to be given at the Membership Meeting. President Jeno Sokoloski gave a report on the Transition Committee's plan to roll out the announcement of the new Director.

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, update on existing grants and pending proposals, status of Bright Star Monitor (BSM) projects, current AAVSO Photometric All-Sky Survey (APASS) and 2nd Generation Synoptic Survey (2GSS) progress, outcomes from recent collaborations, future travel plans, and many other projects.

Director Arne Henden reported that we were successful in obtaining a grant for $420K for APASS. The 2-Eyes 3-D (2E3D) grant is still active with $70K remaining in the budget; Rebecca Turner and Aaron Price are working on the plan for the current phase of the grant. Matt has submitted an NSF proposal titled "Stars at the cliff: investigating the longest-period AGB variables".

Treasurer Bill Goff reported that in 2014 we spent $1.010M versus a budget of $1.083M dollars. Finishing the year slightly under budget required a smaller withdrawal—$624K

vs. the $632K authorized—from the earnings of the endowment.

Treasurer Bill Goff presented the 2015 Budget. The report included the current five-year backward average for the endowment of $13,245,647, and an operational budget of $1,245,709 for the 2015 year. This budget plans for a withdrawal from endowment earnings of $648K for the year, which includes the new marketing plan.

AAVSO Councillors (left to right) Roger Kolman, Bob Stine, Kevin Paxson, Bill Goff, with Mike Simonsen from AAVSO Headquarters

Mike Simonsen gave the Development Report. He reported that we had raised $33,604 from the Annual Campaign, and that he was planning on starting the year-end campaign in December 2014.

Council acted on several items: Discussion was held on the locations of future Association meetings, with the 2015 Spring meeting tentatively at Ball State University. Council agreed to have a second reading before enacting motions. The Director's evaluation process was reviewed. Council voted to make staff and Council Members ineligible for the AAVSO Merit and Olcott Awards.

The Council then stood for a moment of silence in honor of deceased members and friends.

Elections of officers were held, with Dr. Jennifer (Jeno) Sokoloski elected President, Dr. Kristine Larsen elected 1st Vice President, Dr. Roger S. Kolman elected 2nd Vice President, Bill Goff elected Treasurer, and Gary Walker elected Secretary.

The meeting was adjourned at the end of the afternoon.

The 103rd AAVSO Spring Meeting, Ontario, California

The AAVSO Spring Meeting was held jointly with the Society for Astronomical Sciences (SAS) and the Center for Backyard Astrophysics (CBA) at the Ontario Airport Motel. The meeting started on Thursday morning, June 12, 2014, with four special workshops on Supernovae Discovery and Science, Hands-on Spectrum Processing, Improving Signal-to-Noise, and Finding and Using Photometry Transforms, led by Tim Puckett and Michael Richmond, Tom Field, Robert Buchheim, and Arne Henden, respectively.

AAVSO/CBA/SAS meeting attendees (photo by Bob Stevens)

The Membership Meeting was called to order at 7:00 p.m. A warm welcome was given by AAVSO Operations Director Rebecca Turner. Gary Walker gave the Secretary's Report and Bill Goff gave the Treasurer's Report, which were approved. Director Arne Henden reported on deceased members and friends of the AAVSO, and Truman Kohman, Hugh Lund, Arthur Ritchie, Elizabeth Pyle Whitney, and Lillie Berger Zissell were honored with a moment of silence.

Director Arne Henden gave his Semi-annual Report to the membership. He reported that we were having another excellent year. As of this meeting, we had 26 million variable star observations in the AAVSO International Database and that total is increasing at about 1.5 million observations per year. Currently, about 25% of these observations are visual and 75% are electronic (CCD, DSLR, and PEP) observations. Arne reported that we have 1,162 paid members, not including those who have not yet paid the current year's dues and those who have been carried as members even though they did not pay in the past. When complimentary memberships are re-evaluated, we will be able to see better any increase or decrease in membership.

Arne reported that we have five AAVSOnet telescopes online (W30, OC61, TMO61, BSM-South, and SRO).

The 44th AAVSO Merit Award was presented to Gary W. Billings for his service and contributions to the AAVSO, described in detail on page 25. Kevin B. Paxson and Geir Klingenberg were each awarded the AAVSO Director's Award for 2014. Kevin was recognized for his many contributions to the AAVSO, described in detail on page 34, and Geir for his contributions to the AAVSO in software and observing, described on page 35. 102 Observer Awards recognizing variable star observing milestones were announced by the Director (list on pages 26–30). The Director gave a huge thanks to all the volunteers, hundreds of observers, writers of blogs, posters to the forums, contributors to the various AAVSO Funds, and the Council and staff members. Longtime member and Past President Marv Baldwin cited Arne Henden for all he has done for the organization, and relayed a big "Thank You."

The meeting was adjourned at 9:00 p.m. by Rebecca Turner.

On Friday, June 13, the first of two Scientific Paper Sessions was held jointly with the SAS (Society for Astronomical Science) and CBA (Center for Backyard Astrophysics). Eighteen papers were given by members of AAVSO, SAS, and CBA on various topics relating to recent science carried out by them; their titles follow these minutes.

On Saturday, June 14, the second Scientific Paper Session was held, again jointly with SAS and CBA. Fourteen papers were given on various topics of recent science by members of all three organizations.

On Saturday evening attendees enjoyed a banquet held jointly by all three organizations. The Keynote Speaker was Arne Henden, whose talk, "The Adventures of a Roving Astronomer," detailed his experiences with weather disasters during his astronomical career.

Following Arne's talk and questions from attendees, the meeting was adjourned.

A few of the AAVSO/CBA/SAS meeting speakers: from top left: Bob Bucheim, David Boyd, Lance Benner, Wayne Green, Arne Henden, John Martin, Joe Patterson, Arto Oksanen, and Gary Walker (photo by Richard Berry)

The 103rd AAVSO Annual Meeting, Woburn, Massachusetts

While the Council met on Thursday morning, November 6, 2014, a first-time attendee gathering was hosted by Mike Simonsen, staff members, and section leaders not involved in the Council meeting. Meeting Registration was opened at 1:30 p.m. At 2 p.m. a scientific workshop was held by Councilor John Martin on "Spectroscopy with Just a Turn of the Filter Wheel" and was very well attended.

John Martin

The meeting continued on Friday morning with Registration and a hot breakfast buffet, which was enjoyed by all. The day was filled with four general scientific paper sessions. Speakers in Part I included Frank Dempsey, who presented period analysis of Betelgeuse using Vstar, Gary Walker, who spoke on EE Cep's four-color eclipse, Kangujam Yugindro Singh (and co-author Irom Ablu Meitei), who presented a photometric study of Sirius, and John Martin, who spoke on eta Car and its evolution. Poster introductions were given by Robert Dudley on the trend in observing legacy long period variables, Shelby Jarrett (and Cybil Foster) on analyzing the Hα lines in eps Aur post-eclipse, Jessica Johnson (and Kristine Larsen) on the discovery of misidentified BY Dra stars in ASAS data, Kristine Larsen on the AAVSO and the International Year of Light, Dale Mais on flares and bumps in the photometry of LPVs, George Silvis on transforming CCD data using the new TransformApplier (TA) software, George Silvis on the status of the Eggen Card Project, and Lucian Undreiu (and Andrew Chapman) on visual spectroscopy of R Sct.


Jessica Johnson and Kristine Larsen of Southern Connecticut State College

Following a coffee break, in Part II Rodney Howe (and Jan Alvestad) talked about sunspot numbers, David Cowall described his transition to CCD observing, Gordon Meyers (and Ken Menzies, George Silvis, and Barbara Harris) spoke on determining photometric transforms using his Photometry Transformations Generation Program (PTGP) software, and Ken Menzies (and Gordon Myers) spoke on using VPHOT with PTGP to generate transformation coefficients. A lunch break followed.

Elizabeth Waagen and Gerry Samolyk

Part III of the general paper session convened after lunch. Kangujam Yugindro Singh (and Irom Ablu Meitei, Salam Ajitkumar Singh, and Rajkumar Basanta Singh) spoke on the astronomical observations at Manipur University Observatory in India, Mike Joner reported on West Mountain Observatory observations following up on KELT suspected exoplanet transits, David Turner talked about improving visual observations, and John Toone spoke on America's first variable star.

After a coffee break, Part IV of the general paper session was held. Mike Simonsen talked about the future of visual observations in variable star research for 2015 and beyond, and John Toone gave a biographical account of Albert Jones, the world's most prolific variable star observer. The general paper session concluded at about 5 p.m.

Saturday, November 8, began with Meeting Registration and another hot breakfast buffet. Breakfast was followed by the formal membership meeting.

The meeting was called to order at 9:00 a.m. and a warm welcome was given by AAVSO President Jeno Sokoloski. Gary Walker gave the Secretary's Report and Bill Goff gave the Treasurer's Report, which were approved. A budget for 2015 of $1,245,709 was presented which will withdraw $648,000 from the earnings of the Endowment. This is near the 5% guideline recommended.

Director Arne Henden reported on deceased members and friends of the AAVSO: William A. Bradfield, Thomas H. H. Lloyd Evans, Arthur D. Ritchie, Stanislav Stefl, Jan A. Smit, and Zemřel František Vaclík. The membership stood for a moment of silence.

He then reported on AAVSO membership, stating that numbers increased during the year. Two-thirds of AAVSO members are from the USA and one-third come from other countries. Our total paid membership now stands at 1,081 members.

Director Arne Henden reported that we have over 26.5 million observations in the AID (AAVSO International Database) as it continues its exponential rise. As in the past, the current annual submissions are approximately 25% visual and 75% electronic (CCD, DSLR, and PEP).

Arne followed with a summary of the status of currently funded grants: Chandra E/PO is extended through 2017:

Stella Kafka, Paula Szkody, and Kevin Marvel

APASS was funded at the level of $480K, which is in the above-mentioned budget. We also have $70K in 2E3D funding that is being planned by Rebecca and Aaron Price.

Arne announced that Drs. Barbara Harris, Katrien Kolenberg, and Joseph Patterson were elected to AAVSO Council for two-year terms; Dr. John Martin was re-elected for a second two-year term, having earlier served a one-year term. Richard Sabo and Rodney Howe were elected to fill one-year terms.

150 years of observing: Barry Beaman, Roger Kolman, and Art Pearlmutter

Honorary AAVSO membership was awarded to Howard J. Landis and to Kevin B. Marvel, who was present to accept his certificate from Arne. Pins recognizing 50 years or more of membership in the AAVSO were presented to Barry Beaman, Roger Kolman, and Arthur Pearlmutter.

Arne gave his final Director's Report, focusing on the evolution of the AAVSO during the ten years of his directorship, and it was received with a standing ovation. The meeting was adjourned at 11 a.m.

Following a coffee break, Part I of the special paper session held to honor retiring AAVSO Director Arne Henden took place. Dr. Kent Honeycutt spoke on "Why do some cataclysmic variables turn off?" Having Dr. Honeycutt participate in the session was particularly special, as he had been the Ph.D. advisor at Indiana University for both Arne Henden (one of his first advisees) and incoming AAVSO Director Dr. Stella Kafka (his last advisee)!

After lunch, special paper session Part II was held. Ulisse Munari spoke on APASS support of ambitious ground-based galactic investigations and space missions searching for exo-Earths, Stephen Levine spoke on using APASS data to study aspects of local galactic neighborhood kinematics and structure, and Mike Joner spoke on the lasting impact Arne has made on the photometric community—both professional and amateur—through his book *Astronomical Photometry*.

The group photograph commemorating the meeting was taken during the coffee break. Following the break, Part III of the special paper session was held. Richard Berry spoke on AAVSOnet and in particular the Bright Star Monitor, Paula Szkody talked about fourteen years of collaborations with Arne on cataclysmic variables, Mike Simonsen documented the extensive evolution of AAVSO charts and comparison star sequences during Arne's tenure, and Gary Walker talked about Arne's decade of the AAVSO. The session concluded at 5 p.m.

John Toone, Roger Kolman, and Kevin Paxson

Arlo Landolt and John O'Neill

The AAVSO Banquet was held Saturday evening at the Hilton-Woburn Hotel, with attendees assembling at 6:00 for drinks and conversation and 7:00 for dinner. Before dinner, tables became teams for the second annual AAVSO trivia contest—a popular return from last year—and much fun was had. Appropriate to the occasion, questions were drawn from the talks given during the special session honoring Arne, and the winning table received special coffee mugs printed with "it depends," one of Arne's trademark answers to questions.

Following the buffet dinner, awards and remarks were presented. Arne presented AAVSO Solar Observer Awards to those recipients who were present: Frank Dempsey and Kristine Larsen for 500 Sunspot reports, and Rodney Howe and Larry Krozel for 1,000 Sunspot reports. He then presented a staff service award to Elizabeth O. Waagen for her 35 years of service to the AAVSO, and to Dr. Michael Saladyga for his 30 years of service, and announced an award for 15 years for Gloria Ortiz Cruz, who was not present. Arne then became the recipient of a staff service award for his 10 years of service and was heartily acknowledged. Taking back the podium, Arne presented the 2014 Director's Award to Kevin Paxson and announced the other recipient of the Director's Award as Geir Klingenberg. Arne announced the recipient of the 45th AAVSO Merit Award as Monsignor Ronald E. Royer, who was unable to attend. Arne then presented his own award, the Order of the Orange, for the third time in his directorship, this time to Gary Walker, for his ongoing assistance and support. First Vice President Kristine Larsen, acting on behalf of President Jeno Sokoloski, who had had to leave earlier in the day, unveiled Arne's official portrait, which is to be displayed at AAVSO Headquarters. Arne was thanked by everyone with a standing ovation, and the meeting was closed.

Director Arne Henden with his portrait to be displayed at headquarters, presented by Vice President Kristine Larsen

Papers Presented; Deceased Members, Observers Colleagues; Awards

Papers Presented at the Joint Meeting of the Society for Astronomical Sciences and the American Association of Variable Star Observers (AAVSO 103rd Spring Meeting), Held in Ontario, California, June 12–14, 2014

"The CBA: Basements, Backyards, and Binaries"
Joe Patterson

"A Crowd Sourced Light Curve for SN 2014G"
John C. Martin

"Observations of Novae from ROAD"
Franz-Josef Hambsch

"Impact of Observing Parameters on 17 Nights with Nova Del 2013"
Wayne L. Green

"Recovering From the Classical-Nova Disaster"
Joseph Patterson

"Pushing the Envelope: CCD Flat Fielding"
James Vail

"Toward Millimagnitude Photometric Calibration"
Eric Dose

"Mining Your Data"
Maurice Clark

"A Strategy for Urban Astronomical Observatory Site Preservation:
The Southern Arizona Example"
Eric R. Craine, Brian L. Craine, Patrick R. Craine, Erin M. Craine, Scott Fouts

"CCD Astrometry of Double Stars"
Joseph Caruso

"Measuring Double Stars with a Dobsonian Telescope by the Video Drift Method"
Rick Wasson

"Kitt Peak Speckle Interferometry of Close Visual Binary Stars"
Russell Genet, David Rowe, Thomas C. Smith, Alex Teiche, Richard Harshaw, Daniel Wallace, Eric Weise, Edward Wiley, Grady Boyce, Patrick Boyce, Detrick Branston, Kayla Chaney, R. Kent Clark, Chris Estrada, Reed Estrada, Thomas Frey, Wayne Green, Nathalie Haurberg, Greg Jones, John Kenney, Sheri Loftin, Izak McGieson, Rikita Patel, Josh Plummer, John Ridgely, Mark Trueblood, Don Westergren, Paul Wren

"Orion Project: A Photometry and Spectroscopy Project for Small Observatories"
Jeffrey L. Hopkins

"Simplified Color Photometry Using APASS Data"
Nicholas Dunckel

"Detecting Problematic Observer Offsets in Sparse Photometry"
Tom Calderwood

"Software Based Supernova Recognition"
Stephen Walters

"Radar Observations of Near-Earth Asteroids"
Lance Benner

"Photometry of Jupiter Trojans"
Linda French

"Spectro-Polarimetry: Another New Frontier"
John Menke

"A Survey of Current Spectroscopic Tools, Capabilities, and Activities"
Tom Field

"Surveying for Historical Supernovae Light Echoes in the Milky Way Field"
Doug L. Welch

"The Z CamPaign: Year Five"
Mike Simonsen

"A Search for Extreme Horizontal Branch Stars in the General Field Population"
Douglas Walker, Michael Albrow

"How to Discover gamma-ray Burst Optical Transients?"
Arto Oksanen

"How Many R Coronae Borealis Stars Are There Really?"
Geoffrey C. Clayton

"The Asynchronous Polar V1432 Aquilae and Its Path Back to Synchronism"
David Boyd, Joseph Patterson, William Allen, Greg Bolt, Michel Bonnardeau, Tut Campbell, Jeannie Campbell, David Cejudo, Michael Cook, Enrique de Miguel, Claire Ding, Shawn Dvorak, Jerrold L. Foote, Robert Fried, Franz-Josef Hambsch, Jonathan Kemp, Thomas Krajci, Berto Monard, Yemal Ogmen, Robert Rea, George Roberts, David Skillman, Donn Starkey, Joseph Ulowetz, Helena Uthas, Stan Walker

"Photometry on Two New WZ Sge-type Stars"
Enrique de Miguel

"Ground-based Efforts to Support a Space-based Experiment: the Latest LADEE Results"
Brian Cudnik, Mahmudur Rahman

"Diurnal Parallax Distance Determination of Asteroids from a Single Station"
Michael Gerhardt

"An Experiment in Photometric Data Reduction of Rapid Cadence Flare Search Data"
Gary A. Vander Haagen, Larry E. Owings

"The Strange Case of GSC 05206-1013"
Mahfuz Krueng

"Modern V Photometry of the Eclipsing Triple System b Persei"
Donald F. Collins, Jason Sanborn, Robert T. Zavala

"SkyGlowNet Sky Brightness Meter (iSBM) Nodes: Cerritos Observatory Station, Tucson, Arizona, and Colorado State University, Fort Collins, Colorado" (poster)
Roger B. Culver, Erin M. Craine, Heather Michalak

"Undergraduate Observations of Separation and Position Angle of Double Stars ARY 6 AD and ARY 6 AE at Manzanita Observatory" (poster)
Michael J. Hoffert, Eric Weise, Jenna Clow, Jacquelyn Hirzel, Brett Leeder, Scott Molyneux, Nicholas Scutti, Sarah Spartalis, Corey Takuhara

"Got Scope? The Benefits of Visual Telescopic Observing in the College Classroom" (poster)
Kristine Larsen

Deceased Members, Observers, and Colleagues

Kohman, Truman P., PA
Lund, Hugh, South Africa
Whitney, Elizabeth Pyle, MA
Zissell, Lillie Berger, MA

AAVSO Merit Award Recipient (presented at the 103rd Spring Meeting in Ontario, California, June 14, 2014)

Gary W. Billings was awarded the 44th AAVSO Merit Award "...in recognition of his faithful membership and service to the AAVSO as Treasurer, Councilor, financial consultant, mentor to new Council members, and Co-Chair of the Eclipsing Binary Section; his dedication as a careful and prolific CCD observer particularly of binary stars; his key contributions to international observing campaigns; and his scholarly contributions on cataclysmic variables and binaries."

AAVSO Observer Awards (presented or announced at the ***103rd Spring Meeting, Ontario, California, June 14, 2014)***

Award/recipient	*Affiliation***	*Country*	*Interval*	*Total*
Over 75,000 Visual Observations*				
Hiroshi Matsuyama		Australia	1978–2013	84,597
Over 25,000 Visual Observations*				
Barry B. Beaman		USA	1964–2013	26,051
Over 10,000 Visual Observations*				
Stephen R. Hovell	14	New Zealand	2008–2013	11,891
Janos Bakos	03	Hungary	2007–2013	11,242
David Swann		USA	1991–2013	10,087
Over 5,000 Visual Observations*				
Carey Chiselbrook		USA	2004–2013	8,493
Carlos Labordena	15	Spain	2001–2013	5,757
Thomas Karlsson	19	Sweden	2008–2013	5,669
Peter Enskonatus	01	Germany	1991–2013	5,281
Jon G. Moehlmann		USA	2006–2013	5,189
Eric J. Blown		New Zealand	2007–2013	5,167
Luigi Palazzi		Italy	2007–2013	5,158
Over 1,000 Visual Observations*				
Chris P. Maloney		USA	2012–2013	2,669
Karsten Klindt–Jensen		Norway	2011–2013	1,270
Alan J. Baldwin	14	New Zealand	1965–2013	1,037
Over 100 Visual Observations*				
Ivan S. Bryukhanov	16	Belorus	2013–2013	535
Geng Zhao		China	2012–2013	427
Alicia Capetillo Blanco		Spain	2006–2013	413
Andrea Busato		Italy	2012–2013	302
John H. McCammon		USA	2012–2013	282
Thanasis F. Papadimitriou		Greece	2012–2013	243
Juha M. K. Ojanpera		Finland	2008–2013	206
Frederick A. Kazmierski		USA	2012–2013	201

continued on next page

Observer Awards, cont.

Award/recipient	*Affiliation***	*Country*	*Interval*	*Total*
Klemen Cotar		Slovenia	2011–2013	183
Yuankun Wang		USA	2013–2013	170
Lukasz Siekielewski		Poland	2012–2013	161
Adair Cardoso	36	Brazil	2012–2013	135
Sherry Campbell		Canada	2012–2013	133
Conan McCann		USA	2012–2013	130
Janos Bacsa	03	Hungary	2011–2013	125
Hans Coeckelberghs	05	Belgium	1994–2013	121
David J. Benn		Australia	2009–2013	120
Aexandru Garofide		Romania	2012–2013	120
Artyom Novichonok		Russia	2009–2013	119
Robert C. Wolpert		USA	1981–2013	112
Longji Bing		China	2010–2013	111
Victor Ruiz Ruiz	07	Spain	1994–2013	110
Mark Suhovecky		USA	2001–2013	109
John F. Briol		USA	2012–2013	107
Dave Smales		England	2013–2013	106
Ton Schoenmaker		Netherlands	2007–2013	105
Christopher P. Mann	20	England	2009–2013	103
Ronald E. Baker		USA	2006–2013	103
Xin Sheng Chen		China	2012–2013	102
Bjorn Mansdahl		Sweden	2009–2013	100
Over 1 Million CCD Observations*				
Franz–Josef Hambsch	05	Belgium	2002–2013	1,057,501
Over 600,000 CCD Observations*				
Robert A. James		USA	1953–2013	601,520
Over 100,000 CCD Observations*				
William Goff		USA	1981–2013	117,774
Kenneth T. Menzies		USA	1968–2013	111,556
Over 50,000 CCD Observations*				
David Cejudo Fernandez		Spain	2010–2013	71,585
Joseph H. Ulowetz		USA	2010–2013	68,138

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Observer Awards, cont.

Award/recipient	*Affiliation***	*Country*	*Interval*	*Total*
Roger D. Pickard	20	England	2003–2013	58,292
Thomas J. Richards	29	Australia	1967–2013	57,463
Alain Bruno	01	France	1981–2013	55,348
Donn R. Starkey		USA	2001–2013	53,983
George Sjoberg		USA	2007–2013	51,636
Riccardo Furgoni		Italy	2011–2013	50,051
Over 10,000 CCD Observations*				
Leonid Tkachook		Ukraine	2011–2013	24,940
Gordon E. Myers		USA	2007–2013	19,107
Miguel Muro Serrano		Spain	2012–2013	18,431
John W. Rock		England	2012–2013	18,030
Charles L. R. Lemaire		Germany	2011–2013	16,653
Stefano Padovan		Spain	1973–2013	15,320
David J. Lane	27	Canada	2003–2013	13,588
Michael Heald		USA	2001–2013	11,633
Terrence C. Bohlsen	29	Australia	2008–2013	11,523
Over 1,000 CCD Observations*				
Michael J. Cook		Canada	2010–2013	7,611
Ivan A. Curtis		Australia	2012–2013	5,623
Pierre Hallsten		Sweden	2012–2013	5,212
Vesa Tapio Kousa		Spain	2012–2013	4,779
James B. McMath		USA	1992–2013	4,668
Thibault de France		France	2013–2013	4,367
Alfonso Carreno		Spain	2012–2013	4,057
Thomas Wikander	19	Sweden	2010–2013	3,075
David S. Conner		England	2009–2013	2,388
John Centala		USA	2002–2013	1,870
Helmar G. Adler		USA	2013–2013	1,777
Maurice Audejean		France	2011–2013	1,741
Kevin Hills		England	2012–2013	1,573
Fabio A. Mariuzza	18	Italy	2007–2013	1,558
Andras Timar	03	Hungary	1992–2013	1,425
Paul Temple		USA	1996–2013	1,375
Juan Herrero		Canada	2012–2013	1,331

continued on next page

Observer Awards, cont.

Award/recipient	*Affiliation***	*Country*	*Interval*	*Total*
Petri Kehusmaa	17	Finland	2007–2013	1,294
Tiziano Colombo		Italy	2013–2013	1,280
Sergey Kuznetsov		Russia	2004–2013	1,251
George A. Silvis		USA	2007–2013	1,192
Francisco Soldan Alfarp		Spain	2012–2013	1,173
Nick D. James		England	2010–2013	1,102
Christopher Norris		USA	2004–2013	1,060
Stefan Karge		Germany	2006–2013	1,004
Over 100 PEP Observations*				
Gerald Persha		USA	2013–2013	953
Patrick Rochford		USA	1991–2013	108
Roger Diethelm		Switzerland	1966–2013	102
Over 500 DSLR Observations*				
Tiziano Colombo		Italy	1970–2013	635
Over 100 DSLR Observations*				
Giuseppe M. Bertani	18	Italy	2012–2013	354
Richard Biernikowicz		Poland	2011–2013	328
Neil Butterworth	29	Australia	2002–2013	325
Penko G. Jordanov		Bulgaria	2009–2013	300
Giuseppe Frustaci	18	Italy	2010–2013	238
Glen J. Schrader		Australia	2009–2013	153
Heinz–Bernd Eggenstein		Germany	2009–2013	142

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Observer Awards, cont.

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

**These numbers indicate observers are also affiliated with the groups below:

01 Association Française des Observateurs d'Étoiles Variables (AFOEV)
03 Magyar Csillagàszati Egyesület, Valtózocsillag Szakcsoport (Hungary)
05 Vereniging Voor Sterrenkunde, Werkgroep Veranderlijke Sterren (Belgium)
07 Asociacion de Variabilistas de Espagne (Spain)
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 Forening, variabelsektionen (Sweden)
20 British Astronomical Association, Variable Star Section
27 Royal Astronomical Society of Canada
29 Variable Stars South
36 Nucleo de Estudo e Observacao Astronomica—Jose Brazilicio de Souza (Florianopolis, Brazil)

Papers and Posters Presented at the 103rd Annual Meeting of the AAVSO, Held in Woburn, Massachusetts, November 6–8, 2014

General Paper and Poster Session

"Betelgeuse period analysis using Vstar"
Frank Dempsey

"EE Cep Winks in full Color"
Gary Walker

"Transient pulsation of Sirius"
Kangujam Yugindro Singh, Irom Ablu Meitei

"Eta Carinae Continues to Evolve"
John C. Martin

"The Trend in the Observation of Legacy Long Period Variable Stars" (Poster)
Robert Dudley

"Analysis of Hα lines in Epsilon Aurigae post-eclipse" (Poster)
Shelby Jarrett, Cybil Foster

"Discovery of Five Previously Misidentified BY Draconis Stars in ASAS Data" (Poster)
Jessica Johnson, Kristine Larsen

"AAVSO and the International Year of Light" (Poster)
Kristine Larsen

"Precision Photometry of Long Period Variable Stars: Flares and Bumps in the Night" (Poster)
Dale Mais

"Transformation: adjusting your data to the standard photometric framework" (Poster)
George Silvis

"The Eggen Card Project" (Poster)
George Silvis

"Visual Spectroscopy of R Scuti" (Poster)
Lucian Undreiu, Andrew Chapman

"Parallel group and sunspot counts from SDO/HMI and AAVSO visual observers"
Rodney Howe, Jan Alvestad

continued on next page

papers and posters, cont.

"Going Over to the Dark Side"
David Cowall

"Photometry Transforms Generation with PTGP"
Gordon Myers, Ken Menzies, George Silvis, Barbara Harris

"Using VPHOT and PTGP to generate Transformation Coefficients"
Ken Menzies, Gordon Myers

"Observational activities at Manipur University, India"
Kangujam Yugindro Singh, Irom Ablu Meitei, Salam Ajitkumar Singh, Rajkumar Basanta Singh

"A Report on West Mountain Observatory Observations for the KELT Follow-up Observing Network"
Mike Joner

"Visual Observing: New Ideas for an Old Art?"
David Turner

"America's First Variable Star"
John Toone

"The Future of Visual Observations in Variable Star Research: 2015 and Beyond"
Mike Simonsen

"The Life of Albert Jones"
John Toone

"Why do some Cataclysmic Variables Turn Off?"
Kent Honeycutt

continued on next page

papers and posters, cont.

Special Paper Session in Honor of AAVSO Director Arne Henden

"Before the Giants: APASS support to ambitious ground-based Galaxy investigations and space missions serching for exo-Earths"
Ulisse Munari

"APASS and Galactic Structure"
Stephen Levine

"Astronomical Photometry and the Legacy of Arne Henden"
Mike Joner

"Brief remarks"
Richard Berry

"Collaborations with Arne on Cataclysmic Variables"
Paula Szkody

"The History of AAVSO Charts, Part III: The Henden Era"
Mike Simonsen

"Arne's Decade"
Gary Walker

Deceased Members, Observers, and Colleagues

Bradfield, William A., Australia
Lloyd Evans, Thomas H. H., Scotland
Ritchie, Arthur D., MA
Smit, Jan A., South Africa
Stefl, Stanislav, Chile
Vaclik, Zemřel František, Czech Republic

AAVSO Merit Award Recipient (announced at the 103rd Annual Meeting in Woburn, Massachusetts, November 8, 2014)

Ronald E. Royer was awarded the 45th AAVSO Merit Award "...for his devoted service to the AAVSO, including over 60 years of membership; contributing nearly 10,000 mostly visual variable star observations; four years as Councilor; meticulous, enthusiastic participation in countless special observing programs and campaigns; contributions to the AAVSO Charts program, including expert photographic survey and field work on faint stars being added to the AAVSO program and creating or sky-checking sequences; stewardship of the AAVSO's Ford Observatory atop Mt. Peltier; decades as group photographer at AAVSO meetings; and mentoring new observers and performing public outreach."

Ronald Royer in 1954 (left) and at the Ford Observatory, California in more recent times (right)

AAVSO Honorary Membership Recipients (presented and announced at the 103rd Annual Meeting in Woburn, Massachusetts, November 8, 2014)

Howard J. Landis was awarded AAVSO Honorary Membership "In recognition of his contributions to variable star astronomy and faithfulness to the AAVSO through his devoted and meticulous leadership of the AAVSO Photoelectric Photometry program 1975–2001: as Committee Chair; PEP data reducer and Database Archivist; developer of PEP reduction protocols and author of second PEP Manual; advisor, helper, mentor to amateur and professional astronomers in the complexity of PEP observing; and contributor of 1,675 PEP observations to the AAVSO International Database."

Kevin B. Marvel was awarded AAVSO Honorary Membership "In recognition of his invaluable contributions to the AAVSO through his service as Council member 2000-2002, Second Vice President 2002-2003, First Vice President 2003-2005, and Chair of the

AAVSO Director Search Committee during the process in 2004 of choosing candidates for Director of the AAVSO to succeed Janet A. Mattei and in 2014 to succeed Arne A. Henden; his wisdom and guidance and his support, particularly during 2003-2004; and his ongoing support of the AAVSO as he serves as Executive Director of the American Astronomical Society."

AAVSO Director's Award Recipients (presented and announced at the 103rd Annual Meeting in Woburn, Massachusetts, November 8, 2014)

Kevin B. Paxson received the AAVSO Director's Award "In recognition of his invaluable contributions to the AAVSO through his service as Council member since 2012, major contributor to the data digitization project with over 100,000 keypunched observations, developing the methodology and standards for digitizing publications, CCD observations of legacy LPVs and CVs, AAVSO membership and services surveys, new membership and dues structures, director evaluation procedures, newsletter articles on historical AAVSO observers (and being an all-around good guy)."

Kevin Paxson (right) receives the AAVSO Director's Award from director Arne Henden

Geir Klingenberg received the AAVSO Director's Award "In recognition of his continued support of VPHOT, the AAVSO's key photometric analysis program. Geir has contributed years of software design and effort into making VPHOT the premier photometric package available on the Web. Geir has ported the program to the Cloud; has listened to both staff and members to make suggested improvements; and has been available seemingly 24/7 to correct any problems. He has supported the CHOICE choice on this program. Somewhere in his "spare" time, he has also contributed over 17,000 photometric observations to the International Database! VPHOT is a marvelous tool for members using AAVSOnet or their own telescopes; is quick and easy to learn; and has both written and video manuals and tutorials. Without Geir's programming expertise and insight into how observers might want to analyze their data, VPHOT would not exist today."

Geir Klingenberg

AAVSO Solar Observer Awards (presented and announced at the 103rd Annual Meeting in Woburn, MA, November 8, 2014)

Sunspot Observers

500 observations

Alexandre Amorim, Brazil * 13
Salvador Aguirre, Mexico
John A. Blackwell, NH
Raffaello Braga, Italy
Alexandru Burda, Romania
Dean Chantiles, CA
Jose Carvajal, Spain
Frank Dempsey, Canada *27
Fredirico Luiz Funari, Brazil *13
Brian Halls, United Kingdom
Mark Harris, GA
Krystyna Wirkus, Poland
Thomas Jeffrey, OR
Kandilli Observatory, Turkey
Kristine Larsen, CT
John McCammon, CO
George Mudry, Canada
Andries Son, Belgium
George Stefanopoulos, Greece

1,000 observations

Jan Alvestad, Norway
Rodney Howe, CO
Brian Gordon-States, United Kingdom
Larry Krozel, CT

1,500 observations

Javier Alonso, Spain *15
Laurent Corp, France

2,000 observations

Howard Barnes, New Zealand
Kim Hay, Canada *27

2,500 observations

IPS Observatory

3,500 observations

Franky Dubois, Belgium *05
Kenichi Fujimori, Japan
Michael Moeller, Germany
William M. Wilson, TN

4,000 observations

Gema Araujo, Spain
Robert Brown, CA
Brian Cudnik, TX
David Teske, MS

continued on next page

solar observer awards, cont.

Sunspot Observers

4,500 observations
Brenda Branchett, FL

SID Reports
Klemen Cotar, Slovenia
Jon Wallace, CT
Alexander McWilliams, MN

** These observers' group affiliations are as follows: 05 Vereniging Voor Sterrenkunde, Werkgroep Veranderlijke Sterren (VVS Belgium); 13 Rede de Astronomia Observacional (Brazil); 15 Agrupacion Astronomica de Sabadell (Spain); 27 Royal Astronomical Society of Canada (RASC)*

AAVSO 50-Year Membership Awards (presented at the 103rd Annual Meeting in Woburn, Massachusetts, November 8, 2014)

Barry Beaman, Roger Kolman, and Arthur Pearlmutter were awarded 50-year membership pins at the 2014 Annual Meeting. Congratulations and thank you! We greatly appreciate your lasting support.

50-year membership award recipients (from left) Arthur Pearlmutter, Barry Beaman, and Roger Kolman

AAVSO Staff Recognition Awards (presented and announced at the 103rd Annual Meeting in Woburn, Massachusetts, November 8, 2014)

Arne Henden—10 years
Gloria Ortiz Cruz—15 years
Michael Saladyga—30 years
Elizabeth O. Waagen—35 years

AAVSO Headquarters staff recognized at the Annual Meeting: (clockwise from upper left) Arne Henden, Gloria Ortiz Cruz, Michael Saladyga (with director Arne Henden), and Elizabeth O. Waagen (with director Henden)

New Members 2013–2014

Arnold, Christopher, Virginia
Ashmore, Patrick, Canada
Barlazzi, Maurizio, Italy
J Barnyak, Justin, Pennsylvania
Bartlett, Marshall, Texas
Benishek, Vladimir, Serbia and Montenegro
Benni, Paul, Massachusetts
Berrington, Robert, Indiana
Biechele, Lance, Maryland
J Bigger, Marcel, Switzerland
William Weiss, Arizona
Biskupski, Marcin, Poland
J Blown, Eric, New Zealand
Bouttard, Vincent, France
Carroll, Russell, California
Cash, Jennifer, South Carolina
Chromey, Fred, New York
J Costello, Sean, Massachusetts
Cox, Paul, Great Britain
Dadighat, Michelle, California
Daglen, Joe, Idaho
De Villiers, Fanie, South Africa
J Deconinck, Michel, France
Deshmukh, Shishir, India
DeYoung, James, Virginia
Donner, Rob, New York
Doyle, Charles, Texas
Easley, Lynn, Texas
Eaton, David, Michigan
Fabrega, Joaquin, Panama
Faulkinbury, Jeffery, Texas
Ferguson, Leonard, Texas
J Ferrante, Farley, Texas
Foley, Joseph, Oregon
Fontaine, Christian, Florida
Foster, James, California
George, Annet, Zambia
Giangobbe, Mitchell, Arizona
J Gommans, Theo, Netherlands
Guzik, Joyce, New Mexico
Hanisch, Thilo, Colombia
Hemenway, Paul, Colorado
J Hempell, Stephen, Canada
Huth, Glenn, Wisconsin
Jarrett, Shelby, Illinois
Jordan, Thomas, Indiana
Kangujam, Yugindro, India
J Kazimirov, Dmitriy, Russia
Kobus, Kenneth, Pennsylvania
Kraimer, William, Connecticut
Kras, John, Netherlands
Kribbel, Johannes, Austria
Krumm, Nathan, California
Lambros, Greg, Illinois
Lango, Ted, Georgia
Lewis, Karl, Illinois
J Lisk, Patrick, Texas
Livingstone, Richard, Wales
Mallama, Anthony, Maryland
Martinez, Luis, Arizona
Matsnev, Dmitry, Russia
J Matzger, Jim, Arizona
Meloche, Stephane, Canada
Melville, James, Australia
Michaels, Edward, Texas
Michal, Richard, North Carolina
Mohandas, Pradeep, India
Moncrieff, Kathleen, Canada
Moonen, Roel, Netherlands
Moore, Gregory, Pennsylvania
Morris, Michael, California

continued on next page

new members, cont.

Morris, Joseph, Maryland
J Nemeth, Laszlo, Hungary
Ozturk, Erhan, Cyprus
Pagnotta, Ashley, New York
Paquin, George, Massachusetts
J Pham, Dang, Texas
Popov, Velimir, Bulgaria
Poppe, Bjoern, Germany
Preuss, Holger, Germany
Primucci, Emilio, Argentina
Quadri, Ulisse, Italy
J Raineault, Gilbert, Canada
Roberts, Edward, Virginia
Robertson, Jeff, Arkansas
J Rogers, Matthew, Massachusetts
Ruch, Gerald, Minnesota
Samec, Ronald, South Carolina
J Sarwar, Salman, Texas
Sawyer, Edward, Canada
Shakalis, William, Connecticut
Sikes, Ken, Arizona
Sikora, John, Illinois
Sipes, Henry, Kentucky
Smela, Tadeusz, Poland
Solomon, Rob, Australia
Sydney, Paul, Hawaii
Szkaplewicz, Pawel, Poland
Taylor, Ken, Texas
Thaler, Gottfried, Austria
J Vail, James, Idaho
Valle, Julio, Brazil
Veerkar, Sanjay, California
Vietje, Brad, Vermont
Watts, Andrew, Virgin Islands
Wheatley, Philip, Bermuda
Whinfrey, James, England
J Wijngaarden, Marcella, Netherlands
Windisch, Christoph, Germany
Yatsenkov, Igor, Russia
Zonta, Albin, Germany

J = junior membership

Annual Report of the Director for Fiscal Year 2013–2014

Arne A. Henden, Director

Not one, but two naked-eye novae still visible this year! V339 Del (Nova Del 2013) went into outburst in August 2013, and is still stuck at 13th magnitude as I write in early 2015. This was a great northern nova, reaching magnitude 4.3 at peak. There are tens of thousands of observations of it in the AAVSO International Database, and more will be coming before it fades. The spectroscopists had a heyday, acquiring hundreds of spectra, and Steve Shore has been shepherding them through the reduction and analysis of novae spectrum.

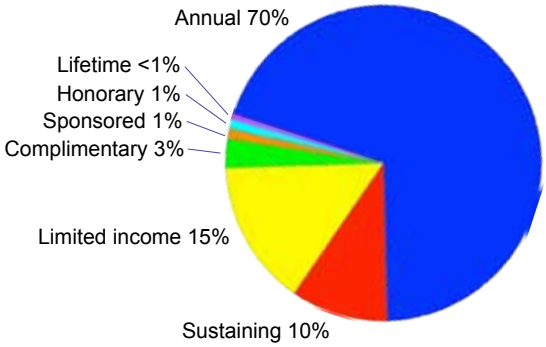
Then in early December 2013, V1369 Cen (Nova Cen 2013) went into outburst for the southern observers. Discovered by John Seach in Australia, this nova peaked at about V = 3.8. Its progenitor was about 15th magnitude, so this is at least an 11-magnitude outburst. This nova is still at 9th magnitude in early 2015, and so will be with us for months to come. I hope everyone has had the opportunity to look at one or the other of these novae!

Did you miss Comet ISON? It's not common for a bright comet to suddenly disintegrate, but that is what happened in November 2013. Luckily for comet hunters (and I consider myself one), an even better comet came around by December 2014—Comet Lovejoy (2014 Q2). The images that the amateur community has taken of this bright comet are nothing short of spectacular. Even better scientifically, many amateur spectroscopists also acquired moderate resolution spectra, providing an excellent tool for monitoring similar comets in the future.

This was a very eventful year for astronomy in general to the AAVSO in particular, from the success of GAIA to the changing of the guard at the top of our organization. To give space to all of the happenings would fill the rest of the *Annual Report*, so I'll mention only a few highlights. Please accept my apologies if I missed your favorite event!

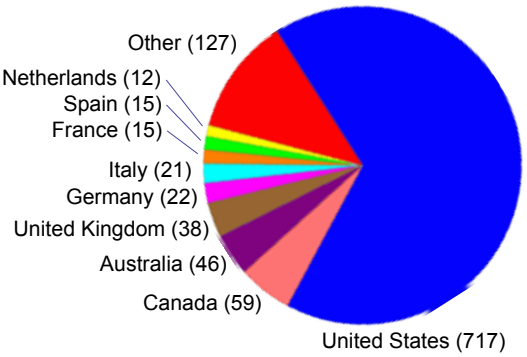
This report covers activities from October 1, 2013, through about December 31, 2014, a little longer than normal to cover the last months of my tenure. I will specify whether totals are on the fiscal year boundary, or over a longer period.

Membership



AAVSO membership classes by percentage

Our membership has been stable for the past couple of years. We had 1,072 members by the end of the year, along with an equal number of non-member observers. Of these, the vast majority are regular members, with about 10% joining as sustaining members, providing an additional donation to the organization. We have a number of new members using the developing-countries reduction in fees, with a total of 114 new members of all varieties for the fiscal year. There are 8 lifetime members (so less than 1% of the total). There are two categories of lifetime members. The recent ones are those who belong to the Argelander Society, in recognition of their contribution of substantial funds to the organization. The other category of lifetime member consists of those who purchased a lifetime membership for the equivalent of 20 years of dues; this membership option was discontinued in 1973. There are only two remaining members in this category, Dr. Owen Gingerich, who joined at the lifetime level as a teenager in 1947, and the Haverford College Observatory, which joined in 1929. Owen is also a long-time volunteer and contributor to the organization. You can become a new lifetime member by being a major benefactor for the AAVSO, so please join the ranks!



AAVSO membership by country

Shown at right is a breakdown of the membership as a function of country. You can see that the majority of our members are from the USA, as to be expected in an organization founded in this country. However, there is a significant fraction of our membership situated outside of the USA. Canada, Australia, and the UK are naturally large constituents, as they are native English speaking countries and have long-term relationships with the AAVSO (the British Astronomical Association, for example, has been in existence longer than our organization!). A large percentage of our International members come from other countries, and we hope to continue to increase this fraction. This is one of the reasons that we offer a reduced-rate membership to developing countries, and provide Spanish translations of much of our material. I only see this effort increasing in the upcoming years.

Observation Database

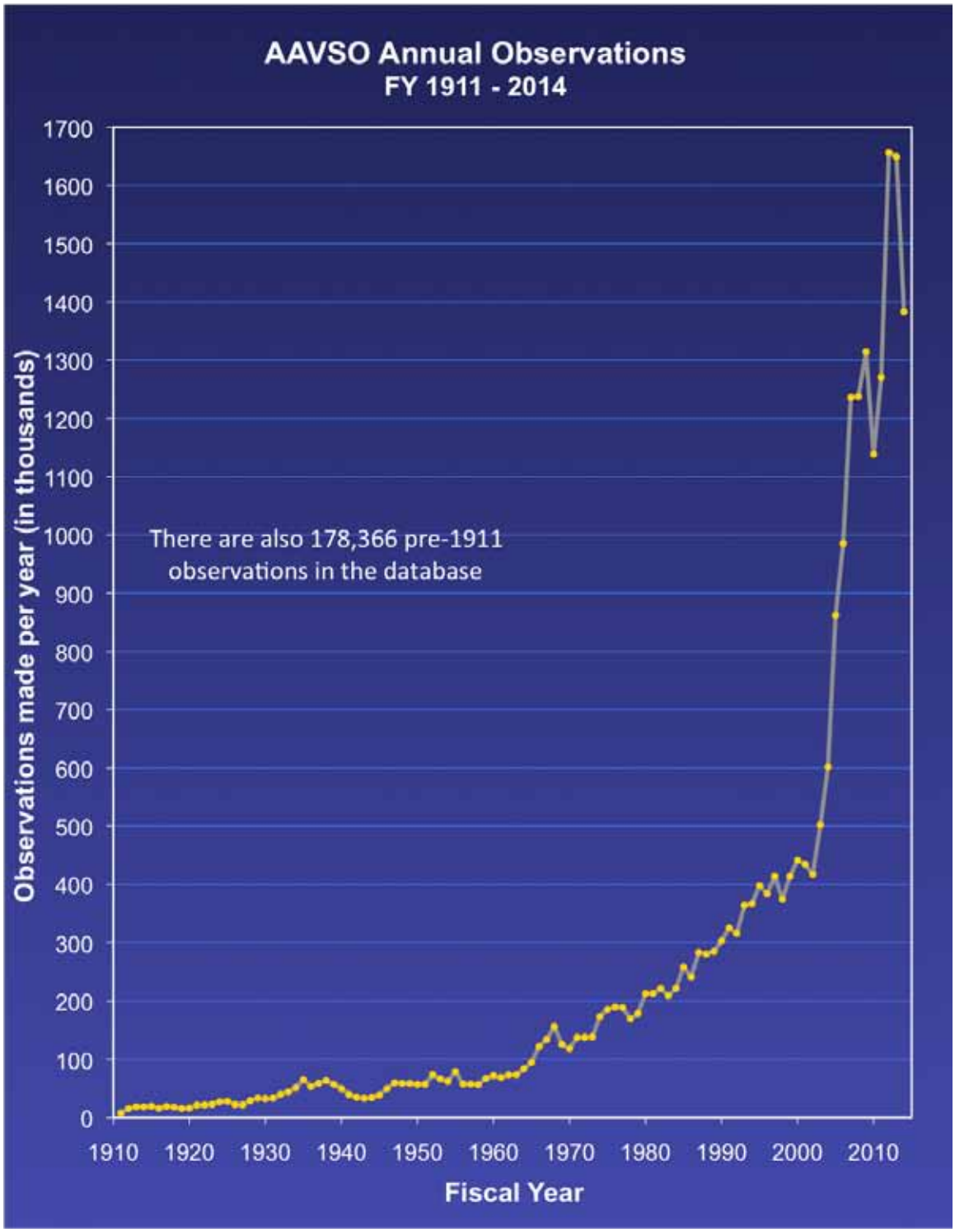
The AAVSO International Database (AID) grew by more than one million observations in FY 2013–2014, with 1,381,186 observations made since October 1, 2013. This marks the eighth straight year with more than one million observations submitted, a trend that we believe will continue in the future. The 1.38 million observations break down as follows:

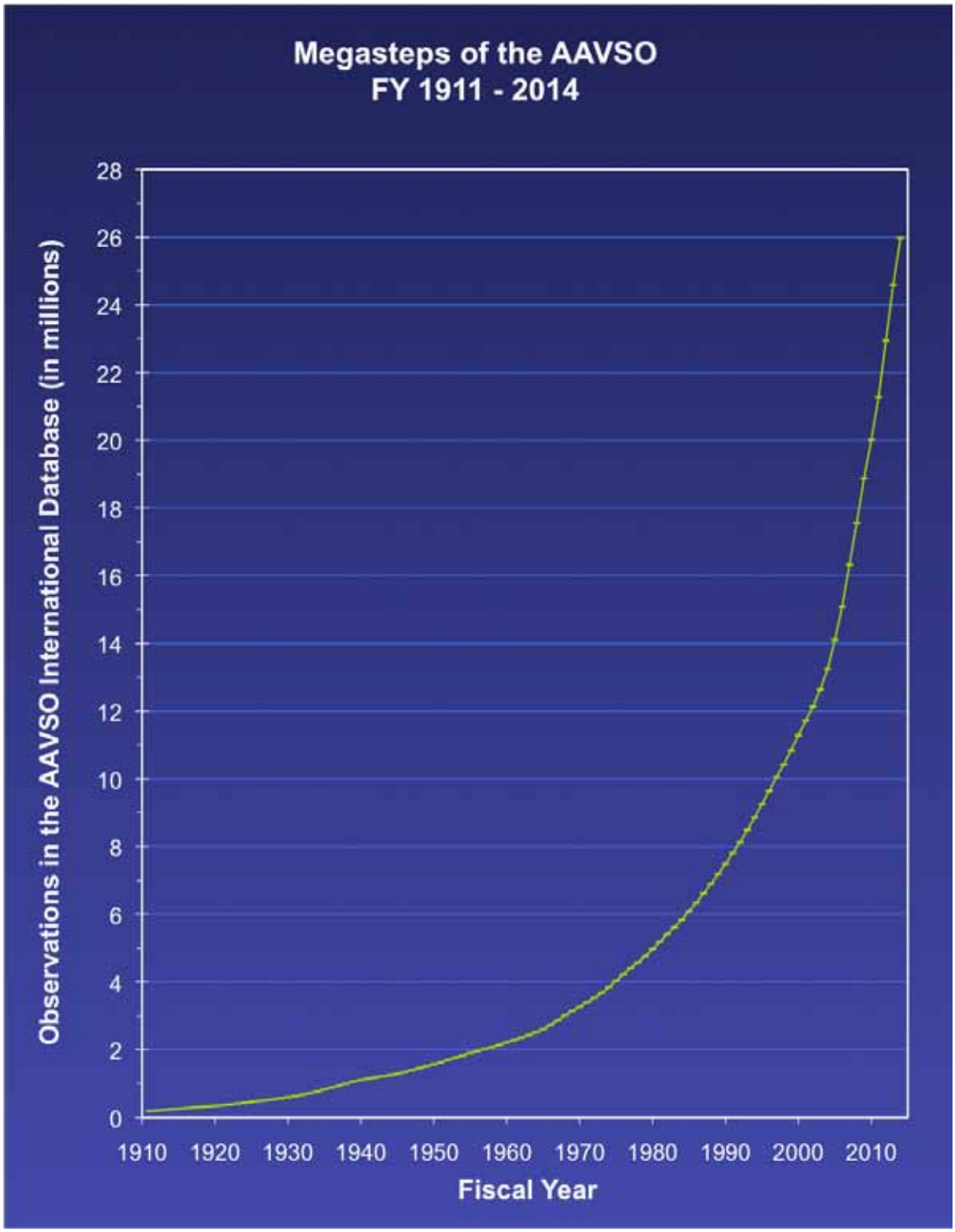
1,188,056 CCD observations; 183,626 visual observations; 6,731 DSLR observations; 2,750 photoelectric (PEP) observations; 962 "VISDIG" observations (visual estimates from digital photographs); and 46 photographic observations. These numbers are down slightly from the total number reported for FY 2012–2013, with a slight increase in the number of visual observations (up from 173,127), and a slight decrease in the number of CCD observations (down from 1.36 million). We note that these numbers reflect those observations made (as opposed to submitted) during the fiscal year, and therefore exclude the large collection of data imported from the British Astronomical Association in December 2014.

We received data for 6,527 stars during the fiscal year. Of that total, 241 stars had 1,000 or more observations made during the year; 6,030 stars averaged less than one observation per day during the year, and 837 stars were observed only once during the year! We continue to explore ways of encouraging broader, long-term coverage of many interesting stars without compromising research programs that require intensive time-series.

As mentioned above, the AAVSO is now serving the data archives of the British Astronomical Association Variable Star Section (BAAVSS) via the AID and other AAVSO tools, in order to expand the audience for these data. The AAVSO had discussions with the British Astronomical Association Variable Star Section for several years, culminating in the first import of the BAAVSS archives into the AID in early December 2014. The entire BAAVSS archives consist of over 2.5 million records; the AAVSO imported those records (a) that had not already been submitted by individual BAA observers to the AAVSO, and (b) in which we could clearly identify both the observer and the star being observed. As of the end of December 2014, the AAVSO has over 2 million observations (80 percent) of the BAAVSS archive now available in the AID. AAVSO staff members Dr. Matthew Templeton and Sara Beck will be working on importing as much as possible of the remaining 20 percent in 2015.

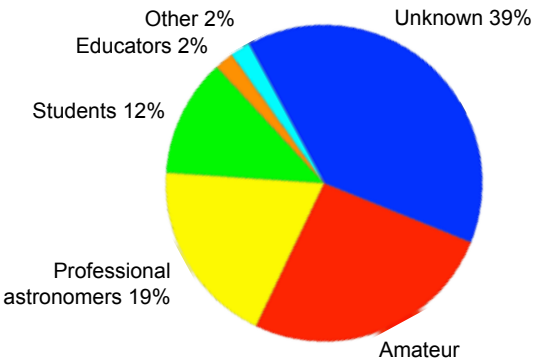
The AAVSO continues its work on a similar project with the Royal Astronomical Society of New Zealand (RASNZ) variable star archives. Progress was made on adding data from both the Frank Bateson Archives and the RASNZ digital database. As of today, nearly


AAVSO Annual Observations
FY 1911 - 2014
Observations made per year (in thousands)
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
There are also 178,366 pre-1911 observations in the database
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
Fiscal Year

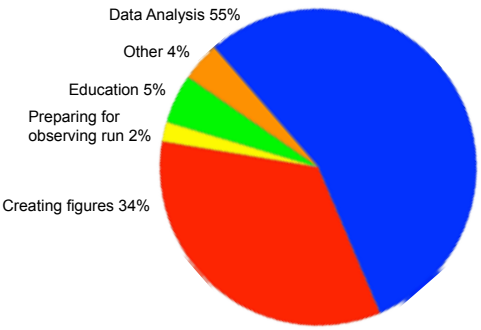

Megasteps of the AAVSO
FY 1911 - 2014
Observations in the AAVSO International Database (in millions)
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
Fiscal Year

21,000 records from the Bateson Archives have been digitized by staff member Dr. Michael Saladyga, with nearly 12,000 of these entered into the AID. The remaining 9,000 observations will be entered once final processing is completed (typically requiring reduction of step magnitudes, creating or verifying observer initials, or entering the variable star into the International Variable Star Index (VSX)). Work also continued on the RASNZ digital archives, with more than 99.5 percent of the available RASNZ data added to date. The remaining small fraction of about 10,000 records will be entered once observer codes for the 500 or so RASNZ observers can be created or verified.

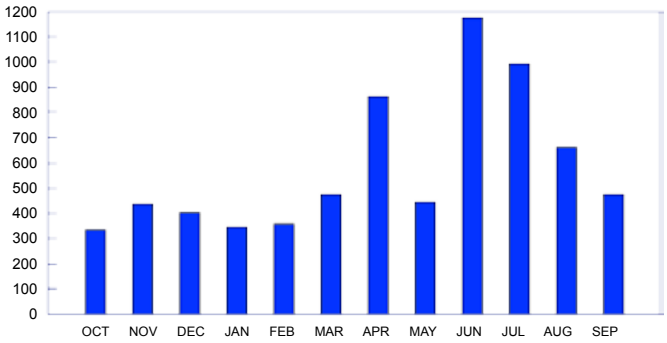
We had 6,974 requests for AAVSO data through our website's Data Download feature. This is nearly 20 percent more than in FY 2012–2013, and indicates that demand for AAVSO data is increasing. Like last year, the number of requests varied substantially throughout the year, with the peak time for requests occurring in June and July. Among those who identified their demographic, Amateur Astronomers made the most requests for AAVSO data, followed by Professional Astronomers. Students, Educators,



Users of AAVSO data or services



Areas in which AAVSO data or services were used



Number of data requests by month during FY 2013–2014

and those listing themselves as "Other" made up the remainder of the self-identifying group; 2,744 requests came without demographic information. When a purpose for the data request was volunteered, a strong majority indicated they would use the data for analysis. Other uses included: creating figures, education, to prepare for an observing run, and "Other."

SS Cygni was the most downloaded data set (227 requests), followed by delta Cephei (158), V339 Del/Nova Del 2013 (110), Supernova 2014J (99), and omi Cet (86) rounding out the top five. The types of stars being requested via Data Download are very diverse, with cataclysmics and novae, Cepheids and LPVs, eclipsers, and many other types commonly requested. Of the nearly 7,000 requests, 1,485 stars were requested only once.

Volunteer data digitization continued in 2014, with over 60,000 digitized observations added during the calendar year (January 1–December 31, 2014). Kevin Paxson contributed more than 49,000 archival observations during the year, followed by more than 8,700 by Bruno Billiaert and more than 2,600 by Christian Froeschlin. The AID now contains over 175,000 records digitized from literature sources by volunteers, extending the AID back in time and to more stars; thanks to the digitization project, the AID now contains data for a (very) few stars dating to the pre-telescopic era. Many thanks go to our dedicated volunteers for putting so much effort into this project.

The AAVSO Solar Section had an active year, appropriate for our closest variable star! Eighty-four AAVSO Solar observers made 12,714 observations of the Sun during FY 2014, with seven observers collecting more than 300 days of observations. AAVSO Sunspot observations and the long-term American Relative Sunspot Number (R_a) continue to be used by the astrophysical community, and the AAVSO data set is one of several being actively studied by solar astronomers trying to understand both the Sun and the (complex) historical record of observations.

We ran a contest to see who could guess when the 25 millionth observation would occur—a great milestone for the AAVSO International Database! That observation was from Josch Hambsch of Belgium (for the star ASAS J180536-4351.8), and the closest prediction was from John Rock of Great Britain, a nice example of our international flavor. What is even more remarkable is that Josch passed the 1,000,000 CCD observation level by October 2013, the first observer to ever reach that plateau. We gave him his AAVSO Observer Award at the June AAVSO meeting. Josch even reached a second milestone this year—submitting his observation number 1,234,567 (see the accompanying partial-webpage screenshot) on July 8, 2014.

A screen shot of the AAVSO webpage indicating that Josch Hambsch had submitted his 1,234,567th observation

The Eggen card collection was scanned by the AAVSO several years ago. George Silvis is heading a volunteer group to catalog and digitize the observations. About 17,000 of the 91,000 cards have been inspected. He is always looking for volunteers to help inspect the rest! The result of this project will be a catalog of astronomer Olin Eggen's photoelectric measures of stars, primarily in the southern hemisphere. You can join the project by going to the project website: https://sites.google.com/site/eggencards/home.

Website

We've implemented some changes on the website. The home page was revised, removing the staff blog and implementing a Stellar News Feed. These articles are garnered from astro-ph and press releases, and contain up-to-date information on stars, observing techniques, equipment, and variability. Mike Simonsen is leading this effort as he has access to several channels of information using his press credentials.

We now have made the AAVSO donate/support options more prominent on the home page. The Amazon.com option is particularly important, as it gives us a means of collecting donations at no cost to the member/observer. All you have to do is reach Amazon by clicking the home-page link, thereby coming from the AAVSO rather than your own computer. Amazon gives us a portion of all purchases made in this manner, but the purchaser sees the exact same cost as if he or she had accessed Amazon directly.

Other changes to the website are less obvious, but take significant staff time. We update material on most pages (for example, for AAVSOnet) when they become dated. The homepage "slider" with its 5 rotating stories is a group effort.

International Cooperation

We acknowledge with appreciation the observations sent to the AAVSO by members of the following variable star associations, either individually or as a group, for inclusion in the AAVSO International Database for dissemination to the astronomical community worldwide:

a. Agrupacion Astronomica de Sabadell (Spain)
b. Association Française des Observateurs d'Étoiles Variables (AFOEV)
c. Association of Variable Star Observers "Pleione" (Russia)
d. Astronomical Society of South Australia
e. Astronomical Society of Southern Africa, Variable Star Section
f. Astronomischer Jugendclub (Austria)
g. Astronomisk Selskab (Scandinavia)
h. British Astronomical Association, Variable Star Section

i. Bundesdeutsche Arbeitsgemeinschaft für Veränderliche Sterne e.V. (BAV) (Germany)
j. Center for Backyard Astronomy
k. Clube De Astronomia De Sao Paolo (Brazil)
l. Israeli Astronomical Association, Variable Star Section
m. Koninklijke Nederlandse Vereniging Voor Weer-en Sterrenkunde, Werkgroep Veranderlijke Sterren (Netherlands)
n. Liga Iberoamericana de Astronomia (South America)
o. Madrid Astronomical Association M1 (Spain)
p. Magyar Csillagàszati Egyesület, Valtózocsillag Szakcsoport (Hungary)
q. Norwegian Astronomical Society, Variable Star Section
r. Nucleo de Estudo e Observacao Astronomica—Jose Bazilicio de Souza (Florianopolis, Brazil)
s. Red de Observadores (Montevideo, Uruguay)
t. Rede de Astronomia Observacional (Brazil)
u. Royal Astronomical Society of Canada
v. Royal Astronomical Society of New Zealand, Variable Star Section
w. Svensk Amator Astronomisk Förening, Variabelsektionen (Sweden)
x. Ukraine Astronomical Group, Variable Star Section
y. Unione Astrofili Italiani (Italy)
z. URSA Astronomical Association, Variable Star Section (Finland)
aa. Variable Stars South (New Zealand)
ab. Vereniging Voor Sterrenkunde, Werkgroep Veranderlijke Sterren (Belgium)

The Feibelman Guest Suite has served the AAVSO well this year. We always have visits from staff members Donna Young and Mike Simonsen, but this year we also had an extended stay from Sebastián Otero here from Argentina to work directly with the rest of the staff, and Bill Goff, our Treasurer, to work with bookkeeper Kathy Vnek. Others who stayed with us include Seiji Tsuji from Japan, Brad Schaefer from Louisiana State University, Ulisse and Emma Munari from Italy, and Stella Kafka (while working with me before her official hire). I even got to use the Guest Suite during January 2015, after moving out of the house!

Computers and Software

Staff member Richard (Doc) Kinne has been working with VPHOT creator Geir Klingenberg to move VPHOT onto a larger Windows cloud instance to give more reliable access. Glen Ward has joined the VPHOT team as a volunteer to give Geir a hand for software development and maintenance.

Sara Beck is working with volunteer David Benn on the latest VStar release, and is also writing some Headquarters database software. Gordon Myers and George Silvis have written a pair of transformation programs, TG and TA. TG "generates" transformation

coefficients from one of the standard clusters. TA "applies" transformation coefficients to an extended-format photometry file, creating a new transformed photometry file for submission to the AID via WebObs. These programs are on our website at http://www.aavso.org/transform. AAVSO web developer Will McMain has created a new version of the AAVSO Variable Star Plotter (VSP) that is currently in beta-testing and should be released during the next fiscal year.

Another couple of worldwide Internet attacks took place during the quarter. The one that got the most attention was "shellshock," which exploited a hole in the popular Bash command processor shell. Because of the increased number of attacks, we revamped many of our computer procedures. The website login was improved; all computers were placed behind our firewall and only available through a Virtual Provider Network access. We reviewed our security procedures, and added features to our backup procedures. We also took the opportunity to combine internal databases (the "unification project") and to improve the development website.

Several new online discussion forums have been created, including ones for time sensitive alerts, spectroscopy, RCB stars, and YSOs. We have many more people participating in the forums, showing that they have been accepted and are better meeting the needs of the observers.

Matthew Templeton has created automated versions of the monthly *CV* and *LPV Circulars*, which highlight stellar activity seen in the data submitted to the AID for cataclysmic variables and long period variables, respectively. These haven't been produced in recent times because of the amount of hand-editing required, so the automation is a very welcome addition. He also created an *RCB Circular*, to disseminate regular information on the R CrB stars.

AAVSOnet News

In the AAVSO global network of robotic telescopes (AAVSOnet), the second version of the Bright Star Monitor (BSM) epoch photometry database (EPD) was released, incorporating several million observations from BSM South. All told, about 21 million datasets are in the EPD, covering a few thousand square degrees of sky. We expect to have new EPDs for other AAVSOnet telescopes in the near future. Both VStar and a members-only webpage give you access to these datasets.

We fully tested the BSM_Berry unit of AAVSOnet while it was installed in the observatory on the Headquarters roof. This year, we shipped it to Greg Bolt in Perth, Australia, who hopes to have the system running in early 2015; Richard Berry has funded the shipment

costs. Richard also donated a Celestron AVX mount and photometric filters for the construction of a replacement BSM for the Headquarters enclosure (appropriately called BSM_HQ). We've cobbled together the rest of the system from spare cameras and the purchase of another AstroTech AT-65EDQ astrograph. Unfortunately, AstroTech is no longer selling these lovely little telescopes, so it will be hard for you to exactly duplicate BSM_HQ! Helmar Adler has graciously volunteered to be the telescope advocate for BSM_HQ, starting it up remotely at the beginning of each clear night and closing it down at dawn. BSM_HQ is our test-bed system: we tweak its software, make sure everything works well, and then update the other BSM systems to the same level. We also test other new equipment up on the roof, such as the AuroraTech cloud sensor (pretty neat).

BSM_Hamren has been moved from Bob Stine's ranchero in California to Mike Linnolt's house in Volcano, Hawaii. Mike runs it every clear night; with a manual roof open/close, he typically shuts down around midnight. Volcano has about 50% useful nights, but has a tropical weather pattern where it may be clear one hour and raining the next, so you have to pay close attention to the sky to keep the system from getting wet. This system may be moved to a site with better weather conditions in 2015.

John Gross took the 2013 Arizona monsoon shutdown opportunity to send Sonoita Research Observatory's Paramount back to the factory for refurbishment. This, along with a couple of optical modifications, has dramatically improved the performance of SRO. I consider it the best-running scientific half-meter telescope available.

Bill Stein added a pier for the original BSM (now called BSM_NM). After polar alignment, this system is performing nicely. Dick Post donated funds for upgrading the BSM network. A used ST-10XME camera was purchased for BSM_NM, and its original ST-8XME camera was moved to BSM_HQ. A new Moonlite focuser was sent to BSM_South in Australia. New filters and spectroscopic diffraction gratings were purchased (Frank Schorr donated the cost of the gratings). We now have two telescopes with diffraction gratings, one in the northern hemisphere and in the southern, along with Sloan filters in both hemispheres. The queues are being reviewed to remove completed objects and to add new projects.

OC61 in New Zealand is being upgraded to support an instrument selector and an eShel spectrograph on the second port. Byron Engler, a student at the University of Canterbury, has been working on configuring the spectrograph. It should be available in early 2015.

Overall, AAVSOnet is working reasonably well, and gives our members access to equipment and sites that would be impossible otherwise. We will be improving the automation over the next year to reduce the load on the host volunteer and the

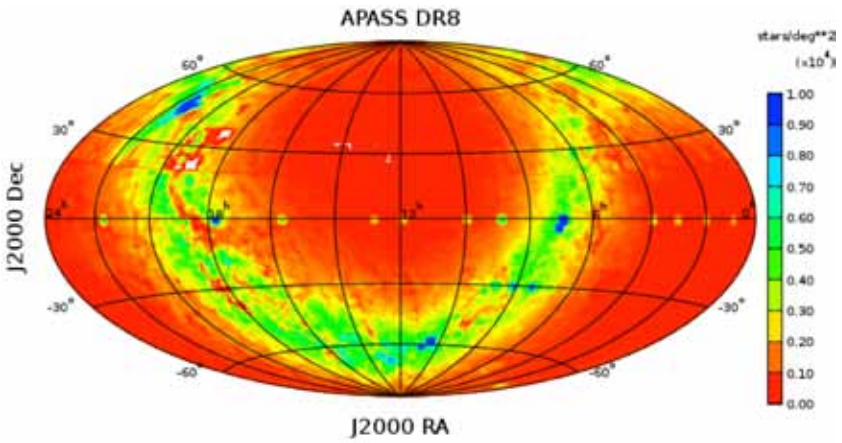
Headquarters staff, and we will be commissioning the remaining telescopes of the network. You may keep track of AAVSOnet at http://www.aavso.org/aavsonet.

APASS News

The major piece of news for the AAVSO Photometric All-Sky Survey (APASS) is the awarding of a two-year National Science Foundation grant to complete the processing and analysis. Over 400,000 images have been taken during the past four years. The weather and hardware have been more problematic in the north, with about three times as many photometric images having been acquired from Chile.

With new funding from the Robert Martin Ayers Sciences Fund, we are in the process of refurbishing the APASS cameras. Apogee Imaging Systems was purchased by Andor, who is honoring the commitment to perform this upgrade. The two northern cameras were upgraded in November 2014, and as I write, the two southern cameras are in Belfast for their upgrades. The sensors are being moving into the Aspen G7 bodies, providing better cooling, faster readout, and an Ethernet transfer option. The faster readout is essential for efficient sky coverage with the short-exposure extension of the Survey to cover stars as bright as V=7.

We released APASS Data Release 8 (DR8), which adds about 3 million stars in the north, filling in most of the remaining gaps in the survey. DR8 has 55,393,911 stars, and was made available at the January 2015 American Astronomical Society meeting. We have made arrangements for APASS to be served by VizieR. Doug Welch has recently used his access to SHARCnet to create Sextractor photometry files for all 400K images. These will have improved centroiding and will also have about 25% more stars, since the star-finding threshold is closer to the sky. Ed Los has created a coverage plot for DR8 (below). We expect DR9, covering the recent southern images, to be released in early 2015.



APASS is a volunteer effort, with many AAVSO members helping me out on the myriad tasks required for each data release. Tom Smith runs the northern site, and I would be remiss if I didn't also include the three professional astronomers associated with the project: Stephen Levine, who is doing the precision astrometry; Dirk Terrell, who is keeping the computers running; and Doug Welch, who is archiving much of the data as both a backup to the Headquarters copy as well as an on-line research tool. Ulisse Munari has been using APASS for his own research as part of the RAVE and HERMES collaborations, and contributing many of the plots and comparison tests that will be used in the first APASS paper that will be submitted in 2015.

Education

We've offered several new CHOICE (the AAVSO Carolyn Hurless Online Institute of Continuing Education in Astronomy) courses this year. Mike Simonsen, Geir Klingenberg, and Ken Mogul have been working tirelessly to produce a manual for VPHOT that was "tested" by the class participants in the first-ever VPHOT course. After the final completion of the DSLR manual on using the digital single lens reflex camera in astronomical research, Mark Blackford raised his hand to teach the first CHOICE course on this popular topic. Repeats of the visual observing, variable star classification, and VStar courses were also well received. The courses fill up pretty quickly, so if you see another one announced, you should make up your mind about taking it within a few days. The forums associated with each course tend to be very active, with lots of interesting discussions.

The other important summer 2014 event was the CCD School. Taught by me and held for the second time at AAVSO Headquarters, we utilized the space better than before after purchasing some new conference tables. The participants were excellent, asking lots of interesting questions. This School was also videotaped, as we don't know if the School will be continued after my retirement. Dick Post donated sufficient funds to hire a professional videographer, who has done an excellent job of editing the 40 hours of material. We hope the end product will be a set of DVDs that we can sell through the online store.

As part of the nova forum, I offered to help CCD observers improve their observing techniques, especially in regard to V339 Del (Nova Del 2013). This target was a difficult one, with most of the scatter (after common mistakes were corrected) being caused by the strong emission lines, especially as the nova entered the nebular phase. Because of this, I started another experiment, to monitor the anomalous Cepheid candidate XZ Cet. Observations of this target are ongoing; we hope to provide targets like this throughout 2015 to improve our CCD observations.

External Grants

APASS NSF grant

The really big summer event this year was the awarding of the National Science Foundation (NSF) APASS grant. This money will carry the project through to completion in about two years. It provides funding for Dirk Terrell and Stephen Levine, along with the ability to hire a summer student for both years. It is an ambitious schedule, but I think we can make it.

MOST NASA grant

Matthew Templeton was awarded a NASA grant in 2011 to use the Canadian MOST spacecraft. He proposed using MOST to study stars in the Orion Trapezium region, concentrating on BM Ori but also imaging another couple of dozen stars. Those observations were taken during December 2010 and January 2011, for a total of about 30 consecutive days of data. We supported those observations with a ground-based campaign to acquire photometry before, during, and after the MOST window. Many nights of data were also obtained with the AAVSO Bright Star Monitor. The grant is finished; Matthew is now finalizing the analysis, and has written a paper in collaboration with Bill Herbst (Weslyan University) and Joyce Guzik (Los Alamos National Laboratory).

Two Eyes, 3D NSF grant

Two Eyes, 3-D, an NSF AISL grant spearheaded by former staff member Aaron Price, studies the cognitive processes and learning outcomes involved in 2D and stereoscopic visualizations of highly spatial scientific objects, with a goal of building a more effective learning experience. Aaron has been studying school children using a series of images in both 2D and 3D and asking content and spatial questions about what they see. A pair of HD stereoscopic films about colliding galaxies and supernovae was developed and presented by the Adler Planetarium as well, to study how adults learn spatial concepts. The tie-in for the AAVSO is in the variable-star aspects of the movies and images, an understanding on how to better make finding charts, and the additional funding that will be available for our infrastructure. Most of the data have been collected, and Aaron is now looking for correlations and differences. The grant period has ended, but the NSF has given us a one-year, no-cost extension to complete the analysis.

Second Generation Synoptic Survey (2GSS) grant

We received a grant in 2013 from the Robert Martin Ayers Sciences Fund. Provisionally called the Second Generation Synoptic Survey (2GSS), this project aims to cover the entire

sky, every night, from 10th to 17th magnitude, in two simultaneous bandpasses. It is a follow-on to APASS, highly leveraging its excellent calibrations to permit observations anywhere in the sky in even non-photometric weather. The grant paid for the first node of an anticipated 5-node network (if we can get external funding). Stephen Levine and I installed the first telescope on Anderson Mesa (Lowell Observatory), and have begun test observations. The refurbished Apogee/Andor cameras from APASS will be re-purposed for this survey when the image collection phase of APASS ends.

Novae NSF grant

AAVSO President Jeno Sokoloski was awarded an NSF grant, "Beyond Spherical Cows: Writing the Next Chapter on Novae." As part of that grant, Jeno has agreed to be the science advisor for the Nova Section of the AAVSO, and will work with the AAVSO to obtain optical light curves of the novae that will be studied. The AAVSO has a sub-contract with her for performing the campaign effort. In August 2013, a naked-eye nova was discovered in Delphinus (V339 Del), and was the target of a concentrated campaign to acquire high quality multi-filter photometry, visual estimates, and spectroscopy. We hope this will be the first of many such targets to follow during the course of Jeno's grant.

The Janet A. Mattei Research Fellowship

Ulisse Munari (Asiago Astrophysical Observatory) was the Janet A. Mattei Research Fellow for a third year. Ulisse was at Headquarters for about a month in June/July, working on various aspects of APASS. He used data from the RR Lyr study (recently published, from 2013 results) to search for new variables, locating about 300 candidates. We also worked on several novae and supernovae that had gone into outburst over the last year, locating all observations taken through the AAVSOnet as well as preparing several plans to acquire new deep images. Ulisse gave several presentations on APASS, and has been instrumental in the acceptance of APASS for calibration of the multi-institution RAVE project, which will study the motions of stars in the Milky Way galaxy, and the European Space Agency's HerMES project, which will study the evolution of galaxies in the distant universe.

Observing Campaign news

As mentioned above under Education, this year, in order to help instrumental observers understand the limitations of their equipment and improve their photometry, we ran some experiments using the very bright nova V339 Del and the bright anomalous Cepheid candidate XZ Cet. Improving the quality of observers' photometry will not

only increase each observer's contribution to science and the value of the data in the AAVSO International Database but will also make possible increasingly sophisticated contributions to observing campaigns. I have had fun giving advice; I hope everyone participating has picked up a few pointers!

Several interesting observing campaigns took place this past year or are underway now. Of course, the two bright novae of 2013 (V339 Del and V1369 Cen) are still easily observable, and continued monitoring is requested. Highlights of some of the campaigns are below.

PSN J09554214+6940260 is a reddened young Type-Ia supernova discovered in January 2014 before it reached maximum. Bradley Schaefer (Louisiana State University) requested AAVSO observations for an exploratory search for possible flares or other short-term photometric variations during the outburst. Fast variability is not expected from supernovae but no one had ever looked for it, and this supernova was well placed in the sky and bright enough, so Schaefer thought it would be a good one to experiment with. Very good BVRI and visual coverage from rise through decline was obtained by AAVSO observers, and no short-term variations were seen.

EE Cep is an interesting star with a disk that causes an eclipse every six years by blocking the light from the star; astronomers are very interested in learning more about the disk. EE Cep was predicted to eclipse in July–August, and the AAVSO issued a call for observations as part of international activities organized to follow the event. The eclipse, which varies greatly in shape and duration from cycle to cycle, was densely covered by AAVSO observers, with excellent BVRI and visual coverage extending a couple of months prior to, during, and subsequent to the event. The very clear multi-color definition of the eclipse, enhanced by being seen in the context of EE Cep's behavior when not in eclipse, will help better understand the disk and its interaction with its star.

In October the AAVSO launched a challenging campaign at the request of Ph.D. candidate Deanne Coppejans (Radboud University Nijmegen (Netherlands) and University of Cape Town), who is studying radio jets in dwarf novae. Only one dwarf nova—SS Cyg—had been determined to exhibit radio-wavelength emission during outburst (a discovery made in 2007 with significant contributions from AAVSO observers), and Coppejans' goal was to study different types of dwarf novae to see if they were radio sources during outburst. Five of a possible nine northern dwarf novae would be observed by the Very Large Array radio telescope network (VLA). Observers were requested to monitor the potential targets closely so as to catch the very beginning of outburst, reporting their observations immediately to the AAVSO. Since the radio jet in SS Cyg appeared only very early in the outburst, and time would be required for VLA to be scheduled and

activated, it was crucial that communication from observer to AAVSO to Coppejans be extremely fast, regardless of local time in the Netherlands or at Headquarters.

Within a month, three of the five targets—RX And, Z Cam, and YZ Cnc—went into outburst timed appropriately for VLA to observe. SU UMa in superoutburst and U Gem were chosen to be the remaining targets. SU UMa was completed in late December-early January, but observers had to continue to keep nightly watch on U Gem until late February 2015, when it finally went into outburst well past its usual outburst interval. VLA observations were successfully obtained, the observers completed their post-outburst monitoring, and the AAVSO's part of the campaign was completed. Coppejans is now analyzing all the data, and we are looking forward to hearing (we hope) exciting results!

Once in a great while a campaign can be carried out well but runs into trouble. In an unusual example, Matthew Muterspaugh and Gregory Henry (Tennessee State University) used a century of data to predict that the bright star alpha Com would undergo an eclipse in January 2015 and requested coverage from the AAVSO to help document this never-before observed event. As alpha Com came out from behind the Sun, our observers acquired early observations to form a baseline for that possible eclipse. However, Muterspaugh and Henry then discovered an error in data published a hundred years ago. When they corrected the data and performed a new analysis, they found the eclipse date moved to a couple of months earlier, when the target had been behind the Sun. Thus, they recanted their prediction and the campaign was terminated.

Details of observing campaigns and related information may be found on the AAVSO website (http://www.aavso.org/observing-campaigns). The campaigns are exciting and impressive both in their scope and in the level of contributions the professional astronomers believe AAVSO observers can make to their research.

In support of the many campaigns, the AAVSO Sequence Team, led by Mike Simonsen, created hundreds of new and revised sequences during the year. A typical sequence for a transient object is created and uploaded within hours of notification, a far cry from the pre-VSP days, when a new sequence could take days or weeks to propagate through the community. This is particularly valuable for the many new cataclysmic variables being discovered by the surveys, and for the dozen new novae that went into outburst this past year. APASS DR8 was eagerly awaited by the Team, as there were several sequence requests that had been in the queue for years, waiting for new calibrated photometry. In addition, Kent Honeycutt requested several dozen calibrations to support his RoboScope photometry. There were 80 sequences created in the first month alone after the DR8 release!

Spectroscopy

We are starting to better support our observers who are interested in spectroscopy. The first step in that direction was taken in early 2014, when we implemented a Spectroscopy Forum and held a teleconference with many amateur and professional spectroscopists. More recently, we placed a group order for the SA200 diffraction grating that goes directly into filter wheels. Bob Hawksley of Paton Hawksley Education Ltd. gave us a substantial discount, and Robin Leadbeater donated his royalties for the grating to our project, making the cost of these gratings quite affordable. Tom Field of Field Tested Systems gave the group a substantial discount for RSpec, a very intuitive program designed to handle diffraction gratings. We will be working with Tom in the upcoming months to implement new features in his software to better support the professional community.

The initial AAVSO spectroscopy database, SpecObs, was developed by Will McMain. This database stores basic diffraction grating images, and permits searching on various names, dates, and fields for downloading archived images.

Next in queue is basic observing support, from a list of calibration sources, to a few observing projects, and finally a spectroscopy manual for these gratings. In the future, we hope to support slit spectrographs in a similar manner, and expect that the professional community will clamor for high quality amateur spectra. This will be particularly true when the new surveys come on-line.

Miscellany

Our income is stable, but limited, and if we want to do anything new, we have to find alternative sources of funding. One is to hold a typical non-profit campaign, and in 2014 we held an Annual Campaign, organized and carefully managed by Development Officer Mike Simonsen. This campaign was the first one for the AAVSO in which every member was personally contacted by an AAVSO Council or staff member. We reached our goal of $30,000, and it doesn't seem to have hurt our year-end fundraising, which means the $30,000 is essentially new money, and is very much appreciated.

Staff member Elizabeth Waagen came up with the idea of the Adopt-a-Star campaign during a brainstorming session we had with the staff in 2013. Will McMain finished the programming for the Adopt-a-Star campaign in November 2013, and many of you participated in the Campaign, adopting your favorite star(s). We've finished the first year of that program, have sent off the light curves of those adopted stars to their sponsors, and are now looking for more participants for this year. Surely you have a favorite star—why not adopt it?

Newly named asteroids (133537) Mariomotta and (367732) Mikesimonsen were announced. Mario Motta and Mike Simonsen join a surprisingly long list of similarly honored AAVSO members and observers (http://www.aavso.org/minor-planet-names-honor-aavso-members-and-observers).

Construction has begun around AAVSO Headquarters. The City of Cambridge is in the midst of a large sewer separation project, splitting the storm and sanitary sewers. All of the streets near us will be torn up for the next two years. Cambridge has protected all of the trees so that the heavy machinery is less likely to damage them, and materials are being stockpiled in a nearby construction yard. Heavy machinery is passing by Headquarters every day. Sometime in early 2015, Bay State Road itself will be torn up. Final resurfacing of the road is planned for late 2015 or early 2016. It may be a challenge to reach Headquarters, but it will be well worth the effort!

Staffing

We said goodbye to our Administrative Assistant, Lauren Rosenbaum, at the end of December 2013. Lauren worked with us while she was going to graduate school, and now moves on to her real career. I can't think of a better fit to our organization than Lauren was, and she will be missed! Jordan Gibson has been selected as our new Administrative Assistant. He started work at the end of January 2014, and with Lauren's help, has gotten up to speed quickly. He is computer savvy, knows forums inside and out, and is learning about variable stars and our membership. Please welcome him if you get a chance to call Headquarters!

Aaron Sliski continues to help me with AAVSOnet activities. Aaron did most of the setup of BSM_HQ, has updated software throughout the network, and tested and shipped cameras and equipment. He set up one of our two eShel spectrographs in the AAVSO lab. Together with his father, Alan, he drilled new holes in the Apogee filter wheels to accommodate the new hole pattern of the Aspen cameras for APASS North.

In January 2015, the American Astronomical Society announced their awards for the upcoming year. One of those went to a special person at the AAVSO: Mike Simonsen, who received the Chambliss Amateur Achievement Award. This award is a prestigious one that goes only to one amateur per year; previous recipients included Brian Warner, Ron Bissinger, and Tim Puckett. Mike won this year for "his multiyear Z CamPaign that is dedicated to the long-term study of Z Camelopardalis stars. These are binary systems in which a white dwarf accretes material from a bloated companion, resulting in erratic explosions that, mysteriously, sometimes stop occurring for days, weeks, or months. Simonsen's research, published in *The Journal of the American Association of Variable Star*

Observers, promises to have a long-lasting impact on the field of accretion-disk theory." Kudos to a dear friend!

Other than these changes, Headquarters staffing has remained constant. We have ten full-time employees, one contract employee, and three part-time staff members, whose names and titles may be found section 3 of this *Annual Report*. All permanent employees are described on our website at http://www.aavso.org/aavso-staff. I encourage you to read about these folk who support the members and observers; it is a really nice and efficient staff at Headquarters!

Publications

At Headquarters, much of the emphasis in the last quarter of this year has been on documentation. Sara Beck and Matthew Templeton (with some input from me) have been working on the new *AAVSO Guide to CCD Photometry*, an excellent beginner's manual. This manual is quite complete and includes a great section on transformation. If you haven't read this one, you should download a copy!

The *AAVSO DSLR Observing Manual* was released at the summer 2014 AAS meeting to good reviews. Congratulations to Rebecca Turner as the task-master in getting the manual completed and to all of the workshop participants who wrote most of the original words! Writers included Mark Blackford, Michael Brewster, Todd Brown, Robert Buchheim, Donald Collins, Martin Connors, Ian Doktor, Heinz-Bernd Eggenstein, Tim Hager, Arne Henden, Rebecca Jackson, Richard Kinne, Brian Kloppenborg, Colin Littlefield, Des Loughney, Bob Manske, Paul Norris, Roger Pieri, Mike Simonsen, Matthew Templeton, and Paul Valleli. Brian Kloppenborg, Elizabeth, Matthew, and Rebecca did a yeoman's job of editing to make the text flow smoothly. Also, Sebastián has undertaken the big job of translating the DSLR manual into Spanish.

Each year the AAVSO provides material on variable stars for the Royal Astronomical Society of Canada's *Observer's Handbook*. For the 2015 handbook, Matthew Templeton wrote the Variable Star of the Year article, and Elizabeth Waagen provided maxima and minima predictions for the variable star tables.

Volume 42, Numbers 1 and 2, of *The Journal of the AAVSO* were published on schedule during 2014, thanks to the efforts of Editors John Percy, Matthew Templeton, Elizabeth Waagen, and Michael Saladyga. The format of the *Journal* was substantially revised this year to improve its readability and give it an appearance more in line with the large astronomical journals (see page 80 for more details). All *JAAVSO* papers are included in the NASA Astronomical Data System (ADS) publication index, one of the principal electronic literature resources for researchers, educators, and students. Many *eJAAVSO*

articles—pre-publication versions of papers appearing in *JAAVSO*—were posted to the AAVSO website in advance of the official publication of each issue of *JAAVSO*.

Elizabeth Waagen and Matthew Templeton created 16 *AAVSO Alert Notices* and 22 *AAVSO Special Notices*, all of which were disseminated via email and posted to the website. Elizabeth and Matthew prepared *AAVSO Bulletin 77, Predicted Maxima/Minima of Long Period Variables* for 2014. The AAVSO released the annual eclipsing binary/RR Lyrae stars ephemerides prepared by Gerry Samolyk. All issues of the monthly *Solar Bulletin*, prepared by Rodney Howe and Kim Hay, were published, and placed online by Jordan Gibson. Four issues of the *AAVSO Newsletter*, edited by Elizabeth and prepared by Mike Saladyga, were published and placed online. Sara Beck facilitated several new translations of the *AAVSO Manual for Visual Observing of Variable Stars*, including Farsi (by Fatemeh Bahrani) and an updated version in Spanish (by Jaime García).

There were 56 staff publications (Henden, Price, Templeton, Waagen; P*ublications of the Astronomical Society of the Pacific* (*PASP*), *Astronomical Journal* (*AJ*), *JAAVSO*, etc.). We noted that 45 papers in journals such as *Astronomy & Astrophysics, Monthly Notices of the Royal Astronomical Society, Astrophysical Journal, AJ, PASP*, etc. were published using AAVSO data and assistance. The actual number is substantially larger than this, as many posters and papers at AAS meetings use our light curves in their presentations. I presented a poster on APASS at the January 2015 AAS meeting.

If you haven't purchased your copy of the Williams/Saladyga book, *Advancing Variable Star Astronomy*, you should consider doing so. It is an excellent history of the AAVSO and of a Citizen Science organization in general.

I would especially like to thank Sebastián Otero for his many Spanish translations of *AAVSO Alert Notices, AAVSO Special Notices*, sections of the *Newsletters*, and his participation in the Spanish forum on the AAVSO website.

AAVSO Staff member Rebecca Turner (left) and AAVSO Council member Kristine Larsen at the new portable exhibit

Travel and meetings

The American Astronomical Society (AAS) held their summer meeting in Boston in June, and we participated in a big way. We had a booth (nicely placed in front of the plenary talk auditorium) that was staffed by AAVSO professional astronomer members/volunteers as well as Headquarters staff.

John Martin and Kristine Larsen in particular spent many hours talking to attendees about the AAVSO and variable stars in general. The booth was a new portable exhibit from Skyline, with three panels of AAVSO information. The staff created a repeating PowerPoint presentation, covering most of the programs of the AAVSO, which we ran on two iPads. Thumb drives containing the new DSLR observing manual, copies of our other manuals, and other reference material were made available to attendees. The hit of the show, however, were the miniature Tootsie-Rolls in a basket on the display podium! I think the staff did an outstanding job of display design and picking appropriate material for the PowerPoint presentation.

At that meeting, the AAVSO also held a Special Session on Long Time-Domain Astronomy, with talks from many of the experts, such as Bradley Schaefer and David Turner. I was also invited to give a plenary talk on "Citizen Science in the Age of Surveys" that was well received. I think the AAVSO was nicely represented at that meeting, and everyone that we talked to respected the work that the observers were doing.

The next week saw the joint meeting in California of the Society for Astronomical Sciences (SAS), the AAVSO, and the Center for Backyard Astrophysics (CBA), with about 170 registered participants. I gave a workshop on photometric transformation, highlighting the excellent programs that Gordon Myers, George Silvis, and Richard Sabo have created to make transformation easier. We've since released them to the community. I was also honored in giving the banquet talk, and had a lot of fun mentioning some of the weather-related disasters that I've had in my 40 years as an astronomer. (Luckily it was not recorded….) There were lots of AAVSO papers, and we set up the AAVSO booth in the exhibitor's area. I like the synergy among the three groups, and the new venue (Ontario Airport Hotel instead of Northwoods Resort) offered more meeting space and informal gathering spots. The bar also stayed open past 9 p.m., and was the focal point for many discussions.

The AAVSO Annual Meeting was held in early November 2014. This meeting was another one held jointly with SAS (their first appearance on the east coast), with several of their officers attending. A special session was devoted to the impact of my career on variable star astronomy, which I gratefully appreciated. Thanks to everyone, especially Rebecca Turner, who organized this meeting and the speakers and saw every detail carried out!

Finally, I attended the January 2015 AAS meeting to give a poster on the current status of APASS. I finished the DR8 release just prior to the meeting, and brought with me a packet of thumb drives to hand out. I'm pleased to say that I gave out all that I had, and had several requests after the meeting for more copies! I saw a number of people there that I had not seen in years, so it was a very good meeting for me. Afterwards, I drove

down to visit with Jim Jones and Tim Crawford. I've met them before, and spend many an evening in the chat room with both of them, but it was a good way to relax before heading back to Headquarters for my final few weeks.

Looking Back on the Past

In the Director's Report at the Annual Meeting, I gave a brief synopsis of where we were when I started at the AAVSO, and what had changed in the intervening 10 years. As far as I can tell, there is nothing at the AAVSO that is being done the same way that it was when I became Director. We've moved the International Database to an online, searchable, relational database. We're now doing Cloud computing. Membership records are kept in MySQL. A dozen new tools are available, including VSP, VSX, VSTAR, VPHOT, SEQPLOT, TG, TA, etc. New manuals are available, and many with translations into other languages. We bought and refurbished a new Headquarters building. AAVSOnet was started; CHOICE courses became available; APASS was created. Nearly everything that you do on the website today was not available in 2005. I think the organization has flourished over the past decade, becoming the premier amateur variable star organization in the world.

Looking Towards the Future

Elsewhere in this *Annual Report* you will find an article by Kevin Marvel on the process of selecting a new Director. Two years ago, I announced to the Council that I would be retiring in early 2015, in order to give them the maximum amount of time to select a quality replacement. I think the search committee, and the Council, have done a marvelous job and have found the ideal person to take over the reins and continue our progress—Dr. Stella Kafka. I found it amazing that she and I had the same faculty advisor (Kent Honeycutt). However, I was disappointed to find that her birthday was in November, the first Director NOT to have been born in January!

Arne Henden (left), and Stella Kafka (right), with their dissertation advisor Kent Honeycutt of Indiana University

I want to say "thank you" to the members and observers of the AAVSO for your contributions to the organization, and for your many acts of graciousness and volunteerism that I have been privy to for the past decade.

Writing this Report has been a bittersweet experience. I've spent 10 years of my career at the AAVSO, and it has been such a great privilege to work alongside so many amazing people, with a common passion for variable stars. While I am saddened by walking away from the front lines, I also know that I am leaving an organization that is stronger than ever and well positioned to lead the way into a promising future of pro-am collaboration, science education, and support for major surveys.

I spent the last two weeks of my employment passing on as much information as I could to Stella about the inner workings of the AAVSO. She is a quick learner, and has goals for the AAVSO that are well in line with our mission, encompassing many of the directions that I wish I only had had sufficient time to lead myself! There will be no pause whatsoever in our activities and our role in the astronomy community. I know that the Council and the staff can count on your continued support and will be the recipients of your volunteer efforts as they prepare to meet the challenges of our future.

I am NOT retiring from astronomy in general, nor from the AAVSO in particular. Stella has asked me to continue my role in the technical aspects of AAVSOnet, and of course I have lots left to accomplish for APASS. Somewhere in there, I'd like to finish that CCD book too. I'm looking forward to contributing as an observer on upcoming campaigns. Please realize that this has not been just a "job" to me—it has been my passion, and honor, to lead the AAVSO. It will always remain close to my heart.

Welcome to the exciting future! Let's all stand beside Stella and make the AAVSO the best that it can be. Clear skies to all!

Acknowledgements

This is not a one-person show, or even a dozen-person show. Everyone who has contributed data, made a monetary donation, or volunteered their time and energy has made this organization the success that it is. We truly "stand on the shoulders of giants"—those who came before us and built the foundation of the organization. Clint Ford contributed enormously to the organization, which is why his name bears such prominence everywhere. Previous Directors organized the association and had the vision for its future. The Council guides the AAVSO, volunteering their efforts to make the organization financially solvent and relevant. Our committee and section chairs handle specific areas of interest, working with enthusiastic observers and making reports to the membership and Council. Others work quietly behind the scene, acting as scientific advisors to programs, writing important software, or participating in important projects such as the Sequence Team. Finally, many institutions and government agencies see our

research important enough to provide financial support. Without all of these people, the AAVSO would not exist.

Observer Totals

Our special appreciation and thanks go to our enthusiastic and dedicated observers, who are the heart of the AAVSO and whose ongoing efforts make this association vital to variable star research. Listed on the following pages are the totals of observations that we have received at Headquarters.

Table 1. AAVSO Observer Totals 2013–2014 by Country.*

Country	No. Observers	No. Obs.	Country	No. Observers	No. Obs.	Country	No. Observers	No. Obs.
unknown	1	1	Finland	14	55226	Poland	31	10868
Argentina	8	288	France	37	36838	Portugal	3	3772
Austria	7	2039	United Kingdom	43	93906	Paraguay	2	10
Australia	29	79523	Greece	7	2401	Romania	8	5114
Belgium	19	205192	Croatia	1	4	Serbia	1	659
Bulgaria	3	2817	Hungary	49	18491	Russian Federation	10	849
Bermuda	1	202	Ireland	4	38	Sweden	14	14159
Bolivia	1	122	Israel	1	24	Slovenia	2	198
Brazil	34	3248	India	2	195	Slovakia	4	2300
Belarus	4	974	Iran	1	5	Canary Islands	1	379
Canada	40	29115	Italy	25	29415	Tunisia	1	4
Switzerland	3	560	Japan	5	522	Turkey	3	9919
Chile	1	26	Luxembourg	1	69	Taiwan	2	153
China	11	753	Malta	1	23	Ukraine	6	23968
Colombia	1	63	Mexico	1	549	United States	266	543899
Germany	42	20788	Nicaragua	1	5	Uruguay	1	12
Denmark	3	1569	Netherlands	12	2432	Venezuela	1	4
Dominican Republic	1	1	Norway	2	235	South Africa	4	738
Estonia	1	2593	New Zealand	8	7632			
Spain	56	167016	Philippines	1	266	TOTAL	842	1382171

Table 2. AAVSO Observer Totals 2013–2014 USA by State or Territory.*

State	No. Observers	No. Obs.	State	No. Observers	No. Obs.	State	No. Observers	No. Obs.
APO/FPO	1	23958	Louisiana	1	32	Oregon	6	66963
Alabama	1	32	Maine	4	440	Pennsylvania	9	1743
Arizona	14	3216	Maryland	6	436	Puerto Rico	1	2
Arkansas	3	9489	Massachusetts	17	51634	Rhode Island	2	91
California	32	76746	Michigan	14	5185	South Carolina	4	133
Colorado	8	1117	Minnesota	5	555	Texas	23	4694
Connecticut	2	16653	Missouri	2	8780	Utah	3	21
Delaware	1	66	Montana	1	35044	Vermont	4	77
Florida	8	34810	Nebraska	1	70	Virgin Islands	1	4
Georgia	5	3339	Nevada	1	6	Virginia	6	1240
Hawaii	1	1005	New Hampshire	2	15168	Washington	5	130
Illinois	15	56957	New Mexico	7	79934	West Virginia	2	1421
Indiana	6	3617	New York	10	3436	Wisconsin	6	30695
Iowa	2	555	North Carolina	4	1234			
Kansas	4	216	Ohio	10	2000	TOTAL	266	543899
Kentucky	2	384	Oklahoma	4	571			

** Totals reflect observations made during fiscal 2013–2014 and do not include historical data (data preceding fiscal 2013–2014) submitted during fiscal 2013–2014.*

Table 3. AAVSO Observers, 2013–2014.*

Code	Org.	Name	No. Obs.	Code	Org.	Name	No. Obs.
AAP		P. Abbott, Canada	382	BPAD		P. Benni, Massachusetts	7593
AAN	02	A. Abe, Germany	108	BEB		R. Berg, Indiana	21
APGA		P. Abel, United Kingdom	10	BGMB	18	G. Bertani, Italy	48
AIBA		I. Abusharkh, Massachusetts	218	BANC		A. Berthold, Austria	1
ACN	13	C. Adib, Brazil	487	BASA		A. Betzler, Brazil	3
AHM		H. Adler, Massachusetts	1656	BMAG		M. Bilca, unknown	1
ASA		S. Aguirre, Mexico	549	BBI	05	B. Billiaert, Belgium	1525
ARL	13	R. Alencar Caldas, Brazil	1	BLOA		L. Bing, China	46
AFSA		F. Alfarp, Spain	300	BMAH		M. Biskupski, Poland	300
ACO	20	C. Allen, Sweden	438	BXN	01	M. Bisson, France	34
ADAB		D. Alling, California	1	BXT	08	T. Bjerkgaard, Norway	216
AJV	15	J. Alonso, Spain	521	BRAC		R. Black, Oklahoma	152
ARC		R. Altenburg, Pennsylvania	1	BMGA		M. Blackford, Australia	1878
AAX	13	A. Amorim, Brazil	2099	BKL		J. Blackwell, New Hampshire	125
AMG	13	M. Amorim, Brazil	2	BSEA		S. Blakely, Rhode Island	5
AMIA		M. Anderlund, Sweden	15	BVZ		J. Blanco Gonzalez, Spain	31
AKG	19	K. Andersson, Sweden	17	BLD	10	D. Blane, South Africa	572
ALQ		L. Andree, Illinois	5	BWZ		E. Blown, New Zealand	1355
ASIA		S. Ansari, Michigan	1	BCAD		C. Blumenroether, Germany	18
AADA	12	A. Anunziato, Argentina	3	BJAA		J. Boardman, Wisconsin	6389
AAM		A. Arminski, Poland	1386	BOH	02	D. Boehme, Germany	21
ARJ		J. Arnold, Texas	60	BJOE		J. Bogado, Argentina	2
ATE		T. Arranz, Spain	65908	BHQ	29	T. Bohlsen, Australia	436
AALB		A. Arranz Lázaro, Spain	173	BRJ		J. Bortle, New York	2768
ATI	03	T. Asztalos, Hungary	2121	BMF	27	M. Boschat, Canada	4
AAUA		M. Audejean, France	1655	BDLA		D. Boulet, Delaware	66
ADI	02	D. Augart, Germany	396	BMU	04	R. Bouma, Netherlands	17
AAV		A. Avtanski, California	1	BDG	20	D. Boyd, United Kingdom	5999
ARX		R. Axelsen, Australia	945	BALC		A. Boyer, France	40
BPAB		P. Bacci, Italy	2	BMK		M. Bradbury, Indiana	146
BJAN	03	J. Bacsa, Hungary	366	BRAF		R. Braga, Italy	15
BOZ	03	B. Bago, Hungary	1780	BJFA		J. Brandie, China	161
BPEA		P. Bagyinszki, Hungary	6	BHOB	02	H. Braunwarth, Germany	16
BIY		D. Bailey, Illinois	47	BQC	01	J. Breard, France	4
BJEA		J. Baker, Kansas	7	BTB		T. Bretl, Minnesota	42
BJMB		J. Baker, Michigan	5	BHA	02	H. Bretschneider, Germany	326
BWW		W. Bakewell, California	3	BMI		M. Brewster, Texas	1
BFO	03	J. Bakos, Hungary	3433	BQE	27	E. Briggs, New York	2
BAH		A. Balcerek, Poland	34	BSM		S. Brincat, Malta	23
BALJ	14	A. Baldwin, New Zealand	211	BJFB		J. Briol, Minnesota	91
BGZ		G. Banialis, Illinois	262	BLP	03	P. Brlas, Hungary	7
BTAD		T. Banys, Poland	33	BAVB		A. Broceno, Spain	18
BJOD		J. Barentine, Arizona	10	BPEB		P. Brock, United Kingdom	12
BMAI		M. Barlazzi, Italy	53	BOS	05	E. Broens, Belgium	25
BRJA		R. Baron, Canada	1	BLUA		L. Brooks, Virginia	75
BSR	18	S. Baroni, Italy	82	BOA	01	A. Bruno, France	11117
BPO		D. Barrett, France	2018	BYQ		T. Bryant, Maryland	44
BQ	03	L. Bartha, Hungary	1424	BISA	16	I. Bryukhanov, Belarus	813
BWAA		W. Basso, Canada	28	BHU		R. Buchheim, California	4
BATT	03	A. Batho, Hungary	1	BDGA		D. Buczynski, United Kingdom	183
BBA		B. Beaman, Illinois	2105	BIW	29	N. Butterworth, Australia	2771
BWX	27	A. Beaton, Canada	137	CAND	01	A. Cailleau, France	14
BSJ		S. Beck, Massachusetts	1	CTOA		T. Calderwood, Oregon	135
BQB	03	B. Becsy, Hungary	10	CCB		C. Calia, Connecticut	174
BZX		A. Beltran, Bolivia	122	CLUB	36	L. Camargo Da Silva, Brazil	14
PNQ		R. Benavides Palencia, Spain	3022	CMN		R. Cameron, Australia	27
BHS		H. Bengtsson, Sweden	1134	CMQ		P. Camilleri, Australia	485
BDJB		D. Benn, Australia	55	CAMA		A. Campbell, United Kingdom	6
BTY		T. Benner, Pennsylvania	380	CPN	27	P. Campbell, Canada	4

Table 3. AAVSO Observers, 2013–2014, cont.*

Code	Org.	Name	No. Obs.
CMP		R. Campbell, Florida	1266
CSHA		S. Campbell, Canada	4
CFRA		F. Campos, Spain	180
CJMC		J. Candelaria Medina, Puerto Rico	2
CEM	15	E. Capella, Spain	10
CQP		A. Capetillo Blanco, Spain	261
CADA	36	A. Cardoso, Brazil	71
CALB		A. Carreno, Spain	2680
CROA	29	R. Carstens, New Zealand	4791
CNY		A. Cason, Georgia	5
CLQ		L. Cason, South Carolina	39
CLAC		L. Cassignard, France	27
CJE	01	J. Castellani, France	433
CRAB		R. Castillo, Spain	38
CKN		K. Castle, Arizona	1
CWO		W. Castro, Florida	6
CDZ		D. Cejudo Fernandez, Spain	63774
CQJ		J. Centala, Iowa	535
CMAB		M. Cervoni, Italy	1
CKIA		K. Chan, Canada	24
CNT		D. Chantiles, California	365
CGF		G. Chaple, Massachusetts	381
CXIA		X. Chen, China	13
CQS		S. Cheng, China	8
CCY		C. Chiselbrook, Georgia	3244
CJUA		J. Cimpian, Michigan	7
CWP		W. Clarke, Arizona	283
CABB		A. Clevenson, Texas	487
CPE		P. Closas, Spain	794
CPP		P. Coker, Colorado	306
CFO		J. Coliac, France	11
CDK		D. Collins, North Carolina	1218
CJOB		J. Collins, United Kingdom	3
CME	18	E. Colombo, Italy	60
CTIA		T. Colombo, Italy	503
CDSA		D. Conner, United Kingdom	2631
CEMB	01	E. Conseil, France	424
COO		L. Cook, California	878
CMJA		M. Cook, Canada	12263
CCHB		C. Cornelissen, Netherlands	1
CLZ		L. Corp, France	2428
CAI		A. Correia, Portugal	432
CJGB		J. Correia, Portugal	2899
CIOB		I. Costache, Romania	2
CMM		M. Costello, California	17185
CKLA		K. Cotar, Slovenia	120
CJGA		J. Cottle, California	2898
COV		V. Coulehan, New York	34
CWD		D. Cowall, Maryland	21
CLEA		L. Crary, Florida	3
CTX		T. Crawford, Oregon	11103
CAWA		A. Crider, North Carolina	3
CBLA		B. Crosby, South Carolina	6
CMJC		M. Crowe, United Kingdom	1
CSM	03	M. Csukas, Romania	845
CKB		B. Cudnik, Texas	2528
CUU		J. Curto Amigo, Spain	427
CSZ	03	S. Cziniel, Hungary	34
DMIA		M. Dadighat, California	4
DGY	03	G. Dalya, Hungary	7
DGSA	20	G. Darlington, United Kingdom	4767
DAM	06	A. Darriba Martinez, Spain	387
DMA		M. Davis, South Carolina	21
DJX	27	M. De Jong, Canada	8
DROC	05	R. De Laet, Belgium	7
DENA		E. De Miguel, Spain	244
DPP		P. De Ponthiere, Belgium	1836
SWQ	13	W. De Souza, Brazil	252
DSJ	13	J. De Souza Aguiar, Brazil	5
DVW	05	W. De Vriese, Belgium	1
DSJA		S. Dean, United Kingdom	20
DMIB		M. Deconinck, France	31
DDAA		D. Dedrickson, Oregon	73
DFR	27	F. Dempsey, Canada	14
DDE		D. Denisenko, Russian Federation	1
DAT		A. Derdzikowski, Poland	765
DNO		O. Deren, Poland	1520
DAND		A. Deshpande, India	194
DSI		G. Di Scala, Australia	8926
DBL		B. Dickey, Utah	2
DPA	05	A. Diepvens, Belgium	148
DRD		R. Dietz, Colorado	10
DENB		E. Diez Alonso, Spain	37
DLA		A. Dill, Kansas	17
DMVA		M. Do Prado, Brazil	1
DSZA		S. Dobra, Hungary	4
DROD		R. Donner, New York	7
DLSA	03	L. Dorogi, Hungary	5
DDJ		D. Dowhos, Canada	286
DSE		S. Du, China	13
DDP		D. Duarte Cavalcante Pinto, Brazil	2
DUBF	05	F. Dubois, Belgium	130
DPV	09	P. Dubovsky, Slovakia	1253
DROB		R. Dudley, Vermont	19
DMO	01	M. Dumont, France	835
DMPA		M. Durkin, New York	118
DFEA		F. Dutton, Michigan	28
DKS		S. Dvorak, Florida	30490
DGP		G. Dyck, Massachusetts	701
ETOA		T. Eenmae, Estonia	2593
EHEA		H. Eggenstein, Germany	51
EMA		M. Eichenberger, Switzerland	30
ELE		L. Elenin, Russian Federation	28
EPE	01	P. Enskonatus, Germany	157
EJO	03	J. Erdei, Hungary	234
EEY		E. Erdelyi, California	2816
EALA		A. Escartin, Spain	39
ELTA	06	L. Espasa, Spain	164
ERW	14	R. Evans, New Zealand	28
EBRA		B. Ewasiuk, Canada	9
DEFA		E. Faustino, Brazil	1
FFAD		F. Feijo, Brazil	43
FJAC	13	J. Ferreira, Brazil	2
FMAC		M. Filipek, Poland	3
FWH		W. Finlay, Canada	1
FJAD		J. Fiola, Canada	5
FSJ	01	J. Fis, France	483
FEV		E. Fischler, Washington	21

Table 3. AAVSO Observers, 2013–2014, cont.*

Code	Org.	Name	No. Obs.
FDA	03	A. Fodor, Hungary	265
FBZ	03	B. Fodor, Hungary	13
FJQ		J. Foster, California	6936
FDU		D. Fowler, Ohio	10
FMAA	20	M. Fowler, United Kingdom	648
FXJ		J. Fox, New Mexico	224
FGIA	18	G. Frustaci, Italy	572
FFRA		F. Fu, China	8
FMG		G. Fugman, Nebraska	70
FFAB		F. Fujiwara, Brazil	2
FRTA		R. Fuller, Texas	33
FRIC		R. Furgoni, Italy	21453
GBZ	21	O. Gabzo, Israel	24
GFEA		F. Gallego, Spain	2
GGHA		G. Galletti, Argentina	8
GJMA		J. Galt, Virginia	694
GTN		T. Gandet, Arizona	55
GFDB	06	F. Garcia, Spain	85
GAJ		J. Garcia, Argentina	68
GAA		P. Garey, Illinois	63
GJP		J. Garlitz, Oregon	3934
GALB		A. Garofide, Romania	115
GADA		A. Gatchell, Colorado	3
GJCA		J. Geary, Texas	3
GKI		K. Geary, Ireland	30
GMD		M. Geldorp, Canada	4
GQR		R. Gherase, Romania	267
GAO		A. Giambersio, Italy	3
GGU	04	G. Gilein, Netherlands	1021
GSEB		S. Girard, Oklahoma	415
GATH		A. Glazier, Ireland	6
GMY		M. Glennon, Ireland	1
GZN		A. Glez-Herrera, Spain	4902
GLG		G. Gliba, Maryland	41
GFB	31	W. Goff, California	6642
GSAB		S. Gomez, Spain	1
GOT	06	T. Gomez, Spain	510
GFDA	27	F. Gonzalez, Canada	3
GCJ		J. Gonzalez Carballo, Spain	638
GDIA		D. González García, Spain	15
GENB		E. Gozzoli, Italy	27
GHN		J. Graham, Ohio	18
GKA		K. Graham, Illinois	956
GRL	08	B. Granslo, Norway	19
GNJ		J. Green, Canada	1
GMKA		M. Griffiths, United Kingdom	2
GVD	16	V. Grigorenko, Russian Federation	91
GPI		P. Grudniewski, Poland	1
GCO		C. Gualdoni, Italy	2052
GFRB		F. Guenther, Maryland	321
GKZ	03	K. Gulyas, Hungary	6
GPIA		P. Guzik, Poland	22
GGX	01	G. Guzman, France	429
HCS	03	C. Hadhazi, Hungary	1702
HDH	03	S. Hadhazi, Hungary	343
HMAC		M. Haimour, Canada	3
HKB		B. Hakes, Illinois	92
HPIA		P. Hallsten, Sweden	1787
HMB	05	F. Hambsch, Belgium	190086
HJRA		J. Hamilton, Michigan	1
HDX		D. Hands, North Carolina	2
HRLA		R. Hardwick, United Kingdom	4
HBB		B. Harris, Florida	2250
HMQ		M. Harris, Georgia	4
HHU	05	H. Hautecler, Belgium	74
HAB		R. Hays, Illinois	695
HMH		M. Heald, APO/FPO	23958
HKDA		K. Hearst, California	1
HGBA	03	G. Heitler, Hungary	1
HQA		A. Henden, Massachusetts	10741
HPMA		P. Henrichs, Texas	5
HCW		C. Hergenrother, Arizona	15
HJOB		J. Hernandez Cabrera, Canary Islands	379
HMV		M. Hessom, California	52
HNDA		N. Hewitt, United Kingdom	18
HEY	05	B. Heyndrickx, Belgium	29
HHAA		H. Hilliard, Pennsylvania	54
HKEB		K. Hills, United Kingdom	1346
HDHA		D. Hinzel, Virginia	54
HJS		J. Hissong, Ohio	1
HJX	13	J. Hodar Munoz, Brazil	3
HFF		T. Hoffelder, Maine	9
HGUA	19	G. Holmberg, Sweden	1976
HKAB		K. Holmquist, Sweden	2
HOO	04	G. Hoogeveen, Netherlands	3
HOT		J. Hoot, California	322
HJG		J. Horne, California	8
HFGA		F. Horta, Spain	47
HGYA	03	G. Hostak, Hungary	9
HSP	14	S. Hovell, New Zealand	1010
HSW		S. Howerton, Kansas	54
HJA		J. Hudson, California	57
HUR	20	G. Hurst, United Kingdom	1559
HUZ		R. Huziak, Canada	38
ILE	03	E. Illes, Hungary	169
ILUA		L. Izzo, Italy	21
JDAC		D. Jackson, Ohio	5
JJB	11	J. Jacobsen, Denmark	14
JMA		M. Jacquesson, France	21
JTP	01	P. Jacquet, France	83
JAT	03	T. Jakabfi, Hungary	17
JDAA		D. Jakubek, Poland	20
JNDA		N. James, United Kingdom	165
JM		R. James, New Mexico	51742
JZO	03	Z. Jankovics, Hungary	219
JVIA		V. Jarno, France	18
JSHB		S. Jarrett, Illinois	62
JJAB		J. Jeandemange, France	1
JJEA		J. Jenkins, New Mexico	3
JRBA	34	R. Jenkins, Australia	850
JGE	06	G. Jimenez Lopez, Spain	79
JOG		G. Johnson, Maryland	6
JSJA	20	S. Johnston, United Kingdom	219
JON	05	K. Jonckheere, Belgium	1
JA	14	A. Jones, New Zealand	1
JJI		J. Jones, Oregon	51555
JPG		P. Jordanov, Bulgaria	627
JLZ	03	L. Juhasz, Hungary	120

Table 3. AAVSO Observers, 2013–2014, cont.*

Code	Org.	Name	No. Obs.
KMY		M. Kaczmarech, Brazil	4
KFRA	02	F. Kahle, Germany	222
KPK		P. Kalajian, Maine	316
KCI	03	C. Kalup, Hungary	5
KB		W. Kaminski, New Mexico	11
KAM	02	A. Kammerer, Germany	24
KSOA		S. Kamoun, Tunisia	4
KTU		T. Kantola, Finland	29404
KMO		M. Kardasis, Greece	38
KSF		S. Karge, Germany	32
KTHA	19	T. Karlsson, Sweden	2680
KAD	03	A. Karpati, Hungary	25
KEI		E. Kato, Australia	130
KBJ		R. Kaufman, Australia	59
KJMB		J. Kay, Vermont	47
KSEB		S. Kazemi, Iran	5
KFAB		F. Kazmierski, Wisconsin	13
KMQ	06	M. Kearns, Spain	4
KJSA		J. Kendall, New York	307
KSZ	03	S. Keszthelyi, Hungary	214
KJLA		J. Kimball, Colorado	79
KRB		R. King, Minnesota	332
KRAA		R. King, Virginia	121
KCO	03	S. Kiss, Hungary	2
KKJ	03	K. Klajnik, Hungary	20
KKAA		K. Klindt-Jensen, Denmark	482
KRAB		R. Kneip, Luxembourg	69
KCD	20	C. Knight, New Zealand	235
KGT		G. Knight, Maine	27
KSP		S. Knight, Maine	88
KLO		L. Kocsmaros, Serbia	659
KRV		R. Koff, Colorado	2
KHL		M. Kohl, Switzerland	519
KRS		R. Kolman, Illinois	193
KTAA	03	T. Komaromi, Hungary	16
KMA		M. Komorous, Canada	1704
KOS	03	A. Kosa-Kiss, Romania	3775
KTJA		T. Kostelecky, Washington	86
KNIA		N. Kourounis, Greece	8
KAF	03	A. Kovacs, Slovakia	502
KFK		F. Krafka, Texas	5
KJGB		J. Kras, Netherlands	3
KSW		S. Krasnicki, Poland	21
KJOA		J. Kribbel, Austria	4
KWO	02	W. Kriebel, Germany	1341
KIS	02	G. Krisch, Germany	97
KRK		K. Krisciunas, Texas	2
KNAA		N. Krumm, California	26
KDAB		D. Kubert, Michigan	1
KBA		B. Kubiak, Poland	1486
KUC	01	S. Kuchto, France	779
KBO		R. Kuplin, Arizona	14
KSQ		S. Kuznetsov, Russian Federation	554
LJAC		J. Laasanen, Finland	6
LCR	15	C. Labordena, Spain	625
LTK	03	T. Lacko, Hungary	80
LHS		H. Lacombe, Canada	17
LEA	03	E. Laczko, Hungary	1
LCIA		C. Lagos Muñoz, Chile	26
LSA	17	S. Lahtinen, Finland	40
LPEA		P. Lancaster, Australia	7
LAL		A. Landolt, Louisiana	32
LDJ	27	D. Lane, Canada	1507
LTVA		T. Lango, Georgia	1
LJOD		J. Lasuik, Canada	29
LZT		T. Lazuka, Illinois	856
LMEA		M. Lee, Taiwan	1
LMT		M. Legutko, Poland	75
LCLA		C. Lemaire, Germany	7366
LPD	01	P. Lemarchand, France	48
MMAM		M. Lessard, Canada	1
LVY		D. Levy, Arizona	26
LDRA		D. Leys, Australia	13
LDW	13	D. Lima, Brazil	11
LFEA		F. Limon, Spain	23
LJDB		J. Lindsay, Texas	14
LMK		M. Linnolt, Hawaii	1005
LNIA		N. Liskun, Ukraine	50
LCO		C. Littlefield, Connecticut	16479
LJX	01	J. Llapassat, France	123
LTE	20	T. Lloyd Evans, United Kingdom	2002
LMAB		M. Locke, New Zealand	1
LGV		G. Lopatynski, California	105
LJOC	06	J. Lopesino, Spain	31
LRD		D. Loring, Utah	3
LJUA		J. Lozano De Haro, Spain	36
LBG		G. Lubcke, Wisconsin	219
LIRB		I. Lubiszewski, Poland	7
LREA	37	R. Luiz, Brazil	2
LMJ	17	M. Luostarinen, Finland	208
LTJA		T. Lux, Michigan	4
MDW		W. MacDonald, Canada	2518
MRGA		R. MacPhail, Canada	145
MATA	03	A. Madai, Hungary	22
MMT	17	M. Maenpaa, Finland	11
MQA		A. Maidik, Ukraine	3770
MLI		L. Maisler, New York	8
MDAV		D. Majors, California	15
MVO	17	V. Makela, Finland	365
MEGA		E. Maleev, Ukraine	52
MJHN	20	J. Mallett, United Kingdom	4
MCPA		C. Maloney, Arkansas	1874
MBJA		B. Mansdahl, Sweden	3
MJIE		J. Manske, Wisconsin	2
MBAC		B. Marchais, France	4
MJOE		J. Marco, Spain	390
MFRA		F. Marcoux, Canada	4
MMAL		M. Marhefka, Slovakia	40
MFB	18	F. Mariuzza, Italy	963
MTON	20	T. Markham, United Kingdom	1504
MMN	18	M. Martignoni, Italy	1822
UIS01		J. Martin, Illinois	458
MJOD		J. Martin, Spain	146
MJPA		J. Martinez, Argentina	15
MLUB		L. Martinez, Arizona	199
MVIA		V. Marttila, Finland	173
MBS		B. Massey, California	1
MWMA		W. Mast, Ohio	4

Table 3. AAVSO Observers, 2013–2014, cont.*

Code	Org.	Name	No. Obs.	Code	Org.	Name	No. Obs.
MAV		D. Matsnev, Russian Federation	18	NJO	02	J. Neumann, Germany	1003
MTH		H. Matsuyama, Australia	9585	NMI		M. Nicholas, Arizona	1568
MERA		E. Matys, Austria	1	NOT	02	O. Nickel, Germany	136
MPR		P. Maurer, Germany	366	NJL	01	J. Nicolas, France	28
MLUA		L. Maurin, France	14	NMTB	17	M. Nissinen, Finland	1
MJHA		J. McCammon, Colorado	117	NCH		C. Norris, Texas	155
MCOA		C. McCann, Arkansas	49	NAO		A. Novichonok, Russian Federation	71
MDP	27	P. McDonald, Canada	1454	NANB		A. Nyholm, Sweden	17
MCOB		C. McKenzie, Canada	18	OCAF		A. O'Connell, Ireland	1
MPL		P. McLelland, United Kingdom	13	OCN		S. O'Connor, Bermuda	202
MJB		J. McMath, Arkansas	7566	ONJ		J. O'Neill, Massachusetts	773
MMAE		M. McNeely, Indiana	16	OALA	02	A. Oertlin, Germany	2
MED		K. Medway, United Kingdom	1703	OYE		Y. Ogmen, Turkey	9822
MSAD		S. Mehta, Texas	218	ONOA		N. Ohuo, Japan	7
MFR		F. Melillo, New York	33	OJMA		J. Ojanpera, Finland	216
MSTC		S. Meloche, Canada	4	OAR	17	A. Oksanen, Finland	24466
MDUA		D. Menezes, Brazil	1	OEDA	13	E. Oliveira, Brazil	7
MLIB		L. Meng, China	6	OPR		P. Ossowski, Poland	3
MZK		K. Menzies, Massachusetts	27526	OSE		S. Otero, Argentina	134
MDEN		D. Merrill, California	90	OJJ		J. Ott, Colorado	592
MWOA		W. Merten, Germany	17	OCR	05	C. Otten, Belgium	855
MHL		E. Michaels, Texas	24	OEH		E. Ozturk, Turkey	85
MVH		V. Mihai, Romania	77	PLA	13	A. Padilla Filho, Brazil	50
MIW	20	I. Miller, United Kingdom	19096	PSD		S. Padovan, Spain	841
MLL		J. Miller, Maryland	3	PLP		L. Palazzi, Italy	705
MMGA		M. Miller, Texas	13	PKO		K. Panourakis, Greece	154
MMEA		M. Millward, Australia	427	PGIA		G. Paone, Italy	68
MKYA		K. Mimikos, Greece	1	PTFA		T. Papadimitriou, Greece	84
MFEA		F. Mina, Argentina	41	PPS	03	S. Papp, Hungary	2805
MZS	03	A. Mizser, Hungary	345	PTQ		T. Parson, Minnesota	87
MRV		R. Modic, Ohio	369	PST		S. Parsons, Florida	11
MHH		J. Moehlmann, Pennsylvania	813	PJJ	15	J. Pastor, Spain	18
MDAD		D. Moffett, South Carolina	67	PPGA		P. Pastusiak, Poland	1
MKSB		K. Mogk, Canada	23	PNIB		N. Paul, India	1
MQE		K. Mogul, Florida	243	PKV		K. Paxson, Ohio	1112
MJAH		J. Mondry, Michigan	1	PEX	14	A. Pearce, Australia	10396
MISA		I. Monks, United Kingdom	43	PEI	11	E. Pedersen, Denmark	1073
MNCA		N. Monteiro, Brazil	1	PEG	01	C. Peguet, France	546
MEV	01	E. Morelle, France	11076	PWD		W. Pellerin, Texas	301
MOW		W. Morrison, Canada	5143	PRVA		R. Pereira, Brazil	14
MACB		A. Moscaliuc, Romania	1	PCX	15	C. Perello, Spain	11
MPS	27	P. Mozel, Canada	72	PEJ	01	J. Perrard, France	20
MKCA		K. Mrazek, Austria	1	PWL		W. Perry, Arizona	44
MMH		M. Muciek, Poland	222	PGD		G. Persha, Michigan	2020
MALG		A. Mueller, Germany	2	PDCA		D. Pham, Texas	222
MROB		R. Mueller, Germany	3	PXR	20	R. Pickard, United Kingdom	20242
MCLA	27	C. Muir, Canada	3	PDKA		D. Piekowski, Poland	11
MGSA	06	G. Muler, Spain	8	PROC		R. Pieri, France	185
MGAB		G. Murawski, Poland	2	PIJ	03	J. Piriti, Hungary	8
MMIC		M. Muro Serrano, Spain	13740	PPL		P. Plante, Ohio	185
MARA		A. Murtovaara, Finland	53	PUKA		L. Plotkowski, Poland	9
MUY	05	E. Muyllaert, Belgium	6162	PAW	29	A. Plummer, Australia	751
MGW		G. Myers, California	37530	AST	12	R. Podesta, Argentina	17
NDQ	01	D. Naillon, France	71	PRX		R. Poklar, Arizona	637
NTA	13	T. Napoleao, Brazil	22	PRAA		R. Poltz, Germany	19
NXAA	19	X. Naveira, Sweden	9	PVEA		V. Popov, Bulgaria	2183
NRNA		R. Naves, Spain	513	CVO01		B. Poppe, Germany	23
NLX		P. Nelson, Australia	6392	PRV		R. Potter, Michigan	590
NLZ	03	L. Nemeth, Hungary	336	PWR		R. Powaski, Ohio	11

Table 3. AAVSO Observers, 2013–2014, cont.*

Code	Org.	Name	No. Obs.	Code	Org.	Name	No. Obs.
PJOC	29	J. Powles, Australia	21551	SPK	01	P. Schmeer, Germany	1
POX		M. Poxon, United Kingdom	336	SULA	02	U. Schmidt, Germany	24
PYG		G. Poyner, United Kingdom	9581	SAQ	04	A. Scholten, Netherlands	5
PVAA		V. Prodanets, Ukraine	94	SFRA		F. Schorr, Georgia	85
PAI		A. Prokopovich, Belarus	1	SGLE		G. Schrader, Australia	63
PMB		M. Prokosch, Texas	32	SYU	02	M. Schubert, Germany	639
PUJ	06	F. Pujol-Clapes, Spain	647	SBEA	02	B. Schwarz, Germany	148
PARA		A. Purroy, Spain	19	STOD		T. Sciezor, Poland	7
PHG		H. Purucker, Germany	49	SJEA	01	J. Sciolla, France	415
PTIA		T. Pönni, Finland	2	SMIK		M. Scott, Utah	16
QYIA		Y. Qiu, China	2	SDMA		D. Selmo, Brazil	27
QW	02	W. Quester, Germany	16	SSAB		S. Sementsov, Russian Federation	10
RKE	02	K. Raetz, Germany	346	SIV		I. Sergey, Belarus	45
RKM	02	M. Raetz, Germany	157	SMRC	01	M. Serreau, France	61
RJOC		J. Rallo, Spain	15	SFJA		F. Sevilla, Spain	1
RMW		M. Rapp, Texas	19	SHS		S. Sharpe, Canada	2321
RCAA		C. Recalde Ruiz, Paraguay	1	SDP		D. Sharples, New York	12
REP	24	P. Reinhard, Austria	442	SFY	20	J. Shears, United Kingdom	3150
RFP	13	P. Reis Fernandes, Brazil	48	SAHA		A. Sherman, Colorado	8
RJG		J. Ribeiro, Portugal	441	SKAC		K. Shimmura, Japan	11
RATA	18	A. Ricerca, Italy	4	SLH		L. Shotter, Pennsylvania	441
RIX	29	T. Richards, Australia	3464	SIVA		I. Shpalau, Belarus	115
RJAB		J. Ridgway, Michigan	1	FSHA		F. Shuxing, Massachusetts	207
RGW		G. Rinehart, Nevada	6	SLUC		L. Siekielewski, Poland	150
RCCA		C. Riou, France	22	SGQ		C. Sigismondi, Italy	463
OJR		J. Ripero Osorio, Spain	3599	SPAO	18	P. Siliprandi, Italy	341
REE		E. Robinson, United Kingdom	5	SSJB	37	S. Silva, Brazil	1
RPT		P. Rochford, Alabama	32	SBN	13	A. Silva Barros, Brazil	37
RJWB		J. Rock, United Kingdom	15552	SMCA	37	M. Silveira, Brazil	2
RAEA		A. Rodda, United Kingdom	1509	SGEO		G. Silvis, Massachusetts	165
RFC		F. Rodriguez Bergali, Spain	2	SNE		N. Simmons, Wisconsin	92
RMU	06	M. Rodriguez Marco, Spain	258	SXN		M. Simonsen, Michigan	2148
RZD		D. Rodriguez Perez, Spain	411	SANG		A. Sing, Philippines	266
ROE		J. Roe, Missouri	8779	SHRA		H. Sipes, Kentucky	323
RWLA		W. Roemer, Pennsylvania	6	SGOR		G. Sjöberg, Massachusetts	998
RANC		A. Roerig, Germany	9	SDN		D. Slauson, Iowa	20
ROG		G. Ross, Michigan	257	SAE	10	A. Slotegraaf, South Africa	29
RGN		G. Rossi, Italy	71	SDAB		D. Smales, United Kingdom	372
RDAB		D. Rothwell, United Kingdom	6	STAC		T. Smela, Poland	680
RR		R. Royer, California	10	SBAD		B. Smith, United Kingdom	1
RJV		J. Ruiz Fernandez, Spain	189	SDZ		D. Smith, Arizona	198
RMAE		M. Ruiz Olazar, Paraguay	9	SHA		H. Smith, Michigan	121
RZM		M. Rzepka, Poland	1395	SJE		J. Smith, California	27
SRIC		R. Sabo, Montana	35044	SSTB		S. Smith, California	4
SSU		S. Sakuma, Japan	473	SLEE		L. Smojver, Washington	6
SJOB		J. Salas, Venezuela	4	SSTC		S. Snedden, New Mexico	28
SJGA	06	J. Salto, Spain	137	STAK		T. Soejima, Japan	3
SFV	18	F. Salvaggio, Italy	1	SROD		R. Solomon, Australia	50
SQL	26	R. Salvo, Uruguay	12	SBX		A. Sonka, Romania	32
SBAH		B. Salwiczek, Poland	16	SZOL	03	Z. Sonkoly, Hungary	31
SAH		G. Samolyk, Wisconsin	23980	SMAL	15	M. Soriano, Spain	3
SPEA		P. Sanchez, Nicaragua	5	SECA		E. Spalding, Kentucky	61
SGE	27	G. Sarty, Canada	1	SIQ		M. Spearman, Texas	16
SVA		A. Saw, Australia	67	SJZ		J. Speil, Poland	1799
SEDB		E. Sawyer, Canada	334	SPGA		P. Spital, United Kingdom	68
SDAV		D. Scanlan, United Kingdom	143	SBL		B. Staels, Belgium	3150
SRIB		R. Scarpa, Spain	7	SVAE		V. Stanimirov, Bulgaria	7
SFS		S. Schiff, Virginia	239	STR		R. Stanton, California	461
SRBR		R. Schippers, Netherlands	422	SDB		D. Starkey, Indiana	3425

Table 3. AAVSO Observers, 2013–2014, cont.*

Code	Org.	Name	No. Obs.
SALE	09	A. Staroverov, Ukraine	1
SPET		P. Starr, Australia	4037
SJAT		J. Starzomski, Poland	560
SYO		T. Steck, Indiana	8
SABB		A. Steenkamp, United Kingdom	18
SGWA		G. Steffens, Arizona	51
STI		P. Steffey, Florida	541
SWIL		W. Stein, New Mexico	27916
SET		C. Stephan, Ohio	285
SRB		R. Stine, California	6
SDI	20	D. Storey, United Kingdom	64
SFU	29	M. Streamer, Australia	151
SWIA		W. Strickland, Texas	10
SIAK		I. Strikis, Greece	1058
SNJ		N. Stritof, Slovenia	78
SMAE		M. Stuart, United Kingdom	3
SRX	14	R. Stubbings, Australia	143
SUK		M. Stuka, California	1
SAC	02	A. Sturm, Germany	169
SUS	02	D. Suessmann, Germany	253
SPP		P. Sullivan, California	102
SJAR		J. Suomela, Finland	280
SWV		D. Swann, Texas	324
SSW		S. Swierczynski, Poland	102
SJME		J. Sykes, Washington	14
SKIT	03	K. Szabo, Hungary	1
SZW		R. Szaj, Poland	160
SAO	03	A. Szauer, Hungary	110
SLY	03	L. Szegedi, Hungary	490
TBV	03	D. Tabi, Hungary	3
TPMA		P. Taggart, Canada	13
TUO		U. Tagliaferri, Italy	47
TMAA		M. Talero, Spain	47
TJOB		J. Tapioles, Spain	8
TSTA	02	S. Taube, Germany	9
TCGA	20	C. Taylor, United Kingdom	52
TDB	27	D. Taylor, Canada	585
TSZ	03	S. Teichner, Hungary	5
TPV		P. Temple, New Mexico	10
TPS	03	I. Tepliczky, Hungary	868
TTU		T. Tezel, Turkey	12
TGOA		G. Thaler, Austria	26
TPJB		P. Thibault, Minnesota	3
TIA	03	A. Timar, Hungary	295
TLEB		L. Tkachook, Ukraine	20001
TBRA		B. Tobias, Texas	6
TRE		R. Tomlin, Illinois	249
TWA		W. Travis, Massachusetts	1
TRF		C. Trefzger, Switzerland	11
TYGA		Y. Tsao, Taiwan	152
TSJ		S. Tsuji, Japan	28
TUC	10	C. Turk, South Africa	17
TYS		R. Tyson, New York	147
TSAA		S. Tzikas, Virginia	57
UJHA		J. Ulowetz, Illinois	50899
UMAA		M. Urbanik, Slovakia	505
VLN	01	L. Vadrot, France	9
VCEA		C. Valencia Gallardo, France	8
VJXA		J. Valle, Brazil	22
VAJA		J. Van Allen, Dominican Republic	1
BVE	04	E. Van Ballegoij, Netherlands	475
HAGA		A. Van Der Hoeven, Netherlands	122
VDL	05	J. Van Der Looy, Belgium	74
VDE	04	E. Van Dijk, Germany	31
VNL	05	F. Van Loo, Belgium	627
VLYA		L. Van Rooijen-Mccullough, Netherlands	105
VUG	04	G. Van Uden, Netherlands	140
VWS	05	J. Van Wassenhove, Belgium	435
VBH	05	H. Vandenbruaene, Belgium	24
VSD	05	D. Vansteelant, Belgium	3
VED	01	P. Vedrenne, France	3323
VCLA		C. Veliz, Vermont	1
VBI	03	B. Vigh, Hungary	2
VFEA		F. Vincentelli, Italy	38
VWIA		W. Vinton, Vermont	10
VJA	17	J. Virtanen, Finland	1
VGK		G. Vithoulkas, Greece	1058
VPZ	03	P. Vizi, Hungary	45
VAQA		A. Vodniza, Colombia	63
VFK	02	F. Vohla, Germany	6161
VALC		A. Voishchev, Russian Federation	18
VOL		W. Vollmann, Austria	1564
VVC		V. Voropaev, Russian Federation	2
VVE		V. Vrhovac, Croatia	4
WEO		E. Waagen, Massachusetts	2
WXR	19	R. Wahlstrom, Sweden	3
WGR		G. Walker, New Hampshire	15043
WBY		B. Walter, Texas	216
WYUE		Y. Wang, Oregon	163
WYUD		Y. Wang, China	5
W4		D. Ward, Australia	13
WGE		G. Ward, West Virginia	2
WJOB	19	J. Warell, Sweden	307
WAU		A. Wargin, Poland	77
WAMA		A. Watts, Virgin Islands	4
WCB		C. Webster, Pennsylvania	24
WPT		P. Wedepohl, South Africa	120
WRCA		R. Weir, Massachusetts	582
WWL		W. Wells, Oklahoma	3
WKL	02	K. Wenzel, Germany	989
WJD		J. West, Missouri	1
WDO		D. Whelan, Rhode Island	86
WJAA		J. Whinfrey, United Kingdom	151
WTHB	19	T. Wikander, Sweden	5771
WEY		E. Wiley, Kansas	138
WTHA		T. Will, Germany	1
WPX	29	P. Williams, Australia	5843
WWJ		B. Wilson, United Kingdom	695
WBH		R. Wilson, Arizona	115
WSN		T. Wilson, West Virginia	1419
WAS	02	A. Winkler, Germany	22
WERB	02	E. Wischnewski, Germany	15
WKM		M. Wiskirken, Washington	3
WGO		G. Wood, North Carolina	11
WUB	04	E. Wubbena, Netherlands	118
WCG		C. Wyatt, Australia	8
YBRA		B. Yang, China	20
YIGA		I. Yatsenkov, Russian Federation	56

Table 3. AAVSO Observers, 2013–2014, cont.*

Code	Org.	Name	No. Obs.	Code	Org.	Name	No. Obs.
YADA		A. Yore, Illinois	15	ZMUA		M. Zembrzuski, Poland	1
YBA		B. Young, Oklahoma	1	ZQIA		Q. Zhang, California	2
YDV		D. Young, Massachusetts	75	ZGEA		G. Zhao, China	471
YJOA		J. Young, Massachusetts	14	ZGRA		G. Zinn, Brazil	1
YON		R. Young, Pennsylvania	7	ZIN		S. Zinn, Pennsylvania	17
ZALB	37	A. Zanardo, Brazil	7	ZALA		A. Zonta, Germany	3
ZMAC		M. Zbrudzewski, California	193	ZDGA	37	D. Zoqbi, Brazil	3
ZPA		P. Zeller, Indiana	1	ZGA	03	G. Zvara, Hungary	466

** Totals reflect observations made during fiscal 2013–2014 and do not include historical data (data preceding fiscal 2013–2014) submitted during fiscal 2013–2014.*

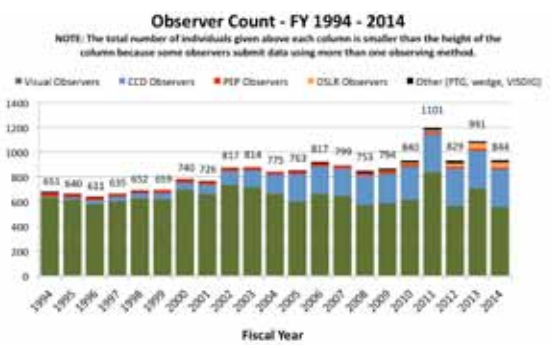
These codes, which appear in the Table (AAVSO Observers 2013–2014), indicate observers are also affiliated with the groups below:

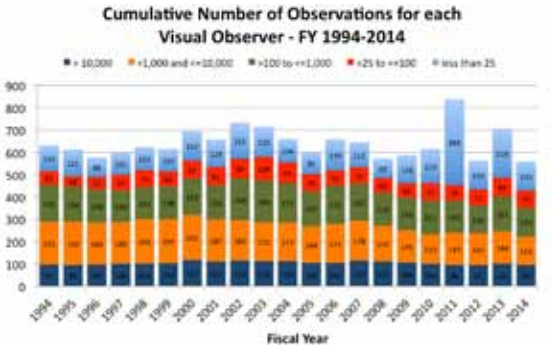
01 Association Française des Observateurs d'Étoiles Variables (AFOEV)
02 Bundesdeutsche Arbeitsgemeinschaft für Veränderliche Sterne e.V. (BAV) (Germany)
03 Magyar Csillagàszati Egyesület, Valtózocsillag Szakcsoport (Hungary)
04 Koninklijke Nederlandse Vereniging Voor Weer-en Sterrenkunde, Werkgroep 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
21 Israeli Astronomical Association, Variable Star Section
24 Astronomischer Jugendclub (Austria)
26 Red de Observadores (Montevideo, Uruguay)
27 Royal Astronomical Society of Canada
29 Variable Stars South (New Zealand)
31 Center for Backyard Astronomy
34 Astronomical Society of South Australia
36 Nucleo de Estudo e Observacao Astronomica—Jose Bazilicio de Souza (Florianopolis, Brazil)
37 Clube De Astronomia De Sao Paolo (Brazil)

Table 4. Observation statistics for fiscal year 2013–2014.*

Observations (increments of 1000)	*No. Observations per increment*	*% of All Observations*	*No. Observers per increment*
0 – 999	90834	7	711
1000 – 1999	61245	4	42
2000 – 2999	58334	4	24
3000 – 3999	41289	3	12
4000 – 4999	18497	1	4
5000 – 5999	22756	2	4
6000 – 6999	38682	3	6
7000 – 7999	22525	2	3
8000 – 8999	17705	1	2
9000 – 9999	28988	2	3
10000+	981316	71	31

** Totals reflect observations made during fiscal 2013–2014 and do not include historical data (data preceding fiscal 2013–2014) submitted during fiscal 2013–2014.*





The International Variable Star Index (VSX)

Sebastián Otero and Patrick Wils

VSX was conceived and created by amateur astronomer Christopher Watson in response to the specific desires of the members of the Chart Team and the Comparison Star Database Working Group of the American Association of Variable Star Observers (AAVSO), and the broader perceived need for a globally-accessible central "clearing-house" for all up-to-the-minute information on variable stars, both established and suspected. The VSX web site was designed to be the on-line medium by which variable star data are made available to the general public, and through which the data are maintained, revised, and commented upon. This database literally comes alive with the input from the world of registered contributors.

In order to keep VSX up to date and populated with the latest corrected findings, registered and approved individuals constantly review and revise the metadata, always citing sources for any new details, and fully documenting the rationales behind any additions or changes. By maintaining a strict version control on all records, the history of the gathered knowledge on each variable star can be traced, validated, and followed up on by those who rely on this information to be accurate and true.

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.

Each year Patrick Wils dedicates a lot of volunteer work to add new variables or corrections made on known variables as they are published in journals, alert pages or even in web resources. 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. So a thorough cross-identification of the new stars with our own records is always performed. Due to inaccurate positions in the original sources (e.g., surveys with poor resolution), a very small number of duplicates may slip through this process from time to time.

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 most 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!

This report covers activity from October 1, 2013, to September 30, 2014.

Number of Submissions and Revisions

1,260 new variables were submitted to VSX by individual users this year (2,136 in 2012–2013).

The mean number of submissions per month was 105, versus 178 from last year.

At the same time the number of new stars decreased, the number of average monthly revisions made by users increased from twenty last year to thirty-four in 2013–2014. This seems to be related to the publication of several thousands of variables found by the CRTS team that were added to VSX. Since the CRTS database is simultaneously being data-mined by a couple of prolific groups, more of their findings ended up as revisions instead of new discoveries.

There are currently 246 different users who have submitted at least one submission or revision to VSX. Twenty-four 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.

Sebastián's personal count of revisions per month almost remained the same: 131 instead of 133 last year, with 1,567 revisions made over the whole 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 by e-mail as part of the moderation process.

Patrick's work importing new catalogues and discoveries/lists coming from published papers resulted in 42,006 new stars added and 1,201 revisions to known variable stars. This year we added 43,266 stars (from Patrick, Sebastián, and individual submitters) and the publication of a single list from any of the ongoing or upcoming surveys may easily outshine those numbers in the near future.

New variables being announced through survey pages and alert lists continue to be imported almost in real time. The number of alerts that we need to check grows faster—just think about ASAS-SN, CSS, 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 among groups is essential.

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.

Duplicate Records

VSX currently has almost 325,000 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 683 duplicate entries this year, plus three unclassified duplicate objects. 5,435 duplicate records have been hidden since the primary record creation work started back in 2011 (5,547 counting the unclassified ones). Patrick hid another 44 records this year after cross-identifications were made while importing new lists.

A total of 22,436 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. 31 incorrect cross-identifications in VSX were corrected in 2013 (usually incorrect identifications made by surveys). 34 GCVS/NSV identifications were also corrected and reported to the GCVS team (only one of them was incorrectly cross-identified in VSX).

Cross-Identifications of Objects Added

300 new cross-identifications between VSX records were established this year (2,498 in total since 2011) and the 300 resulting duplicates were deleted.

Variable Star Classification

We are not only keeping up with the flow of new discoveries but also struggling to update our variability types document by adding the most recent variable star types recognized in the literature. Recent examples are the addition of the new SN Iax supernova subtype and the reorganization of the V Sagittae-type stars (CBSS/V) as a subtype of the CBSS (Close-binary supersoft source) class.

Work on VSX/VSD/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 anymore that will be a big help so we can do our task without having to check over and over again (once Sara Beck merges all the observations in the star's primary record, we delete the AUID 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 in VSX. We urge observers to double-check their images to properly identify the stars being reported.

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.

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

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) is the peer-reviewed research publication of the AAVSO dedicated to variable star astronomy and related scholarly topics across a range of disciplines. Launched in 1972 and published twice a year, The *Journal* (or *JAAVSO*) contains scholarly research articles submitted by members of the AAVSO community on a wide range of topics relevant to the AAVSO and variable star astronomy. The *Journal* is also the primary publication for papers and abstracts presented at AAVSO meetings. The *Journal* is a refereed publication, open to any and all amateur and professional members of the variable star research and observation community, as well as related scholarly groups such as computer and information scientists, historians, and educators.

In 2014 the physical format of the *Journal* was changed substantially. The size of the Journal went from 5.5×8.5 inches to 8.5×11 inches, and the layout of text was revised to a double-column format. Tables and figures were also revised. These and other revisions to its appearance significantly improved the readability of the *Journal*, bringing it more into line with professional journals such as *The Astrophysical Journal* and *The Astronomical Journal*.

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Paper Session: The Role of Amateur Astronomers in the Age of Large-Scale Surveys

Invited Talk Photometry of Bright Variable Stars with the BRITE Constellation Nano-Satellites: Opportunities for Amateur Astronomers
Edward F. Guinan

Using the Transient Surveys
Arne A. Henden

Kepler and the RR Lyrae Stars
Katrien Kolenberg

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Douglas L. Welch

Two Centuries of Observing R Coronae Borealis. What Will the Role of the AAVSO be in the Next Century?
Geoffrey C. Clayton

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Unpredictable LPVs: Stars Dropped from the AAVSO Bulletin
Matthew R. Templeton, Elizabeth O. Waagen

Aperture Fever and the Quality of AAVSO Visual Estimates: m Cephei as an Example
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The Eggen Card Project
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AAVSO Visual Sunspot Observations vs. SDO HMI Sunspot Catalog
Rodney Howe

Identification of Cepheid Variables in ASAS Data (poster abstract)
Vanessa Swenton, Kristine Larsen

Identification of BY Draconis Variable Stars among ASAS Cepheid Candidates (poster abstract)
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Summer Student Solar Observing Project Determining the Sunspot Number (poster abstract)
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CT Lacertae: Another Long-period Carbon Star with Long-Timescale Variations?
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Amplitude Variations in Pulsating Yellow Supergiants
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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 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 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 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 a right-hand column with Activity at a Glance (outbursts from the past 72 hours), CV outbursts from Catalina Real Time Survey, and boxes for the Z CamPaign, Hamburg Survey CVs, and the Long-Term Polar Monitoring Programme.

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.

Simonsen and Poyner also moderate the CVnet Yahoo mail lists. The three CVnet lists are:

CVnet Discussion

The discussion list has 272 subscribers. The past few years' activity is best described as an announcement list. Actual discussion seldom takes place. Notes from *AAVSO Alert* and *Special Notices, IAU Circulars,* and *Astronomer's Telegrams* get forwarded here also.

CVnet Outburst

The outburst list has 255 subscribers. This list shows 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.

CVnet Circular

Daily average magnitudes of all the CVs in the AAVSO DB are calculated and tabulated for a 30-day period and distributed automatically in the Circular automatically via email each Monday morning at 00:00 UT.

The *Circular* was edited and maintained by Mike Simonsen into 2014. However, distribution proved to be increasingly unstable because of occasional changes to Yahoo's newsgroups and their security and email settings. So, a new AAVSO procedure was implemented to track subscribers' email addresses and deliver the *Circular* via AAVSO email. We also wanted to use the AAVSO's internal resources, notably the AAVSO Variable Star Index, to dynamically generate the list of stars. This work is now done, and the old *CVnet Circular* mail list of 179 subscribers has been archived and mothballed.

Charts and Sequences

Section Leader: ***Mike Simonsen,*** *2615 S. Summers Road, Imlay City, MI 48444*

While we refer to the International Variable Star Plotter (VSP) as an Automated Chart Plotter, there is still a lot of work that goes on behind the scenes to make these "automated" charts available. There are real people who work tirelessly day after day, reducing data from the APASS survey and other AAVSOnet telescopes, loading them into the database, selecting the stars for sequences, documenting the work that is done, updating the lists of new and revised sequences, and checking off the requests for new sequences as they are completed.

The charts and sequences team is made up of volunteers and staff who work countless hours each month revising old sequences and creating new sequences. The current active members of the charts and sequences team are Sara Beck, Tom Bretl, Tim Crawford, Robert Fidrich, Keith Graham, Jim Jones, Mati Morel, Sebastián Otero, and Mike Simonsen.

Our most active team members account for about 90% of the work, notably Tom Bretl, Tim Crawford, and Jim Jones. Sebastián Otero provides invaluable insight into bright star catalogs and photometry as well as southern hemisphere sequences. He also adds new stars to VSX in a timely fashion and advises us on various other topics.

The primary tool, SeqPlot, displays stars with reliable photometry in three colors, green, red, and blue. This makes it easy for team members to select non-red and non-blue stars based on B–V color. Selecting a star for a sequence is done by clicking on that star, which in turn sends it to a text file, formatted for uploading into the variable star/comparison star database, VSD.

Files and notes on sequences are shared through the sequence team mail list. Simonsen collects and archives the files, evaluates the submissions, uploads data to VSD, checks the resulting charts, and notifies the observers of updates every other month via the AAVSO website.

The other important tool in the sequence chain is the VSD Admin tool, which allows team members to access, edit, add, and delete information from the comp star database.

Changes are all tracked online in a Google spreadsheet accessible to the public at: https://docs.google.com/spreadsheet/ccc?key=0Ar0ujdSb5ufQdEhkTE5jREhWRm95dDRialM0R1ZGREE&usp=drive_web

We have been actively addressing reported errors and issues and requests for sequence revision and additions via CHET, the chart error tracking tool, which allows observers to report and track the progress of chart issues. CHET can be accessed on the website at: http://www.aavso.org/chet

Photometry available in SeqPlot includes the Tycho database, Bright Star Monitor data, Henden 1M USNO calibrations, new releases of APASS data as they become available, and several sources from AAVSOnet, including SRO and the Coker telescopes.

All the new photometry used in 2013 came from APASS, which now covers the entire sky down to approximately 16th magnitude in V.

The sequence team has its own website, created and maintained by Simonsen, where team members, especially new team members, can find instructions on how to use SeqPlot, guidelines for sequence creation and revisions, photometric resources outside SeqPlot, a tutorial on how to use ASAS data, and a list of current projects and priorities. The team site can be viewed online at: https://sites.google.com/site/aavsosequenceteam/Home

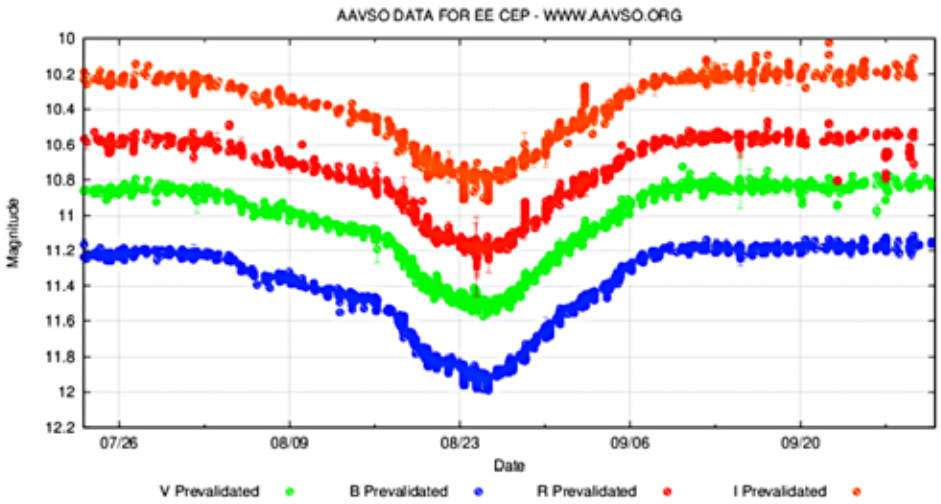
The results speak for themselves in the improved quality of the sequences available to observers and the speed and efficiency with which revisions and new sequences can be implemented with the system now in place. Below are the total numbers of new and revised sequences produced since 2009. Production slowed in 2014 as most of the issues raised by observers have been addressed, and projects developed by the team have been completed.

Year	*Number*
2014	259
2013	787
2012	860
2011	655
2010	437
2009	268

Eclipsing Binary

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

This past year, the AAVSO had its best-observed eclipse of EE Cephei. The pre-validated data are shown in the figure below. Gary Walker presented a preliminary look at some results from this eclipse at the AAVSO Annual meeting in November. Look for additional papers to be published as we await the next eclipse in 2020.



The new Eclipsing Binary Section website went online in June 2014. It offers a wealth of information for new and experienced EB observers, and refers users to other AAVSO resources for general skills such as CCD photometry. The EB Ephemeris for long-observed "Legacy" EBs is available via these pages, as is a spreadsheet that offers an evolving compilation of information about these stars.

The EB Section website also offers a new observing project for observers: the "Otero+" stars. It is a list of more than 1,100 eclipsing binary stars identified by Sebastián Otero and numerous co-authors in a series of *IBVS* and *OEJV* papers published in 2003–2008. These stars were identified using ROTSE (NSVS) and ASAS data from more than a decade ago, and many have not been observed since. Thus ephemerides prepared using the published elements can be "off" significantly. Observations of a few dozen of them show typical ephemeris errors of half an hour, but some are much worse and require multi-night searching to find an eclipse. New observations of these stars will significantly improve the elements and ephemerides and would be the critical first step to determining which

of them show interesting behaviors such as period changes. Shawn Dvorak at Rolling Hills Observatory has kindly added these stars to the various lists of stars available in his "EB Ephemeris Generator" (linked from the EB Section page).

A paper containing 230 times of minima of 161 stars observed by 8 observers was submitted to *JAAVSO*. 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 gsamolyk@wi.rr.com.

Using observations received in 2014, the light elements of over 38 stars on the AAVSO legacy program have been updated for the 2015 Ephemeris. The 2015 ephemeris can be found on the EB section website.

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 2009: AG Vir
Not observed since 2010: ZZ Boo, UU Leo, and AQ Peg
Not observed since 2011: CT Her, TX UMa, and XZ UMa

Long Period Variable (LPV)

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

The AAVSO LPV section is developing new programs and initiatives after AAVSO observer Michael Soukup stepped in as section administrator in 2014. We will be announcing new programs and initiatives via the LPV Section website in 2015. Observers who are interested in the LPV Section may contact AAVSO Headquarters (aavso@aavso.org) for more information, or visit the section's website:

https://sites.google.com/site/aavsolpvsection/ [sites.google.com]

The primary goals of the section are: to facilitate the long-term observation, both visually and electronically, of the Legacy LPVs in the program; and to promote other scientifically significant LPV targets for observers to follow. We are particularly interested in encouraging and guiding visual observers to include LPVs in their target selection and in building their own observing programs. As with all Sections, the LPV section requires both healthy leadership and interest from the larger observer community. The AAVSO encourages both LPV observers and users of AAVSO LPV data in their research to get involved with the AAVSO LPV section.

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

Section Leader: ***James H. Fox,*** *P.O. Box 135, Mayhill, NM 88339*

The AAVSO Photoelectric Photometry (PEP) program has continued to attract new participants during the past year as detailed in the 2014 *AAVSO Newsletters*. The cadre of active PEP observers has contributed 2,901 observations of 149 stars through a variety of standard filters during the period. We continue to provide accurate measurements of bright stars.

Observers also have contributed measurements to 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; EE Cep for the AAVSO as part of the global campaign to observe its eclipse; eps Aur for Dr. Robert Stencel, University of Denver Astronomy Program; and P Cyg for Ernst Pollmann, Leverkusen, Germany.

During the first part of the year, last year's bright nova, N Del 2013 (V339 Del), continued to be bright enough to follow with our PEP equipment. Also, in an uncommon occurrence, the Type-Ia supernova SN 2014J, which was discovered in January before maximum, brightened enough for PEP observing.

Heartfelt thanks to each observer for his contribution! Sincere thanks also go to Dr. Matthew Templeton for his assistance in coordinating the PEP work at AAVSO Headquarters.

We welcome novice and experienced PEP observers alike. To learn more about PEP observing and the AAVSO PEP program visit:

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

AAVSO International Database PEP data contributors 2013–2014

CCB	Charles Calia	Connecticut	82
CTOA	Tom Calderwood	Oregon	123
DSI	Giorgio di Scala	Australia	128
FXJ	James Fox	New Mexico	224
KCD	Carl Knight	New Zealand	8
KJMB	James Kay	Vermont	48
LJX	Jean-Marie Llapassat	France	6
MFR	Frank Melillo	New York	30
PGD	Gerald Persha	Michigan	2089
RPT	Patrick Rochford	Alabama	32
UIS01	John Martin	Illinois	37
BVE	Erwin van Ballegoij	Netherlands	4
VBR	Henri Van Bemmel	Canada	90
		Total	2091

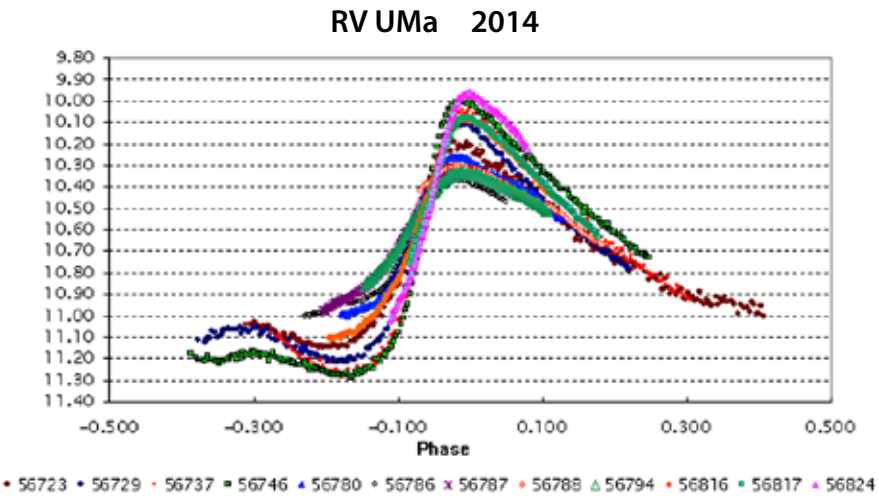
Short Period Pulsator

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

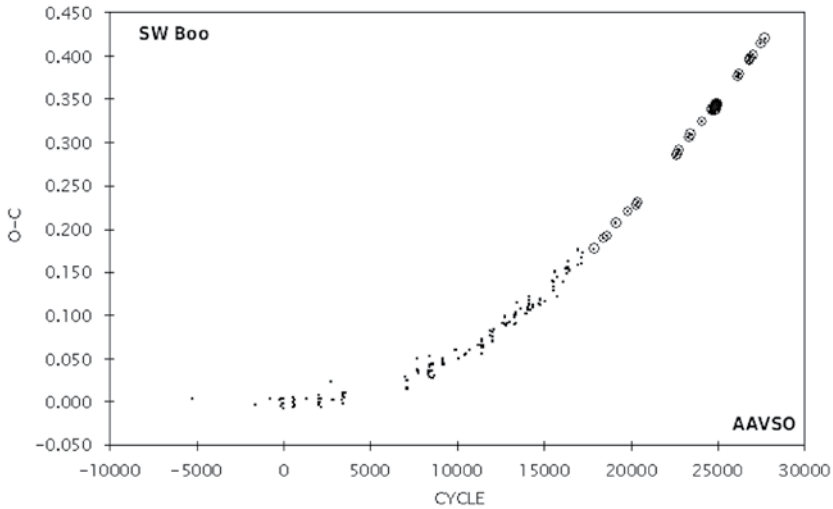
A paper containing 317 times of maxima of 75 stars was published in *JAAVSO*. This paper contained the reduction of data sent to the section chair by ten observers in 2013. This paper included a number of times of Maxima that were supplied by Pierre de Ponthière. Any observer who would like to contribute data to these papers in the future should upload their observations to the AID and send a copy to gsamolyk@wi.rr.com.

In 2014, observations were received on all of the stars on the AAVSO RR Lyr legacy program with the exception of XZ Dra. Using these observations, the light elements of 13 stars on the AAVSO legacy program have been updated for the 2015 ephemeris. This ephemeris is posted on the AAVSO SPP Section website at https://sites.google.com/site/aavsosppsection/.

A number of legacy stars that exhibit a Blazhko effect were well observed in the past year. As shown in the example of RV UMa below, most observers concentrate on the portion of the light curve close to maximum. The differences in the light curve at all phases, particularly near minimum, are important when the Blazhko effect is analyzed.



A project has been underway to reduce times of maximum from visual observation of legacy RR Lyr stars made since the early 1960's. Below is an O–C plot for SW Boo showing the changing period over the past half century. The circled points represent CCD observations, the rest are visual.



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*

The sun has been up and down this year, but our average of 65 to 70 monthly observers has been pretty constant. Kim Hay from Yarker, Ontario, Canada, is doing an excellent job of collecting, cleaning, and creating the monthly American Relative numbers for the *Solar Bulletin*. A total of 84 sunspot observers contributed 12,499 observations (October 2013–September 2014). 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 from 2006 onward, as shown in the table on pages 36–37.

Solar Ionospheric Disturbance (SID) Report

For the last 12 months overall SID Activity has been up and down. Our observer ranks have remained consistent and we still have a good number of observers remaining vigilant in their watch for the next solar flare events. We also added two new observers this year, Igor Ryumshin (A142) and Ralph Rogge (A143). A total of 17 observers submitted reports and a total of 321 reports were sent in. 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 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 37.

Young Stellar Object

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

It is good to see that our members are catching interesting activity, for instance the recent fades of RW Aur and RZ Psc. The latter object is particularly interesting as it is an isolated, late spectral-type UXOR in a high galactic latitude and is of a comparatively advanced age (c.30Ma). Neither is it near nebulosity nor in a star forming region, yet it appears to be forming planets, which process looks to be responsible for the sharp fades. You could do worse than googling for "rz psc" on a cloudy night!

The higher the profile of YSOs is raised, one hopes that the greater coverage of these objects will result, with more activity being caught. Keep up the brilliant work!

Treasurer's Report
October 1, 2013–September 30, 2014

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

The fiscal year for the Association ended well and on budget. There were some adjustments through the year that helped this picture. Notably, contributions by members to the Annual Campaign, bequests, and some grant money were received just at the end of the fiscal year.

Receipts for the year totaled $731K. Of this, $233K was from dues, contributions, and operational items such as promotional sales. In the late spring, many members made generous donations to the Annual Campaign conducted by Development Director Mike Simonsen which brought in $32K. These contributions and donations through bequests and other forms of planned giving are a great help to the AAVSO's financial picture and are greatly appreciated. Receipts from grants provided a significant portion of our funding. These are some of the highlights: NASA Chandra—$179K, NSF 2 Eyes 3D—$192K, NSF IYA—$107K.

While grants bring monies to the organization, a portion of these funds are for staff time servicing the purpose of the grant, and a portion goes to AAVSO for overhead. The NSF IYA grant has now ended and only a small portion of the NSF 2 Eyes 3D grant remains. Headquarters staff and the Director devote considerable time to writing, completing the work of the grant, and monitoring for payment with these grant agencies.

Disbursements for the year totaled $1.3M. Staff costs are the highest portion, as with all organizations, at $1.1M. A portion of that is paid from grant receipts. Other areas are listed below.

The difference between Receipts at $731K and Disbursements at $1.3M is made up by withdrawal from the AAVSO Endowment. Like most non-profit organizations, AAVSO funds a great deal of its operations from an endowment, and during the 2013-14 fiscal year, the Association withdrew $624K. This figure had been calculated early in the year by applying a formula of 5% of the five-year backward-looking average of the Endowment value. Averaging in this way allows the Association to make a withdrawal and preserve the Endowment for coming years. The Endowment saw a nice increase in value during the fiscal year, ending with a value of $13,826,337 after withdrawals. Most of the increase was due to a very positive 2013 calendar year for our Endowment investments.

The Endowment investment profile has changed during this fiscal year. The year began with some funds held by a non-profit corporation, The Investment Fund for Foundations (TIFF) and the balance by Modera Wealth Management. TIFF only serves non-profits and maintains all client money in their Multi Asset fund. All clients own shares in that one fund. TIFF only buys other funds. Their analysts therefore study the performance of those funds they hold. TIFF holds $6.8M of the AAVSO endowment. In March 2014, the Investment Committee of the Council decided to move the Modera portion to Graystone, a Morgan-Stanley company. Graystone is a large company with over $200B under investment and 150 analysts on staff. Our investment profile there is custom-designed for the Association and widely distributed with equity, fixed income, and alternative investments. Graystone holds $6.7M of the AAVSO endowment.

Having our investments managed by two firms with very different investment strategies will distribute the risk and provide a way for the Investment Committee of the AAVSO Council to compare their performance over the coming years.

2014 Income

Dues income	$70,9315
Sales	5,099
Grants	491,496
Bequests and Donations	66,853
Meetings, CCD School, Choice	17,950
Temporarily restricted	77,278
Bank interest and royalties	1,566
Total Income	$731,173

2014 Expenses

Staff salary costs	$768,307
Contract/temp salaries	139,749
Payroll tax, benefits, and other costs	206,389
Building and utilities	22,577
General operations	34,562
Technical operations	25,456
Publications	1,430
Fixed asset purchase	4,671
Legal and accounting	0
Meetings	25,151
Travel	38,230
Miscellaneous	35,635
Total Expenses	$1,302,157
Endowment withdrawal	$624,801
Receipts (from above)	$731.173
Net	$ 53,817

While the net shows a positive value, $37,500 of this amount was a restricted bequest that was later moved to the endowment.

3. Officers, Staff, and Volunteers

AAVSO Officers, Council Members, and Section Leaders for Fiscal Year 2014–2015

You may contact these persons through AAVSO Headquarters.

Officers

Director	Arne A. Henden	(term of office: 2005–31 January 2015)
Director	Stella Kafka	(1 February 2015–)
President	Jennifer Sokoloski	(2013–2014, 2014–2015)
1st Vice President	Kristine M. Larsen	(2014, 2014–2015)
2nd Vice President	Roger S. Kolman	(2014–2015)
Secretary	Gary Walker	(2009–2015)
Treasurer	Bill Goff	(2014, 2014–2015)
Clerk	Arne A. Henden	(2009–2015)

Council Members

Barbara G. Harris	(2014–2016)
Rodney H. Howe	(2014–2015)
Katrien Kolenberg	(2014–2016)
John C. Martin	(2011–2016)
Joseph Patterson	(2014–2016)
Richard Sabo	(2014–2015)
David G. Turner	(2009–2015)
Doug Welch	(2013–2015)

Section Leaders

Cataclysmic Variable	Mike Simonsen, Gary Poyner
Charts and Sequences	Mike Simonsen
Eclipsing Binary	Gerard Samolyk, Gary W. Billings
Photoelectric Photometry	James H. Fox
Short Period Pulsator	Gerard Samolyk
Solar	
Section Chair	Rodney H. Howe
Sunspot Group Leader	Kim Hay
Solar Flare/SID Observing Group	Rodney H. Howe
Solar Bulletin Editor	Rodney H. Howe
Young Stellar Object	Michael Poxon
Journal of the AAVSO Editor	John R. Percy

AAVSO Headquarters Staff

Sara J. Beck	Technical Assistant, Special Projects
Gloria Ortiz Cruz	Data Entry Technician
Jordan Gibson	Administrative Assistant (through March 2015)
Arne Henden, Ph.D.	Director (through January 2015)
Stella Kafka, Ph.D.	Director (from February 2015)
Richard Kinne	Astronomical Technologist, Information Technology
Will McMain	Web Developer
Sebastián Otero	External Consultant, VSX Team, Spanish Translations
Michael Saladyga, Ph.D.	Technical Assistant, *JAAVSO*, *Newsletter*, and *Annual Report* Production Editor, Archives, Library
Mike Simonsen	Membership Director and Development Officer
Matthew Templeton, Ph.D.	Science Director, *JAAVSO* Editorial Board
Rebecca Turner	Operations Director
Kathy Vnek	Bookkeeper
Elizabeth O. Waagen	Senior Technical Assistant, *JAAVSO* Associate Editor, *AAVSO Newsletter* and *Annual Report* Editor
Donna Young	Lead Educator, Chandra Education/Public Outreach Office, SAO/NASA

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, vetting submissions to the *Variable Star Index*, 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.

Mentor Program

Patrick Abbott
Barry Beaman
John A. Blackwell
Tom Bretl
Tim Crawford
Bill Dillon
Shawn Dvorak
Robert Fidrich
Bill Goff
Keith Graham
Tim Hager
Jerry Hubbell
Rick Huziak
Roger Kolman
Michael Linnolt
Ken Menzies
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Stefano Padovan
Alan Plummer
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Donn Starkey
Chris Stephan

Variable Star Index (VSX) Moderators

Patrick Wils

Charts and Sequences

Tom Bretl
Tim Crawford
Robert Fidrich
Keith Graham
Jim Jones
Mati Morel

Speakers Bureau

Tom Bretl
Tim Crawford
Pamela Gay
Keith Graham
Albert Holm
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Chuck Pullen
Michael Richmond
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3. Officers, Staff, and Volunteers

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Dirk Terrell
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Fatemeh Bahrani (*Manual for Visual Observing of Variable Stars*)
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AAVSO Part-time Help

We also take this opportunity to recognize our part-time help, and to say *thank you* for a job well done.

Aaron Sliski

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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K. Bakowska and A. Olech, "Hot spot manifestation in eclipsing dwarf nova HT Cassiopeiae", (arXiv:1409.8107) [Sep 29, 2014]

Taichi Kato, Franz-Josef Hambsch, Arto Oksanen et al., "CC Sculptoris: Eclipsing SU UMa-Type Intermediate Polar", (arXiv:1409.8004) [Sep 29, 2014]

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Armin Liebhart, Manuel Guedel, Stephen Skinner et al., "X-ray emission from an FU Ori star in early outburst: HBC 722", (arXiv:1409.5357) [Sep 18, 2014]

Joanna Molenda-Zakowicz, Karsten Brogaard, Ewa Niemczura et al., "Spectroscopic Study of the Open Cluster NGC 6811", (arXiv:1409.5132) [Sep 17, 2014]

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F. Giovannelli, G.S. Bisnovatyi-Kogan, I. Bruni et al., "Optical and X-ray behaviour of the high mass X-ray transient A0535+26/HDE245770 in February-March 2014", (arXiv:1409.3434) [Sep 11, 2014]

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C. E. Ferreira Lopes, I. Dekany, M. Catelan et al., "The WFCAM Multi-wavelength Variable Star Catalog", (arXiv:1408.4137) [Aug 18, 2014]

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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'll be contacting you soon with some results! 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 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, Washington

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, 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: http://www.aavso.org/2015-choice-course-schedule

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 Blueprint 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 gratefully acknowledges the benefactor members of

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