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ISSUE NO.53 | JULY 2012

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# AAVSO Newsletter

SINCE 1911...

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

## FROM THE DIRECTOR'S DESK

ARNE A. HENDEN (HQA)



It must be summer again! Ben Briggs has shown up for a second summer of work with Will on the website, a much-needed extra pair of hands this year. Another summer student, Aaron Sliski, is helping me with APASS and with some hardware

aspects of AAVSONet. Aaron will be starting at Suffolk University in the fall, majoring in Physics. He and his brother (David), along with his dad (Alan), have been refurbishing old telescopes and installing new ones for a while, so Aaron has a fair amount of hands-on experience. The other "Aaron" at the AAVSO—Aaron Price—has moved on to the Chicago Museum of Science and Industry. He is the topic of another newsletter article in this issue. While I wish him the best, his loss will impact HQ in many ways.

Work continues on the condo complexes across the street. The two yellow buildings of the *Sky & Telescope* campus were torn down a couple of months ago, and ever since, this area of Cambridge has been a construction zone. The constant beep-beep of heavy equipment can get tiring after a while! It looks like they are making good progress, so maybe the noise will disappear sooner than I think. Linda and I have been working on the yard here at HQ, so things may look different on your next visit.

I attended the AAS summer meeting in Anchorage a few weeks ago, giving a poster on the current status of APASS. While there, I also was part of a press conference, and the story of APASS was picked up by several of the news services. The AAVSO got a lot of attention at this meeting! I just came back from ALCon (Astronomical League Convention) and the MWAIC (Mid-West Astro-Imaging Conference). I gave a paper at MWAIC, but the really important event at this joint meeting was Mike Simonsen receiving the Leslie C. Peltier Award from the Astronomical League. Unfortunately, I was not able to attend the banquet, but I bet there are a few photos taken of the event that will make it to the website. My congratulations to Mike for receiving this award, honoring his many contributions to amateur astronomy. [Ed. note: see item by Roger Kolman in this newsletter]

The other big event over the past few months was the joint AAVSO/SAS meeting in Big Bear. Like the previous joint conference, this one was well attended. There were some excellent talks from both groups, and most of the AAVSO Council arrived early to take in sessions and be available for answering questions from AAVSO members. In fact, several of the Council members arrived in time to watch the annular eclipse of the Sun, a very rare event indeed. We tried to observe the Venus transit from Headquarters, but it was cloudy until exactly sunset. Other staff members went home and were able to see it there (only HQ was cloudy!).

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## PRESIDENT'S MESSAGE

MARIO MOTTA, M.D. (MMX)



I have been an eclipse chaser for many years, therefore, knowing there was an annular eclipse on May 21, 2012, just two days before our spring meeting at Big Bear Lake in California, I resolved to view the annular eclipse, and chose Kanarraville in

Utah, as it would be convenient and not far from the spring meeting. Two past presidents, Gary Walker and Jaime García, joined me in this expedition. The expedition was appropriately therefore called the "Three Amigos AAVSO Presidential Eclipse Expedition."

We met up at the Las Vegas airport, and had some initial difficulties, (rental car engine light went on one block after leaving the agency!). We eventually got things straightened out and we were on our way. I had contemplated entering Zion Park on the north end as a suitable viewing location, but determined that the surrounding hills would prematurely end the westward setting of the eclipse. We stayed outside the Park in a small town called Kanarraville, Utah. This was fortunately a very good choice, with a nice and low western horizon. In addition, the townspeople

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## DIRECTOR'S MESSAGE CONTINUED...

So, what's with the Galaxy? We seem to be hearing about a new nova every couple of weeks! Maybe we should devote one of our new Forums to just covering novae. I hope that you are all appreciative of the Sequence Team, who've been working overtime to create sequences for each of these new stars, usually within hours after hearing about their discovery. If you remember how things were only a few years ago, you will realize how big an improvement this is, and how important our volunteers are to the community.

Speaking of Forums, I hope that you all have had the opportunity to try them out. They are more

## PRESIDENT'S MESSAGE CONTINUED...

set up large areas of protected fields for observing. We met quite a number of amateurs from around the country, and we were blessed with crystal-clear skies. I have put together a montage of the eclipse, from first contact, through the annular eclipse phase, to the sun setting behind a distant mountain (see figure next page).

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active than the old discussion list, with lots of new faces raising their hands and participating in the conversations. If you have any suggestions as to how to improve their functionality, don't hesitate in sending a message to Will or posting a comment on the Web Site forum. [Ed. note: see item by Rebecca Turner in this newsletter]

I'm pretty well tied up for the next month in completing the PowerPoint presentations for the upcoming CCD School. I'm really looking forward to this event, and hope that we can hold it again next year. We'll return to the CHOICE courses soon as well; we're just sorting out tasks and moderators. After the CCD School, I head to Tucson to participate in the All-Hands meeting

This was my 12th eclipse overall, and being an annular eclipse, there was no hard science during the expedition. This was in contrast to the spring meeting, which dealt with the enormous amount of hard science that both AAVSO members and SAS members undertake on a regular basis. This brings us back to a recurrent theme among AAVSO members on the relative value of doing science or simply enjoying the sky. I enjoy doing science, which is what attracted me and many others to the AAVSO in the first place. However, I also greatly enjoy amateur astronomy as a relaxing hobby. I see nothing wrong with that. Though I get satisfaction in chasing down a gamma ray burst, a supernova, following a campaign for a select object of study, or simply periodically checking a star's magnitude, I still get a thrill just looking at a beautiful dark sky. I enjoy viewing old friends in the sky, and finding new ones. I even enjoy (gasp) taking an occasional pretty picture.

Most amateurs are initially attracted to the hobby because of the beauty of the night sky, and then develop the intellectual curiosity that propels them forward to do more. The great tragedy of our modern times is that much of the world's population now lives under light polluted skies. Thus many never develop that initial awe of the night sky that has inspired countless generations prior to the current situation of murky nights. Indeed, while I agree that we should all strive to do the science of the AAVSO, let's not denigrate those who simply enjoy observing. It's okay to have fun and enjoy your hobby.

Let me give an analogy. I am a physician in the highly technical field of cardiology. Being a physician is both an art and a science. Though my job is to be as technically competent as possible,

for LSST, where I will be talking to the transient objects and outreach teams to see how we can get the amateur community involved sooner than later.

HQ is always busy; there is never a dull moment. That is how it should be—supporting the members, improving the website, adding to the database, mentoring observers. We're here to help you! ★

*Ed. note: the Spanish language version of Arne's message can be found on page 11.*

## THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS

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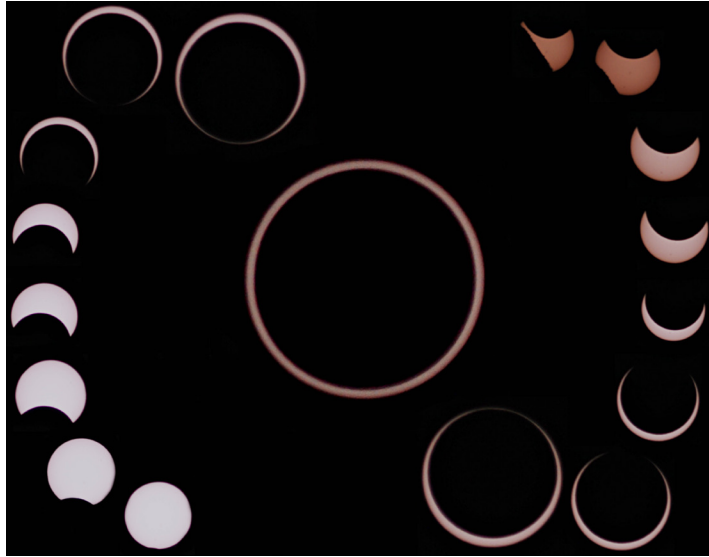
The *AAVSO Newsletter* is published in January, April, July, and October. Items of general interest to be considered for the *Newsletter* should be sent to [ewaaagen@aavso.org](mailto:ewaaagen@aavso.org). Photos in this issue courtesy of G. Dyck, R. Howe, R. Kolman, M. Motta, K. Paxson, Msgr. R. Royer, and M. Simonsen.

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

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## PRESIDENT'S MESSAGE CONTINUED...



*A montage of the eclipse, from first contact, through the annular eclipse phase, to the sun setting behind a distant mountain (Mario Motta)*

and be accurate in diagnosing and treating, I would in fact be a poor physician and an unhappy one at that, if that is all I did. I still enjoy to this day interacting with and caring for patients. I try to never forget that I am treating a human, not a disease. If I do not do the “art” of medicine well, I would simply be a glorified technician, and few patients would actually listen to my advice. No matter how technically competent I am, I would have failed my patients. Thus to be a truly good physician, one must enjoy interacting with real people. In other words, it is okay to have fun and enjoy your work. The day I stop enjoying that, I should retire.

I see a parallel here in amateur astronomy. No one doubts the importance of the science we do as

AAVSO members, but I suspect few new members would be attracted to join if it is viewed as work, another job, and not as an enjoyable pastime. Indeed, our growth will always be primarily from the large pool of amateurs out there who enjoy the hobby, but are now finally ready to do some science with their equipment. They are generally enthusiastic and enjoy the hobby, and to attract them we must not make the AAVSO appear to be another job. So let's convince everyone out there how much fun it is to be an AAVSO member and do the science. Enjoy the great hobby we have, and it's okay to have some fun. ★

*Ed. note: the Spanish language version of Mario's message can be found on page 11.*

*Three Amigos: Gary Walker, Mario Motta, and Jaime García (Mario Motta)*



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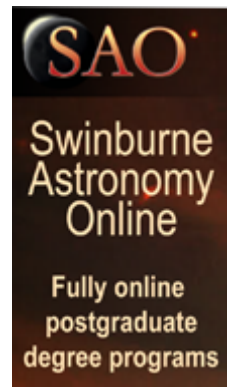
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## ONWARD AND UPWARD, AARON PRICE

ARNE HENDEN (HQA), AAVSO HQ

Charles Aaron Price, more commonly known as just “Aaron,” has left the AAVSO to take on the new position of Manager of Research and Evaluation at the Chicago Museum of Science and Industry.

I electronically “met” Aaron not long after he returned to the AAVSO in May 1998. About a year earlier, Janet had contacted me regarding a calibration paper that I did with Kent Honeycutt. She wondered if I would be willing to calibrate some fields for the AAVSO. Like most requests from Janet, this one was hard to turn down! As part of that initial set-up, Doug Welch added me to the AAVSO-discussion mail-list in January 1998. Not long after that, Aaron was brought into the loop as I needed access to the ftp site to upload some of the sequences I was creating. I tend to keep every email sent to me, so browsing through my email archive, I find several initial ones from Aaron in that timeframe, giving me passwords and access to the HQ computers.

However, it wasn’t long after that when the messages changed character, and Aaron started asking science questions, and working with me on the GRB network. It was obvious that he was a staff member who had many talents and great potential. For the next half-decade, I met Aaron several times at AAVSO meetings and had fruitful conversations and projects with him.

When I became Director, the entire staff worked hard to show me the ropes of running the organization and to explain why things were done one way rather than another. Aaron went beyond that stage, though, and suggested many changes that might make things better for the organization and its observers. Together, we implemented the relational database of observations, investigated alternatives to the chart plotting (ending up with VSP), found a cheaper Internet solution, and moved into the Mac world for the computers.

I saw that Aaron had ambitions beyond being just an IT person. He had been taking astronomy courses at the on-line Swinburne University, and asked me if getting the new on-line Ph.D. being offered at James Cook would be a good idea. Together with other astronomer colleagues, we convinced Aaron that a traditional Ph.D. would be a better career choice, and worked hard to get him into the Tufts program. Aaron excelled at Tufts and received his Ph.D. about a year ago. All during his graduate schooling, Aaron worked at the AAVSO, I think spending more time here than doing his schoolwork! For example, Aaron was the main driving force behind the Citizen Sky NSF grant, and the education studies that came out of that became his Ph.D. thesis.

While I was fully supportive of his graduate studies, I was also fully aware that this was only Aaron’s first step into the professional world. I hoped that there would be enough opportunities at the AAVSO to pursue his research interests, but my first and foremost goal was that he find the path that satisfied him the most. The job offering at MSI looked like it was written with Aaron in mind, and I would have found it difficult to believe if they had not offered it to him. He is heading a new department with a fresh staff, with plenty of opportunity to pursue his science education research. What better test group than the hundreds of thousands of people visiting a museum?

As is the “norm” with Aaron, he carefully crafted his exit from the AAVSO, completing many projects and handing off others, so that his loss was as minimal as possible. It will be very hard to fill his shoes—he was not only a hard worker, but also an “idea” man, making many of the suggestions that



*Aaron’s going-away party at AAVSO HQ (above), and (left) the Price family in October 2011: Caroline, Erma, and Aaron (Caroline has grown up a lot since then!)*

drive the AAVSO today and into its future. He has often said that he is not leaving the AAVSO, but will continue to participate in a volunteer mode and perhaps return to his observing roots. I know that he will be busy for the next few months, learning his role at the museum and molding his staff into an efficient workforce, but I expect to see his posts on our forums in the near future and to meet him again at AAVSO meetings. I’m grateful for his friendship over the years, and I know that he will be successful, wherever this path leads. Onwards, Aaron! ★

## SO LONG, FAREWELL...

REBECCA TURNER (TRMB), AAVSO HQ

We had a party at AAVSO HQ a couple of weeks ago—a celebration, but a bittersweet one. After almost a decade and a half Aaron Price served his last day as an AAVSO staff member on Wednesday, June 27th.

Despite the threat of rain it was a beautiful, sunny day. Arne masterfully presided over the grill as the cheeseburgers flowed in the HQ front yard. We were lucky enough to have Aaron’s family in attendance for the cookout so that we could say goodbye not only to Aaron but also to his wife and daughter who have been a special part of the AAVSO family. After the burgers, chips, and potato salad were downed and Aaron’s special-request key lime pie dessert was but a fond memory, it was time for gifts!

The staff had two going-away gifts for Aaron. Aaron and his family are proud members of Red Sox Nation and Aaron is known to satisfy his mid-afternoon snacking urge with a bowl of microwave popcorn, so the first gift was a Boston Red Sox popcorn serving set. (Hopefully we won’t get them into trouble in the land of those other, less colorful Sox!) Only a few days after the party Aaron and his family were set to move from Boston to Chicago in a massive, multi-day, eight-person, two-cat road trip. The second gift was a road trip care package of over thirty items (from car-friendly games to snacks to extra sunglasses to cat treats for his traveling feline family members) all packed in a large Red Sox canvas tote bag.

At the end of the day Aaron loaded the last of his desk contents into his car, said his final see-you-laters, and drove off into the sunset.

Although we are sad for ourselves to lose them, we are nothing but thrilled for Aaron and his family. We wish them all the best as they embark on this new life chapter. The folks of Chicago don’t know how lucky they are, but considering who we’re talking about, they’ll find out in short order. ★

## AAVSOers RECEIVE ASTRONOMICAL LEAGUE AND ALPO AWARDS

**ROGER KOLMAN (KRS), GLEN ELLYN, ILLINOIS**

The Astronomical League held its annual meeting, ALCon 2012, along with the Association of Lunar and Planetary Observers in Lincolnshire, Illinois, July 4th through July 7th.

The annual awards banquet was held the evening of July 7, 2012.

The AAVSO was well represented at the awards banquet. The first AAVSOer presented with an award was Daniel Troiani. He received the Walter Haas Award from the Association of Lunar and Planetary Observers for excellence in solar system observational amateur astronomy. In addition to his outstanding contributions to ALPO, he is a longtime AAVSO member and observer (TDM).

AAVSOer Richard Schmude received the Peggy Haas Award from ALPO for outstanding service to the organization. Richard is also a longtime AAVSO member and observer (SQR).

The next set of awards given included the Leslie C. Peltier Award for contributions to astronomical observations of lasting significance. This year's recipient was our own Mike Simonsen. As chair of the Peltier Award committee, it was a pleasure to present the award to Mike.

Mike is one of the world's leading variable star observers and advocates. Since 1998 he has submitted over 80,000 variable star observations to the AAVSO International Database.

Mike is currently employed by the AAVSO as Membership Director and Development Officer. Among the many hats Mike wears, he is in charge of all variable star chart production for the AAVSO, as well coordinator of the AAVSO Mentor Program, Speakers Bureau, and Writers Bureau. Mike is also the section leader of both the AAVSO Cataclysmic Variable Section (CVnet) and Long Period Variable (LPV) Section.

His current area of research is Z Cam stars, a type of dwarf nova, and he is the author or co-author of more than twenty peer-reviewed papers on cataclysmic variables.

In 2005, Simonsen received the AAVSO's highest observing honor, the AAVSO Director's Award. In October 2011, Mike became only the third recipient of the Charles Butterworth Award, the British Astronomical Association Variable Star Section's highest honor.

Mike's astronomy blog, Simostronomy, is among the top science blogs on the Internet, with over 20,000 monthly readers. He is also a staff writer for Universe Today and has contributed articles to *Sky & Telescope* magazine.

An animated and enthusiastic speaker, Mike gives talks on stellar astronomy and variable star science to astronomy clubs, organizations, conferences, and university groups throughout the United States each year.



*Daniel Troiani (left) received ALPO's Walter Haas Award; Richard Schmude received ALPO's Peggy Haas Award.*



*Roger Kolman (left) presents Mike Simonsen with the AL's Leslie C. Peltier Award.*



*Roger Kolman (right) receives the Special Astronomical League Award from AL president Carroll Iorg*

Mike's observatory, named after legendary AAVSO observer and chart maker, Charles E. Scovil, houses two 12-inch LX200 telescopes, one for visual use and one for CCD observations, or as Mike likes to joke, "One for each eye!" He is now amassing both visual and CCD observations from home and the remote robotic telescopes of AAVSONet.

Following Mike's acceptance of the Peltier Award, a Special Astronomical League Award was presented to longtime AAVSOer Roger Kolman for his long time service to astronomy, the Astronomical League, and as chairman of the Leslie C. Peltier Award Committee. This is the ninth such award given by the Astronomical League in its sixty-five year history. ★



## NEW AAVSO FORUMS

In early June the AAVSO established a new series of forums on the website to help support a better online community for our members and observers. At that time we migrated the AAVSO Discussion Group to the new forums.

The AAVSO discussion group was created in 1996 by Doug Welch. It served as an online gathering spot to discuss AAVSO activities. At the time, online e-mail discussion groups and mailing lists were a very popular method to support discussion on common topics. As the discussion group became more active, administration of the group moved to AAVSO HQ in 2001 and additional, specialty discussion groups were added.

The AAVSO Discussion Group had a terrific run but we felt it had reached its natural conclusion. The sheer size of the membership, combined with the limitations of e-mail technology, caused the group's role in fostering community to diminish. As technology marches forward and the Internet culture changes, general e-mail-based discussion groups are losing their relevance.

The forums replaced the function of the AAVSO-Discussion and AAVSO-Photometry discussion lists on June 6, 2012. The deactivated list archives are public and will be permanently stored on the AAVSO website.

There are a number of advantages to using the forums:

- Since e-mail addresses are not used, the forum content can be made 100% open to the public.
- For the same reason, your e-mail address is better protected against spam and harassment.
- Persistence of Threads—When a discussion is started on a forum, it remains there forever. Others can comment on a thread days, weeks, months, even years later. This will help prevent the same questions being asked over and over again. Also, it means it will be easier to find answers in the first place. An added benefit is that those not interested in the topic can easily ignore it without it filling up their inbox.
- Focused discussion—We have created many forum topics and can create as many more as and when needed.
- Remaining on Topic—It is very easy to move a thread from one forum to another. For example, if someone posts an advanced photometry topic in the Getting Started forum, it is easy to move it to the Photometry forum.
- Images—The forums allow the use of rich text/HTML to format posts. This makes it easier to embed images/light curves, attach data, etc.

- Website forums are a more popular communication venue among younger generations of Internet users, so it may help attract newer and younger members.

You do not need to be logged into the AAVSO website to read the forums, but you do need to be logged in to post a message to them. For those of you who have not registered on the website, it is a simple procedure, you do not have to be a member, and your information is not shared.

As we've mentioned, forums based on a website have many advantages over e-mail discussion groups. However, we recognize this has been a change for many of you. Some of you are already familiar with the existing AAVSO forums, which have been online for years. As a part of the migration we added many more forums and added a number of new features.

You can visit the forums at this URL: <http://www.aavso.org/forum>. On the right side of this page you will find links to: the rules of participation in AAVSO Forums, some helpful guidelines for Forum use, a list of posts/comments that you have not yet read (must be logged in), and a list of threads that you started. You can visit the "Website and Forum Help & Announcements" Forum for posts on subscribing to the forums, navigating the forums, attaching images to posts, and many other forum-related questions. This is a great first stop for those new to using forums.

We feel it is in the AAVSO's best interest to take advantage of the many features this upgrade in technology has allowed—already our discussions are becoming more focused and accessible while being more useful to future members and observers. If you have any questions or comments, please feel free to post them to one of the forums so others who may have the same question can benefit from the responses.

If you have not yet been active in the AAVSO Forums, please consider stopping by and taking a look around. We look forward to welcoming you into the AAVSO Forum community! ★

## THE NEW VISION STATEMENT—ONE COUNCILPERSON'S OPINION

BOB STINE (SRB), NEWBURY PARK, CALIFORNIA

At the 2012 Spring AAVSO Council Meeting in Big Bear, California, a new AAVSO vision statement was adopted. The new statement, “Discovering the Universe through variable stars,” replaced the previous statement, which read, “The AAVSO seeks to be the world-recognized leader in information and data on variable stars.”

As did my fellow Councilors, I liked the new vision statement. I imagine that each Councilor has ~~her~~ his or his own reasons, but speaking only for myself, I want to tell you why I like the new vision statement.

To me, the key words of the new vision statement are “discovering” and “Universe.” There are many things I do in life, from paying bills to buying groceries, which are essential to my social and physical survival. By survival standards, my affair with variable stars is quite non-essential. In fact, I could not fault someone for saying that my involvement with AAVSO is “frivolous.” Certainly the study of variable stars does not produce a tangible critical survival asset, such as wheat grown by a farmer or a house for shelter built by a construction worker.

Then why would I choose to be involved with astronomy, variable stars, and AAVSO? For me, it is simply for fun. I know that, for some folks, “fun” might seem a banal reason. It is certainly not glamorously high-tech and all serious, like, for instance, an Apollo Moon mission or other “rocket science.” But it is fun for me to think about what’s out there. I still get a kick from looking up at the night sky, as I did when I was a kid, filled with wonder. The fun is in the “discovering” and the “what’s out there” is the “Universe.” That is the heart of the new vision statement, and if AAVSO didn’t connect with me on that level, I don’t think it would connect with me at all.

I know that saying it is fun is not a very sexy scientific explanation, such as an explanation of stellar oscillation modes or Roche Lobes might be. I suppose I can make my explanation more scientific by saying that AAVSO’s mission, as newly stated, appeals very strongly to me on Level 5 of Maslow’s Hierarchy. (Psychologist Abraham Maslow identified categories of basic needs common to all people. The fifth level of Maslow’s pyramid represents an individual’s need to know and understand.)”

For those who know me, and maybe even voted for me to be on Council, my explanation should come as no surprise. I believe AAVSO is not so much about stars, but about people. I believe that the stars simply don’t care, one way or the other, whether we observe and study them. The stars will continue in their behaviors whether we understand them or not.

The stars don’t care, but WE do. I believe that we AAVSO’ers are bound together by a shared love of variable stars, in particular, and a love of the mystery of the broader Universe in general. We are only a few thousand, on a planet with over 7 billion people, who like this stuff. At the heart of it, whether we are a visual observer using a Dob or a CCD’er using the latest high-tech equipment, I believe that, at the root of it all, we think it’s fun to look up and discover the Universe, and participating in AAVSO lets us share the joy of it with like-minded people.

So, in summary, I like the new vision statement because I think it captures the elements of fun and wonder. To me, the new vision statement is an invitation to join the party on the fifth floor of the Maslow Hotel! See you there! ★

## UPCOMING AAVSO MEETINGS

The AAVSO 2012 Annual Meeting will be held November 1–3 at the Hilton Hotel in Woburn, Massachusetts. We plan to introduce some new features at this meeting such as a new member welcome reception. A meeting announcement with all of the details will be released in August.

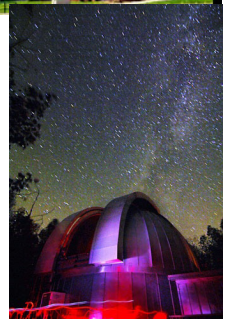


Hilton Hotel, Woburn, exterior (right), and interior at the October 2011 Annual Meeting (below)

The 2013 Spring Meeting will be held May 15–18 at Appalachian State University in Boone, North Carolina. Representatives from Appalachian State submitted a very interesting and well thought-out proposal. The University has some very impressive facilities and we look forward to working with them to produce a great Spring Meeting.



Above right: Appalachian State University meeting building exterior with “Orion” (a sculpture consisting of seven steel obelisks located to approximate the position of the seven brightest stars in the Orion constellation) outside it. Above left: Appalachian State University telescope classroom. Below right: Appalachian State University Dark Skies Observatory (our BBQ banquet location!)



When available, further details on both of these meetings will be posted on the AAVSO Meeting Page. Stay tuned!

## BAAVSS ONLINE DATABASE NEWS

**ANDREW WILSON, BAAVSS DATABASE SECRETARY**  
**ROGER PICKARD (PXR), BAAVSS DIRECTOR**

At the beginning of this year the British Astronomical Association Variable Star Section (BAAVSS) went live with their new online database, replacing Quixote, which had been developed by Roger Dymock.

The database contains visual, CCD, DSLR, and photographic observations, and in the future will also contain the PEP data. At present observers still submit observations to BAAVSS Officers, though in the future it will be possible to load data online as with the AAVSO International Database.

Data are freely available to review as a light curve or a downloadable table. The web pages allow users to select data by star, observer, observation method, and filter type. It is also possible to search for a star, as the database records multiple names for any given star. Particular attention was given to selecting a graphing package that would work well as an online light curve generator. Once a light curve has been displayed, it is possible to zoom in on any region of the light curve by simply dragging the cursor to select the desired time/magnitude scale. This is then easily reset by the "reset zoom" button.

The accompanying light curve shows a 20-year span of BAAVSS data for U Mon (type RVb) from 1980 to 2000. This star holds a special significance for the BAAVSS since the oldest observation in the database is of U Mon, as observed by former Director Col. E. E. Markwick on Christmas Day 1888.

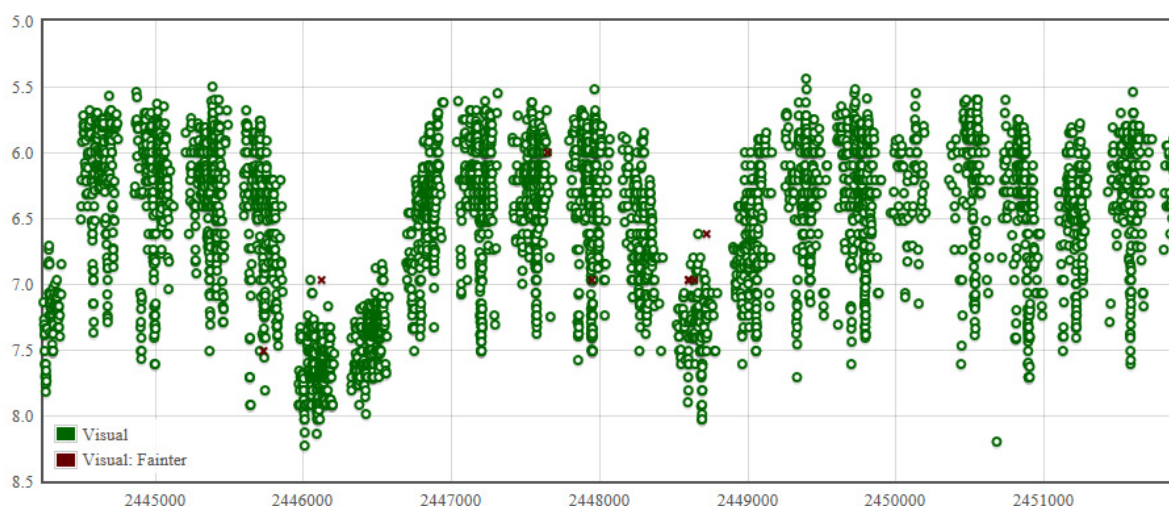
The online database preserves the unique capability of the BAAVSS databases to recalculate magnitudes when sequences are updated. This does rely on observers submitting the full visual estimate or instrumental magnitudes for CCD observations, as well as using a recognized sequence.

Further improvements will be made to the online database, but one aspect that is already being worked on is to link it to the AAVSO International Database. We hope that this will benefit not only variable star researchers but also both organizations.

The database is accessed from the address <http://britastro.org/~vssdb>. All we ask is that the BAAVSS is acknowledged in any articles or websites where the data are used. ★



### Light Curve for U MON



**Symbol Key:** Crosses = Negative observation, Triangle = Brighter than, Otherwise: Circle = Visual, Diamond = CCD, Square = Everything else

20 years of BAAVSS data on U Mon (type RVb), 1980–2000



## TALKING ABOUT THE AAVSO

ELIZABETH O. WAAGEN (WEO) AAVSO HQ

**Events**—AAVSO members, observers, and friends have given presentations about the AAVSO at the following venues:

April 6, 2012—**David Benn** (BDJB, Klemzig, South Australia) gave a short VStar update at the National Australian Convention of Amateur Astronomers (<http://dbenn.wordpress.com/2012/04/14/nacaa-2012-summary/>).

April 24, 2012—**James F. Aldrich** (AFJA, Walnut Grove, Missouri) gave a talk titled “Amateur Photometry” to the Springfield Astronomical Society at the Library Center, Springfield, Missouri. Jim writes, “I’m a recent member of AAVSO and have only been dabbling in CCD photometry for about six months. With the help of the AAVSO web site and its resources, I have been able to measure variable stars, eclipsing binaries, and even a few exoplanets. I shared my newly found knowledge with my fellow astronomy club members by giving a presentation on what I had learned so far. It seemed to be well received and I hope others get involved in this fascinating science project.”

April 30, 2012 (Astronomy Day)—**Roger Kolman** (KRS, Glen Ellen, Illinois) “had a great time at Astronomy Day at Harper College and the Northwest Suburban Astronomers. I gave two talks, one called ‘A Beginner’s Guide to Astronomy,’ and the other ‘Variable Stars and the AAVSO.’ Both were packed—standing room only—over 100 in attendance at each talk. The first had a bunch of kids (lots of cub scouts and their parents. I went from professor to grandfather and we had a great time. The parents were thrilled with the interaction. I wish you could have been there! The second was a transition to what can be done scientifically after learning the sky (variable stars, natch). Very good interaction with a more mature crowd, but lots of young adults.”

May 2012—**Alan Plummer** (PAW, Linden, NSW, Australia) gave a talk promoting VSOing and the AAVSO at the Sydney Observatory.

May 2012—**Alan Plummer** (PAW, Linden, NSW, Australia) gave a talk promoting VSOing and the AAVSO at the Nepean Observatory, University of Western Sydney.

June 2, 2012—**Sebastian Otero** (OSE, Buenos Aires, Argentina) gave a talk titled “Evolución estelar ...y variabilidad” (“Stellar evolution... and variability”) in Martinez, Buenos Aires, for the people at CAIFA (Club de Astronomía Ingeniero Félix Aguilar—<http://www.caifa.com.ar/>). Sebastian’s talk included animations of evolutionary tracks made by his colleague and friend Enzo De Bernardini.

June 6, 2012—**John Percy** (University of Toronto, Ontario, Canada) spoke on behalf of the AASVO and variable stars even as he was being recognized by the Canadian professional astronomy organization for his contributions to astronomy and public education. John writes, “I have just returned from the annual conference of the Canadian Astronomical Society, in Calgary, where I received the inaugural Qilak Award, for astronomy outreach and communication (see <http://www.aavso.org/dr-john-percy-wins-cascas-inaugural-qilak-award>).

“In my award lecture, I discussed the AAVSO in several contexts, including its role in enabling skilled amateurs to contribute to astronomical research, and its role in supporting supporting student research and education—I made special mention of HOA/VSA [*Hands-On Astrophysics/Variable Star Astronomy*].

“And I contributed a poster paper, co-authored with undergraduate student Hannah Fu, on ‘Studies of R CrB Stars.’ We used AAVSO visual and CCD photometry to study the pulsation of several RCB stars at maximum light. We

showed that, even if the pulsation amplitude was only 0.1, visual observations could still be used to study it, thanks to the number of AAVSO observations, and the ‘magic’ of time-series analysis!”

June 9, 2012—**Sebastian Otero** (OSE, Buenos Aires, Argentina) gave the talk he gave in May, “Evolución estelar ...y variabilidad” (Stellar evolution... and variability), in Olavarría, Buenos Aires, for the people at GOCO (Grupo de Observadores del Cielo de Olavarría—<http://gocoolavarría.blogspot.com.ar/>). Sebastian’s talk again included animations of evolutionary tracks made by his colleague and friend Enzo De Bernardini.

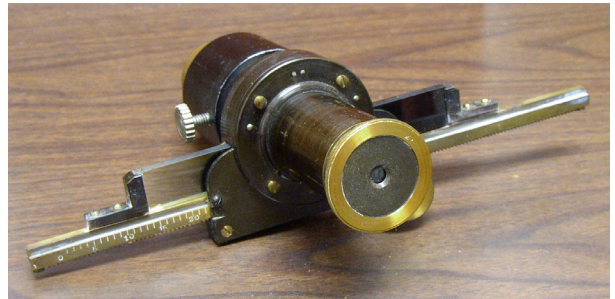
June 2012—**Alan Plummer** (PAW, Linden, NSW, Australia) gave another talk promoting VSOing and the AAVSO at the Sydney Observatory.

**Alan Plummer** (PAW, Linden, NSW, Australia) continues his regular column for *Australian Sky & Telescope* to make VSOing attractive to new observers, writes astronomy club newsletters, and does other astronomy/VSOing outreach.

Let us help you spread the word! Send us information about your event (upcoming or past) for inclusion in the October AAVSO Newsletter (submission deadline September 15). Many thanks for your education and outreach efforts on behalf of the AAVSO and variable star observing! ★

## THE LATEST TECHNOLOGY (AT ONE TIME)

MICHAEL SALADYGA, AAVSO HQ



This spring at AAVSO HQ we received a small wood box sent to us by longtime member and observer Charles Scovil. In the box was an *AAVSO wedge photometer*! This device, designed in 1923 by AAVSO Recorder Leon Campbell with the help of members J. E. G. Yalden, Morgan Cilley, and others, was meant to be made available to AAVSO members—not difficult to build from inexpensive and readily available parts—although various distractions led Campbell to abandon the project. The blueprint plan (matching one already in the archives) came with it. The instrument is described in the AAVSO centennial history:

Campbell’s wedge photometer used a neutral-density gradient filter that slid across one half of the telescopic field of view to extinguish the light of the brighter star. The gradient filter would be advanced with a micrometer head mechanism until the brighter star matched the brightness seen in the other half of the field without a filter. Each density gradient filter would be calibrated independently against stars of known brightness to understand the extinction of light along the filter.

The device came to Scovil by way of AAVSO Secretary Clint Ford, who received it from member Lewis Boss. This is the only AAVSO wedge photometer known to exist—it will enjoy a well-deserved rest in the AAVSO archives. ★

## VISITORS FROM INDIA

**MICHAEL SALADYGA, AAVSO HQ**

This spring, AAVSO Director Arne Henden was pleased to welcome to AAVSO Headquarters Dr. Ranatossh Chakrabarti of Calcutta, India. Dr. Chakrabarti has had a long-standing interest in the life and work of one of the AAVSO's earliest and most prolific observers, Radha G. Chandra (1878–1975) of Bagchar, India, who made over 49,000 variable star observations from 1919 to 1954.

Although a physiologist with no formal knowledge of astronomy, Dr. Chakrabarti's interest began when he happened to be living very close to where Chandra lived, and he heard stories about him from his neighbors. Dr. Chakrabarti was intrigued, and, over the years, researched as much as he could about Chandra from diverse and difficult to obtain resources. The AAVSO's first contact with Dr. Chakrabarti was in 1994, when he contributed a letter to the editor to the *Journal of the AAVSO*, which outlined his interest in the astronomer. His early research on Radha Chandra led him to publication of an article, with Prof. A. Bandyopadhyay, in the *Indian Journal of History of Science* (Vol. 26, 1991).



*Radha G. Chandra in 1937  
with telescopes loaned to  
him by the AAVSO*



*Dr. Ranatossh Chakrabarti (on left), with his wife and son-in-law (who resides in Cambridge), and AAVSO Director Arne Henden, at AAVSO Headquarters*

Dr. Chakrabarti was delighted to learn that the AAVSO Archives has a collection of letters written by Chandra to the AAVSO, and to him from AAVSO Recorder Leon Campbell and Director Margaret Mayall. Dr. Chakrabarti made two visits to AAVSO Headquarters to examine the letters and discuss the life of Chandra with us.

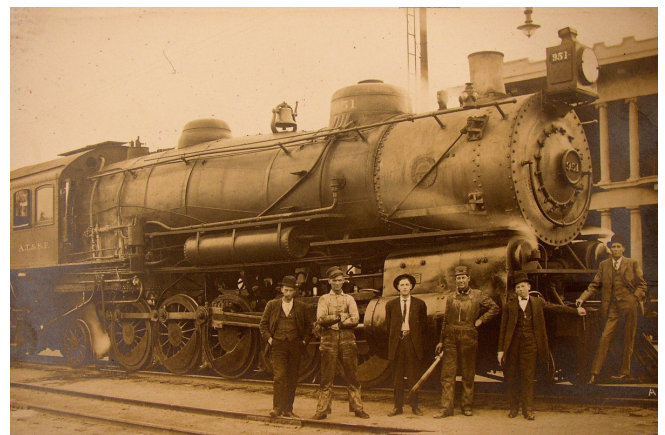
Dr. Chakrabarti emphasized that, for him, the significance of the life of Radha Chandra was more than his collection of variable star observations and astronomical work, as such. During his discussions with us at Headquarters, Dr. Chakrabarti made it clear that what fascinated and most interested him about Radha Chandra was his strong ethical nature which seemed to impress many who encountered him. "Chandra maintained a life like an ancient Indian 'Rishi' (saint)," wrote Dr. Chakrabarti in 1994, "A man without any formal education or an equipped observatory, but only with extreme devotion and hard work, Chandra made his life a beacon to every serious voyager in the domain of science." ★

## THE FORSYTH SAGA

A call came in one day from a woman in California saying that she had been cleaning out an attic and found a personal (non-astronomical) journal of an "E. L. Forsyth." Her search of the name on the internet led her to the AAVSO's website listing of Charter Members. The caller wished to try to find any Forsyth descendants, so that she could send the journal to them.

The AAVSO archives has Forsyth's observing reports (873 observations made between 1912 and 1913) but no correspondence—just "Needles, Calif." on the reports.

The only other clue, as shown in a photo in W. T. Olcott's scrapbook, was that Forsyth was a locomotive engineer for the Santa Fe railroad. Further internet searching led to one more clue: a page from a 1908 Santa Fe R.R. employee's newsletter with the item: "Seligman [Ariz.]—Mrs. E. L. Forsythe [sic] and daughter are visiting in Topeka, their former home. Upon their return they will live at Needles." So, E. L. Forsyth's family might be found somewhere along the Topeka-Seligman-Needles arc. We hope that the journal will find its home. ★



*AAVSO observer and Charter Member E. L. Forsyth as Santa Fe R.R. locomotive engineer is fourth from the left (holding the long-spouted oil can). The men are proudly standing in front of a then-new 2-10-2 type locomotive, which was the apex of traction power at the time—the early 1900s. The photo is in the AAVSO archives in William Tyler Olcott's astronomical scrapbook.*



## AN IRONIC ENCOUNTER AND A NEW AAVSO MEMBER

**TIM CRAWFORD (CTX), MENTORING TEAM, SEQUENCE TEAM, SPEAKERS BUREAU, ARCH CAPE, OREGON**

This year I was invited to make two presentations at the “Imaging The Sky Conference 2012.” This conference was organized and implemented by Neil Heacock, Duncan Kitchin, and David Haworth, who all reside in the Greater Portland, Oregon, area. In past years the conference has taken place on a Saturday at the Oregon Museum of Science and Industry (OMSI). Most years the topics revolve around imaging of Deep-Sky Objects. This year the organizers choose to incorporate Science topics into the conference. This was also the first year the conference had sessions on both Saturday and Sunday (May 5–6) and was held, for the first time, on the campus of Intel.

Initial attendance was over forty people but it declined to around twenty-five by Sunday afternoon when I made two presentations, with the first being “Variable Star Observing with CCDs” and the second one being “Differential Photometry.”

I normally like to include Visual observing as part of my presentations but did not with this conference as it was specifically devoted to DSLRs and CCDs.

My presentations totaled about two hours in length, and afterwards only one individual approached me with after-session questions.

He introduced himself and then asked: “What about visual observing? Is that data useful and how do I get started?”

About an hour of CCD observing followed by about an hour of Differential Photometry and the only person in the room with any obvious interest wants

to know about Visual Observing. Go figure! I had a good internal laugh over the irony of this.

But the good news was that at least one person in the room had a serious interest in Variable Star Observing.

I described to him the importance still of visual observing and the advantages he had with a smaller scope for this purpose over CCD observers (brighter targets). I further described some of the AAVSO resources to him and the need to secure observer initials. I made sure he had my email address and told him that I was one of the AAVSO Mentors available to work with new observers and that I had some materials that I would like to send him as well as some useful links. He also asked me what it costs to join the AAVSO.

That Tuesday (two days later) I received an email from the individual to inform me that he had already joined the AAVSO and received his observer initials. Wow and WaHoo!

He has now advanced to doing some practice observations and is about ready to submit his first observation, just as soon as the clouds clear, again, here in the Pacific Northwest.

Welcome to the AAVSO, Terry Halstead (HTDA), and may your journey of Variable Star Observing bring you great satisfaction knowing that you have made contributions to science and hopefully had some fun along the way. ★

## A VISIT TO THE OLCOTT GRAVESITE

In May, longtime AAVSO member and observer Gerry Dyck (DGP), while on a trip to Norwich, Connecticut, thought he would try to find the gravesite of AAVSO founder William Tyler Olcott. With the help of a map from the AAVSO archives, Gerry found the Olcott plot where Tyler and his wife, Clara, are buried in Yantic Cemetery in Norwich. Gerry wanted to share his experience, through these photos, with *Newsletter* readers.



*A close view of the inscription on the Olcott memorial*



*The AAVSO's Gerry Dyck at the Olcott gravesite, Yantic Cemetery, Norwich, Connecticut*



## A STELLAR MEMORIAL

DOC KINNE (KQR), AAVSO HQ

A new minor planet has been named in the heavens—(40463) Frankkameny.

Most of us know that stars cannot be named for people, despite the claims of certain organizations. Comets are named for their discoverers. However, the discoverers of minor planets have the privilege of suggesting a name for their discovery, subject to review by the International Astronomical Union (IAU) and the Minor Planet Center (MPC).

Readers of this newsletter may remember almost a year ago when we ran a small obituary on Dr. Frank Kameny [AAVSO Newsletter, No. 50, October 2011]. Dr. Kameny, who held the AAVSO Observer Initials KFE, did some of the first photoelectric photometry on certain RV Tauri and yellow semiregular variables in the 1950s. After gaining his Ph.D. from Harvard, where he worked with, and remembered, both Margaret Mayall and Dorrit Hoffleit, Dr. Kameny worked a grand total of perhaps two years as an astronomer for the U. S. Army Mapping Service before it was revealed he was gay and he was fired, his astronomical career in ruins.

With the U.S. Government declaring war on him, Kameny returned the favor. He fought his firing all the way to the U.S. Supreme Court which, back then, refused to hear the case. Turning to activism, Kameny was involved in virtually every major U.S. legislation on gay rights, including his last major achievement, helping to author the District of Columbia's Marriage Equality law.

But the stars weren't quite ready to release their hold on Kameny. In 2009 Kameny's Ph.D. thesis, "A Photoelectric Study of Some RV Tauri and Yellow Semiregular Variables," was found in the AAVSO's MacAteer Library. Doc Kinne went down to Washington, D.C., that summer to meet with Dr. Kameny and have him sign his thesis for the AAVSO. Kinne also brought down modern examples of the light curves of the stars in Kameny's thesis. Kameny told Kinne that he'd not thought of the thesis in decades, but had re-read it just a few days before the meeting. A door that he had thought had been shut to him forever was re-opening.

At the same time a group within the American Astronomical Society was starting to organize for the dual purpose of beginning an LGBT Equality Group within the AAS and developing a prize in Dr. Kameny's name. As time went on this prize morphed into a Certificate of Appreciation. The group realized they were racing against time since Dr. Kameny was 85 years old.

On 11 October 2011 the group lost its race when Kameny died. Kinne wrote an obituary for Dr. Kameny that appeared in the online AAVSO discussion group. One of the folks who read it was former AAVSO Treasurer and Council Member Gary Billings. Billings, who is not only active in variable star photometry work but also minor planet astrometry, wrote Kinne and said, "There are a few asteroids I've discovered that I've not named yet. What do you say we name one for Frank?" Floored, Kinne agreed. "Good," said Billings, "you write the citation for the IAU and I'll submit it." This was done in late November of 2011.

Franklin E. Kameny (1925–2011)  
Source: Wikipedia



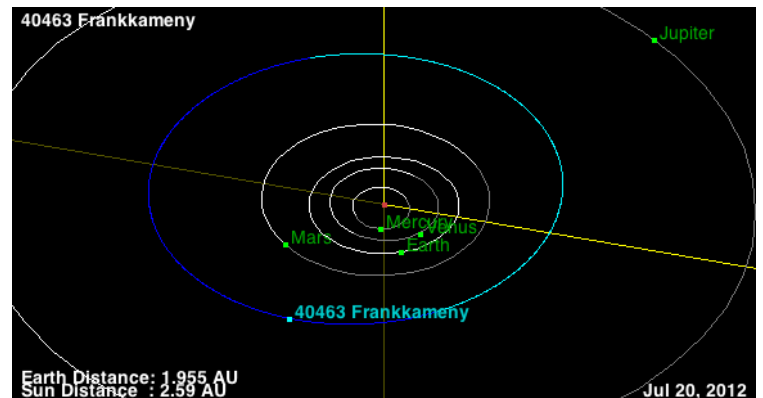
On 1 July 2012, realizing these things take time, Kinne wrote to Billings asking if he'd "heard anything about Frank?" Billings responded saying he hadn't, and it was his experience that if nothing had been heard by that time then the IAU and MPC had rejected the name. That news turned 180° by July 6, when Kinne received an email from Billings saying he'd just gotten word "indicating that [Minor Planet] 40463 has been named. And [Minor Planets Circular 79911] shows 40463 is Frankkameny." It was official!

The official MPC Citation reads:

(40463) Frankkameny = 1999 RE44

Discovered 1999 Sept. 15 by G. W. Billings at Calgary.

Frank E. Kameny (1925–2011) trained as a variable star astronomer in the 1950s, but joined the Civil Rights struggle. His contributions included removing homosexuality from being termed a mental disorder in 1973 and shepherding passage of the District of Columbia marriage equality law in 2009.



Orbital diagram of asteroid Frankkameny (40463) Source: NASA/GPL

It was decided to keep the news quiet for a bit. Kinne wanted to see if he could get in touch with someone close to Kameny so that his close friends would hear the news first. He decided to write Charles Francis, founder of The Kameny Papers Project, who had accepted the AAS Certificate of Appreciation awarded to Kameny in January 2012.

CONTINUED ON PAGE 15

## IN MEMORIAM

MEMBERS, OBSERVERS, COLLEAGUES,  
AND FRIENDS OF THE AAVSO

**RICHARD CROWE**, Ph.D., age 60, astronomer and educator at the University of Hawai'i at Hilo, died May 27, 2012, in an automobile accident in Arizona. Co-founder of the astronomy program at UH-Hilo, he taught physics and astronomy, including hands-on observing with the university's 24-inch on Mauna Kea. He was a gifted and extremely popular teacher and won several education awards. His research specialties included pulsating stars, stellar evolution,



*Richard Crowe*

and spectroscopy, and he had used AAVSO data in his work. He authored or co-authored nearly fifty scientific articles and nine articles debunking pseudoscience, pseudoastronomy, and creationism, and was involved in administering major NASA and NSF grants for minority science education in Hawai'i. Very involved in the community and outgoing and friendly, he gave many talks on astronomy in schools (with his portable planetarium) and to the public. Active in community arts and entertainment, he was an excellent musician (clarinet, piano, voice) and actor. Our sympathies go to his wife Debra, who survived the accident, their children, and their families, as well as his colleagues, students, and friends.

**ROYA. MIMNA** Ph.D. (MMA), age 68, passed away June 7, 2012, at home after an extended illness. Roy, an AAVSO member 1980–1984, contributed 664 visual observations over those years. He switched to comet hunting, which remained a key astronomical interest of his. A U.S. Army veteran who served as a Captain 1969–1972, Roy was a lawyer in private practice and professor of mathematics at Youngstown State University, Pennsylvania. He was introduced to variable star observing by fellow Mahoning Valley Astronomical Society member Chris Stephan, who taught him the art; Roy was later president of the Society. Kind and soft-spoken, Roy enjoyed reading, cooking, walks with his wife, Selah, and spending time with his children and grandchildren, and our sympathies go to all of them and his extended family.



*Roy Mimna*

**VI ROYER**, beloved mother of longtime AAVSO member observer Msgr. Ron Royer (RR), died June 12, 2012, at the age of 101, from dementia complications. Cheerful and lively, Vi was a welcome attendee at several AAVSO meetings, where she particularly enjoyed the people and the field trips. Christened Violet Iris Rose Pompey, she did not like her flowery name and preferred simply Vi. She led such a remarkable life that Msgr. Royer's abbreviated summary of her life reads like the description of an unbelievable movie heroine: "She was born in L.A. Died in Porterville, California. Education, to eighth grade only. Dancing: at sixteen she won a marathon six-day event, making national news. Big band dancing from Avalon to Bakersfield. Marriage: to Ed Royer in 1929 lasting till death of Ed in 1980. Three children, Msgr. Ronald Royer, Sister Judith Royer, Ph.D., and Carole Redmon. Muscle Beach, California: we were there during the great depression, no money needed. Mom working out with the Hollywood stuntmen, me hiding in the surf from those human pyramids. WWII: she was an electrician building Russian Icebreakers. Waitress: at fancy restaurants in Santa Monica and Westwood. Moved to Leisure World in 1967: Golf, won women's golf championships for twelve out of fifteen years. Six holes in one, four eagles, one double eagle, and a house full of trophies! Sacristan at St. Nicholas Church. Synchronized swimmer, got lots of publicity, even in the National Enquirer. Put on water shows and made costumes for them. Won many medals at the world Masters Championships throughout U.S. Oldest female certified lifeguard in the country, making eight rescues." Sadly, during her last twelve years she was afflicted with progressive dementia, and Msgr. Royer was her devoted caregiver and saw to her every comfort. Our sympathies go to Msgr. Royer, Sr. Judith Royer, and their extended family.



*Msgr. Ron Royer and Vi Royer*

*Ed. note: following is the Spanish language text of Arne's Director's message.*

## MENSAJE DEL DIRECTOR

**ARNE A. HENDEN (HQA)**

Ya debe ser verano otra vez! Llegó Ben Briggs para su segundo verano de trabajo con Will en la página web, un par de manos extra muy necesitado este año. Otro estudiante de verano, Aaron Sliski, me está ayudando con APASS y con algunos asuntos de hardware de AAVSONet. Aaron estará ingresando a la Universidad de Suffolk en el otoño, especializándose en Física. El y su hermano (David), como así también su padre (Alan), hace tiempo que restauran viejos telescopios e instalan nuevos, así que Aaron tiene bastante experiencia práctica en el tema. El otro "Aaron" de AAVSO – Aaron Price – se ha ido al Chicago Museum of Science and Industry. Él es tema aparte de otro artículo del newsletter en este número. Si bien le deseo lo mejor, su pérdida impactará HQ de muchas maneras. [Nota del editor: ver el artículo en este newsletter]

Siguen trabajando en los nuevos condominios de enfrente. Los dos edificios amarillos del campus de Sky & Telescope fueron derribados un par de meses atrás y desde entonces esta parte de Cambridge ha sido una zona de construcción. ¡El ruido constante del equipamiento pesado se torna cansador después de un tiempo! Parece que están avanzando rápido, por lo que tal vez el ruido desaparezca más pronto de lo que pensaba. Linda y yo hemos estado trabajando en el patio aquí en HQ, así que puede que las cosas se vean diferentes en tu próxima visita.

Asistí al encuentro de verano de la AAS en Anchorage hace unas semanas, presentando un poster sobre el estado actual de APASS. Mientras estaba allí, también fui parte de una conferencia de prensa, y la historia de APASS fue tomada por varios de los servicios de noticias. ¡La AAVSO obtuvo mucha atención en este encuentro! Acabo de regresar de ALCon (Convención de la Astronomical League) y de la MWAIC (Conferencia de Astrofotografía del Medio-Oeste). Di una charla en la MWAIC, pero el evento realmente importante de este encuentro conjunto fue que Mike Simonsen recibió el Premio Leslie C. Peltier de la Astronomical League. Lamentablemente no pude asistir al banquete, pero apuesto a que hay muchas fotos de ese momento que aparecerán en el sitio web. Mis felicitaciones a Mike por recibir este premio, en honor a sus tantas contribuciones a la astronomía

amateur. [Nota del editor: ver el artículo de Roger Kolman en este newsletter]

El otro gran evento de los últimos meses fue el encuentro conjunto de la AAVSO y SAS en Big Bear. Como la conferencia conjunta antes mencionada, esta también contó con una numerosa asistencia. Hubo varias charlas excelentes de ambos grupos, y la mayor parte del Consejo de AAVSO llegaba temprano para abrir las sesiones y estar disponible para responder preguntas de los miembros de la Asociación. Incluso varios de los miembros del Consejo llegaron a tiempo para observar el eclipse anular de Sol, un evento realmente muy raro. Intentamos observar el tránsito de Venus desde los cuarteles generales pero estuvo nublado justo hasta la puesta de Sol. Otros miembros del staff se fueron a su casa y pudieron verlo desde allí (¡sólo estuvo nublado en HQ!).

¿Y qué pasa en la galaxia? ¡Parece que estamos teniendo noticias de una nueva nova erupcionando cada dos semanas! Quizás debamos dedicar uno de nuestros nuevos Foros sólo a las novas. Espero que todos aprecien el esfuerzo del Equipo de Secuencias, que ha estado trabajando a toda hora para crear secuencias para cada uno de estos nuevos objetos, generalmente a las pocas horas de conocer su descubrimiento. Si se acuerdan de cómo eran las cosas hace sólo unos años, se darán cuenta de cómo ha mejorado todo y lo importante que nuestros voluntarios son para la comunidad.

Hablando de Foros, espero que todos hayan tenido la oportunidad de probarlos. Están más activos que la vieja lista de discusión, con muchas caras nuevas levantando la mano y participando en las conversaciones. Si tienen sugerencias acerca de cómo mejorar su funcionalidad, no duden en enviar un mensaje a Will o postear un comentario en el foro del Sitio Web. [Nota del editor: ver el artículo de Rebecca Turner en este newsletter]

El mes que sigue estará dedicado a completar las presentaciones PowerPoint para la Escuela CCD que se viene. Estoy ansioso por que llegue este evento y espero que podamos llevarlo a cabo de nuevo el próximo año. También pronto volveremos con los cursos CHOICE, estamos repartiendo tareas y moderadores. Después de la Escuela CCD, me voy a Tucson a participar en el encuentro de representantes de LSST, donde estaré dando una charla a los grupos de objetos

transitorios y de difusión para ver cómo podemos lograr que participe la comunidad de aficionados lo más pronto posible.

HQ siempre está ocupado; nunca hay un momento de descanso. Así es como debe ser – apoyar a los miembros, mejorar el sitio web, agrandar la base de datos, guiar a los observadores. ¡Estamos aquí para ayudarlos! ★

*Ed. note: following is the Spanish language text of Mario's President's message.*

## MENSAJE DEL PRESIDENTE

**MARIO MOTTA, M.D. (MMX)**

Soy un cazador de eclipses desde hace muchos años, por lo tanto, sabiendo que había un eclipse anular el 21 de mayo de 2012, sólo 2 días antes de nuestra Reunión de Primavera en Big Bear Lake, California, me decidí a ver el eclipse anular, y elegí hacerlo en Kanarraville, Utah, ya que sería conveniente y no muy lejos de la Reunión de Primavera. Dos expresidentes, Gary Walker y Jaime García, se unieron a mí en esta expedición. La expedición fue apropiada por lo tanto, llamarla "Tres Amigos—Expedición Presidencial de AAVSO al Eclipse".

Nos encontramos en el aeropuerto de Las Vegas y tuvimos algunas dificultades iniciales, (¡la luz del motor del automóvil de alquiler se encendió una cuadra después de salir de la agencia!). Finalmente, las cosas se solucionaron y nos pusimos en camino. Había pensado en el extremo norte en Zion Park como un lugar de observación adecuado, pero determinamos que las colinas de los alrededores harían que se adelantase la puesta de Sol, poniendo fin al eclipse, antes de tiempo. Nos quedamos fuera del parque en un pequeño pueblo llamado Kanarraville, Utah. Esta fue, afortunadamente, una muy buena elección, con un horizonte occidental agradable y bajo. Además, la gente del pueblo reservó grandes extensiones de terreno protegido para la observación. Nos encontramos con un buen número de aficionados de todo el país y fuimos bendecidos con cielos diáfanos y sin nubes. He realizado un montaje del eclipse, desde el primer contacto, pasando por la fase de eclipse anular, hasta la puesta de Sol, detrás de una lejana montaña

Esta fue el 12º eclipse, en mi cuenta personal y, como se trató de un eclipse anular, no hubo un

CONTINUED ON NEXT PAGE



## MENSAJE DEL PRESIDENTE CONTINUED...

intenso trabajo científico durante la expedición. Esto fue lo que contrastó con la Reunión de Primavera, en la que se tartaron una enorme cantidad de trabajos científicos que tanto los miembros de AAVSO como los miembros de SAS realizan regularmente. Esto nos lleva de nuevo a un tema recurrente entre los miembros de AAVSO, acerca del valor relativo de hacer ciencia o simplemente disfrutar del cielo. Me gusta hacer ciencia, que es lo que me atrajo a mí y a muchos otros a la AAVSO, en primer lugar. Sin embargo, también me gusta mucho la astronomía amateur como un pasatiempo relajante. No veo nada malo en ello. Aún después de conseguir la satisfacción de perseguir un estallido de rayos gamma, una supernova, o después de una campaña para un objeto de estudio seleccionado o, simplemente, la comprobación periódica de la magnitud de una estrella; sigo emocionándome tan sólo de admirar un hermoso cielo oscuro. Me gusta ver viejos amigos en el cielo y encontrar otros nuevos. Yo incluso disfruto (¡ejjem!) ocasionalmente tomando una bella imagen.

La mayoría de los aficionados son inicialmente atraídos por la afición debido a la belleza del cielo nocturno y, luego, desarrollan la curiosidad intelectual que les impulsa a hacer más. La gran tragedia de nuestros tiempos modernos es que gran parte de la población mundial vive bajo cielos contaminados por la luz. Así, muchos de ellos nunca desarrollan ese asombro inicial del cielo nocturno que ha inspirado a incontables generaciones, antes de la situación actual de noches opacas. De hecho, aunque estoy de acuerdo en que todos debemos esforzarnos por hacer la ciencia que AAVSO propone, no voy a denigrar a aquellos que simplemente disfrutan de la observación. Está bien divertirse y disfrutar de su afición.

Permítanme hacer una analogía. Soy médico en el campo altamente técnico de la cardiología. Ser médico es a la vez un arte y una ciencia. Si bien mi trabajo es ser lo más técnicamente competente que me sea posible y ser preciso en el diagnóstico y tratamiento, en realidad sería un pobre y desafortunado médico, si eso fuera todo lo que hiciere. Hasta hoy, sigo disfrutando de la interacción y el cuidado de los pacientes. Trato de no olvidar nunca que estoy tratando a un ser humano, no a una enfermedad. Si no hiciese el “arte” de la medicina, sería simplemente un técnico glorificado y pocos pacientes escucharían realmente mis consejos. No importa cuán técnicamente competente sea, le habría fallado a mis pacientes. Así, para ser un médico verdaderamente bueno, uno tiene que disfrutar de la interacción con personas reales. En otras palabras, está bien divertirse y disfrutar de su trabajo. El día que deje de disfrutar de eso, deberé retirarme.

Yo veo un paralelo en la astronomía amateur. Nadie duda de la importancia de la ciencia que hacemos como miembros de AAVSO, pero sospecho que pocos nuevos miembros se verían atraídos a unirse si lo considerasen como un trabajo, otro trabajo, y no como un pasatiempo agradable. De hecho, nuestro crecimiento siempre se deberá principalmente a la gran cantidad de aficionados que disfrutan de la afición, pero que están finalmente listos para hacer algo científico con su equipamiento. Por lo general son entusiastas y disfrutan de la afición y, para atraerlos, no debemos hacer que la AAVSO se parezca a tener otro trabajo. Así que vamos a convencer a todos por ahí de lo divertido que es ser un miembro de AAVSO y hacer ciencia. Disfruten de la gran afición que tenemos y está bien que nos divirtamos. ★

### A NOTE ON THE TRANSLATIONS

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

## A STELLAR MEMORIAL CONTINUED...

Meanwhile, at least among the astronomical community, the news was leaking. Kinne received an email from Dr. Jay Pasachoff that weekend saying that Pasachoff had heard the news and thought he should edit Kameny's obituary on the AAS website. Kinne responded with thanks and asked that Pasachoff hold off a few days as a favor while Kameny's friends were given the news.

On July 9 Kinne again wrote Charles Francis, attempting to inform Kameny's friends. He decided that he'd give them until July 11 to respond, but that he couldn't hold the news any longer. Coming into work on July 10, Kinne discovered an email from Brett Zongker of the Associated Press wishing to interview him. Minutes after reading that email a response to the messages to Charles Francis came in. Kameny's friends knew. The news could now be made public.

And public it was! Gary Billings later remarked that there was “probably a bit more hoopla than I was expecting.” In less than twelve hours Google showed over 300 hits regarding the news, ranging from *The Pink News* in the UK (where Billings was referred to as “an amateur astrologist”) to *The Daily Kos* (where Kinne found out that he supposedly worked for the Minor Planet Center) to the *Boston Globe* and Fox News (which got it all correct).

Dr. Frank Kameny was denied the opportunity to study the stars he loved. He ended up dedicating his life to a struggle that helped ensure that his future colleagues wouldn't be treated as he had been treated. Nearly a half-century after he began that struggle his colleagues started thanking him, in part by giving him a lasting tribute in the sky.

As of 20 July 2012, (40463) Frankkameny is a 20th magnitude object between Scorpius and Libra at R.A. 15<sup>h</sup> 29<sup>m</sup> 27.7<sup>s</sup> Dec. -21° 24' 58". ★

## INTERVIEW WITH DR. KOJI MUKAI

MIKE SIMONSEN (SXN), IMLAY CITY, MICHIGAN

In early June, *AAVSO Alert Notice 459* announced a campaign to monitor RU Peg to notify astronomers planning to use the Swift satellite of the start of the next outburst. Principle investigator Dr. Koji Mukai (Universities Space Research Association/NASA Goddard Space Flight Center) says his observations will target the rise to outburst and the late decline from outburst. Thus, catching RU Peg at the beginning of the outburst will be critical to the success of this campaign. I asked Koji to explain what they are looking for with the Swift satellite. [Ed. note: On June 23, RU Peg went into outburst and the Swift observations were triggered.]



Dr. Koji Mukai

Simonsen: Hi, Koji. Thank you for granting me this interview. Let's start with: where are you working now and what are your primary responsibilities? Also, what are your current areas of research?

Mukai: I work at NASA's Goddard Space Flight Center, although my employer is the University of Maryland, Baltimore County. I work at the U.S. Guest Observer Facility for the joint Japan-U.S. Suzaku mission, and also work in the education and public outreach group of the astrophysics science division here. My research has always focused on accreting white dwarfs—it still does, but over the last few years it has expanded from just CVs to CVs and symbiotic stars. I'm interested both in accretion and mass ejection during nova outbursts.

Simonsen: Are you still maintaining the Intermediate Polars pages?

Mukai: Yes, although I haven't had the time to make a substantial update for the last year or so. There are quite a few new confirmed and candidate IPs to add to the site!

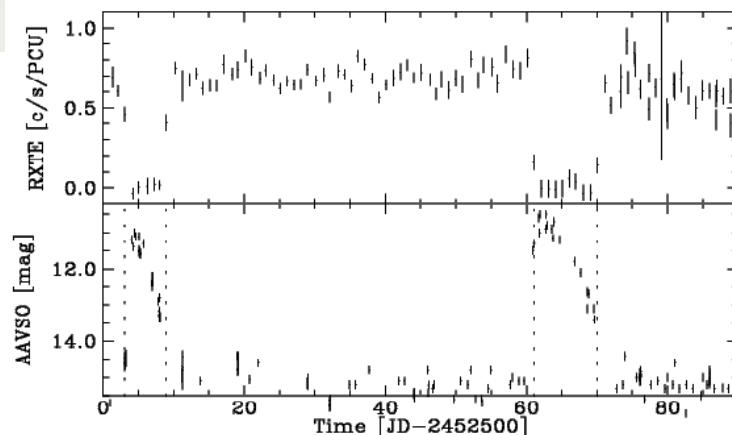
Simonsen: *AAVSO Alert Notice 459* states you are requesting monitoring of the dwarf nova RU Peg in anticipation of the next outburst. Let's discuss why RU Peg is so interesting, and what you hope to learn by observing it with Swift.

Mukai: RU Peg is a bright dwarf nova that has been neglected, relatively speaking, for X-ray observations. For dwarf novae, it is very important to conduct X-ray monitoring campaigns through an outburst. Now that RXTE has been decommissioned, Swift is the only observatory for this type of campaign.

Simonsen: Since your observations will be in the X-ray, where do X-rays in dwarf novae originate?

Mukai: In a dwarf nova, half the available gravitational potential energy is radiated away in the accretion disk—that's a source of infrared, visible, and ultraviolet light. The other half of the potential energy has been converted into the kinetic energy of the disk material, moving at several thousand kilometers per second. Since the white dwarf is rotating much more slowly than this, that motion must suddenly cease in a very small region—what we call the boundary layer. That's where the X-rays originate in dwarf novae.

Simonsen: How does the amount of X-rays emitted change between the quiescent and outburst phases of the dwarf novae?



Visual (AAVSO) and X-ray (RXTE) light curves of WW Cet. (from Fertig, et al. 2011, *PASP*, 123, 1054)

Mukai: That actually depends on what you mean by “X-rays.” But if you mean X-rays in the traditional band (photon energies of 2-10 keV, or wavelengths of about 1–5 Ångströms), dwarf novae become fainter during outburst than in quiescence. Below (Figure 1) are the AAVSO and RXTE light curves of WW Cet from a recent paper I was involved in. This shows what I now think of as “typical” behavior. X-ray bright in quiescence, X-ray faint in outburst, with sudden a transition and no intermediate states.

Simonsen: What do we think is happening as the outburst begins in the accretion disc to cause this X-ray suppression?

Mukai: In quiescence, the boundary layer is optically thin—that is, X-ray photons, once emitted, escape the boundary layer without interacting with matter. In outburst, much more matter is flowing through the boundary layer, so the density is much higher. In this case, the boundary layer becomes optically thick—X-ray photons emitted by the ions interact with surrounding matter several times before they are able to escape. In this situation, the temperature of the boundary layer drops, and only lower energy X-rays (“soft” X-rays, as in X-rays that cannot penetrate matter that much) are emitted—with energies below 0.5 keV. The optically thin case is like the corona of the sun, the optically thick case is like the photosphere of the sun. In fact, during outburst, the boundary layer has both the photosphere-like region and the corona-like region.

If the line of sight to the dwarf nova is relatively free of interstellar matter, then we can observe dwarf novae brighten dramatically during outburst in soft X-rays and extreme ultraviolet.

Simonsen: Isn't this the opposite of what has been observed in prior campaigns on SS Cygni?

Mukai: No, not really. During the peak of the outburst (as determined by visible light observers), SS Cyg is fainter in hard X-rays and brighter in soft X-rays. It's in the time of transitions that SS Cyg has shown a behavior pattern that has not been seen in other dwarf novae. Other systems have shown “quiescent” (hard X-ray bright) and “outburst” (hard X-ray dim) states, and nothing else. SS Cyg, on the other hand, initially brightens in hard X-rays (near the time of the peak visible light) before switching to hard X-ray faint/soft X-ray bright state. There is another hard X-ray brightening near the end of the outburst. So, in hard X-rays, it goes from bright-brighter-faint-brighter-bright through an outburst. You can see this in the light curves here.

Simonsen: Does this mean SS Cygni is actually the exception to the rule, and not the prototype as most people have always assumed?

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## MIKE LINNOLT—CONTRIBUTIONS OF THE VISUAL OBSERVER IN THE DIGITAL ERA

KEVIN B. PAXSON (PKV), SPRING, TEXAS

You will not find a bigger advocate for visual variable star observing than Mike Linnolt (LMK) of Hawaii. With two important visual discoveries in 2011, Mike has proven the viability of visual observing in the digital age. One does not need expensive CCD equipment to make significant contributions. So, let's meet Mike and hear his story about variable stars and visual observing.

Mike Linnolt is 56 years old and he, his wife, and daughter live in Puna on the eastern end of the Big Island, Hawaii. Mike received a B.S. degree in Engineering from MIT and worked in aerospace and technology industries for many years. Mike also has Ph.D. in Biomedical Sciences from the University of Hawaii. He currently works as a teacher at Hawaii Pacific University and other Hawaii colleges.

While growing up as a child in upstate New York in the 1960's, Mike's father helped him build some 2- and 3-inch refractors and Mike later made several Newtonian telescope mirrors. He was active with film astrophotography during his high school years using a homebuilt 6-inch astrograph. But after college, work, and a move to the west coast, his interest in astronomy waned.

The Internet revolution of the mid-1990s renewed Mike's interest in astronomy. He had been making visual meteor and comet observations and ran across the AAVSO website. Upon hearing about a nova in Aquila (V1494 Aql), Mike made his first observation on December 3, 1999, of that nova with binoculars from football field bleachers of Washington High School in San Francisco, California. Subsequently, Mike started observing and sending in observations to the AAVSO. He now has around 16,000 observations to date, going "mainly for quality (accuracy), not quantity" in his observations.



Mike Linnolt and his wife Rie, with his 20-inch  $f/3.6$  Newtonian reflector.

Over the years, Mike has used binoculars and homebuilt 8- and 10-inch Newtonians (including the primary optics) which were either on equatorial or alt-azimuth mounts. Later, he made a 14.5-inch and then his current main scope, a sphere-mounted 20-inch  $f/3.6$  Newtonian of his own design and construction. It is similar to the commercial "Portaball" design, but it uses some of Mike's own innovations. It has a minimal mirror support system with collimation adjustment at the eyepiece end of the truss poles and uses a central bolt lateral mirror support, rather than a complex sling system. It is lightweight, weighing just 65 pounds, being made of strong fiberglass construction. The sphere mount provides comfortable viewing positions and can be easily pointed anywhere in the sky, especially the zenith.

With his sphere mount, Mike "star hops" to find his variable stars. He memorizes or uses a wide-field chart to find star patterns leading toward the variable using a low power eyepiece. He then switches to high power eyepiece and zeros in on the field of the variable star. On the average, it takes under a

CONTINUED ON NEXT PAGE

### DR. KOJI MUKAI CONTINUED...

Mukai: You can still consider SS Cyg to be the prototype of the hard X-ray bright (quiescence)—dim (outburst) behavior. It appears to be an exception in showing the bright-brighter-faint-brighter-bright behavior.

Simonsen: How does the mass of the white dwarf come into play in the whole process?

Mukai: The accretion rate at which the boundary layer switches from the optically thin regime to the optically thick regime is believed to be a strong function of the white dwarf mass, according to theoretical studies. The higher the white dwarf mass, the higher the accretion rate at which the transition occurs. The state change of the disk, between quiescence and outburst, is governed by the conditions in the disk, and is far less sensitive to the white dwarf mass. When the disk goes into outburst, the accretion rate through the boundary

layer rises, making it optically thick for an average mass white dwarf, while making it brighter but still optically thin for a high mass white dwarf—at least that's a physically motivated explanation of why SS Cyg might behave differently from the average dwarf novae.

Simonsen: Is this the main reason for selecting RU Peg as your target for the Swift campaign?

Mukai: Yes, we believe that the white dwarf in the RU Peg system is among the most massive for a dwarf nova. Also, it is one of the X-ray brightest dwarf novae for which an X-ray monitoring campaign has never been done.

Simonsen: How do you know the mass of the white dwarf in RU Peg?

Mukai: In the optical spectra of RU Peg, you can see both the mass donor and the accretion disk,

so the radial velocity motion of both stars can be measured, with the usual caveats.

Simonsen: So what if we don't see the same X-ray behavior as SS Cyg when RU Peg goes into outburst? Will the campaign still prove useful scientifically?

Mukai: That would be a very important result, because it would have disproved our current hypothesis. We will have to go back to square one in terms of trying to understand why SS Cyg is different, but that's how science is supposed to work.

Simonsen: Thanks, Koji. Any final comments or advice for our observers?

Mukai: Thank you, and thanks to all the AAVSO observers out there who make this kind of research possible! ★



MIKE LINNOLT  
CONTINUED...

minute to find each variable in this manner. Mike hopes to someday build a R.A. and Dec. encoder for his “Portaball” mount, but he admits this may take a bit of engineering and design work.

Mike usually observes from a dark sky lot in Ocean View, Hawaii, at 2,400 feet elevation, but the seeing is “only average (>1 arc-second), being on the turbulent lee side of the mountains.” He sometimes observes from Puna, near Hilo, where the seeing is “usually excellent (sub-arc second) due to unobstructed air flow from the Pacific Ocean.” If the “seeing is good and sky is transparent,” he can estimate down to 17th magnitude in the 20-inch with high power, but in typical conditions magnitude 16.5 is his usual working limit. Magnitude 15.3 is the best he has seen using his 8-inch reflector.

Mike is an avid CV and recurrent novae observer. One of his favorite variable stars is NSV 1436 in Perseus, an enigmatic outburster. “It appears to have regular CV-like outbursts and may also become inactive for years or decades!” It is poorly observed and it’s also a “very challenging target for both visual and CCD observers, since it has two very close companions of similar brightness at its minimum!”

Mike usually starts observing variables low in the west just after dusk and works his way up increasing R.A. until he gets enough observations for the night or until the moon rises. He may take time off to estimate comets or count meteors during showers. He mainly uses a Televue 3.7-mm Ethos SX eyepiece which provides a 15-arc minute true field and 500× magnification. When seeing is poor, he uses 9-mm (200×) and 30-mm (60×) low power eyepieces.

Since the U Sco outburst in January 2010, Mike has been regularly following other recurrent novae and CVs. Recurrent novae are pretty important because they are thought to be precursors of Type Ia supernovae. He particularly likes the southern stars, since these get less overall coverage and he can easily get down to Declination -60 from his Hawaii location. The minima of many CVs are visible in his 20-inch reflector and Mike enjoys making positive estimates versus “fainter than” observations. In 2011, his attention to southern stars paid dividends when Mike was the first to discover two significant outbursts.

On the evening of April 12, 2011 (which was his birthday, coincidentally!), during his usual routine, Mike noticed T Pyx somewhat bright at magnitude 14.5. “I made a note to definitely check it the next evening. Fortunately, it was clear on April 13th and even with a bright moon he saw T Pyx at magnitude 13.0.” Knowing right away it was up to something he quickly entered the observation via WebObs and then notified the community by a post to the AAVSO Discussion List. “Within just a couple hours several Australian observers confirmed my discovery, noting its rapid rise of several magnitudes. Sleeping was a bit tough that night, with all the excitement with such a discovery!”

Mike also made other discoveries. Also in 2011, he recorded the first known outburst of BW Scl in October, and discovered a new RR Lyrae type variable near HX Peg back in 2002 (IBVS 5521). Mike says, “I do not know if I’ll ever have another year like 2011, again!” Time will tell!

Mike enjoys visual observing and feels that “too many observers quickly go the CCD way and avoid visual observing.” Mike explains, “For the cost of modern CCD equipment and associated mounts, drives, computer interfaces, flat-field telescopes, and their observatories, one can get a very large aperture Dobsonian type with superb eyepieces that will allow fairly comparable visual

variable star observations to be made. Plus, that allows the enjoyment of general deep sky observing, which tends to be lost when using a computer screen to watch the skies! Getting out under the stars, with actual starlight entering one’s own eyes from thousands of years in the past—I think that will always carry some degree of romanticism and a connection to the real universe, for the right people.”

Mike hopes to continue making visual observations for many years to come and hopes that visual observers don’t continue to decline as a percentage of observers. “Eventually, my eyesight will probably get to the point where I can no longer do effective visual observing, and then I may have to switch to some form of digital imaging. But that could be 30 or more years in the future, and it’s difficult to predict what the state of the technology will be then.”

In his spare time, Mike likes to build telescopes and make parabolic primary mirrors. He does his own mirror grinding, polishing, and figuring to a high level of accuracy by the star test. He also enjoys boating, particularly ocean sailing, and is a ham radio operator (AH6L) as well. I am sure what many discoveries await Mike Linnolt. “Mahalo Nui Loa” (Thank you very much), Mike, for sharing your story. ★

## AAVSO CENTENNIAL HISTORY !

*Advancing Variable Star Astronomy: The Centennial History of The American Association of Variable Star Observers* by Thomas R. Williams and Michael Saladyga, published by Cambridge University Press, is available through the AAVSO at a special reduced price.

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## OBSERVING UNDER A MICHIGAN SKY

KEVIN B. PAXSON (PKV), SPRING, TEXAS

While on my recent visit to Ohio, I decided to visit my friend and fellow AAVSO'er Mike Simonson (SXN) for an evening. I had visited my daughter the day before in northwestern Detroit and the next day (Wednesday, May 23, 2012) I made the hour-and-a-half drive to Imlay City, Michigan. After I arrived, we enjoyed lunch at a nearby restaurant on a lake, engaged in pleasant conversation, and enjoyed a happy hour with a neighbor. Later I enjoyed a rib dinner with Mike and his wife Irene. We took a nap until just before 11 p.m. EDT to rest up for our morning observing session. We awoke and listened to Arne Henden giving his Director's Report on the Internet from Big Bear, California, from 11:10 to 11:45 p.m..

Mike takes his observing very seriously, with red lights in and outside of his house for maximum dark adaption. He observes with a 12-inch SCT in a custom dome. He uses separate chart books for CVs and other books for Mira stars. The chart book is put on a music stand next to the telescope for quick reference. A special clock projects UT in red light on the wall of his dome. He has a laddered observing chair to maximize comfort. With nearly perfect polar alignment on his telescope mounting, he can quickly slew from one variable star to another.

It was a clear night, with only a trace of thin cirrus clouds. The three-day-old crescent moon had already set. I could see all the stars in Ursa Minor and the Milky Way was easily seen from Cygnus down to Sagittarius. Stars were visible in all directions down to the horizon. In the dome, Mike would operate the telescope and make the first estimate and after I made my estimate, we would compare notes.

Variable	SXN	PKV
R CrB	12.1	12.1
T CrB	10.2	10.2
QZ Ser	<14.7	<14.4
RU Her	11.0	11.0
SS Her	9.7	9.8
S Her	7.3	7.3
W Her	13.5	13.6
RV Her	10.5	10.7
RT Her	12.5	12.5
RS Her	9.0	8.9
RY Her	10.3	10.4
T Her	12.5	12.4
TV Her	14.4	Pass
SS Cyg	8.6	8.5
CI Cyg	11.4	11.3
CY Lyr	13.7	13.8
RX Lyr	Pass	12.6
AY Lyr	<14.7	Pass

We began observing just after midnight, starting with R CrB. "I hope I am within 0.2 magnitude of Mike to avoid any embarrassment," I thought to myself. He observed it at 12.1 and so did I. Next up was T CrB and an estimate of 10.2 was made by each us. Next up was UG variable QZ Ser, but QZ Ser was not visible. So we both recorded "fainter than" observations. Mira

variable RU Her was next and we both observed her at 11.0. After battling the electric focus on the SCT on the first four variables, I decided to use Mike's focus position for the rest of the session. My estimating fears faded also and I just recorded what I saw.

We continued to estimate Mira variables in Hercules. We estimated SS Her and Mike then slewed to S Her and saw logged her at 7.3 in the 80-mm refractor. As I moved to the observer's chair there was a loud "thud." My head had hit the diagonal of his 80-mm refractor atop the SCT, knocking the telescope 1.5 degrees out of alignment. Mike re-centered the telescope and I regained my composure, estimating S Her at 7.3.

We took a peek at globular cluster Messier 13 and it was resolved to the core. The stars looked like a pile of sugar spilled on to a navy blue tablecloth. We then estimated nearby Mira W Her, RV Her, RT Her, RS Her, RY Her, and T Her all followed in succession. Except for RV Her, which has a wide spread between the 100 and 112 comp stars, all of our estimates were either identical or within 0.1 magnitude. At 2:25 a.m., a well-deserved break for coffee was taken.

We returned to the dome about twenty minutes later. Next up was Mira variable TV Her. Mike estimated her at 14.4 and I could not see reliably, so I passed and did not make a "fainter than" observation. The cataclysmic variable SS Cyg was still in outburst and we both made estimates in the 80-mm refractor. Estimates of the Z And variable CI Cyg and the cataclysmic variable CY Lyr followed. Next was a brief stop at the Ring Nebula and the view was inspiring. Mike passed on the nearby Mira variable RX Lyr and I estimated her at 12.6. Mike finished up with the cataclysmic variable AY Lyr at <14.7 and I did not make an observation due to a lack of orientation in the faint comp star field. We finished up at 3:45 a.m., gathered our notepads, and had one last cup of coffee before retiring for the morning.

Mike was up by 9 a.m. and prepared a breakfast of blueberry pancakes, bacon, toast, juice, and coffee. After breakfast we talked for a while, I thanked him for his hospitality and I then began my five-hour drive back to Dayton, Ohio. I reflected on my visit and observing session with Mike. For being a self-taught observer with no mentoring, I think I did fine in my observing. I have never seen stars of the 14th magnitude visually before. Most of the CVs that I had observed with Mike I had only imaged with remote Internet telescopes. I found myself wanting a great observing location instead of my urban Houston skies.

What struck me the most was how much fun the joint observing experience was. Sharing stories, gaining new perspectives, and learning a few new observing tips were priceless. Taking one's time, slightly defocusing to confirm or deny initial impressions, and the placement of the variable and comp stars in the eyepiece along with eye orientation are lessons I will not soon forget. Many AAVSO members have observed together over the years, from the night-long star parties of Leslie Peltier and Carolyn Hurlless to the annual "StarBeQues" held by Mike Simonsen. It seems that very few of us observe together any more. We mostly stay isolated, working in seclusion. Variable star observing is meant to be fun and social, as well as scientific. By observing together on occasion, one can learn about new objects for observation, nuances in observing techniques, and gain experience in using new equipment. And you can strengthen bonds with fellow AAVSO'ers and increase your personal network. The stars are far too numerous to be observed alone. The night sky was truly meant to be shared. ★

## PENNSYLVANIA STAR PARTY ADVENTURE

MIKE SIMONSEN (SXN), IMLAY CITY, MICHIGAN

I had been looking forward to this trip since last October. That is when we took a side trip on our way back from the AAVSO Centennial Celebration in Cambridge through the northwestern part of Pennsylvania known as the Pennsylvania Wilds. The landscape is dominated by state forests among some of the most picturesque mountains, valleys, rivers, and streams in America.

We left Wednesday morning after 9 a.m. It's an eight-hour drive from Michigan to Coudersport, Pennsylvania, which, after driving to the Texas and Nebraska Star Parties and the Winter Star Party in Florida seemed like a jog across town. We checked into our hotel, unloaded our baggage, and did a little exploring to check out the local eateries. We ended up having dinner that night and most other nights at KayTee's, the restaurant two doors down from our hotel.

Thursday morning we headed out to the Cherry Springs State Park, which is about fifteen miles from town up a winding mountain road. The park sits on top of a mountain at 2,300 feet. Unlike most places I've been to for star parties, this park is designed specifically for astronomical viewing. They have AC power pedestals throughout the observing field, concrete pads to sit telescopes on, and permanent observatories you can rent year round. There are porta-potties conveniently located around the park, as well as a small building with running water and flush toilets near the gate. The field is large and the trees have been cut back all around to provide a good view almost to the horizon, yet there are plenty of them to block any stray light from the rare car passing in the night. There were already a couple hundred campers set up from the night before when we arrived Thursday morning, the first official day of the star party. We set up our tent, camping gear, and the 12-inch LX200 in about an hour. We're getting pretty good at this.

Across the road from the park is a public viewing area and astronomy trail for naked-eye or binocular astronomers, with its own parking area and berms to block any stray light from the road. All in all, this is one of the darkest places I've ever been. Saturday morning at 4 a.m. I could not see my car twenty feet away as I left the star party to head back to the hotel. The only clue I had I was heading in the right direction was the sound of the gravel parking lot under my boots. I had to hit the button on the key fob to flash the lights on the car to find it.

Thursday night was clear and cold. Irene took a peek at Saturn, tried a few astro-photos, and then retreated to the tent and crawled under a blanket and shivered until dawn. The guy camped next to us had a 25-inch Obsession Dobsonian. He had a lot of visitors during the night anxious to see galaxies and nebulae that looked like something more than faint fuzzies in the eyepiece. I heard a lot of oohs and aahs coming from the top of the ladder as his guests would ogle deep sky treasures. I explained to him that I was usually the loneliest guy at a star party, because no one ever wanted to look at variable stars...too boring.

The sky was dark but the seeing wasn't terrific. Still, I was able to log some pretty faint observations and see mid 15th magnitude stars with direct vision. This is definitely my best star party session in the last year. I stuck to familiar targets, doing about seventy CVs in Com, Boo, CrB, Ser, Her, Lyr, Vul, and Cyg before the waning crescent moon rose above the trees around 3:45 a.m. By then I was pretty tired, so Irene and I made our way to the car parked



*The star party site at Cherry Springs State Park, Coudersport, Pennsylvania*

across the road and headed back to the hotel as the dawn broke over the misty mountains of Pennsylvania.

I slept most of the day until Irene came back from exploring to take me to the park. I was giving a talk on variable stars and the AAVSO and wanted to get there early to set up the presentation and box of handouts I had brought along. The crowd gathered for my talk wasn't huge, but they were definitely interested. The question and answer session after went on almost as long as the talk and I gave away nearly all the ten-star tutorials, pamphlets, and bookmarks I had brought. I showed them a map of where I was located on the astronomy field and announced that I would be doing a variable star workshop at the telescope all night long for anyone who was interested in actually trying to make variable star observations.

We drove back to town for dinner, I took a nap and Irene settled in for the night in our hotel suite. She wasn't going to be caught dead in a tent, in the dark, in the cold, in Pennsylvania again on this trip. I arrived back at camp around dusk and there were already people milling around waiting for the "variable star guy to get here." As soon as the sky was dark enough I started showing people T CrB in a low power eyepiece on the 12-inch. I'd explain how the chart related to the view in the eyepiece, what the numbers next to the comparison stars represented and taught each one how to make an estimate of the brightness of T CrB. I also related the story of Leslie Peltier's waiting for decades for T CrB to erupt, and how on the one night he decided to stay in because he thought he might be catching scold, T CrB went into outburst while he lay sleeping in his bed.

I expected the crowd to thin out any time all night long, but they just kept coming, one or two at a time usually. I could hear them finding their way in the dark. "Hey, is this the way to the variable star guy's telescope?" From about 1 a.m. until 3 a.m. there were five of us taking turns at each star. We would all look at the field and then when everyone had seen it we would reveal our estimates. I was glad to see everyone was in pretty fair agreement on all the targets, especially after doing a few. With just a little practice they were all quite comfortable making the call, and proud to see they were coming up with the same answers as "the variable star guy."

As a reward for making their first estimate I was giving out some AAVSO buttons I had gotten from HQ. When those ran out I started giving away Centennial T-shirts. I ran out of steam about the same time as the last die-hard observers called it a night. I passed out t-shirts to the last four observers, and as I was packing up eyepieces and covering the telescope for the night I heard a voice in the dark say, "You're not the loneliest guy at the star party anymore,

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STAR PARTY  
CONTINUED...

are you?" I drove down the mountain in the pre-dawn glow feeling tired, but strangely satisfied. I slept like a stone until 11 a.m. Saturday morning, which is later than I've slept in in years.

We decided that the weather was looking a little iffy and it would be better to break camp on Saturday and drive home Sunday early than to do it all on Sunday after a short rest after staying up all night. So we headed out to Cherry Springs, where I visited the vendors to make a deal for a couple Ethos eyepieces, Irene got some last pictures of the camp, we packed up the tent, gear and telescope and said goodbye to our new friends.

After studying some maps and pamphlets I'd picked up along the way, I suggested that we take the long way home on Sunday to take advantage of the nice weather and the scenic byways I'd read about in the travel brochures. This plan had the added bonus of letting us skip the Interstate 86 part of the route we'd taken to get there. I-86 is in terrible condition, and I had no desire to go thumping along on that old slab of rough concrete for 100 miles on the way to Erie, Pennsylvania. Our alternate route would take us along rushing rivers and stone cliffs busting out of forest-covered mountains, eventually spilling us onto I-80 where we could cruise home at light speed through Pennsylvania and Ohio to get home in time to feed the cats dinner and watch the sunset from our own front porch in the Michigan countryside.

We made some wrong turns, got a little lost, and discovered some unexpected treasures in the forests of Pennsylvania that Sunday. So it was worth the extra time and miles to go the scenic route. We've decided we really like Pennsylvania, and we'll be going back again soon. They have another star party at Cherry Springs in the fall called the Black Forest Star Party. I think I can hear the fall colors and clear skies calling. ★

## PHOTOELECTRIC PHOTOMETRY PROGRAM UPDATE

MATTHEW TEMPLETON (TMT), AAVSO SCIENCE DIRECTOR

AAVSO PEP observers continued to monitor several bright stars in the AAVSO PEP Program this past quarter, with 156 observations of 29 different stars contributed by 5 different PEP observers. PEP observers continue to use different strategies for observing these stars, split between (a) intensive coverage of a few targets, and (b) long-term monitoring of a small number of targets. Two of our observers, Adrian Ormsby (OAD) and Tom Rutherford (RTH), pursue the former, concentrating their time on P Cygni (OAD, 18 observations), R Leonis (RTH, 10 observations), and epsilon Aurigae (RTH, 8 observations). Other

observers are monitoring a more diverse list of targets, with PEP chairperson Jim Fox (FXJ) leading the way with 85 observations of 22 different stars; Charles Calia (CCB) made 34 observations of seven stars, and John Martin (UIS01) made two observations (one set of B and V for the star kappa Draconis). We note that Tom Rutherford remains the sole infrared observer, submitting 9 observations in each of the J- and H-bands for his targets, while the remaining observations were V-band (106 observations) and B-band (14 observations). ★

## USING MULTIPLE FILTERS IN THE AAVSO PEP PROGRAM

JIM FOX (FXJ), MAYHILL, NEW MEXICO

CHAIR, AAVSO PEP SECTION (MAKALI45@GMAIL.COM)

The AAVSO Photoelectric Photometry (PEP) program has traditionally been limited to single channel measurement (V filter) except for special campaigns. Most stars in the program have small color change during their cycles, and an average color, B-V, is used in the analysis. However, Director Arne Henden has suggested in the 2012 April 07 AAVSO-photometry-request discussion group, "if you have ... multiple filters, consider taking at least two filters of data for every object." The net result will be more accurate data for the target star.

Most of us in the PEP program use the Optec SSP-3 photometer. By default, that instrument comes with a 2-filter slider. Should we begin to use that second filter, regularly, when reporting our observations? I would like to hear from other members of the PEP community on this subject. If

you are interested and willing to give it a try, let me know what filter-pair(s) you have available. You will have to determine your transformation coefficient for your additional filter(s), but generally, you can use the same technique that you use for your V filter.

Reporting multi-filter data is not possible with the existing reporting program, PEPOBS. Rewriting that program to allow additional filters will require a significant effort and may not be justified if observers are unwilling to make the additional measurements. In the meantime, if you do your own reductions, you can submit the observations using WEBOPS. If you are uncomfortable calculating your own reductions, I have a Microsoft Excel® spreadsheet available that will help you. ★

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## AAVSO OBSERVING CAMPAIGNS UPDATE

ELIZABETH O. WAAGEN (WEO), AAVSO SENIOR TECHNICAL ASSISTANT

2012 continues to be filled with exciting events asking for observers' attention—bright objects, faint ones, young objects, old ones, familiar friends, unusual targets.... The opportunities for AAVSO observers to participate in professional variable star research are many. Below are notes on campaigns recently concluded, initiated, and in progress.

### New campaigns

Including the campaigns initiated after 2012 April 1 but announced in the last newsletter (*Dr. Bram Ochsendorf* on the RCB star **V854 Cen** and *Dr. Michael Rupen* on **Nova Oph 2012**), this past quarter has been an extremely busy one for new—and sometimes unusual—campaigns!

*Dr. Christopher Mauche* (Lawrence Livermore National Laboratory), and colleagues in Spain and Oman requested AAVSO observations in support of their upcoming multiwavelength observations (May and June 2012) of the novalike intermediate polar cataclysmic variable **AE Aqr** with the Swift satellite, the MAGIC (Major Atmospheric Gamma Imaging Cherenkov) telescope on La Palma, Canary Islands, and telescopes at other ground-based observatories in Serbia, Crete, and La Palma. Their goal is to study the extreme high-energy (gamma-ray) and high-energy (X-ray) behavior of this complex system. AAVSO observations are critical to the success of this campaign. (*AAVSO Alert Notice 458*)

Update: As of July 1, this campaign is officially concluded, and Dr. Mauche is gathering the datasets for correlation and analysis.

*Dr. Koji Mukai* (Universities Space Research Association/NASA Goddard Space Flight Center) requested AAVSO observers' assistance in monitoring the SS Cyg-type dwarf nova **RU Peg** in support of target-of-opportunity observations with the NASA Swift satellite during an outburst. His observations will be targeted during the rise to outburst and during late decline from outburst. Thus, prompt notification to AAVSO Headquarters of activity in RU Peg will be crucial. Dr. Mukai writes: "In the famous AAVSO/EUVE/RXTE campaign on SS Cyg (Mattei et al. 2000JAVSO...28..160M), the hard X-ray flux went up (with a delay) during the rise, then suddenly dropped; there was a corresponding flux enhancement episode during the decline. We know that, during the peak of the outburst, many dwarf novae are hard X-ray fainter than in quiescence (with a few exceptions, like U Gem). However, the hard X-ray enhancement episodes seen in SS Cyg have never been observed in other dwarf novae. We have proposed a hypothesis that this is related to the mass of the accreting white dwarf; only dwarf novae with a relatively massive white dwarf show the hard X-ray enhancement. If that's true, we may well see similar enhancement in RU Peg, which is thought to have a massive white dwarf. Even if this hypothesis is completely wrong, RU Peg is a good target for an SS Cyg-like campaign, since it's X-ray bright during quiescence." (*AAVSO Alert Notice 459*)

Update: Just a few days after the campaign was announced to AAVSO observers, RU Peg began to go into outburst, during the weekend. AAVSO observers did an excellent job of reporting the activity immediately, which was relayed to Dr. Mukai equally quickly, who triggered the Swift observations once it was certain the outburst was underway. However, the outburst turned

out to be an anomalous one (rise time of several days rather than ~1 day) and that, Dr. Mukai reports, combined with the weekend timing which meant a longer response time from the Swift team, had the result that satellite observation of the earliest part of the rise—one of the primary goals—could not be achieved. However, the second phase of Swift observations, covering the decline, is now underway and good results are hoped for.

*Dr. Leslie Young* (Southwest Research Institute) asked the AAVSO to help disseminate the news of a possible occultation by **Pluto** visible to observers on the US East coast on 2012 June 14. Although the AAVSO does not ordinarily issue announcements of upcoming occultations, this was a special case as the object is Pluto and the NASA New Horizons mission will be visiting Pluto in 2015, so we were happy to oblige. Dr. Young, who is also Deputy Project Scientist for the New Horizons mission, writes: "Pluto's thin, nitrogen atmosphere is in vapor-pressure equilibrium with the surface ice, and changes seasonally. We've seen it double since 1988, and now we measure its pressure once or twice a year. The technique we use is stellar occultation, when a star passes behind Pluto's atmosphere. The atmosphere defocuses the starlight. By the timing of the fading of the star, we measure the pressure and temperature in Pluto's atmosphere at ~10 km resolution." (*AAVSO Alert Notice 460*)

Update: Dr. Young writes: "Observers on the US east coast, France, Spain, and Morocco, including AAVSO members, attempted observations of a Pluto occultation on June 14 UT. During an occultation, Pluto's tenuous atmosphere defocuses the starlight, allowing us to monitor Pluto's changing atmosphere leading up to the flyby of NASA's New Horizons spacecraft in 2015. As Pluto only subtends 0.1 arcsec, predicting the occultation shadow path requires both precise astrometry of the occulted star, and accurate Pluto ephemerides. Prior to the occultation, three independent groups predicted Pluto's shadow would be observable from most of the eastern North America, as well as parts of Europe and Africa. So far, several sites have reported negative results. The only reported observation of the occultation is from Marrakech, Morocco, implying that the shadow was well south of the predicted path. We are investigating the reason for the difference between the predicted and actual path; the prime suspect is currently a error in the occulted star position caused by a contamination by a nearby, bright star. Anyone who observed this event is encouraged to send raw data or reduced lightcurves to Leslie A. Young (Southwest Research Institute, 1050 Walnut St., Suite 300, Boulder, CO 80302; (303) 546-6057; layoung@boulder.swri.edu). Of particular interest would be (1) data from South Carolina, Georgia, or Florida that might show a grazing occultation from the top of Pluto's observable atmosphere, and (2) any high-quality lightcurves, especially between 3:30-3:47 UT, that can help constrain the optical depth of material near Pluto."

*Dr. Eric Mamajek* (Cerro Tololo Interamerican Observatory and University of Rochester) requested AAVSO observers' assistance in monitoring the young star **1SWASP J140747.93-394542.6** (J1407) to help determine the eclipse behavior related to a transiting ringed substellar companion. This observing campaign began in late June 2012 and continues until further notice. Dr. Mamajek writes: "J1407 underwent a series of symmetric, deep eclipsing events in April/May 2007, consistent with a transiting substellar companion (likely to be a brown dwarf or giant planet) surrounded by a complex ring

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OBSERVING CAMPAIGNS  
CONTINUED...

system moving in front of the star.... We are gathering observations to test whether this may constitute a moon-forming 'protoexosatellite disk'...This star is no longer being monitored by the surveys that led to the initial discovery of this object, so monitoring by AAVSO observers is crucial...As soon as the first eclipses are confirmed, we will conduct a large multiple observatory monitoring campaign to capture in detail the structure and composition of this ring system based on the monitoring photometry from the AAVSO." (*AAVSO Alert Notice 462*)

Scotty Degenhardt (Santa Fe, NM, and International Occultation Timing Association (IOTA)), informed the AAVSO of a research project he and colleagues are working on and in which he invited AAVSO observers to participate: modeling the **Jovian dust field, moon atmospheres, and Io's Torus** through Jovian Extinction Events (JEE)—"dimminings of Jovian moons via extinction of their light by the atmospheres of other moons and/or by the dust and gas material in the Torus of Io...The upcoming conjunction JEEs provide the best opportunity to document this extinction phenomenon and give rise to the possibility of inverting the light curve to produce a 3D model of the dust and gasses in the Jovian system...I really look forward to the quality data that I know AAVSO provides. It will be quite the gemstone in the data set...I will be making a major presentation at SAS next year, so the work will for sure be featured there. We are planning on a major paper in *Icarus* as well....

"The NASA space probe Juno is en route to Jupiter and their Director of the Pro/Am collaborative has recently expressed interest in collaborating to see if any of the JEE Project light curve data can give them additional insight into distribution of material in the Jovian System...JEE2012 is a great opportunity for amateur and professional astronomers to work together to accomplish something no one thought was possible: to actually detect and measure the tenuous atmospheres surrounding some of the moons of Jupiter as well as this same material that is captured in a torus ring around Jupiter called the Torus of Io. The most exciting aspect of this project is that since the moons of Jupiter are bright compared to most astronomical endeavors, the JEE work can be done in the smallest of telescopes, putting the ability to accomplish a real scientific measurement in virtually anybody's hands...even the amateur astronomer with the simplest equipment can perform some of the same measurements that our space probes have done flying out to Jupiter..." Much more information about this fascinating project is in *AAVSO Alert Notice 464*.

Update: Scotty reports that he is very pleased to be hearing from AAVSO observers, and that his observations are continuing successfully.

**Ongoing campaigns**

*Dr. Noel Richardson's* (Georgia State University) campaign on the luminous blue variable (LBV) prototype **S Dor** as part of a multiwavelength campaign he is coordinating to study the photosphere of this star continues. He writes: "We are very happy with the AAVSO data collected in the recent months. We are certainly beginning the analysis of the data. We will likely continue our optical spectroscopy through the end of the year, and support AAVSO observations would be warmly welcomed. Many thanks for coordinating the southern observers! My collaborators and I are planning a campaign next year, and I will be certain that they know how wonderful the AAVSO support is for optical photometry support!" (*AAVSO Alert Notice 453*)

*Dr. James Miller-Jones'* campaign on the dwarf nova **SS Cyg** continues. They have one trigger left, so close monitoring and immediate notification of outburst is essential. (*AAVSO Alert Notice 445, AAVSO Special Notice #258*)

*Dr. Margarita Karovska's* campaign on the symbiotic variable **CH Cyg** continues in the post-satellite observing phase. Dr. Karovska writes, "I would very much like if the observers could continue with the campaign. There are some interesting variability signatures that are emerging [from analysis of the Chandra/HST/AAVSO data], and it would good to follow CH Cyg for some time. I would like also to ask that if possible the observers continue monitoring CH Cyg photometrically, in visual, B, and V (and if possible in R/I) during the next few months." (*AAVSO Alert Notice 454, AAVSO Special Notices #267 and #268*)

**P Cyg**, S Dor variable = Luminous Blue Variable (*AAVSO Alert Notice 440*)

**HBC 722 and VSX J205126.1+440523**, Young Stellar Objects (*AAVSO Alert Notice 425*)

**HMXBs and SFXTs**, High-Mass X-ray Binaries and Super Fast X-ray Transients, Dr. Gordon Sarty's list (*AAVSO Alert Notices 348, 354, and 377, AAVSO Special Notices #118, #129, #143, #213, and #220*, and description of research program in *JAAS*, Vol. 35, p. 327; article viewable at <http://adsabs.harvard.edu/abs/2007JAVSO...35..327S>)

**QX Pup**, Mira variable (<http://www.aavso.org/qx-pup>)

**RT Cru**, symbiotic variable (*AAVSO Alert Notice 451*)

Observations of **eps Aur** and **T Pyx** are still very much needed, although the formal campaigns are over (see *AAVSO Newsletter 51* for details of current coverage requirements).

Finally, the boom in galactic novae continues. April through early July 2012 have brought a flock of novae (and Type Ia supernovae):

**Supernova 2012cg** in NGC 4424 = PSN J12271283+0925132 (*AAVSO Special Notice #283*)

**Nova Ophiuchi 2012 No. 2** = PNV J17395600-2447420 (*AAVSO Special Notice #284*)

**Nova Scorpii 2012** = MOA 2012 BLG-320 (*AAVSO Alert Notice 461*)

**Supernova 2012db** in ESO 139-G28 = PSN J17484870-6042193 (*AAVSO Special Notice #288*)

**Nova Sagittarii 2012 No. 3** = PNV J17522579-2126215 (*AAVSO Alert Notice 463*)

[**Nova Sagittarii 2012 No. 4**] Bright possible nova in Sagittarius = PNV J18202726-2744263 (*AAVSO Special Notice #289*)

The astronomers and us at AAVSO Headquarters are grateful to all of you who are participating in AAVSO Observing Campaigns, and we thank you for your contributions. You have been and continue to be a vital part of variable star research, so stay tuned, get plenty of rest, and keep your equipment at the ready! ★

## TRIP REPORT: 2ND SUNSPOT NUMBER WORKSHOP, BRUSSELS

RODNEY HOWE (HRHA, HOWR, A121), CHAIR, AAVSO SOLAR SECTION

The Brussels Sunspot Number (SSN) workshop was held at the Solar Influences Data Center (SIDC), Royal Observatory of Belgium (ROB), Brussels, 21–25 May 2012. It was sponsored by ROB, the National Solar Observatory (NSO), and the Air Force Research Laboratory (AFRL). While the first workshop, held September 2011 in Sunspot, New Mexico, offered a panorama of all issues in the sunspot number series, the Brussels workshop focused on the progress and additional evidence addressing the key problems of understanding solar indices as identified in the first workshop. Invited were additional European experts in the field of long-term tracers of solar activity. The goal was to make a synthesis of archival data and progress towards defining solar indices in order to define and update the action list in preparation for the next workshop, which will be in January 2013 in Tuscon, Arizona. The Agenda for the Brussels meeting is at the end of this report.

**Meaning of the Workshop** Publicly, there is a need to speak authoritatively about the SSN over historical times. Definition and calibration of the SSN is needed (like the compass needle magnetometers). Gratitude was expressed to SIDC (and to AAVSO and Sonne et al.) for bringing the current SSN to perfection.

**General observations and the Livingston-Penn effect** I think the most talked-about graph at the Brussels meeting was from Livingston and Penn (included in Hudson 2012: <http://www.leif.org/research/SSN/Hudson.pdf>) and is shown in Figure 1. The basic premise of Livingston and Penn's research results is, to quote them, that: "Sunspots may vanish by 2015. We have observed spectroscopic changes in temperature sensitive molecular lines, in the magnetic splitting of an Fe I line, and in the continuum brightness of over 1,000 sunspot umbrae from 1990–2005. All three measurements show consistent trends in which the darkest parts of the sunspot umbra have become warmer (45K per year) and their magnetic field strengths have decreased (77 Gauss per year), independently of the normal 11-year sunspot cycle. A linear extrapolation of these trends suggests that few sunspots will be visible after 2015...." More on their research is in [http://wattsupwiththat.files.wordpress.com/2008/06/livingston-penn\\_sunspots2.pdf](http://wattsupwiththat.files.wordpress.com/2008/06/livingston-penn_sunspots2.pdf).

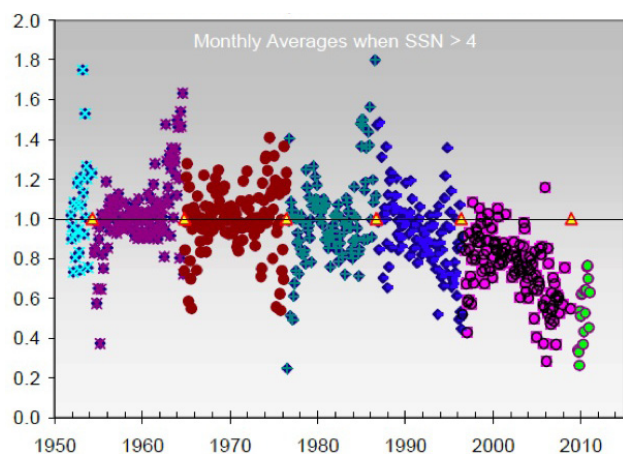


Figure 1. Ratio of Observed Sunspot Number to the Sunspot Number from F10.7. (F10.7 is an index used as a surrogate for sunspot numbers. It represents the Solar Flux Index recorded by a radio receiver with a 10.7-cm wavelength.)

There is no question that something is happening which we have not seen before. We should try to understand this, and exploit it. We should ignore wild-sounding claims about sunspots disappearing completely. However, the data are weak, and the theory is weaker. We don't really understand the physical origin of any of our best indices (SSN and F10.7), especially across wide dynamic ranges of activity. It is even worse for less-well-understood items such as the Mount Wilson Observatory plage or Ca K indices (cf. IRIS improvements). At any rate, there was much speculation, which is summarized in Hudson (2012: <http://www.leif.org/research/SSN/Hudson.pdf>).

**Discussion on how to count sunspots and sunspot groups** Many talks were on how past and present observatories count sunspots and sunspot groups. Much of the archived data are of drawings and logs kept in university and observatory libraries. These need to be digitized and made available as has been done by the Royal Greenwich Observatory. There were questions about AAVSO's current method for calculating the American Relative number. To some extent statistical processing for sunspot numbers is new. The AAVSO Ra has only been adjusted once during the mid-1990s, done mainly to correct for what was believed to be inflation in the yearly estimates of each observer's K factor. Now, looking back with a fifteen-year perspective, we can see that correcting for the AAVSO Ra number has been shown to match the SIDC international index. However, the inflation problem implies a vulnerability of the Ra index as it still rests mainly on yearly updates to observer K factors.

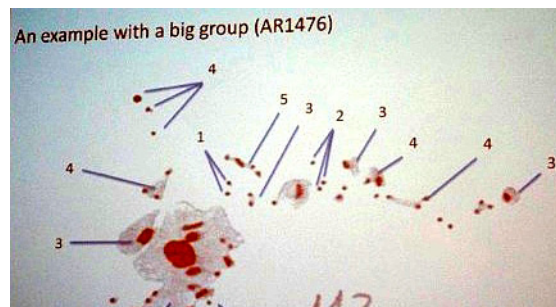


Figure 2. Example of counting sunspots and sunspot groups.

**Ad hoc requests for AAVSO sunspot data sets** I have sent the AAVSO raw sunspot data (May 2010–April 2012) to Jamie Riggs (University of Northern Colorado), Thomas Rhoades (University of California), Thierry Dudok de Wit (Université d'Orléans), and Ali Kilcik (Big Bear Solar Observatory (California), New Jersey Institute of Technology). Some data sets were given at the workshop, others before. All of these folks except for Thierry have publications (some pending) [Ed. note: Riggs' abstract appears in JAAVSO Volume 40, No. 1]. I can't say how many folks have used the NOAA/NGDC archive monthly data for research.

Researchers who have shown interest in the AAVSO Ra Number, at least from the Brussels workshop, are Hugh Hudson (University of California at Berkeley), David Willis (Royal Greenwich Observatory), and Frederic Clette and Laure Lefevre (Royal Observatory of Belgium). These people are perhaps more interested in how we calculate the Ra number, rather than using our data. But, it's too early to tell who from the workshop may have a future interest.

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TRIP REPORT  
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**Conclusions** To remain in this “ball game,” so to speak, I think we only need to do what AAVSO has done in the past. In many ways we have become a “standard” for being robust and long-standing with accurate monthly American Relative sunspot numbers. By taking an interest in the sunspot community of scientists, such as with these Sunspot Workshops, we should little by little see an increase in data usage and research-related publications.

**Social activities at the workshop** Wednesday featured a guided walking tour featuring the historical, architectural, and cultural highlights of downtown Brussels. Afterwards, the ROB staff members took everyone to a nice tavern near the Grand Place for an aperitif. Thursday evening the workshop banquet was held at the Cercle des Voyageurs, a picturesque and popular restaurant in Brussels.

**Participants in the workshop** Rainer Arlt, Laura Balmaceda, Luca Bertello, Roman Brajsa, Marco Cagnotti, Frédéric Clette, Ed Cliver, Ingrid Cnossen, Norma Crosby, Véronique Delouille, Gianna de Toma, Steven Dewitte, Thierry Dudok de Wit, Peter Foukal, Thomas Friedli, Mario Gatti, Samuel Gissot, Rodney Howe, Hugh Hudson, André Koeckelenbergh, Matthieu Kretschmar, Monica Laurenza, Laure Lefevre, Kalevi Mursula, Matt Penn, Alexei Pevtsov, Werner Poetzi, Jamie Riggs, Leif Svalgaard, Andrey Tlatov, Ilya Usoskin, Ronald Van der Linden, Lidia Van Driel—Gesztelyi, José Vaquero, Laurence Wauters, David Willis (Figure 3).

## SSN Workshop website

On this site (<http://ssnworkshop.wikia.com/wiki/Home>), you can find general information, the announcements and the presentations of the 1st SSN Workshop. All presentations of this 2nd Workshop will be added after the meeting. Leif Svalgaard is the curator for the website so please contact him with any questions or suggestions ([leif@leif.org](mailto:leif@leif.org)). ★



Figure 3. Participants in the 2nd Sunspot Workshop.

## 2nd SSN Workshop agenda

Monday 21/5/2012

13:00–14:00: Registration

13:00–14:00: lunch (possible at the ROB cafeteria)

14:00–14:15: Welcoming remarks: Frédéric Clette & Ronald Van der Linden (ROB Director)

14:15–14:30: Motivations and goals—Ed Cliver; Introduction to the SSN (Chair E. Cliver)

14:30–15:10: T. Friedli: Rudolf Wolf and the Zürich Sunspot Number

15:10–15:50: F. Clette: The international Sunspot Index: method and relation with recent indices

15:50–16:00: break

16:00–16:30: L. Svalgaard (K. Schatten): The Group Sunspot Number

16:30–16:45: Discussion: questions and clarifications regarding the methods at the base of the SSN

16:45–18:00: Welcome Reception at the ROB

Tuesday 22/5

Introduction to the SSN (Chair F. Clette)

08:30–09:00: M. Cagnotti & Gatti: Sunspot Number at the Specola Solare Ticinese Locarno: past and present

09:00–09:20: L. Svalgaard: Study of the weighted sunspot count at Locarno

09:20–09:40: W. Poetzi: Sunspot observations at the Kanzelhöhe Observatory

09:40–10:00: Discussion: questions and clarifications about the practices at Locarno

*Sunspot & facular areas (Chair: A. Pevtsov)*

10:00–10:30: D. Willis: The Greenwich Photo-heliographic Results, 1874–1976

10:30–10:50: A. Tlatov & V. Erschov: Numerical processing of sunspot images using the digitized Royal Greenwich Observatory Archive

10:50–11:10: break

11:10–11:30: P. Foukal (teleconf): title TBD

11:30–11:50: A. Pevtsov: title TBD

11:50–12:10: A. Tlatov, D. Lepshokov & V. Vasil'eva: Reconstruction of the characteristics of sunspots in the period 1853–1879

12:10–12:30: M. Laurenza, Empirical Mode Decomposition to study sunspot number variability

12:30–12:50: Discussion: about developing standards for measuring sunspot areas

13:00–14:00: lunch

*Recent sunspot activity and the fading of sunspots (Chair: A. Pevtsov)*

14:00–14:20: Alexei Pevtsov: Sunspot Magnetic Fields and umbral areas in Cycles 15–19

14:20–14:40: H. Hudson (F. Watson): A first systematic look at sunspot statistics from space

14:40–15:00: L. Lefèvre & F. Clette: Are the sunspots vanishing? What was different in solar cycle 23?

15:00–15:30: G. de Toma: Sunspot variations over two solar cycles

15:30–15:45: break

15:45–16:05: M. Penn (teleconf): Changing Distribution of Umbral IR Magnetic Field Strengths and Application to F10.7

16:05–16:30: Discussion: Cycle 23 anomalies and lessons for the past sunspot record

*The American Sunspot Number (Chair: F. Clette)*

16:30–17:10: R. Howe & J. Riggs: The American Sunspot Number from the AAVSO

17:10–17:20: F. Clette: A 70-year long comparison of Ra and Ri

17:20–17:40: Discussion: Questions regarding the counting and processing methods

Wednesday 23/5

a.m.: Discovery of Brussels: group sightseeing tours

p.m.: Free afternoon, Split meetings (science or technical)

Thursday 24/5

*Using geomagnetic indices to calibrate or validate the SSN (Chair: E. Cliver)*

08:30–09:10: L. Svalgaard: Using the daily range of geomagnetic activity as a consistency check on the ISN

09:10–09:40: I. Cnossen: The effects of secular change in the Earth's internal magnetic field on geomagnetic activity

09:40–10:20: K. Mursula: title TBD

10:20–10:40: Discussion: on the use of geomagnetic proxies

10:40–11:00: break

*Using Cosmic Rays to Justify the Consistency of the SSN (Chair: I. Usoskin)*

11:00–11:40: I. Usoskin: title TBD

11:40–12:00: Discussion: on the use of isotope proxies

*Reconciling the International and Group SSNs (Part 1) (Chair: F. Clette)*

12:00–12:40: J. Vaquero: Sunspot data from 17th–19th centuries

12:40–13:00: D. Willis & M. Wild: Reconciling the International and Group Sunspot Numbers: Evidence from the Greenwich Photo-heliographic Results.

13:00–14:00: lunch

*Reconciling the International and Group SSNs (Part 2) (Chair: F. Clette)*

14:00–14:40: R. Arlt: Sunspots observations before 1900 in their originals

14:40–15:00: F. Clette & L. Wauters: Reconstructed Group SSN over the last 40 years: some insights

15:00–15:20: I. Usoskin: Computation of clean Wolf and group numbers from Schwabe's originals

15:20–15:40: break

15:40–16:10: L. Svalgaard: Rectifying the GSN and ISN after 1826

16:10–16:30: Discussion: on remaining issues in the SSN and group SSN

19:00: Workshop banquet in downtown Brussels.

Friday 25/5

*Call-K line index & other Sunspot Number Proxies (Chair: L. Bertello)*

09:00–09:30: L. Bertello: Consistency of Ca II K measurements at intermediate and long time scales. How well they agree with the ISN?

09:30–9:50: A. Pevtsov: title TBD

09:50–10:20: T. Dudok de Wit: title TBD

10:20–10:30: break

10:30–12:00: Workshop Summary/Discussion & Mid-Course Assessment (Chair: E. Cliver)

All participants + observers: R. Brajsa, H. Hudson, N. Crosby, G. De Toma

12:00–12:30: Planning for the Third SSN Workshop (Chair: E. Cliver & F. Clette)



## JULIAN DATE / MOON PHASE CALENDARS

2,450,000 plus the value given for each date

## JULY 2012

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1 	2 	3 	4 	5 	6 	7 
8 	9 	10 	11 	12 	13 	14 
15 	16 	17 	18 	19 	20 	21 
22 	23 	24 	25 	26 	27 	28 
29 	30 	31 				

## AUGUST 2012

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1 	2 	3 	4 
5 	6 	7 	8 	9 	10 	11 
12 	13 	14 	15 	16 	17 	18 
19 	20 	21 	22 	23 	24 	25 
26 	27 	28 	29 	30 	31 	

## SEPTEMBER 2012

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1 
2 	3 	4 	5 	6 	7 	8 
9 	10 	11 	12 	13 	14 	15 
16 	17 	18 	19 	20 	21 	22 
23 	24 	25 	26 	27 	28 	29 
30 						

Moon calendars courtesy StarDate online

<http://stardate.org/nightsky/moon/>

## THE AAVSO MENTOR PROGRAM

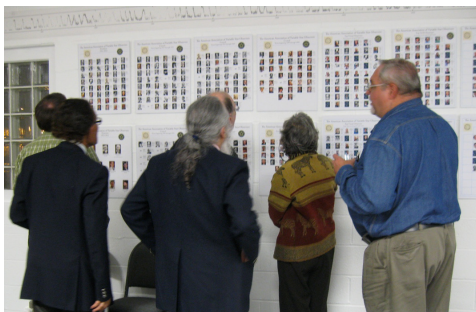
Since the earliest days of the AAVSO, experienced observers have helped new observers by corresponding, answering questions, and even providing personal guidance at the telescope.

If you would like to talk with an experienced variable star observer, contact the AAVSO and we will put you in contact with the mentor program coordinator, Mike Simonsen. Just send us an email ([mentor@aauso.org](mailto:mentor@aauso.org)), or call 617-354-0484 to let us know you are interested in this program.

Ideally, Mike will be able to provide you with names, addresses, and phone numbers of active AAVSO observers near you. If there are none located in your area, he can at least provide you with more distant contacts. A simple phone chat with an experienced observer may provide all the feedback you need to continue progressing as an AAVSO observer.

Visit the AAVSO mentor program webpage:

<http://www.aauso.org/mentor-program>



## BY POPULAR DEMAND!

A set of twenty pdf commemorative posters exhibited at AAVSO Headquarters is available for downloading from our ftp site.

The posters show portraits of the AAVSO's Directors, Presidents, Secretaries, Treasurers, Council members, and Staff from 1911 to 2011, and the top Visual, CCD, PEP, and Photographic/Photovisual observers. For more information go to:

<http://www.aauso.org/aauso-100th-anniversary-commemorative-posters>

## THE AAVSO WALTER A. FEIBELMAN SUITE

The Feibelman Suite is available to guests who are in the Boston/Cambridge area to perform an AAVSO-related task, that is, the purpose of their visit is to do something for or related to the AAVSO. For details about the suite or making a reservation, please visit <http://www.aauso.org/walter-feibelman-guest-suite>.



See the following pages for important information about membership renewals and contributions.

# JOIN THE AAVSO!

## AAVSO 2012 New Member Form

Please send application, first year's dues, and application fee to:  
AAVSO, 49 Bay State Road, Cambridge, MA 02138, USA

Date: \_\_\_\_\_

Full Name: \_\_\_\_\_

Full Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Telephone 1: \_\_\_\_\_ Telephone 2: \_\_\_\_\_

E-Mail: \_\_\_\_\_

Birth Date: \_\_\_\_\_ Vocation: \_\_\_\_\_

Telescopic Equipment: \_\_\_\_\_  
\_\_\_\_\_

Astronomical Experience (if any): \_\_\_\_\_  
\_\_\_\_\_

How did you learn about the AAVSO? \_\_\_\_\_  
\_\_\_\_\_

### Types of Membership Offered and Dues

Annual:	Adult	US \$5.00 per month
	Associate (Under 21)/Pension/Limited Income	US \$2.50 per month
Sustaining:		US \$10.00 per month

Membership is paid through the end of the year, starting with the current month.

**All applicants also add a one-time, \$10.00 application fee.**

\*Please note that if joining in November or December, the following year's dues are already being collected, so we request that you pay for the end of this year and for the following year.

Please consult the following table to find out how much to pay, including application fee.

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct*	Nov*	Dec*
Annual	\$70.00	\$65.00	\$60.00	\$55.00	\$50.00	\$45.00	\$40.00	\$35.00	\$30.00	\$25.00	\$80.00	\$75.00
A/P/LI	\$40.00	\$37.50	\$35.00	\$32.50	\$30.00	\$27.50	\$25.00	\$22.50	\$20.00	\$17.50	\$45.00	\$42.50
Sustaining	\$130.00	\$120.00	\$110.00	\$100.00	\$90.00	\$80.00	\$70.00	\$60.00	\$50.00	\$40.00	\$150.00	\$140.00

**Dues + application fee** (see chart): US \$ \_\_\_\_\_

**Donation** (optional): US \$ \_\_\_\_\_ to \_\_\_\_\_ fund (see box on right)

**Total payment::** US \$ \_\_\_\_\_

#### Contributions (see last page for descriptions):

AAVSO Building Fund	\$ _____
Janet A. Mattei Research Fellowship	\$ _____
Margaret Mayall Assistantship	\$ _____
Member Sponsorship Fund	\$ _____
AAVSO General Fund	\$ _____

\_\_\_\_\_ I have enclosed a check / money order \_\_\_\_\_ Please charge my credit card (Visa or Mastercard)

Credit card #: \_\_\_\_\_ Exp. Date: \_\_\_\_\_ Security Code (on back of card): \_\_\_\_\_

Cardholder's Name (as on card): \_\_\_\_\_

Billing address (if different from above): \_\_\_\_\_  
\_\_\_\_\_

Signature: \_\_\_\_\_

# MEMBERSHIP RENEWAL

On this page is a copy of the AAVSO membership renewal form for 2012. You may also renew your membership online. Safe and secure online payments are possible by visiting <http://www.aavso.org/membership-renew>. If your postal or email address has changed, please also take a minute to update your personal profile online. Simply click "User login" at the upper right of the home page, then go to "My account." Please note: We are transitioning from charging membership dues from the fiscal year (October 2010–September 2011) to the calendar year (January 2012–December 2012). If you paid dues for 2010–2011, you will be charged for the rest of 2011 (October–December) plus all of 2012. The prices listed for 2012 have been updated to reflect this. This is a one-time update and does not reflect a change in the price of our membership dues. In addition to your dues, your contributions to the AAVSO further support the organization's activities and are very much appreciated. Also, on the next page you will find descriptions of the various funds to which you may contribute.



**AAVSO**  
**Membership and Subscriptions**  
**49 Bay State Rd**  
**Cambridge, MA 02138-1203**

*Address Service Requested*

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State/Province \_\_\_\_\_

Zip/Postal Code \_\_\_\_\_

Country \_\_\_\_\_

## Payment and Contact Information

My **check** for \$\_\_\_\_\_ is enclosed. *Checks must be in US funds and made payable to AAVSO.*

For payment by **credit card** please complete the section below. *All fields are required.*

\_\_\_ Visa \_\_\_ Mastercard Card Number \_\_\_\_\_ Exp Date: \_\_\_\_ / \_\_\_\_

Card Security Code (3-digit number on the back of your card): \_\_\_\_ Total to be charged: \$\_\_\_\_\_

Name on card: \_\_\_\_\_ Signature: \_\_\_\_\_

**\*If the billing address for this credit card is different from your address above, please provide it here:**

Billing Address \_\_\_\_\_ City \_\_\_\_\_

State/Province \_\_\_\_\_ Zip/Postal Code \_\_\_\_\_ Country \_\_\_\_\_

**Please make any changes necessary to correct and complete your membership contact information below:**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State/Province: \_\_\_\_\_

Zip/Postal code: \_\_\_\_\_ Country: \_\_\_\_\_

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

## 2012 Membership Dues Renewal Form

**Membership Type** *(please check one):*

- ☐ Annual \$75 ☐ Sustaining \$150  
☐ Associate (*under 21*) \$37.50  
☐ Pension/Limited Income \$37.50

**Contributions** *(see other side for descriptions):*

AAVSO Building Fund	\$ _____
Janet A. Mattei Research Fellowship	\$ _____
Margaret Mayall Assistantship	\$ _____
Member Sponsorship Fund	\$ _____
AAVSO General Fund	\$ _____

**TOTAL ENCLOSED:** \$ \_\_\_\_\_



# SUPPORT THE AAVSO

In order to sustain the AAVSO and its operations, we rely on the generous support provided by members, sponsors, donors, and staff. Together we are the AAVSO. Your gift is a way for you to say that you believe in what we are doing and that you want it to continue moving forward. Every dollar given and membership purchased benefits the AAVSO in a necessary and unique way.

**AAVSO Building Fund:** Contributions to this fund will be used to replenish the Endowment, to refurbish the building, and to cover other costs associated with the purchase of 49 Bay State Road, Cambridge, Massachusetts. We expect the new Headquarters to meet the needs of the AAVSO for decades to come, with sufficient space for growth, for safeguarding our century-long archives, and for giving us the opportunity to hold meetings and workshops at Headquarters.

**Janet A. Mattei Research Fellowship Fund:** Contributions to this fund help to bring a visiting scientist, postdoctoral researcher, or student to AAVSO Headquarters to perform research using the AAVSO International Database with the goal of disseminating the results throughout the astronomical community.

**Margaret W. Mayall Assistantship Fund:** Established in honor of the former Director of the AAVSO on the occasion of her retirement in 1974, this fund is used to hire summer research assistants to carry out various important technical projects of the organization.

**Member Sponsorship Program:** Contributions to this fund go toward paying for the membership dues of an active observer who otherwise would not be able to become a member of the AAVSO. The recipients are chosen by the Director based on the quality and number of observations submitted to Headquarters and the perceived benefit of membership to the observer.

**AAVSO General Fund:** Contributions to this fund help in the operation of the AAVSO, enabling us better to serve the needs of our members and the astronomical community.

If you wish to contribute to one or more of these funds please fill in the amount on the appropriate line on your renewal form and include it in the total. *All contributions are tax-deductible in the USA.*

You may also donate online at: <http://www.aavso.org/support-aavso>

**Thank you for your support of the AAVSO!**