IN THIS ISSUE:

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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)

Winter is over for Cambridge, and what a mild one it was—fourth least snowfall (only 7.7 inches) and second warmest on record! That meant I did not have to do nearly as much sidewalk shoveling, and so therefore must have had more time to devote to the AAVSO….

We've been busy improving the website infrastructure. In March, we moved all of the databases over to the website computer, thereby improving the response time considerably. This was a group effort, with Doc Kinne and Will McMain leading the task, but with contributions by many other staff members and programming volunteers. Will has been cleaning up many other aspects of the web, including the membership renewal page and WebObs. He is now working on making the download tool more flexible so that you can query on multiple stars. Doc and Will have also been spearheading an effort to move the entire website to the Cloud. That project is nearly completed, and should offer another throughput improvement with the larger bandwidth available. We've been gaining Cloud experience through the VPHOT project, which is hosted on the Amazon Cloud. Doc and Geir Klingenberg just upgraded that system to have five times the throughput, and have had favorable comments from users.

We added two new CHOICE (Carolyn Hurless Online Institute for Continuing Education) classes, and moved their forums to the AAVSO web page. I introduced the AAVSO CCD School, which will be running during the first week of August. Rebecca found a vey affordable venue for summer courses through Tufts University, and we'll make more use of that location for future Schools and workshops. Rebecca also finalized plans for both the Spring and Annual meetings, reserving necessary space and designing preliminary agendas.

Our calibration survey continues to have good progress, with Data Release 5 announced at the Winter AAS meeting in Austin. We expect DR6 to be announced at the Summer AAS meeting in Anchorage; this release will cover the entire sky and so is a major milestone for the project. Bill Goff and Gary Myers stepped in and are providing important astrometric volunteer efforts for the survey. AAVSOnet also continues in good shape, with BSM-South coming on-line (thanks, Peter Nelson, Chris Stockdale, and Rod Stubbings!) and TM61, the first of our 24-inch telescopes, undergoing commissioning tests. Gary Walker and I went out to Las Cruces in March to help Jon Holtzman (New Mexico State University) in getting that telescope working—the preliminary images are excellent! We're inviting volunteers to help in our Telescope Advocate program; Ken Mogul is the first volunteer, working with K28 and doing an excellent job.

CONTINUED ON NEXT PAGE

PRESIDENT'S MESSAGE

MARIO MOTTA, M.D. (MMX)

The great strength of the AAVSO is the large number of dedicated observers who are able to rapidly mobilize on new transient events, contributing to rapid identification and characterization of the transient phenomenon. Due to our worldwide coverage and close communication, possible errors or misidentifications are rapidly resolved.

A perfect example of this occurred just last month in March of 2012. There was a potential transient identified in M95, a barred spiral in Leo. AAVSO member Andy Cason alerted us all to a new transient that had not yet been reported officially. I, along with others, immediately resolved to confirm or deny its existence, and to help characterize this event. I opened my dome and had my equipment ready to image M95 as soon as possible. In fact, I took images in late twilight while there was still a considerable sky gradient. Initial sub-frames were taken and compared to an older image of M95 from several years back. Seeing only one star south of the core, and comparing that to an older image with a much

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DIRECTOR'S MESSAGE
CONTINUED...

Sara Beck and Matt Templeton have been upgrading the Solar Observing Program, creating a software tool to upload sunspot observations in a manner similar to WebObs. Sara continues her support of VStar, the excellent visualization tool that David Benn in Australia created for Citizen Sky (and now is being used for generic AAVSO International Database light curve plotting and analysis). Elizabeth Waagen and Matt have finished *LPV Bulletin 75*, and have put it online along with Matt's neat query program.

Mike Simonsen went to the Winter Star Party to publicize the AAVSO, and has decided to make it an annual trip. The Florida Keys are just a bit warmer in February than is Michigan! Mike is also planning to go to the Cherry Springs star party coming up shortly (see the announcement on the AAVSO website homepage). In addition to his normal greet-the-members activities, Mike has recently interviewed our new Council members and is posting those blog entries on our home page.

The skies have cooperated this season as well. We've had many new novae (all in the southern hemisphere, including a very interesting one in the LMC) that have had lots of interest from the professional community, and another major supernova occurred in another Messier galaxy. I've seen some stunning photos from the deep-sky imagers of these events (M95 and M101), and the light curves look even better! Some fun campaigns on CH Cyg and V854 Cen have also been running recently. I hope everyone found some object of interest!

Is the next quarter going to be as exciting as this one? You betcha. The AAVSO is a thriving organization, with lots to take credit for in the past, and more planned for the future. All of the members, observers, and volunteers have contributed to our continued success. Clear skies, everyone! ★

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

PRESIDENT'S MESSAGE
CONTINUED...

longer exposure showing a single bright star, I concluded that no new object existed. Thus within 90 minutes of being notified of a possible transient, I was giving feedback to the AAVSO community.

That sounds like a well-working system, with rapid feedback. Later, after completing some other imaging projects, I saw reports from several visual observers who also reported negative findings. Given that, I did not "bother" to stack and calibrate my initial quick images, convinced that no new transient in fact existed. Later that evening, however—at 2:30 a.m. my time—I received an e-mail from Robert Fidrich, who sent me an image of M95 taken by Gabor Szitkay from Hungary. He pointed out that in this image there appeared to be a bright object that did in fact look like a supernova. I was initially skeptical as I still saw only one bright star south of the core in the new image, but noticed it seemed much brighter than my earlier recollection. Putting skepticism aside and looking at these new data, I processed and calibrated my earlier images. By stacking and removing the sky gradient from my early twilight images, lo and behold there now were two stars south of the core! I quite frankly was dumbfounded.

Comparing directly now to my old images of M95, it was now clear that in fact there was a new transient slightly to the west of the previously existing star in my older images. In retrospect, it is clear what transpired: The old image had been carefully calibrated, of course, and showed numerous stars to faint magnitudes. The new image with the gradient present from twilight and lack of calibration showed only the brightest speck, which was the supernova, and the pre-existing star was lost in the glare. I immediately sent out a correcting email statement through the AAVSO, that in fact a new transient was there after all!

CONTINUED ON NEXT PAGE

CONTENTS

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PRESIDENT'S MESSAGE
CONTINUED...

It should be noted that up to this point there was still no official confirmation that any such object existed. Meanwhile several professional observatories had conflicting statements of what this transient actually was. The first spectroscopic report claimed it was a cataclysmic variable related to a known X-ray source. Subsequent analysis however showed that it was a Type II supernova, and now has the official name of SN 2012aw, a new supernova after all.

There are several lessons to be learned from the above tale, the most important of which is that having a large active community, like the AAVSO, interacting and sharing information leads to the best overall outcome and overcomes pitfalls. We had a survey camera that first noted a possible transient, members who were alert enough to relay this information to the general membership, multiple possible observers looking to confirm or deny its existence, overcoming any possible local bad weather of a single observer. There were conflicting early reports (including mine) of the object's existence. But by having multiple observers, scattered across the globe, inconsistencies and inadvertent negative reports were rapidly reconciled. To me this shows the strength of the organization, and the importance of all the individual parts. A survey camera picked up the first indication of the new transient. In this case, if we had been relying solely on scattered individual observers, it would not have been discovered so early in its course; surveys are in fact valuable. Our membership communication system worked well in notifying our community, and Andy Cason served a valuable function in sending out the initial e-mail alert. Paying attention to such alerts led to a worldwide effort to identify the transient. And this all occurred before the official notification and before the next dawn.

Another lesson learned from this event is that our work depends on careful attention to detail. My initial failure to identify the new supernova was due entirely to my viewing a poor image taken without proper calibration; I have learned a valuable lesson from this event. Later in the evening there were conflicting reports from observers as to whether the transient even existed being settled by the group's collective observations. This shows the value of having multiple observers in arriving at the proper eventual conclusion. The third leg of this triad was the professional identification of the transient. Even then, there was considerable confusion as to the nature of the transient object, with conflicting reports of spectra identifying either a cataclysmic variable or a supernova. Within 24 hours all was resolved, and we now have the third significant supernova in a nearby galaxy for study within the past year, following the supernova events in M101 and M51. (It's been a very good year for interesting supernovae in picturesque galaxies).

As a cardiologist, I compare missing the initial supernova on my image as the medical equivalent of missing an important finding on an echocardiogram of a patient's heart. In both cases accurate diagnosis or identification requires careful attention to detail, knowledge of the imaging technique and possible pitfalls, and reassessment of any discrepancies. Fortunately there are no cosmic lawyers yet, and within 24 hours identification and classification was completed—my "astronomical malpractice" event was quickly resolved and corrected. Andy Cason was initially worried that he would be perceived as crying "wolf" with his alert. Nothing could be further from the truth: some alerts lead to important discoveries and others will prove to be negative, but nothing occurs if you do not take the effort to look. Robert Fidrich did not take a negative finding as being definitive, and prompted all to take another look.

It took a large AAVSO Village, but the final message is that by close collaboration and teamwork, even separated by continents, we do in fact accomplish great science and contribute to discoveries. To me, that is reason enough to be a part of this great organization and support its mission. Keep observing—everyone is needed. ★

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

THANKS TO OUR SPONSORS!

PRO-AM ASTRONOMY CONFERENCE

CAPAS—*Congress Amateurs Professionals en Astrophysique Stellaire*/ the Amateur-Professional Congress on Stellar Astrophysics will present new discoveries and new techniques in various subjects related to stellar astrophysics in which amateur astronomers might be involved.

The Congress will be held September 28–October 1, 2012, at the Onet le Chateau in Rodez, France.

Professional and amateur astronomers from around the globe are expected to participate and share their findings. This year, for the first time, double star astronomers and variable star astronomers have been invited to share their research and results. Representing the AAVSO will be Mike Simonsen (USA) and Laurent Corp (France). The official languages of the conference will be French and English.

Of special note, two open conferences will be held which will allow astronomers to present their work to the public as well as provide an opportunity for the audience to meet astronomers.

The following is a preliminary program, listing speakers already committed to appear, in alphabetical order by session.

Eclipsing and spectroscopic binaries

Amateur spectrometric study of Albireo—David Antao
The state of eclipsing binary observations by amateurs—Laurent Corp (4A, GEOS, AAVSO)
The rare eclipsing stars ε Aur and ζ Aur: a report on 2011 eclipses—Jeff Hopkins, in video-conference
The use of DSLR photometry in measuring the magnitude of variable stars—Des Louhgney (BAAVSS)
Classification of eclipsing binaries: extreme and unusual systems—Oleg Malkov (Institute of Astronomy, Moscow)
Role of binary and variable stars in the cosmic distance scale—David Valls-Gabaud (Observatoire de Paris)
A Study of 200 Eclipsing Stars recently discovered in Cygnus and Auriga—Stan Waterman (BAAVSS)

Astrometric double and multiple stars

Use of the 26-inch telescope in Johannesburg—Bob Argyle
Research on B–V measurements of double stars with a color CCD—Pierre Durand (SAF)
A William Herschel pair catalogue for amateurs—Pierre Durand (SAF)
Binary star database: state of affairs and prospects—Oleg Malkov (Institute of Astronomy, Moscow)
Title to be defined—Edgar Soulié (SAF)
Interférométrie des tavelures sur étoiles doubles avec des moyens amateurs—Bernard Trégon (SAF) (Interferometry of spots on double stars using methods available to amateurs)

Pulsating stars

Photometric study of the pulsating star BL Cam—Stéphane Fauvaud (GEOS, Association T60)
The GEOS RR Lyr Survey—Jean-François Le Borgne (IRAP, GEOS)
Pulsating stars in the space mission context—Philippe Mathias (IRAP)
Pulsating Stars in the AAVSO Program—Mike Simonsen (AAVSO), in video-conference

Exoplanets, stellar evolution

Supernovae, explosive death of the stars—Remi Cabanac (IRAP)
Success of a Pro-Am collaboration: Be stars—François Cochard (Shelyak)
Life and death of the stars—James Lequeux (Paris Observatory)
Searching for Low Amplitude Variable Stars and Transiting Exoplanets—Stan Waterman (BAAVSS)

For more information, including registration costs, see the CAPAS website at: http://rr-lyr.ast.obs-mip.fr/capas2012/index.php ★

101ST AAVSO SPRING MEETING IN BIG BEAR

REBECCA TURNER (TRMB), AAVSO HQ

The AAVSO is holding its 101st Spring Meeting in Big Bear, California, on Tuesday–Thursday, May 22–24, 2012. This meeting will be a joint one with the Society of Astronomical Sciences (SAS). (We had a very well attended joint meeting with SAS in 2009 at this same location and are on track to top 2009's attendance!) As before, SAS is handling the registration and paper submissions for this meeting. Both AAVSO members and SAS members are eligible to receive the member registration rate.

AAVSO Council Member John Martin will be giving a Tuesday morning workshop on "Spectroscopy with Small Telescopes" and AAVSO Assistant Director Aaron Price will be giving a Tuesday afternoon workshop on "Using the Photometry Analysis Package VPHOT." Paper sessions will take place during the morning and afternoon on Wednesday and Thursday. There have been a record number of paper submissions for this meeting so the schedule is sure to be filled with many interesting talks. The AAVSO Membership Meeting will be held Wednesday evening and the Banquet will be held Thursday evening. The Banquet Speaker will be well known science writer Dava Sobel.

Early registration ends May 1, 2012. Please visit http://www.socastrosci.org to register.

A complete schedule may be downloaded from:

http://www.socastrosci.org/SASFiles/Symposium/2012/SymposiumSchedule_2012.pdf

We hope to see many of you in Big Bear! ★

BIRDS OF A FEATHER...

When Doc Kinne and Mike Saladyga arrived for work, they found this Canada goose perched atop AAVSO Headquarters where it could see the lobby door, patiently waiting for someone to arrive so it could receive its AAVSO Observer Initials and begin contributing to the AAVSO International Database.

Fortunately, the AAVSO Observer Initials GOOSE were available. When asked about its observing history and preferences, the goose's responses included:

—*How long it had been interested in the stars:* since it was a mere chick.

—*Its favorite constellations:* Apus, Aquila, Columba, Corvus, Cygnus, Grus, Pavo, Phoenix, Tucana, and Eridanus (such a nice river).

—*Its least favorite constellations:* Orion, Vulpecula, Canes Venatici, Canis Major and Minor, Leo Major and Minor.

—*Question it would like answered:* why there is no constellation named for a goose.

—*Its preferred method of observing:* bird's-eye viewing.

—*Its greatest concerns about observing:* that it might lay an egg and then be called silly.

—*Why it wants to observe:* to earn another feather in its cap.

—*Why it chose the AAVSO:* it heard it was not a fly-by-night organization.

—*Its favorite astronomy bumper sticker:* Honk if you love variable stars!

Our AAVSO Canada Goose

We look forward to receiving GOOSE's observations—with its unique perspective, they will surely be something to crow about.... ★

NEW DATA ENTRY SOFTWARE FOR SUNSPOT OBSERVERS

Participants in the AAVSO Solar Section's sunspot observing program will soon have a new way to enter and submit their data to the AAVSO.

SunEntry is a platform-independent Java application that will help observers to create reports and send them to the solar database. Users will be able to submit their observations day by day, or on a monthly basis as they have done in the past. The data collected will then be published monthly in the *AAVSO Solar Bulletin* and used in the AAVSO American Relative Sunspot Program.

Over the past several weeks, SunEntry has been beta-tested and useful feedback has been sent to its creator, AAVSO Staff member Sara Beck (sara@aavso.org).

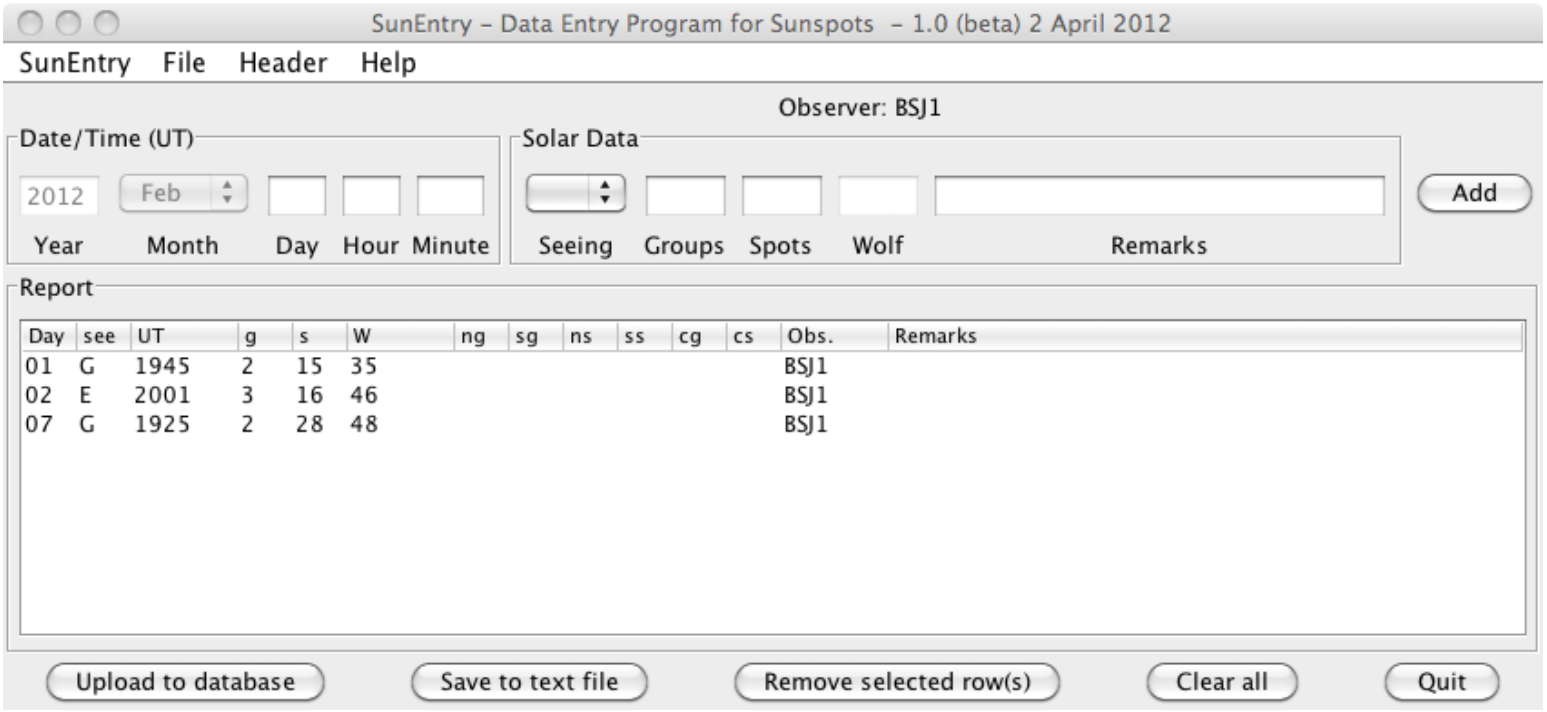
The formal release of SunEntry is scheduled for May 1, 2012. However, we would suggest that all AAVSO sunspot observers begin learning how to work with SunEntry by using it to enter their April data. Please save all your entries to a text file and upload them to the database (these are options in the program).

It is our goal to make SunEntry the only program you will need for submitting sunspot data to the AAVSO and we ask that all users of SUNKEY and SolObs switch to the new program. Using it will not only reduce staff time and the time spent entering data by Solar Section leaders, but it will also ensure that your data are properly formatted and stored in the most useful form for solar researchers to access.

To read more about SunEntry and to download the program, please visit this page: http://www.aavso.org/sun-entry

People who have never submitted sunspot data to the AAVSO before, but would like to begin participating in the program, should contact Solar Section chair Rodney Howe (ahowe@frii.com) to let him know of your interest. Useful information about the sunspot observing program can also be found here: http://www.aavso.org/solar.

Thank you for your solar observations, and best wishes for sunny skies! ★



SunEntry screen display

VSTAR VERSION 2.13 RELEASE

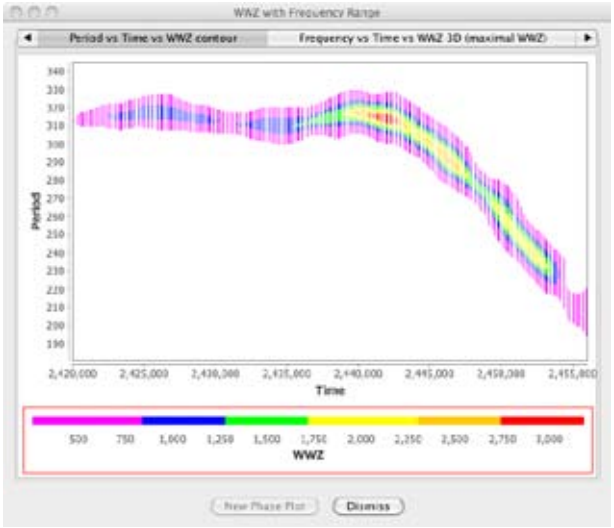
It has been more than a year and many "test versions" in the making, but a new and much improved version of VStar (Version 2.13) is now formally available. Lead developer David Benn has contributed literally thousands of hours on VStar, and this latest version represents a huge amount of work on his part. To read more about VStar and download a copy, please visit the http://www.aavso.org/vstar-overview and click the "Download VStar Now" button.

This version brings with it a lot of new features and capabilities—most of which are centered around improved and enhanced data analysis tools. It also works with the latest plug-ins so you no longer have to download an interim release in order to use them.

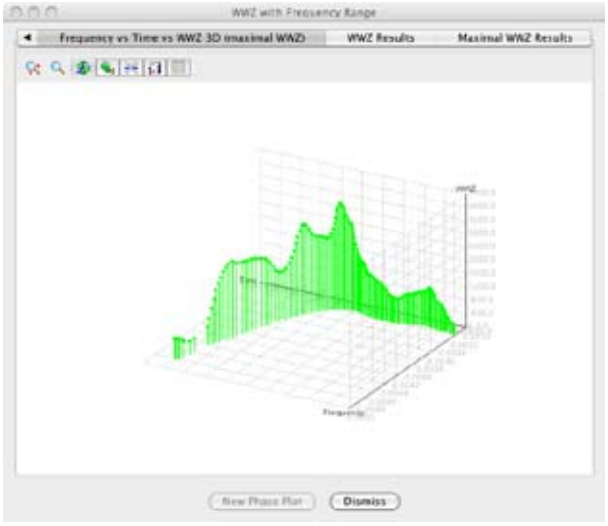
Here are some of the things you should look for:

- Additional modes of invoking DC DFT (standard scan and by frequency or period).
- Weighted Wavelet Z-Transform (WWZ) for time-frequency analysis.
- Ability to create multiple-period models, including harmonics, from period analysis (DC DFT) and to obtain Fourier series equation-representing model.
- Option to run the CLEANest period analysis refinement algorithm.
- Addition of search/filtering capability in observation list pane.
- Improvements to user interface and memory usage.
- Initial implementation of VStar scripting (JavaScript only currently) and API.
- Improvements to plug-in infrastructure, fixes to some plug-ins, additional plug-ins.
- The ability to exclude observations as an alternative to mark-as-discrepant. Multiple observations can be selected in the observation list and excluded together.
- Added Mac OS X and DOS launcher applications and Linux launcher shell script for ease of offline use.
- Added ability to generate a Filter series from an observation list selection.
- Numerous bug fixes.

As always, we appreciate your continued feedback. ★



WWZ contour plot of T Umi



WWZ 3D plot of T UMi

***David J. Benn** with the 2011 AAVSO Director's Award given in recognition of his contributions to the AAVSO and the astronomical community through his work on the AAVSO curriculum* Variable Star Astronomy *software and the development of VStar.*

TALKING ABOUT THE AAVSO

ELIZABETH O. WAAGEN (WEO) AAVSO HQ

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

March 14, 2012—**David Blane** (BLD, Henley-on-Klip, South Africa) gave a talk on Variable Stars at the monthly meeting of the Astronomical Society of Southern Africa, Johannesburg Centre, at the Johannesburg Observatory, 18a Gill St., Observatory, Johannesburg, South Africa.

April 14, 2012—**Dr. Stella Kafka** will give a talk on her favorite objects—Type Ia Supernova progenitors—at 7:30 pm at the University of Maryland Astronomical Observatory, Metzerott Road, College Park, Maryland, for Washington D.C.'s National Capital Astronomers.

May 5–6, 2012—**Tim Crawford** (CTX, Arch Cape, Oregon) will be giving talks in two separate presentations at the "Imaging The Sky Conference," Intel HF3 Auditorium, Hillsboro, OR (http://www.stargazing.net/david/workshop/20120505workshop.html). The first presentation will be on "Variable Star Observing With CCD's" and the second one will be on "Differential Photometry."

May 21, 2012—**Rodney Howe** (HRHA, Fort Collins, Colorado) will be speaking about the AAVSO Sunspot Numbers Program and Solar Section at the Second Sunspot Workshop, hosted by the SIDC, Royal Observatory of Brussels, Belgium.

September 28–October 1, 2012—**Mike Simonsen** (SXN, Imlay City, Michigan) will be speaking (via video conference) about "Pulsating Stars in the AAVSO Program" at CAPAS, the Amateur-Professional Congress on Stellar Astrophysics, being held at the Onet le Chateau in Rodez, France. A description of this meeting and a preliminary list of presentations are given in this newsletter.

Thank you, speakers!
vLet us help you spread the word! Send us information about your event (upcoming or past) for inclusion in the July 2012 *AAVSO Newsletter* (submission deadline June 15). Many thanks for your education and outreach efforts on behalf of the AAVSO and variable star observing! ★

IT WAS JUST A TUESDAY

MIKE SIMONSEN (SXN), AAVSO HEADQUARTERS

It was just a Tuesday, not unlike any other Tuesday, except I happened to be working in my office on the first floor of AAVSO headquarters in Cambridge. I opened my email and began responding to the messages that had come in since the previous night. Several members had renewed their membership, some had made donations with their renewals, some new members had signed up, TZ Per was in outburst so I updated the CVnet page. Here was one from the sequence team telling me Tim Crawford had uploaded a sequence created by our newest team member Natalia Virnina, from Odessa, in the Ukraine.

I had witnessed Natalia's AAVSO story right from the beginning. She had submitted a well-constructed proposal to observe several eclipsing binaries, using AAVSOnet telescopes. Unfortunately, she was not a member, and paying dues would have presented a hardship for her. No problem, Tom Krajci volunteered to sponsor her membership and within a few days he was setting up her observing plan and taking data for her.

As it turned out, almost none of her program stars had existing sequences, so she contacted Tim Crawford to request sequences for her observing targets. She was perfectly willing to do the work herself, if Tim could just show her the ins and outs of using SeqPlot and creating the proper files to upload into the comp star database. After a few basic tutorials Natalia was off and running, creating sequences for her program stars and sharing them with the sequence team. Shortly after that, Natalia became the newest member of the team and has been submitting work on a regular basis. This morning's email was just the latest in a string of newly minted Virnina sequences uploaded to the database.

The next email was from a new member who wanted to learn how to use VPHOT. I called Ken Mogul in Georgia to see if he'd be willing to take him on as a student, and he gladly accepted. Ken is the one who made the video tutorials for VPHOT and was the person who taught me how to use it, so I knew he was qualified. I was glad we started our conversation on a positive note, because I was about to ask Ken to volunteer for another long-term project: examining all the images that are downloaded from AAVSOnet telescope K28 each night, and entering comments about them into a permanent record created by a snazzy tool called Remark-O-Matic and developed by Sara Beck. This was a new volunteer program and we had decided to ask Ken to be our test case.

Ken said he'd be happy to take on another project, even though he was already involved in several AAVSO volunteer efforts, and not only that, he asked me what I thought about the idea of him running for Council! I told him I thought he would be a great councilor. People who are willing to roll up their sleeves and work for the AAVSO as well as donate time and money to the organization are just the kind of people we need on council. I thanked him and wished him luck and moved on to the rest of the email in my folder.

Another email had arrived from a Dr. Knight in the United Kingdom, asking for some assistance in CCD photometry of exoplanet transits. I had to think about this, since I don't have an "official" AAVSO mentor in the UK. I thought I would take a chance and write to Richard Miles, who I know is an excellent photometrist and scientist.

Richard is a past president of the British Astronomical Association, but I wasn't even sure if he was an AAVSO member. I looked up his records in our database and was happy to discover he is a member of the AAVSO. The thing is, I hadn't heard much from Richard lately and suspected he was rather busy. Considering his credentials, I thought it was worth a try, so I wrote to Richard

CONTINUED ON NEXT PAGE

JUST A TUESDAY
CONTINUED...

to ask if he would kindly lend his expertise to help out a fellow Englishman looking to do some advanced observing.

Richard replied within ten minutes, explaining that he was and had been very busy, reviewing papers for journals and writing an extensive paper on comets for another, but that he would be glad to help out if I put him in touch with Dr. Knight.

Here was another email from a new member in Germany, responding to the "Welcome to the AAVSO" message I send to all the new people when they join. This one was from Katrin Fortak, or Katy, as she likes to be called. She's been observing variables with a CCD for about a year now, and complimented the AAVSO on the tools and information we offer. She especially appreciated VSP, VPHOT, and the *CCD Manual*.

As it turns out, she knew some other Germans interested in CCD photometry who don't know English so well, and she wanted to know if it was okay if she translated the CCD manual into German for use by her friends and others. I discussed her generous offer with Matthew Templeton, and he gave me a Word doc version for her to work with, which would be easier than trying to re-create it from scratch using the pdf she had downloaded from the website.

Katy had some questions about exoplanet transits and short period eclipsing and pulsating stars, so I referred her to the respective section leaders and gave her what information I could to help. She also indicated she would be taking the CHOICE course on Variable Star Types and Light Curves that I would be teaching in May.

Katy's letter continued, as she also volunteered to act as mentor for the AAVSO for anyone from Germany or surrounding countries—a very generous offer from someone who was still learning advanced techniques herself. But she had been impressed with the friendly, helpful advice she had been getting in the AAVSO chat room, and thought it was only fair to pay it forward, in the best tradition of the AAVSO mentor program. I have every confidence she will be an excellent mentor. She is obviously very enthusiastic and her English is very good.

It is no secret that we have been having some problems with VPHOT recently. We had fallen victim to our own success—the high volume of images being uploaded and analyzed daily were now pushing the limits of our current cloud computing configuration—and we had been discussing how to proceed with the anticipated upgrade to more cloud computing power.

VPHOT is another example of the power of volunteers and donors, and how they can push the AAVSO forward by their sheer will and generosity. The program was written by Geir Klingenberg, an AAVSO member from Norway. Geir donated it and the copyright to AAVSO almost two years ago, and has been supplying the support needed to keep it running, as well as continuous incremental improvements along the way. The initial expense of hosting it on the Amazon cloud server had been paid for by AAVSO members Ken Mogul and Donn Starkey.

Now that we were making plans to upgrade to a more powerful instance on the cloud, another AAVSO member, Ken Menzies, had contacted me to tell me he would like to pay for the increase in power and bandwidth. Ken is a power user of the program, and had been aware of the rash of problems we were now experiencing as we had outgrown our baby teeth on the cloud. Several of us had spent our entire lunch period discussing how we were going to implement the changeover and now I was back in my office when Ken stopped by headquarters to drop off a generous check to pay for the impending upgrade.

Little did we realize that, as we sat in my office discussing VPHOT, AAVSOnet, the upcoming SAS/AAVSO meeting in Big Bear, Z Cam stars, and a host of other topics, thirty feet away in the office next door Doc Kinne had just watched our Amazon server disappear before his very eyes. We were moving to Plan B right now, and Ken's check was going to be deposited today!

Plan B meant building a whole new version of VPHOT and launching it on the cloud as soon as possible. Unfortunately, Geir had been ill with the flu for several days and the clock was closing in on midnight for him as he and Doc struggled to reconstruct VPHOT and get it back online as soon as possible. This was the spirit of AAVSO volunteerism and unselfish sacrifice demonstrated at the highest levels.

Nobody complained. They just opened up their checkbooks, rolled up their sleeves, and got about the business of doing what was needed.

After the initial shock of what had just happened wore off, I got back to my email. A new visual observer from Colorado had just joined the AAVSO and he needed a mentor. I knew just the person for him: Roger Kolman. Roger has been an AAVSO observer and member for fifty years and has over 75,000 visual observations to his credit. He also has a great enthusiasm and love for variable stars and the AAVSO. I wrote to Roger asking if he had time to take on another student. He wrote back saying he would be glad to help out a newbie and added jokingly that he "wasn't sure how often he could get to Colorado to help the new guy."

Of course he was kidding, since most of the instruction provided by our mentors happens via email, chat, Skype, and the telephone these days. But that is another reason I knew Roger would be a good choice - he'll make learning to observe fun and interesting.

Later that night, as I threw myself on the bed in the Feibelman guest suite at HQ, it dawned on me what a perfect example of the spirit of the AAVSO today had been. Our members and observers speak volumes about what is really special about the AAVSO through their actions every day. They walk the walk. It was only Tuesday, I was exhausted, but I couldn't wait for Wednesday. I have one of the best jobs in the world, and it's because of the people I work for, you, the AAVSO. ★

IN MEMORIAM

MEMBERS, OBSERVERS, COLLEAGUES, AND FRIENDS OF THE AAVSO

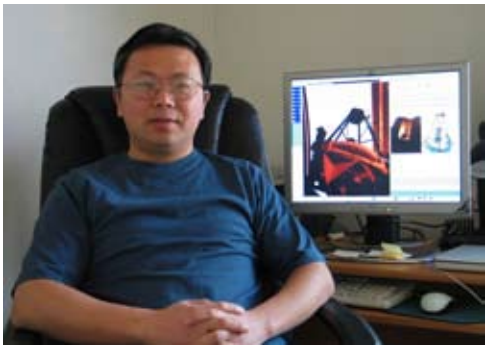
PROFESSOR HILMAR W. DUERBECK died January 5, 2012, at the age of 63. An AAVSO member for many years, he was a longtime friend and colleague of the Association. His particular areas of interest were cataclysmic variables—especially novae—and contact binaries, final helium flash objects, and the history of astronomy and cosmology. His undergraduate thesis was a study of his photoelectric photometry astronomical observations, and his Ph.D. dissertation in physics and astronomy was on "The eclipsing binary VV Orionis," so his involvement with variable stars dated from early on.

Hilmar Duerbeck

His educational and research positions included scientific assistant at the University of Bonn's Hoher List Observatory, astronomy lecturer for the European Division of the University of Maryland in Germany, lecturer in astronomy at the University of Muenster (and from 1996 on he was an honorary professor there), exchange professor at the Universidad Catolica de Chile in Santiago and at the Universidad Catolica del Norte in Antofagasta (Chile), senior visiting scientist at the European Southern Observatory in Chile and at the Space Telescope Science Institute, senior scientific collaborator at the Vrije Universiteit Brussel, and Professor at the James Cook University in Australia. He was a member of IAU Commission 42 (Close Binary Stars) and chaired the IAU Working Group on Venus transits. He was also an associate editor and an editorial board member of several astronomical and history of astronomy journals.

He was married to the late professor of astronomy Waltraut C. Seitter of the Universities of Bonn and Muenster and Smith College. A kind, friendly, and caring person, Hilmar was a mentor to many students and a valued colleague and friend. Minor planet 1989 SW2 is named 9327 (Duerbeck).

WEIDONG LI, Associate Research Astronomer at the University of California, Berkeley, died December 12, 2011, at the age of 42. A world-renowned expert on supernovae, he was a key member of Dr. Alex Filippenko's supernova research project, the Lick Observatory Supernova Search (LOSS), using the Katzman Automatic Imaging Telescope (KAIT).



Weidong Li

Weidong studied astronomy, focusing on supernovae, at Beijing Normal University, where he obtained his Master's and Ph.D. As a postdoctoral scholar at the Beijing Astronomical Observatory (BAO), he established the first systematic supernova search in China and made it nearly completely automated. The first of its many discoveries, the BAO supernova search, led by Weidong, discovered SN 1996W, the first supernova discovered by Chinese astronomers since the Crab supernova of 1054 AD.

After Weidong joined Filippenko's research group, he was given nearly full authority over LOSS and KAIT, and over the survey's ten years nearly 900 supernovae were discovered; hundreds of supernovae were also studied after discovery. Weidong also programmed KAIT to automatically respond to gamma-ray burst (GRB) alerts from Swift and other satellites in search of the optical afterglow. He and Filippenko published nearly 200 articles together.

Weidong was a mentor to many undergraduates studying supernovae, as well as to some graduate students and postdoctoral researchers. As the child of farmers and the first child from his rural village in China to attend college, he was keenly interested in fostering the careers of young scholars. He was extremely passionate about his work, and it showed in his enthusiasm for and dedication to every aspect of it. His cheerful and generous nature endeared him to everyone. He is survived by his wife and 12-year old daughter and by his siblings.

Sincere thanks to Dr. Alexei Filippenko, Professor of Astronomy, University of California, Berkeley, for information in this obituary.

NATHANIEL WESLEY (WES) TAYLOR (TNX), died January 12, 2012, after complications following a stroke in 2010. He contributed 49,143 variable star observations through 2009. A mathematician and math/physics college professor by profession, Wes was a passionate amateur astronomer and mentor, a member of RASNZ with over 40 years of observing variables among his activities, and a founding member of UNENTAS (University of New England Northern Tablelands Astronomical Society, NSW, Australia).

Wes Taylor

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

MENSAJE DEL DIRECTOR

ARNE A. HENDEN (HQA)

El invierno en Cambridge ya pasó y cuán leve fue ¡tan solo cuatro nevadas (de sólo 20 cm) y el segundo más caluroso registrado! Eso significó que no tuve que andar mucho paleando nieve en la acera y, por lo tanto, he tenido más tiempo para dedicarme a la AAVSO....

Estuvimos ocupados mejorando la infraestructura del sitio web. En marzo, trasladamos todas las bases de datos a la computadora del sitio web, mejorando así, en forma considerable, el tiempo de respuesta. Este fue un esfuerzo grupal, con Doc Kinne y Will McMain conduciendo la tarea, pero con contribuciones de muchos otros miembros del personal y programadores voluntarios. Will limpió muchos otros aspectos de la web, incluso la página de renovación de la membresía y WebObs. Él ahora está trabajando en hacer una herramienta de descarga más flexible de modo que se pueda consultar por múltiples estrellas. Doc y Will también han sido la vanguardia de un esfuerzo para mudar todo el sitio web a la Nube. Ese proyecto está casi terminado y deberá ofrecer otras mejoras de rendimiento al disponerse de un mayor ancho de banda. Hemos ido ganando experiencia en la Nube gracias al proyecto VPHOT, que se encuentra alojado en la Nube de Amazon. Doc y Geir Klingenberg acaban de actualizar ese sistema para tener cinco veces el rendimiento y han tenido comentarios favorables de los usuarios.

Hemos añadido dos nuevos CHOICE (Carolyn Hurless Online Instituto de Educación Continua) las clases, y se trasladó a sus foros a la página web de AAVSO.Yo introduje la AAVSO CCD de la Escuela, que se ejecutará durante la primera semana de agosto. Rebeca encontró un lugar asequible para encuesta a través de cursos de verano de la Universidad Tufts, y vamos a hacer un mayor uso de ese lugar para las escuelas y talleres futuros. Rebecca también finalizó los planes, tanto para la primavera y las reuniones anuales, reservando el espacio necesario y el diseño de las agendas preliminares.

Nuestro relevamiento de calibración sigue teniendo un buen progreso, con la quinta publicación de los datos (DR5) anunciada en la reunión de invierno de la AAS (Sociedad Americana de Astronomía), en Austin. Esperamos anunciar la DR6 en la reunión de verano de la AAS, en Anchorage, esta publicación cubre todo el cielo y, por lo tanto, es un hito importante para el proyecto. Bill Goff y Gary Myers entraron en escena y están proporcionando importantes esfuerzos astrométricos voluntarios al relevamiento. AAVSOnet también sigue en buena forma, con BSM-South (Monitor de Estrellas Brillantes-Sur) ya casi en línea (¡gracias a Peter Nelson, Chris Stockdale y Rod Stubbings!) y con TM61, el primero de nuestros telescopios de la clase de 60 cm, sometido a pruebas de puesta en marcha. Junto con Gary Walker fuimos a Las Cruces en marzo para ayudar a Jon Holtzman (New Mexico State University) a poner a trabajar al telescopio. ¡Las imágenes preliminares son excelentes! Estamos invitando a voluntarios para ayudar en nuestro programa de promotor del telescopio; Ken Mogul es el primer voluntario, haciendo un excelente trabajo con el K28.

Sara Beck y Matt Templeton han actualizado del Programa de Observación Solar, creando una herramienta de software para cargar las observaciones de manchas solares en una forma similar a la de WebObs. Sara continúa su apoyo a VSTAR, la excelente herramienta de visualización que creó David Benn, en Australia, para Citizen Sky (y ahora está siendo utilizado para la representación gráfica y análisis de datos genéricos de curvas de luz de la base de datos internacional de AAVSO). Elizabeth Waagen y Matt han terminado Boletín de Variables de Largo Período Nº75 y lo han puesto en línea junto con el programa de Matt de consulta ordenada.

Mike Simonsen fue a la Star Party de invierno para dar a conocer la AAVSO y ha decidido hacer de ese un viaje anual. ¡Los Cayos de la Florida parecen ser sólo un poco más cálidos en febrero que lo que es Michigan! Mike también está planeando ir a la Star Party de Cherry Springs, que ya está próxima (ver el anuncio en la página web de AAVSO). Además de sus actividades normales saludando a los miembros, Mike ha entrevistado recientemente a nuestros nuevos miembros del Consejo y las ha publicado como entradas de blog en nuestra página web.

Los cielos han cooperado también en esta temporada. Hemos tenido muchas nuevas novas (todas en el hemisferio sur, incluyendo una muy interesante en la Nube Mayor de Magallanes) que han tenido mucho interés por parte de la comunidad profesional, y otra importante supernova tuvo lugar en otra galaxia Messier. He visto algunas fotos impresionantes de los astrofotógrafos de imágenes de cielo profundo de estos eventos (M95 y M101), y ¡las curvas de luz se vean aún mejor! También se han estado realizando entretenidas campañas de CH Cyg y V384 Cen. ¡Espero que cada cual haya encontrado su objeto de interés!

¿El próximo trimestre será tan emocionante como este? Pueden estar seguros. La AAVSO es una organización próspera, con mucho heredado del pasado y más planes para el futuro. Todos, miembros, observadores y voluntarios han contribuido a nuestro éxito continuo. ¡Cielos despejados para todos! ★

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

MENSAJE DEL PRESIDENTE

MARIO MOTTA, M.D. (MMX)

La AAVSO se destaca por su gran número de dedicados observadores, capaces de movilizarse rápidamente cuando aparecen nuevos objetos, contribuyendo a la inmediata identificación y caracterización de esos fenómenos transitorios. Gracias a nuestra presencia a lo largo y ancho de todo el mundo y a la comunicación continua, los posibles problemas o errores de identificación se resuelven rápidamente.

Un ejemplo perfecto de esto ocurrió justamente en marzo de 2012. Se identificó un potencial objeto transitorio en M95, una galaxia espiral barrada en Leo. El miembro de AAVSO Andy Cason nos alertó a todos sobre un nuevo objeto que aún no había sido reportado oficialmente. Yo y varios más decidimos inmediatamente confirmar o descartar su existencia, y contribuir a caracterizar este evento. Abrí la cúpula de mi observatorio y preparé mi equipo para tomar una imagen de M95 lo más pronto posible. Tanto que tomé mis imágenes aún durante el crepúsculo, cuando todavía había un gradiente de luz considerable en el cielo. Tomé las primeras tomas y las comparé con una imagen de M95 de hacía varios años. Al ver sólo una estrella al sur del núcleo, y habiendo comparado la imagen mía con una más vieja cuyo tiempo de exposición era mucho más largo y que mostraba una sola estrella brillante, concluí que

CONTINUED ON NEXT PAGE

MENSAJE DEL PRESIDENTE
CONTINUED...

no había ningún objeto nuevo. Así que a los 90 minutos de haber sido notificado de un posible objeto transitorio, estaba dándole mi aporte a la comunidad de AAVSO.

Suena como un sistema que funciona bien, con un rápido ida y vuelta. Más tarde, luego de completar algunos otros proyectos que requerían imágenes, vi reportes de varios observadores visuales que también informaban no haber detectado nada. Por lo tanto, ni me "molesté" en apilar y calibrar mis imágenes iniciales, convencido de que no había existido ningún objeto real. Esa noche más tarde, sin embargo—a las 2:30 AM en mi localidad—recibí un e-mail de Robert Fidrich, que me enviaba una imagen de M95 tomada por Gabor Szitkay desde Hungría. El señalaba que en esa imagen parecía haber un objeto brillante que, en efecto, lucía como una supernova. Al principio me mostré escéptico, ya que seguía viendo sólo una estrella brillante al sur del núcleo galáctico en la nueva imagen, pero noté que parecía mucho más brillante que en la mía. Dejando a un lado el escepticismo y mirando estos nuevos datos, procesé y calibré mis imágenes. Al apilarlas y remover el gradiente del cielo generado en mis imágenes durante el crepúsculo, no lo podía creer, ¡ahora sí había dos estrellas al sur del núcleo! Francamente, me quedé mudo.

Ahora, comparando directamente con mis imágenes viejas de M95, era evidente que había un nuevo objeto transitorio apenas al oeste de la estrella que existía previamente en aquellas imágenes. En retrospectiva, está claro qué fue lo que pasó: la imagen vieja había sido cuidadosamente calibrada, por supuesto, y mostraba muchas estrellas hasta magnitudes muy débiles. La nueva imagen, con el gradiente presente debido al crepúsculo y sin haber sido calibrada, mostraba sólo la manchita más brillante, que era la supernova, y la estrella preexistente quedaba perdida en el brillo general. De inmediato envié un e-mail con la corrección a la AAVSO, reportando que, efectivamente, ¡había allí un nuevo objeto transitorio después de todo!

Es importante aclarar que hasta ese momento todavía no había confirmación oficial de que el objeto existiera. Mientras tanto varios observatorios profesionales daban versiones contradictorias acerca de lo que este objeto era realmente. El primer reporte espectroscópico indicaba que se trataba de una variable cataclísmica relacionada con una fuente de rayos X conocida. Sin embargo, análisis posteriores mostraron que era una supernova de tipo II y ya tiene la designación oficial SN 2012aw. Una nueva supernova finalmente.

Hay varias lecciones que aprender en la historia anterior, la más importante de todas es que al contar con una comunidad muy activa como la de AAVSO, interactuar y compartir información conduce al mejor resultado final posible y evita los errores. Tuvimos una cámara automática que detectó por primera vez un posible objeto transitorio, miembros que estuvieron lo suficientemente alertas como para reenviar esta información a todos los demás, múltiples observadores intentando confirmar o negar su existencia, evitando así el posible impacto de malas condiciones climáticas locales de un observador aislado. Hubo reportes contradictorios al principio (incluyendo el mío) acerca de la existencia del objeto, pero al tener múltiples observadores, distribuídos a lo largo de todo el mundo, las inconsistencias y los reportes negativos poco cuidadosos se pudieron corregir rápidamente. A mí esto me muestra la fuerza de la organización y la importancia de cada una de sus individualidades. Una cámara de un relevamiento recogió la primer señal del muevo objeto. En este caso, si sólo hubiésemos confiado en observadores individuales dispersos, no se lo habría descubierto en una etapa tan temprana; los relevamientos son, en efecto, muy valiosos. El sistema de comunicación de nuestros miembros funcionó a la perfección notificando a nuestra comunidad, y Andy Cason cumplió una función muy importante al enviar el e-mail inicial con el alerta. Prestar atención a estas alertas generó un esfuerzo mundial para identificar al objeto. Y todo esto ocurrió antes de la notificación oficial y antes de que volviera a amanecer.

Otra de las lecciones es que nuestro trabajo requiere de una atención cuidadosa a los detalles. Mi fracaso inicial en identificar a la nueva supernova se debió a que miré una imagen de mala calidad y sin la calibración adecuada; he aprendido una valiosa lección de este evento. Al avanzar la noche hubo reportes conflictivos de si el objeto en realidad existía que fueron solucionados gracias a la observaciones colectivas del grupo. Esto muestra el valor de tener muchos observadores para al final poder llegar a la conclusión apropiada. La tercer pata de este trípode fue la identificación profesional del objeto transitorio. Incluso entonces, hubo bastante confusión acerca de la naturaleza del mismo, con reportes espectrales contradictorios que lo caracterizaban o como una variable cataclísmica o como una supernova. En menos de 24 horas se resolvió todo, y ya podemos estudiar a la tercera supernova significativa en una galaxia cercana en el último año, siguiendo a los eventos de supernova en M101 y M51. (Ha sido un año muy bueno con supernovas interesantes en galaxias pintorescas).

Como cardiólogo, comparo el no haber visto la supernova en mi imagen con el equivalente médico de pasar por alto un hallazgo importante en el ecocardiograma del corazón de un paciente. En ambos casos un diagnóstico preciso o la identificación requieren prestar mucha atención a los detalles, conocimiento de la técnica de recolección de imágenes con sus posibles problemas, y reevaluación de cualquier discrepancia. Afortunadamente no hay abogados cósmicos todavía y en 24 horas se completó la identificación y clasificación—mi caso de "mala praxis astronómica" se resolvió y se corrigió rápidamente. Andy Cason en un principio se preocupó por estar dando falsas alarmas con su alerta. Nada podría estar más lejos de la verdad: algunos alertas llevan a importantes descubrimientos y otros terminan siendo negativos, pero nada sucede si uno no se toma el esfuerzo de mirar. Robert Fidrich no tomó un reporte negativo como definitivo y urgió a todos a mirar nuevamente.

Hizo falta mucha gente de AAVSO para lograrlo, pero el mensaje final es que colaborando codo a codo y trabajando en equipo, incluso separados por continentes, hacemos ciencia real y contribuimos a los descubrimientos. Para mí, ese es un motivo más que suficiente para ser parte de esta gran organización y apoyar su misión. Sigan observando—se los necesita a todos. ★

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.

PRELIMINARY RESULTS OF SU AUR OBSERVING CAMPAIGN

HANS MORITZ GÜNTHER
HARVARD-SMITHSONIAN CENTER FOR ASTROPHYSICS

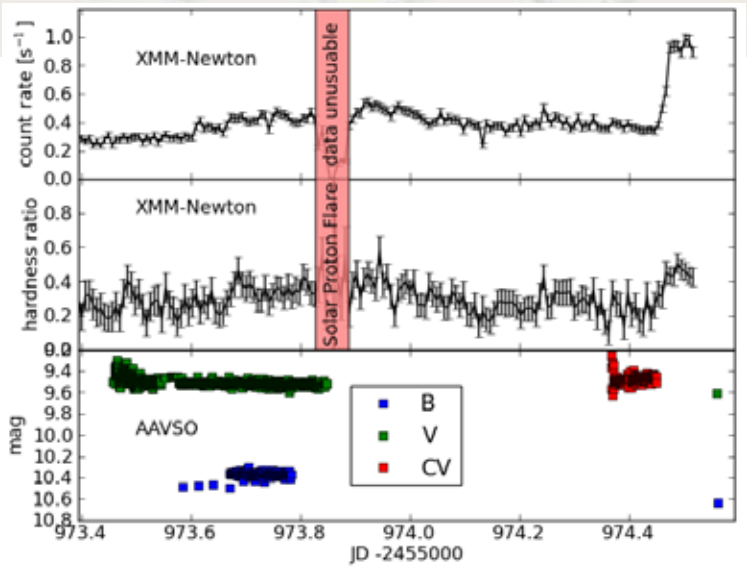
First of all, I want to thank the observers of the AAVSO for supporting my multwavelength observing of the classical T Tauri star (CTTS) SU Aur (see *AAVSO Alert Notice 452* for details).

Stars form from large clouds of dust and cold gas in the Milky Way. These clouds collapse under their own gravity and, depending on the size, mass, and structure of the cloud, they fragment into many smaller segments, each of which can form an individual star. The initial phases of star formation are hidden from our view behind the gas and dust of the molecular cloud, but as time progresses, more and more mass is accreted onto stars or blown out of the system. At an age of 1–5 million years the young stars are still surrounded by a disk, but most of the surrounding material is gone, so we can observe these systems in the optical. At this stage proto-stars are called CTTS. In the case of SU Aur we are looking close to edge-on on the disk, which means that we see the star through the upper layers of the disk.

CTTS are—compared to our sun—relatively fast rotators, because they are still so young. This makes them very active: they show much more frequent and much larger flares than older stars do. In past observations, SU Aur was one of the most active stars, which is why we picked it for this study. In addition to solar-like activity, CTTS can also interact with their disk. The magnetic field of the star connects to the inner rim of the disk and channels matter from the disk onto the star. This accretion causes extra emission in the ultraviolet and the blue optical range, making CTTS slightly bluer than main-sequence stars.

The original goal for this observing campaign was to look for flares on SU Aur and test if they behave the same way as flares on the sun. If they do, it would indicate that the flare mechanism is similar to the sun's. Alternatively, flares on CTTS could develop in other ways than on the sun because of the accretion, which the sun does not have. The interaction of accretion and magnetic field could, for example, cause stellar flares to rise faster than observed in the sun.

To test this, we obtained observations with the XMM-Newton X-ray satellite. XMM-Newton has a small optical telescope on board (30 cm) to observe in the optical simultaneous to the X-ray observations. This is exactly what is needed for this study. Unfortunately, SU Aur (and AB Aur, which is in the same field of view) are so bright that the optical monitor of XMM-Newton would be damaged by the large flux.



XMM-Newton and AAVSO data for SU Aur.

This is why we asked the AAVSO for help. SU Aur has a V-magnitude around 9.5 and is easily observable from the ground. Here we give the first results of our new study. In the first panel of the figure we show the X-ray light curve of SU Aur taken from XMM-Newton. In X-ray astronomy, the units of a light curve are often given as counts (detected photons) per second. The second panel shows the hardness ratio or "X-ray color." Low values indicate cooler temperatures (around 2 million Kelvin), high values hotter temperatures. After about a third of the observation, a burst of energetic solar protons hit the spacecraft and a short period of time is unusable. In the X-ray light curve there is a gradual rise and decay over about a day until in the very end a flare suddenly increases the count rate by a factor of 4. The second panel shows that the hardness ratio also rises in the flare (but only moderately), thus the plasma must be hotter. This is usual in solar flares as well, although I would have expected larger changes in the hardness ratio than seen here.

The last panel shows the AAVSO data. Just as in the X-ray data, there is some variability on time scales of minutes to hours, but in general the light curve is more or less flat. The gradual rise and decay in the X-ray is not seen in the V-band data. Thus, it is probably not due to stellar rotation, because a stellar rotation period should show up in all bands, not only in X-rays. Unfortunately, the AAVSO data just missed the X-ray flare.

In the next step, we will analyze the X-ray spectra and optical spectroscopy, which were taken from different sites (but only twice per night). ★

AAVSO OBSERVING CAMPAIGNS UPDATE

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

2012 is off to a busy start! New observing campaigns, ongoing campaigns, novae and suspected novae—they are all tugging at observers' sleeves for attention; some of them are jumping up and down waving their arms and shouting "Me! Me first! Look at me right now!"

The opportunities for AAVSO observers to participate in professional variable star research abound. Below are notes on campaigns recently concluded, initiated, and in progress.

The campaign on the classical T Tauri star SU Aur and the Herbig Ae star AB Aur (*AAVSO Alert Notice 452*) run by Dr. Hans Moritz Günther has concluded successfully. Many thanks for your valuable observations! An exciting article by Dr. Günther on this campaign with early results appears in this newsletter.

Campaigns initiated since January 2012

Dr. Michael Rupen (National Radio Astronomy Observatory) and his colleagues of the EVLA (Expanded Very Large Array) Nova Team are carrying out a multiwavelength campaign on the Fe II-type nova **Nova Oph 2012**. They are currently observing with Swift (X-ray), JVLA (Jansky Very Large Array, centimeter), SMA (Submillimeter Array), and high-resolution spectroscopy. The EVLA Nova Team (https://safe.nrao.edu/evla/nova/index.shtml) aims at consistent, high-quality radio, optical, mm, and X-ray coverage of nearby novae. Swift and VLA observations are scheduled for this week and Swift for late April; SMA and other observations have been made and are being planned. Dr. Rupen writes: "It would be very useful to have fairly regular multi-color photometry to follow the overall evolution of the source, as well as spectroscopy to track the velocity of the ejecta. Spectroscopy on the dates of the Swift observations (April 13 and April 27 UT) would be particularly valuable…" (*AAVSO Alert Notice 457*).

Bram Ochsendorf (Leiden Observatory, Netherlands) has requested monitoring by AAVSO observers of the R CrB variable **V854 Cen** to detect a fading in support of observations to be made using the XSHOOTER instrument on the Very Large Telescope (VLT) of the European Southern Observatory's La Silla Paranal Observatory in Chile. Ochsendorf and colleagues have already observed **V854 Cen** at maximum and now need to observe it during a fading episode (*AAVSO Alert Notice 456*).

Dr. Noel Richardson (Georgia State University) has requested monitoring of the luminous blue variable (LBV) prototype **S Dor** as part of a multiwavelength campaign he is coordinating to study the photosphere of this star. His campaign will include UV Spectroscopy from HST, optical spectroscopy from CTIO and an amateur in Australia, and pending approval, near-IR Spectroscopy from SOAR and mid-IR photometry from Gemini (*AAVSO Alert Notice 453*).

Campaigns in progress

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'd like to thank the observers for the wonderful observations that they obtained in support of the **CH Cyg** HST and Chandra observations. The Chandra and HST observations went well and there is a lot of work to do with hope for very interesting science and new discoveries. 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 *JAAVSO*, 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, as if there weren't enough observing campaigns vying for your attention (along with all of your other variable star observing!), March and early April have brought a bouquet of novae and possible novae:

V834 Car = Nova Car 2012 = TCP J10502000-6406480 (*AAVSO Special Notice #266* and *AAVSO Alert Notice 455*).

Nova LMC 2012 = Possible Recurrent Nova in the LMC = TCP J04550000-7027150 (*AAVSO Special Notice #270*).

Nova Cen 2012 = Possible Nova in Centaurus = PNV J13410800-5815470 (*AAVSO Special Notice #272*).

Nova Oph 2012 = Possible Nova in Ophiuchus = PNV J17260708-2551454 (*AAVSO Special Notice #273*).

Nature unknown to date = **Variable Object in Centaurus** = TCP J14250600-5845360 (*AAVSO Special Notice #274*).

Grateful thanks from the astronomers and us at AAVSO Headquarters go to all of you who are participating in AAVSO Observing Campaigns. You have been and continue to be a vital part of variable star research, so stay tuned, get plenty of rest, and keep your lenses polished and equipment temperature-acclimated!★

PHOTOELECTRIC PHOTOMETRY PROGRAM UPDATE

MATTHEW TEMPLETON (TMT), AAVSO SCIENCE DIRECTOR

AAVSO PEP observers continued to monitor several bright stars in the AAVSO PEP Program, with a number of long-time targets receiving observations. Epsilon Aurigae remains the most-observed target, with 18 infrared and one *B*-band and ten *V*-band observations made between 2012 January 1 and March 29. A number of other stars received substantial coverage during the quarter including: CE Tauri (15 observations), RS Cancri (13), RZ Arietis (9), eta Geminorum (9), rho Persei (9), V398 Aurigae (5), Betelgeuse (alpha Orionis, 5), X Persei (5), and V442 Andromedae, P Cygni, U Monocerotis, and V614 Monocerotis with four observations each. A total of 38 different stars were observed. Our PEP chairperson, Jim Fox (FXJ), remains the most prolific observer of the program, with 82 PEP observations of 30 different stars made during the quarter, followed by Charles Calia (CCB) with 48 observations of 9 stars, Tom Rutherford (RTH) with 18 infrared observations of epsilon Aurigae, AAVSO Councillor John Martin's volunteer group (UIS01) with 6 observations of epsilon Aurigae, and Adrian Ormsby (OAD) with 4 observations of P Cygni.

I'll briefly note a few happenings of the quarter. First, and most recently, the symbiotic star CH Cygni is currently quite bright (around V=7.5) and is bright enough for PEP work. Dr. Margarita Karovska had a combined HST and Chandra program to observe this star in late March, and continued photometry from both CCD and PEP observers would be appreciated. (She's also very happy to be getting spectroscopy from the amateur community as well, so if you have spectroscopic capability, so much the better!)

Ernst Pollman will have a short paper coming out in *JAAVSO* updating the community on the P Cygni *V*-band + H-alpha spectroscopy project he's been coordinating, and a number of AAVSO observers have contributed data over the past several seasons. P Cygni remains an interesting target, and probably will until it becomes a supernova! Another active star is V442 And, and Jim Fox provided some additional data this past quarter. It was noted in outburst in October 2011, and the light curve seems to be complex.

Jim Fox also made some additional photometry of another supernova-in-waiting, Betelgeuse, and its complex variations are still easily visible. If you have an SSP-3 in your closet and a telescope to put it on, by all means give Betelgeuse a try. This star was well observed up through 2003, and it would be wonderful to see comparable amounts of data again. If you can't observe it, then certainly download the data from our website (http://www.aavso.org/data-download) and have a look at the PEP data. It's a beautiful light curve.

If you're a PEP observer or own PEP equipment and would like to revitalize your observing program, feel free to contact either Jim Fox or myself. We also have an SSP-3 available at AAVSO headquarters that is available for loan to any AAVSO member in good standing -- the only requirement to having it beyond being a member is that you observe! If you're interested, please contact me.

Clear skies! ★

GET THE LATEST CAMPAIGN NEWS...

Subscribe online to receive AAVSO *Alert Notices* and *Special Notices* directly to your email's inbox. Stay on top of stellar activity and get detailed information on current and upcoming observing campaigns by visiting http://www.aavso.org/observation-notification to subscribe today!

JULIAN DATE / MOON PHASE CALENDARS

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

APRIL 2012

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1 6019	2 6020	3 6021	4 6022	5 6023	6 6024	7 6025
8 6026	9 6027	10 6028	11 6029	12 6030	13 6031	14 6032
15 6033	16 6034	17 6035	18 6036	19 6037	20 6038	21 6039
22 6040	23 6041	24 6042	25 6043	26 6044	27 6045	28 6046
29 6047	30 6048					

MAY 2012

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1 6049	2 6050	3 6051	4 6052	5 6053
6 6054	7 6055	8 6056	9 6057	10 6058	11 6059	12 6060
13 6061	14 6062	15 6063	16 6064	17 6065	18 6066	19 6067
20 6068	21 6069	22 6070	23 6071	24 6072	25 6073	26 6074
27 6075	28 6076	29 6077	30 6078	31 6079		

JUNE 2012

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1 6080	2 6081
3 6082	4 6083	5 6084	6 6085	7 6086	8 6087	9 6088
10 6089	11 6090	12 6091	13 6092	14 6093	15 6094	16 6095
17 6096	18 6097	19 6098	20 6099	21 6100	22 6101	23 6102
24 6103	25 6104	26 6105	27 6106	28 6107	29 6108	30 6109

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@aavso.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.aavso.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.aavso.org/aavso-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.aavso.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:_____

JOIN THE AAVSO FOR HALF OFF!

From now until April 30, 2012, new members can join the AAVSO for half off the usual price of annual dues.

See details on next page

JOIN THE AAVSO FOR HALF OFF!

From now until April 30, 2012, new members can join the AAVSO for half off the usual price of annual dues.

Your total cost will be just $40.00. ($30.00 for 2012 dues and a one time $10.00 processing fee. This offer is only for new members.

Within a week or so (depending on where you live) you will receive your new member kit, which includes:

New Member acceptance letter, membership certificate, and AAVSO decal

A copy of the By-Laws of the AAVSO, the most recent *AAVSO Newsletter, AAVSO Bulletin, Journal of the AAVSO,* and *AAVSO Annual Report*

The 10 Star Tutorial for those new to visual variable star observing

A copy of our *Manual for Visual Observing of Variable Stars*, and getting-started manuals for CCD and PEP observing

A user guide to the AAVSO's Variable Star Plotter -- our online chart-making utility, and

A number of reference documents covering topics such as Julian Day, object naming, easy to observe stars, and the AAVSO Mentoring Program

You also immediately gain access to the member-only sections of the AAVSO website, our powerful photometry software VPHOT, and AAVSOnet, our robotic telescope network.

You automatically become eligible to take advantage of our Mentor Program and CHOICE Short Courses.

There has never been a more exciting time to join the AAVSO and now you can do it at a special introductory rate of $30.00. Join today!

In order to join you must first register for a website account and you must be logged in.

For more information or help, contact us at aavso@aavso.org

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 _____

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: $_____

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: _____

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!