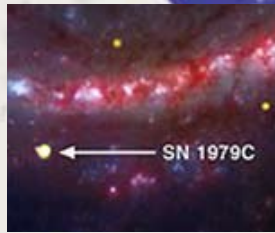


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ISSUE NO.47

JANUARY 2011

WWW.AAVSO.ORG

AAVSO Newsletter



Celebrating
100 years

1911–2011

FROM THE DIRECTOR'S DESK

ARNE A. HENDEN (HQA)

This is the time of year when I reflect on everything that has happened over the past year, and plan for the following year. I can't believe how busy the AAVSO has been this year, with the new web site, lots of building improvements, and changing faces at headquarters. The next year is likely to be just as exciting as we gather together to celebrate our century of existence. I tend to concentrate my contribution to the newsletter on projects done by staff members, but I also want to express my feeling of honor at being able to lead the AAVSO for the past five years. It has been a wonderful experience.

I spent a week down at CTIO, helping Tom Smith install APASS. What a wonderful site for an observatory!. Since I returned in early November, it has been crystal-clear at CTIO, and we've been gathering data at the maximum rate. I'm having fun controlling the telescope from my workstation, with several web-cam views and the Windows desktops being displayed on my screen. It is amazing what you can do from 6,000 miles away. Peter Nelson has BSM-South up and running too, and the images look great. That will be a very useful southern hemisphere system, once their abnormal rain pattern breaks.

We had the local International Occultation Timing Association meeting in the Conference Center during early December. They made good use of the space, and the Internet access was sufficient

to do some webcasting of the meeting. There were two asteroid occultations passing through the Boston area that Saturday night. Two of their sites were successful in obtaining photometry during the occultation, but since many of the IOTA folks participated, they delayed the start of the second day of the meeting.

The contractors have finished the basic painting of the building exterior, just barely in time for winter. They will come back in the spring to paint the trim. The building looks great, both inside and out. We have a couple of small inside tasks to finish, and then next spring will do some landscaping to complete the project.

Elizabeth Waagen and Mike Saladyga spent many hours in the archives, finding photos and facts that span the 100 years of our existence. Those photos and facts are now part of the 2011 AAVSO Calendar, for sale on the web site. I highly recommend the purchase of at least one of these centennial calendars, to look at and read through the year and then to store for future memories.

We have a new phone system, thanks to diligent research and installation by Doc Kinne. Doc also finalized the Internet service, obtaining a lower rate from our primary vendor and adding a separate cable connection for AAVSONet. Doc's office is overflowing with boxes from the new phones, and from Costco purchases of external

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.

PRESIDENT'S MESSAGE

JAIME R. GARCIA (GAJ)

Happy New Year! This is a special year for the AAVSO because we have just reached our Centennial Anniversary year! I am very happy and proud to be the President this year.

In this message I would like to pay homage to those who through the years were responsible for making our Association grow and maintain its health. The list is very long but you will be able to know all the history by the time of our Spring Meeting. Yes, the incredible work of our historian Tom Williams and our archivist Michael Saladyga will be published within an entire book containing the most relevant chapters of our Centennial history.

Our Annual Meeting in Woburn was excellent. We had very interesting presentations, including a workshop on VStar by Sara Beck, invited talks by Doug Welch, Tim Slater, and by Stephanie Slater, who was the our Banquet speaker. Michael Hill received a special award because he was retiring as SID section leader, after his ten years of service in this role. During the open house we also had a chance to enjoy the recent renovations at AAVSO headquarters.

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DIRECTOR'S MESSAGE CONTINUED...

hard drives for various AAVSONet telescopes. The cost of storage keeps coming down, just as the need for that storage increases. We've been lucky so far!

Will McMain has been quickly learning all about the AAVSO, and applying his skills in improving the web site. Sara Beck continues to collaborate with David Benn in improving VStar, and is adding new features to the quality-checking of AAVSONet data that takes place every morning. She is now in Ireland for a couple of months, but is working remotely on validation and programming. It is amazing how the Internet has improved our ability to work from "home."

Now that the centennial book is in the hands of the publisher, Mike Saladyga has returned to importing the remaining archival observations received from the BAA and the RASNZ. He

and Elizabeth are assigning observer codes to the many non-AAVSO observers who submitted observations to those organizations. Many of the early observations will fill in the light curves of important variables, so we're looking forward to the conclusion of this exercise.

Aaron Price and Matt Templeton spent several weeks in October and November writing grant proposals for various NSF programs. We have a good chance at several of these projects, so I'm hopeful that the review panels will look favorably upon them. Both Aaron and Matt have stepped into their new roles as managers and are doing well, though it means extra workload for the two of them. Aaron completed his Ph.D. defense in great style, even web-casting the event and accepting external questions.

Rebecca Turner, Mike Simonsen, and Aaron are finalizing the AAVSO plans for our centennial year. It is not just having a couple of extended

meetings with the AAS in May and by ourselves in October, but also sending representatives to the major star parties, lots of fun things to do on the web site, special sale items, and the works. They've come up with a wide range of activities to highlight the organization and to involve the members and observers. If you can't find something of interest happening at the AAVSO during the next year, you are not trying very hard!

Have a happy New Year, and help us celebrate our 100th anniversary!. I hope to meet most of you at one of our meetings in the coming year. ★

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PRESIDENT'S MESSAGE CONTINUED...

One of the presentations described a new tool called Variable Stars which is the version for iPhone of our Variable Star Index: the power of VSX in your hands. This program was developed by Diatom Software, led by John Rachlin. We, the Android users, are looking forward to that kind of application!

A little before, during, and after our Annual Meeting, I spent almost ten days at Headquarters. It was a very auspicious experience, mainly because it was an excellent opportunity for talking with everyone there. Our staff is really great. Everyone is committed to the Association and is doing his/her job in a way that I would like to describe as enthusiastic and responsible.

After that, I made a trip to Hermosillo, Sonora, Mexico, where I was hosted by AAVSO member and observer Salvador Aguirre. Salvador is an amazingly good visual observer and I took advantage of his generous hospitality, and we shared a whole night observing deep in the northern skies with his 10" Dobsonian, something that is not so usual for me, certainly!

There I also had the opportunity of giving a whole week of lectures on variable stars and photometry

CONTINUED ON PAGE 10

Ed. note: the Spanish language text of Jaime's message can be found on page 10.

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS

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NEWSLETTER

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DEVELOPMENT	Mike Simonsen

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 mike@aavso.org. Photos in this issue courtesy of Carol Beaman, Thomas Bretl, NASA, and Aaron Price.

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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REPORTS FROM THE ANNUAL MEETING

MY FIRST AAVSO MEETING

KEVIN B. PAXSON (PKV), SPRING, TEXAS

Though I have been an AAVSO member since 2001, I have only become more active over the last several years. While I knew of many AAVSO members from their papers, postings on the AAVSO or Yahoo discussion boards, or participation in the AAVSO chat room, I had never actually “met” other AAVSO observers or attended an AAVSO meeting. My decision to attend the 99th AAVSO Annual Meeting in Woburn, Massachusetts, was a last-minute decision. So I drove from Texas to Ohio and spent a few days visiting my family, then drove to Boston.

The venue was top rate. The technical talks were very interesting. A VStar software overview, cosmic ray detection in water tanks of New York City, solar astronomy at Very Low Frequencies, an overview of the outburst of recurrent nova U Scorpii, irregular LPV’s, an iPhone variable star application, artificial intelligence algorithms for eclipsing variable stars, and other talks were well done and thought-provoking. The invited talks of Drs. Tim and Stephanie Slater were very well received. In between talks, I even had my copies of Astronomical Photometry and Understanding Variable Stars signed by Dr. Arne Henden and Dr. John R. Percy, respectively! While the talks all were of great interest, what impressed me the most were the people—the members and guests of the AAVSO. They were warm, friendly, and very approachable.

I first met Mike Simonsen, who I had befriended via the VSObs-Share Yahoo Group when I was posting my CV observations using remote Internet telescopes (GRAS, SSON, and BRT). He later introduced me to other AAVSO members. I introduced myself to Frank Schorr of the AAVSO LPV Group, whom I initially met in the AAVSO chat room a few weeks earlier. I showed him the Peranso software and my archival data of R Leonis which went back to 1839. I talked to Dr. Matt Templeton about older variable star observations in the literature (another interest of mine) and optical scanning technology that the AAVSO hopes to use in capturing archival observations. I later introduced myself and showed my archival R Leonis data set to Dr. Lee Anne Willson. She was most interested and after the meeting I sent her a copy of my data file. I met educators like Dr. Pebble Johnson, Dr. Stephanie Slater, Dr. Tim Slater, and Jim Bedient, all of whom share their passion for education and getting younger people involved with citizen science. In the “Mapping the Future of the AAVSO” group exercise, I became acquainted with Dr. Margarita Karovska and her enthusiasm for semiregular and Mira variables.

On the bus going to AAVSO Headquarters for the evening open house, I met and talked with fellow Houstonian, Past President and AAVSO historian Tom Williams. While at AAVSO headquarters, I met most of the AAVSO staff. Sara Beck showed me the AAVSO library and archives. There I saw the Paul Yendell archive files of thousands of unreduced observations which date from 1889 to 1916. I even held in my hand the first observation report submitted by Leslie Peltier, which began with his observation of R Leonis in March of 1918! On the return trip on the bus, I talked to a couple of AAVSO members about their solar observations. I met countless other AAVSO members at lunch, dinner, the banquet dinner, and other social gatherings.

CONTINUED ON NEXT PAGE



Some of the participants in the AAVSO's Annual Meeting for 2010
Photo by Carol Beaman

A WORTHWHILE TREK

THOMAS BRETL (BTB), PLYMOUTH, MINNESOTA

My wife and I drive to AAVSO meetings whenever possible. We like to stop, sight-see, and take hikes along the way. We usually bring our dog along, a 130-pound Newfoundland named Callie who loves to lie across the entire back seat.

We spent four days traveling from Minnesota to Boston for the 99th Annual meeting. We took a high-speed ferry across Lake Michigan, saw one of only three US luge runs at Muskegon State Park, hiked trails in the Cuyahoga Valley National Park, and visited the Pocono Environmental Education Center in the Delaware Water Gap National Recreational Area.

We were lucky to make it across Lake Michigan when we did. A big storm with 50-mile per hour winds hit the next day. They had to use snowplows to clear sand dunes from the streets of Muskegon! But after one very rainy day in Michigan and Ohio, the weather was perfect for the rest of the trip, and we enjoyed several hikes through woods displaying just slightly past-peak fall colors.

We got to Boston on Thursday afternoon. We had made special arrangements for our dog beforehand, but still turned a few heads as we checked into the Woburn Hilton. Callie seems to draw a crowd wherever we go, and she loves the attention. At the meeting in Calgary, visitors from China thought she was a bear!

For me, the highlights of the meeting were the VStar workshop, the HQ Open House, the annual banquet, and the talks given by Drs. Timothy and Stephanie Slater. Most of the time I am “just” an observer, but it was interesting to learn how VStar can be used to help analyze the data which I submit.

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alpha Ursa-Canis Majoris at the AAVSO? Callie takes a back seat but always enjoys the trip to Cambridge.

MY FIRST MEETING CONTINUED...

The AAVSO is all about people—amateurs, professionals, and educators who have passion for their special projects and/or objects in the night sky. Diversity and a remarkable sense of purpose make the AAVSO a strong and most unique organization. There is something for everyone in the AAVSO: data mining, data archiving, data validation, observing the sun, monitoring the very low frequencies for SID's, and observing variable stars with the unaided eye, binoculars, DSLR's, CCD's, and back yard to large Internet telescopes. I look forward to attending future AAVSO meetings to make new friendships and to renew the friendships created at this most memorable meeting. I drove over 4,000 miles round trip to attend the 2010 Annual Meeting of the AAVSO, but it was worth it. But next year, I will fly! ★

A WORTHWHILE TREK CONTINUED...

It was fun to meet and talk with people at the open house, but I especially enjoyed touring the building and leaning more about the history of the organization. I never really liked history as a subject in school, but I find it much more appealing in a “real life” context.

As a retired high school math and science teacher, I was especially interested in, somewhat depressed by, but not really surprised by Dr. Timothy Slater's talk titled “What's a Light Curve? Unexpected Reasoning Difficulties When Interpreting Graphs.” The difficulties he discussed are similar to ones that I tried to deal with for over 40 years!

The banquet was a great way to end the week. My wife and I were seated at a really “fun” table - with good conversation and lots of laughs. Again, as a former educator, I enjoyed Dr. Stephanie Slater's talk titled, “Amateurs Matter: Women's Pathways to Professional Astronomy.” I have taught many girls who were “not good at math” mostly because they did not think they were supposed to be good at math. And for some reason, one quote sticks in my mind: “The plural of anecdote is not data.”

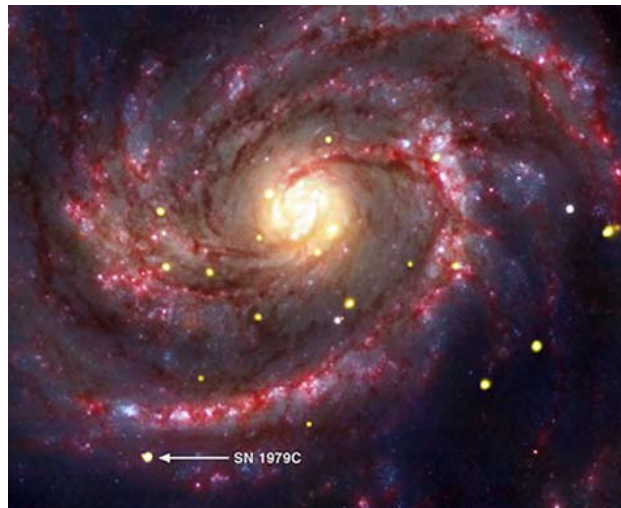
Overall, it was a fun (although somewhat tiring) trip and an enjoyable meeting. We look forward to more in the future—maybe in the midwest sometime? ★

31-YEAR OLD SN DISCOVERY BY AAVSOER NETS BABY BLACK HOLE!

MICHAEL SALADYGA, AAVSO HEADQUARTERS

Longtime AAVSO member and observer Gus E. Johnson (JOG) of Swanton, Maryland, was surprised by fame one day recently. It seems that a supernova discovery he made in April 1979 (SN 1979C in M100) has been found to be a very young black hole. Gus sent us a somewhat bemused account in a letter he attached to his monthly observing report:

It came as quite a surprise in early Nov. when Dr. Edmonds of the Chandra X-Ray Center phoned me for an interview pertaining to my old April 1979 discovery of the supernova in M100, that there now is evidence that it is a black hole, the first one with a known birth-date. He told me of a coming Nov. 15 news conference concerning it. Nov. 15th and the next two days had lots of interviews by phone and in person, the latter I chose to have at the Discovery Center, of the Deep Creek Lake State park [in Swanton, Maryland], where I work. Astronomy is a small part of the nature-related programs of the Discovery Center, but I lead its star parties there and at three other nearby parks. So much publicity, while it was Patnaude, Loeb, and Jones, of the Chandra X-Ray Center that did the real research about the black hole, and forgotten were P. Mechain and C. Messier, who discovered the galaxy; I tried to get them included, and the local newspaper, The Republican, gave them deserved mention. As for myself it was like I had ridden around the merry-go-round 31-1/2 times then caught the brass ring, without even trying! Caroline Blizzard, head lady of the Discovery Center, is delighted with the publicity the park received.



This composite image from NASA shows supernova SN 1979C within the galaxy M100 that may contain the youngest known black hole in our cosmic neighborhood. Visit NASA's webpage http://www.nasa.gov/mission_pages/chandra/multimedia/photoH-10-299.html for more information.

Credits: X-ray: NASA/CXC/SAO/D.Patnaude et al., Optical: ESO/VLT, Infrared: NASA/JPL/Caltech

In their website report of this discovery, NASA neglected to mention Gus by name, saying only that “SN 1979C was first reported to be seen by an amateur astronomer in 1979.” But we're glad to see that his small part in all this (like that of Mechain and Messier) was acknowledged by Dr. Edmonds of the Chandra X-Ray Center and by his local media. We hope that this event will boost attendance at the Discovery Center's star parties. Congratulations, Gus! ★

REFLECTIONS ON THE JOURNAL OF THE AAVSO

JOHN R. PERCY, JAAVSO EDITOR (john.percy@utoronto.ca)

JAAVSO was established in 1972 as (in the words of Margaret Mayall): “a place where professional and non-professional astronomers can publish papers on research of interest to the observer.” It has also included reviews, abstracts of papers presented at meetings, and various AAVSO reports. *JAAVSO* is now available on-line, but paper copies can be obtained at cost.

JAAVSO therefore has a number of purposes and audiences. One is to contribute to scientific knowledge, by being read and cited by researchers. Another is to provide AAVSO observers and members with interesting information about current research and other aspects of variable stars, and especially to show them how AAVSO observations are used in research. *JAAVSO* and its research papers and reports provide a showcase for AAVSO activity for VSOers and other readers around the world. *JAAVSO* has also been an outlet for student research papers on variable stars, as well as for papers by observers and members. My students and I regularly publish in *JAAVSO*, to contribute to scientific knowledge, to show readers how AAVSO observations can be used for research and education, and to motivate and recognize the work of my students. It’s a win-win-win situation! In 2006, the AAVSO held a workshop on scientific publication, with observers and members and students as its audience; the papers from that workshop are available at:

<http://www.aavso.org/aavso-workshop-writing-and-publishing-scientific-papers>

AAVSO staff have recently expressed concern—and rightly so—about whether *JAAVSO* is fulfilling its purposes. Its impact on scientific research can be measured by its citations in other research papers, and that impact is low. Because of this, and because *JAAVSO* is not included in some abstracting services (we are endeavoring to change this), some professional astronomers are hesitant to publish in it. It is a bit more difficult to measure the impact of *JAAVSO* on AAVSO observers and members, and on VSOers around the world; these are significant audiences! I would be delighted to hear from readers about this point.

The *JAAVSO* Editor is assisted by an Editorial Committee, one of whose duties could be to monitor and assess the impact and all-round effectiveness of the *JAAVSO*. The Editorial Committee can serve as a “steering committee”

for the *Journal*, providing ongoing advice, assessment, and support. The Editorial Committee has not been reconstituted for many years, and although some current members are still active, others are not. However, it is not clear how *JAAVSO*, its Editor, and the Editorial Committee fit in the constitution and by-laws of the Association. Who appoints them? What is their term of office? What are their terms of reference? Are they a committee of Council, or part of Headquarters? AAVSO staff and I are in the process of addressing these interesting questions.

How does *JAAVSO* function? AAVSO staff members carry out the day-to-day administrative operation of the *Journal*, including communicating with the Editor and with referees, with the author, and preparing final versions of papers for on-line publication and the print version. The Editor is responsible for the scientific administration of the *Journal*, including deciding whether submitted manuscripts are suitable for refereeing, assisting in recommending referees for each paper, and assessing whether the final versions of the manuscripts meet any concerns of the referees. The Editor and AAVSO staff members may also review the final versions of the manuscripts. Frankly, the staff does most of the work, and I am extremely grateful for this.

The challenges facing *JAAVSO* are to be effective in serving the dual audiences of the astronomical community and the AAVSO members and observers, while being cost-effective in terms of “value for money.” This requires the *Journal* to find a unique niche among the other forms of astronomical research communication. The strength and relevance of the *Journal* is that of the AAVSO itself: its observers continue to make significant contributions to astronomical research, in partnership with professional astronomers and students. *JAAVSO* is a mouthpiece for this remarkable, century-old partnership community.

Comments would be gratefully received. ★



Dr. John R. Percy,
JAAVSO Editor

AAVSO STAFFER EARNS PH.D.

AAVSO Staff member Aaron Price recently earned a Ph.D. from the Math, Science, Technology and Engineering Education program in the Department of Education at Tufts University. Aaron’s Dissertation is titled *Scientific Literacy of Adult Participants in an Online Citizen Science Project*. Congratulations, Aaron!

A newly-minted Aaron Price, Ph.D., center, with his wife Erma, his dissertation committee, and friends



AAVSO CENTENNIAL CALENDAR FOR 2011

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

In celebration of the AAVSO Centennial, we have created *A Century of Variable Star Observing: 1911–2010*, a 13-month, full-color calendar that showcases the AAVSO and the people who have made it the dynamic institution it is today. Give it as a gift to yourself, the AAVSO'er or variable star observer or amateur astronomer in your life, the history of astronomy or science fan you know, the student of women in science....

The AAVSO Centennial Calendar is full of images—nearly 200 of them!—and includes artwork pages on:

- members, observers, and friends of the AAVSO
- observers and their observing equipment and observatories
- women in the AAVSO
- Directors and Recorders
- staff members and volunteers
- AAVSO Headquarters locations
- AAVSO charts
- AAVSO reports, showing how submitting observations has evolved
- the AAVSO logo

There are too many photographs of people in the calendar to include identifications of everyone there. Thus, we have created files of identifications and placed them on the AAVSO website for your reference (perhaps to download, print, and keep near the calendar).

The date page for each month includes:

- Julian Dates
- UT dates and times of lunar phases
- standard civil and religious holidays
- 2011 AAVSO meeting dates
- AAVSO historical tidbits—lots and lots of them!

What is the remarkable coincidence about all of the AAVSO Recorders and Directors? Exactly when did the AAVSO leave Harvard College Observatory and where did it go? When did HCO approve of the AAVSO's use of blueprint finding charts? Just what is the "projected star logo"? When did Leslie Peltier make his first observation (and what star did he observe)? Danie Overbeek? John Bortle? Who made the 10 millionth AAVSO observation and when? The who's, what's, where's, and when's of much AAVSO history is given on these pages.

The front cover shown here highlights the formal AAVSO organization meeting held in 1917. Also shown here are two additional samples from the calendar—the date page for October 2011 and the back cover.

The AAVSO Centennial calendar is 8.5 × 11 inches in size and covers January–December 2011 and January 2012. The cost (U.S. funds) per copy, including First Class postage and handling, is: \$15.00 U.S. address; \$16.00 Canadian address; \$17.50 all other addresses. Please order through the AAVSO Online Store: <http://www.aavso.org/aavso-online-store>



The date page shows how each month's information is arranged and gives you an idea of the AAVSO history covered—October has always been a busy month for the AAVSO!



The back cover shows small versions of the artwork for 2011. As you can see, there are many people and many telescopes!

*Join the celebration and order your calendar today—
travel through the AAVSO's past
as you move ahead with it into its second century!*



OUR 100TH YEAR!

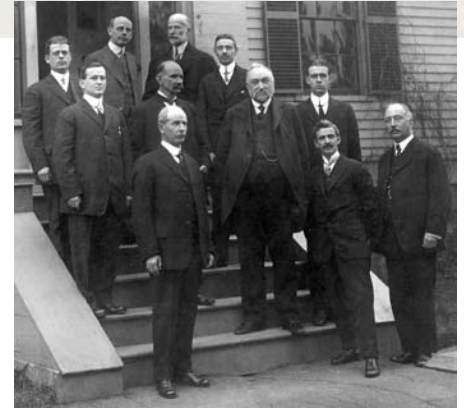
ARNE A. HENDEN (HQA), AAVSO HEADQUARTERS

I may have been the Director for six years, but that is puny with respect to the 100 years of the AAVSO's existence. A century of citizen science is truly amazing!

We've decided to celebrate all year long, not just in October (the founding date was October 10, 1911). Here is the first round of fun activities:

- Two meetings in Boston! The AAS is holding a joint meeting with the AAVSO in May, and then we have our blow-out celebration in early October.
- A new logo contest. The current one has been around for decades—do you have a neat idea for the next 100 years?
- Observer challenges. Two of these are already scheduled, but more will be announced during the year.
- Website features. An AAVSO Timeline will show important dates in AAVSO history; a trivia challenge will be highlighted on the home page; and we'll have a forum on AAVSO Sightings around the world.

The AAVSO's Annual Meeting in 1915—the first to be held at Harvard College Observatory.



- Star party talks. AAVSO staff (including Yours Truly) will be featured at many of the major star parties throughout the U.S. You can get involved too!
- A centennial T-shirt Campaign. Here is your chance to get my "John Henry" on a unique T-shirt, never to be produced again, and at the same time, help fund our celebration.

Don't forget to buy your copy of the 2011 AAVSO Calendar. It contains many historical photos that you may never see again.

We want this year to be fun and exciting, so if you have other suggestions, don't hesitate in letting us know! Happy New Year to everyone! ★



*Celebrating
100 years*



1911–2011

DIDN'T I KNOW THAT?

MICHAEL SALADYGA, AAVSO HEADQUARTERS

Railroads? Smoking? Balloon flights? The atomic bomb? The Baseball Hall of Fame? What on earth do these have to do with variable star observing?

Find out! Participate in the online AAVSO Trivia Challenge that is part of our 100th anniversary celebration.

You will not only have fun trying to guess the answers to some truly arcane factoids gleaned from the AAVSO archives, you might find yourself using them at your next star party! ★



Most would recognize the famous amateur astronomer and variable star observer Leslie Peltier in this photo, but what was it about his telescope that made the pages of Popular Science, and not anywhere else?

DEVELOPMENT REPORT

MIKE SIMONSEN (SXXN), AAVSO

New members 101 new members joined the AAVSO in fiscal year 2009–2010. They are a diverse group, including several professional astronomers, perhaps a dozen educators, twenty or more engineers, IT professionals, computer scientists, and a half dozen students and grad students. Our new members also include a pharmacist, a dentist, a geologist, a biologist, a law officer, a Navy officer, several construction workers, a retired magazine editor, a ranch owner, a land use planner, a service tech, and a toolmaker.

How do they find us? Many of them say they have always known about us, but decided now is the time to join. Many of them mention reading about us in *Sky & Telescope* magazine, or hearing about the AAVSO at an astronomy club meeting. Several mention the podcasts Astronomy Cast and Slacker Astronomy as their introduction or inspiration. Our presence at the Northeast Astronomical Imaging Convention (NEAIC) and the Northeast Astronomy Festival (NEAF) last year netted four new members. This year we had our first new member join because of our Facebook page, a trend I hope we will expand on in the future.

New member contacts All new members receive a welcome email letter from me personally at a minimum. Depending on my workload and their time zone, many of them also get a phone call from me. This usually comes as a surprise, and I get a lot of favorable feedback from new members on this. I also get to know many of them personally and can help with their questions and mentoring needs right away. This naturally evolves into a stronger relationship between the members and the organization based on familiarity and trust.

Sponsored members FY 2009 we trimmed the list of sponsored and complimentary memberships to only those individuals who still wished to be sponsored or deserved special recognition from the Director in the form of a complimentary membership. We started with 132 sponsored and complimentary memberships and ended up with 36—14 sponsored and 22 complimentary—significantly reducing the work required to service these memberships.

I made an effort to pair donors with sponsored individuals where I could. The rest of the sponsored memberships were paid from funds acquired during FY2009. We took in a total of \$725.00 in general sponsorship fund donations, and Michael Kran, David Turner, and I paid for three other sponsored memberships of specific individuals. Thus, we actually ended the accounting with a surplus for the year.

Sponsored student members and Photometrica I was contacted in April by a professor at Sonoma State University who wanted to use VPHOT for his students to do photometry of AGN and variable objects. In order to take advantage of what is now a member-only benefit, the professor joined the AAVSO and I found a donor, Ken Mogul, to pay for the memberships of four of his students. This has become the model for educators wishing to use VPHOT. The instructor joins at the annual rate, and then we offer the reduced

rate of \$30 for the students, or I try to match them with a donor to cover the student costs.

Corporate sponsors Swinburne Astronomy Online has renewed their support and *Astronomy* and *Sky & Telescope* magazines have agreed to continue their level of support for 2011. We added a new sponsor, Unihedron, based on donations of sky quality meters for AAVSONet, and hope to add Quantum Scientific Imaging (QSI) to the fold this year, based on talks at the Big Bear meeting and their loan to us of a CCD for testing. The Orion click-through promotion was not netting us any money so they have been discontinued from the role for now, and SBIG has decided to hold back further donations of equipment temporarily.

Mentor Program Nearly half of the new members request some sort of guidance or mentoring upon joining. Sometimes this is as simple as my suggesting stars for them to begin with or finding information on the website or elsewhere on the Internet for them to research. Other members would benefit from enrolling in the mentor program and I assign them to one or more of our wonderful volunteer mentors. These assignments are still about 50/50 visual to CCD. I've had a half dozen inquiries from astronomy instructors in high schools and small colleges wanting to set up labs or experiments for their students. John Blackwell usually gets these referrals and does a marvelous job helping educators get started and helping them avoid the landmines frequently encountered in setting up student programs.

Magazine articles and podcasts This year we had several variable star related articles published online in *Universe Today* (6), *Astronomy.com* (2), and *Sky and Telescope.com* (4) as well as a feature article on the eruption of U Sco in the May issue of *Sky & Telescope* magazine.

New Media Although I'm still not sure where this is going, I know we need to be on Facebook to be viewed as in the game. The one thing I've found is it is an excellent way of reaching people all around the world. We now have more fans on Facebook (2,392) than we have members of the organization, and they are from many places we have not been visible before, including the Middle East, Philippines, Taiwan, and Argentina.

Like Facebook, our Twitter feed should be like a beefed-up version of our news headlines on the website. Any time something changes on the website it should be tweeted, and then we should be able to add links to relevant articles and events picked off the news wires and Google reader. Unfortunately, I probably need some volunteer help and possibly some more automated web crawlers looking for content to really make this interesting.

I'm thankful for the opportunity to do so many things for the AAVSO and to be rewarded with the friendship and appreciation of the staff and membership. I look forward to many more years of service and satisfaction. ★

IN MEMORIAM

MEMBERS, OBSERVERS, COLLEAGUES,
AND FRIENDS OF THE AAVSO

ADRIAAN BLAAUW died December 1, 2010, at the age of 96. His long career included serving twice as professor of astronomy at Leiden University, associate professor at Yerkes Observatory, and Director of Groningen Observatory. He was involved in the founding of the European Southern Observatory (ESO) and was its first Scientific Director and then later its Director General, and he was President of the IAU for three years (and was responsible for bringing China back into the IAU); he set up the archives of the IAU and wrote its history. His research interests included galactic structure and OB associations and runaway OB stars; he co-edited Volume 5 (galactic structure) of the 1965 series Stars and Stellar Systems. Closest to AAVSO members and observers may be his contribution as the chair of the group that was responsible for specifying the content of the input catalogue for the HIPPARCOS mission. Minor planet (2145) Blaauw, discovered at ESO, was named in his honor.



*Adriaan Blaauw
Carnegie Observatories/
Carnegie Inst. Washington*

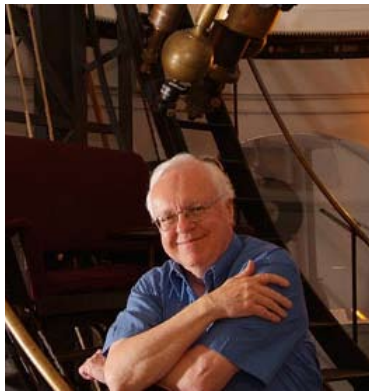
JEREMY H. KNOWLES, AAVSO member and observer since 1949, died January 4, 2011, at the age of 80 after a siege with Alzheimer's. Jeremy contributed 8,650 observations mostly of bright variables; he was a keen binocular observer. A minister and a former Chaplain Major in the U.S. Air Force, Jerry was a gentle, kind man, a poet (read his astronomy haiku in *JAASO* 15, 2, 310 (1986)), and a strong supporter of the AAVSO since his youthful days at Harvard College Observatory.



*Jeremy Knowles as
an Air Force Chaplain
Major in 1974.*

He witnessed Harlow Shapley's support of the AAVSO (and wrote of it in *JAASO* 26, 1, 68 (1997)) and he was present at the fateful post-Shapley HCO meeting in which the future of the AAVSO was discussed. Jerry and his wife Elfriede were regular AAVSO meeting attendees.

BRIAN GEOFFREY MARSDEN, AAVSO member since 1986, died November 18, 2010, from pneumonia and leukemia at the age of 73. Brian was a real believer in the potential and power of amateur astronomers, and a strong supporter of their serious efforts and contributions. Director of the IAU Central Bureau for Astronomical Telegrams and the Smithsonian Institution's Minor Planet Center for decades, from the 1960s on he was a very good friend of the AAVSO and a close colleague, often asking for assistance to confirm or refute a discovery report before issuing an announcement, request follow-up observation information, or check on the behavior of a star in assessing a report made to the CBAT. Brian was an expert in the history of astronomy as well as in topics related to solar system minor bodies; he was also a key player in Pluto's change in planetary status, and was past president of IAU Commissions 6 and 20. Minor planet (1877) Marsden was named in his honor. Brian's wife, Nancy, their family, and colleagues will hold a memorial service for him at 3 P.M. on Sunday, January 16, 2011, at Hancock United Church of Christ, 1912 Massachusetts Ave., Lexington, MA 02421.



*Brian Marsden inside the dome of the
15-inch refractor at Harvard College
Observatory.*

ALLAN R. SANDAGE died November 13, 2010, from pancreatic cancer at the age of 84. Not an AAVSO member or observer, Sandage nevertheless contributed to the AAVSO and all astronomy through his enormously important work on understanding the size and age of the universe. His interest in astronomy began as a boy when he looked through a friend's backyard telescope, and he started to grind (although did not finish) a 6-inch mirror. He studied mathematics



*Allan Sandage inside
the dome of the 100-
inch Hooker Telescope
at Mount Wilson
Observatory (early
1970s).*

and physics, as a student observed with Edwin Hubble, and made observational astronomy his career (although his contributions as a cosmologist were also vast). His main interests included the processes of stellar evolution, the age, structure, and formation of the Milky Way galaxy, and absolute magnitudes and distances of remote objects and their roles in understanding distance scales. Early in his career he realized that Hubble had incorrectly identified star-forming regions in galaxies as individual stars; Sandage's revised value of the Hubble constant matched the currently accepted value yielding an age of the universe as approximately 12 billion years. More locally, minor planet (9963) Sandage was named in his honor.

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

MENSAJE DEL PRESIDENTE

JAIME R. GARCIA (GAJ)

¡Feliz año nuevo! Y este es un año especial para la AAVSO porque ¡acabamos de llegar a nuestro Centenario! Estoy muy feliz y orgulloso por ser el Presidente en este año.

En este mensaje me gustaría hacer un homenaje a aquéllos que, a través de los años, se encargaron de hacer que nuestra Asociación crezca y mantenga su salud. La lista es muy larga, pero usted podrá conocer toda la historia en el momento de nuestra reunión de primavera. Sí, el increíble trabajo de nuestro historiador Tom Williams y de nuestro curador Michael Saladyga se publicará en un volumen completo con los capítulos más relevantes de nuestra historia centenaria.

Nuestra reunión anual en Woburn fue excelente. Hemos tenido presentaciones muy interesantes como un taller de Sara Beck, charlas invitadas de Doug Welch, Tim Slater, y de Stephanie Slater, quien fue la oradora de nuestra cena de cierre. Michael Hill recibió un premio especial por su retiro como jefe de sección SID, después de sus diez años de servicio en este rol. Durante la recepción, en la sede, también tuvimos oportunidad de disfrutar de las recientes reformas en el edificio sede de AAVSO.

Una de las presentaciones se refirió a una nueva herramienta informática "Variable Stars" que es la versión de nuestro índice de estrellas variables

para iPhone: todo el poder de VSX en sus manos. Este programa fue desarrollado por Diatom Software, empresa que lidera John Rachlin. Los usuarios de Android estamos a la espera de ¡una versión que opere en él!

Un poco antes, durante y después de nuestra reunión anual, pasé casi diez días en la sede. Fue una experiencia muy auspiciosa. Sobre todo porque era una excelente oportunidad para hablar con todos y cada uno de nuestros colaboradores. Nuestro personal es realmente excelente. Todo el mundo está comprometido con la Asociación y está haciendo su trabajo de una manera que me gustaría describirla como entusiasta y responsable.

Después de eso, hice un viaje a Hermosillo, Sonora, México, donde fui huésped de Salvador Aguirre, miembro y observador de AAVSO. Salvador es un observador visual increíblemente bueno y aproveché su generosa hospitalidad compartiendo toda una noche de observación del cielo profundo boreal con su dobsoniano de 10", algo que no es habitual para mí, ¡sin duda!

Allí también tuve oportunidad de dar una semana de clases sobre estrellas variables y fotometría en la Universidad local (Universidad de Sonora), difundiendo nuestras increíbles herramientas de análisis: VPHOT (el ex Photometrica) y VStar. Somos realmente muy afortunados por tener estas herramientas disponibles para los miembros de forma totalmente gratuita. Me gustaría dar las gracias a David Benn y Sara Beck para el diseño y la programación de VStar, y al VStar team en Citizen Sky por colaborar en las pruebas y adicionando sugerencias para que sea una mejor herramienta.

Y hablando de Citizen Sky, tenemos una noticia muy interesante para nuestros miembros y observadores del hemisferio sur, debido a que el impresionante equipo de Southern Gems acaba de publicar su primer producto cooperativo: una versión del tutorial de diez estrellas para el hemisferio sur. Esto es, una vez más, un gran ejemplo del trabajo complementario en equipo. Agradezco la actividad laboriosa de este equipo, especialmente de Joan Chamberline, que los lidera. Y ahora, parte del equipo está trabajando en la traducción al español del tutorial. ¡Lo que será genial!

Otra buena noticia para el hemisferio sur es que nuestro APASS (AAVSO Photometric All-Sky Survey) está muy ocupado observando los cielos del sur. Uno de los proyectos más importantes, que es tener un relevamiento fotométrico completo de esta parte del cielo, está en curso en Cerro Tololo gracias al esfuerzo de nuestra organización y al trabajo paciente de Tom Smith quien puso todo en operaciones.

La generosa contribución de nuestros miembros, a través de donaciones, es la mejor forma para continuar con esta evolución en la tecnología, herramientas y el progreso general en la astronomía de estrellas variables.

Por último, me gustaría continuar conociendo sus ideas acerca de cómo la AAVSO puede contribuir al futuro de las estrellas variables. Estoy deseoso de verlos en Boston para la 100a Reunión de Primavera de AAVSO que se celebrará junto, con la Sociedad Astronómica Americana, en mayo próximo. ¡Que tengan una buena temporada! ★

PRESIDENT'S MESSAGE CONTINUED...

in the local University (Universidad de Sonora), spreading the word of our incredible tools for analysis: VPHOT (the former Photometrica) and VStar. We are really very lucky to have these tools available for the membership completely free of charge. I would like to thank David Benn and Sara Beck for designing and programming VStar, and the VStar Team in Citizen Sky for the collaboration in testing and adding suggestions making it a better tool.

Speaking of Citizen Sky, we have very interesting news for our Southern Hemisphere members and observers: the awesome Southern Gems team has just published their first cooperative product, a version of the 10-Star Tutorial for the Southern Hemisphere. This is, once again, a great example

of complementary team work. I appreciate the laborious activity of this team, especially Joan Chamberline, who leads them. And now, part of the team is working on the Spanish translation of the Tutorial. That will be great!

More exciting news for the Southern Hemisphere is that our APASS (the AAVSO Photometric All-Sky Survey) is very busy observing the southern skies. One of the most important projects of having a complete photometric survey of this part of the sky is ongoing in Cerro Tololo, thanks to our efforts and the patient work of Tom Smith in making everything operational.

Generous contributions from our members through donations are the best way for continuing with

this evolution in technology, tools, and overall progress in variable star astronomy.

Finally, I would like to continue hearing your ideas about how the AAVSO can contribute to the future of variable stars. Also, I am looking forward to see you in the Boston area for our 100th Spring Meeting to be held with the American Astronomical Society next May. Have a nice season! ★

AAVSO 2011 MEETINGS

2011 marks the AAVSO's centennial year and we have two very special meetings planned to calibrate this momentous occasion. Mark your calendars!

AAVSO 110th Spring Meeting (held jointly with AAS) May 21–26, 2011 (May 21–23, core variable star days) Boston, Massachusetts. The AAVSO 100th Spring Meeting will be held as a joint meeting with the American Astronomical Society (AAS) at the Westin Copley Place, Boston, Massachusetts. The AAS is a very large and highly respected professional astronomical society. (The AAS 2010 winter meeting was the world's largest astronomy meeting in history.) This joint meeting will start mid-day on Saturday, May 21, 2011. Saturday will include an AAVSO Paper Session and an open house at AAVSO Headquarters. Sunday will include further paper sessions, a joint session with the AAS Historical Astronomy Division (HAD) and the AAS Welcome Reception. Monday will include a couple of topical planetary talks as well as two AAVSO-sponsored, variable star special sessions, "Astrophysics with small telescopes" and "Variable stars in the imaging era." AAS meeting events will continue through May 26, 2011, and each day will include dozens of talks covering a wide range of astronomical topics. Those who are not members of the AAS will be able to take advantage of special registration rates just for AAVSO Members. What a great opportunity to attend an AAS meeting at a dramatically reduced rate! More information on registration and hotel reservations will be available in January of 2011—details will be announced on the AAVSO homepage.

AAVSO 100th Annual Meeting October 5–8, 2011 Cambridge and Woburn, Massachusetts. The AAVSO 100th Annual Meeting will be held at AAVSO Headquarters in Cambridge, Massachusetts and the Hilton Hotel in Woburn, Massachusetts. This meeting will start on Wednesday, October 5th, with a Council Meeting and banquet for past and present Council members. On Thursday morning we will hold the dedication ceremony for the Dorrit Hoffleit Headquarters renovation project and an AAVSO Birthday Party Welcome Reception and time capsule dedication. Friday and Saturday will include a book signing, invited speakers, paper sessions, poster sessions, and the AAVSO closing awards banquet. This is sure to be a once in a lifetime meeting with unprecedented attendance and a very special anniversary program. If you've been waiting to find just the right AAVSO meeting to attend, this is it!! Sleeping room rates will be \$99 per night at the main hotel with roommate matching assistance and lower priced hotels offered as options. Further details will be posted on the AAVSO homepage early next year. Please consider joining us in 2011 to help celebrate this once in a lifetime event!

We hope to see you next year at an AAVSO meeting!

SPECIAL SESSIONS PLANNED FOR JOINT AAVSO AND AAS MEETING IN MAY 2011

LEE ANNE WILLSON, IOWA STATE UNIVERSITY

In May 2011 the American Astronomical Society and the AAVSO will be having a joint meeting in Boston, recognizing a century of the AAVSO (this meeting will be part of the 100th AAVSO Spring meeting). The Vice Presidents of the AAS, who plan the scientific content of their meetings, are coordinating closely with the AAVSO to set the schedule so as to make it easy for the AAVSO members to come to the sessions of the AAS that are most interesting for them. Thus, on Sunday, May 22, there will be an AAS Historical Division sponsored session, organized by Tom Williams (twice President of the AAVSO) on the history of variable star astronomy. On Monday, May 23, two sessions are being planned by Matt Templeton, one on astronomy with small telescopes and one on imaging variable stars with interferometry, both expected to appeal to AAVSO and AAS members. There will be invited talks of common interest also, and we've tried to put the sessions most likely to be of interest close to the beginning of the week to make it easier for AAVSOers who would like to stay on for just part of the AAS meeting.

It is not too late to suggest a speaker for one of the special sessions, for a plenary talk, or for a public lecture. Please send suggestions to <lwillson@iastate.edu> by January 7, 2011.

THANKS TO OUR SPONSORS!

Astronomy
magazine

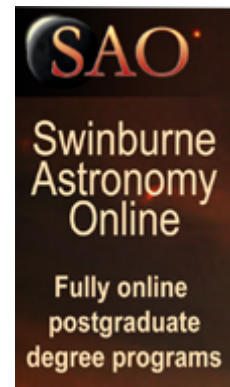
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INTERNATIONAL OBSERVING CAMPAIGN: PHOTOMETRY AND SPECTROSCOPY OF P CYGNI

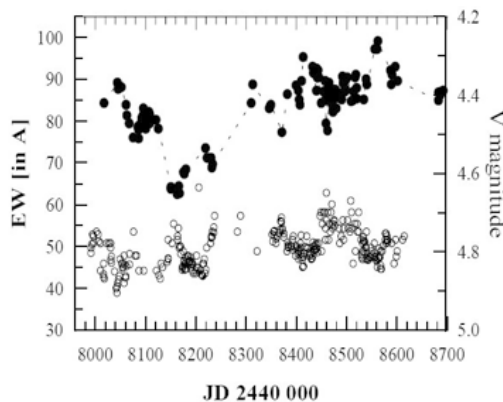
ERNST POLLMANN AND THILO BAUER, ASPA-SPECTROSCOPY GROUP

The international observing campaign, Photometry and Spectroscopy of P Cyg, is a common project of the AAVSO, Active Spectroscopy in Astronomy (ASPA), and the BAV. Launched in November 2008 (see *AAVSO Special Notice No. 131*), the project yielded very encouraging results. Markova (2001) and Markova *et al.* (2001) suggested an anti-correlation between the variations of the equivalent width (EW) of the H α line profile and the variations of the photometric V magnitude of the star P Cyg. The variability of the equivalent width of the H α line was up to 10Å. In this investigation the time scale of the variability is found to be between 40 and 60 days. Participating observers are given in Table 1.

The primary goal of the project is to continue observations to confirm the anti-correlation between the photometric variability and the spectroscopic variations suggested by Markova. In addition, further information about the flux of the spectroscopic lines will be obtained.

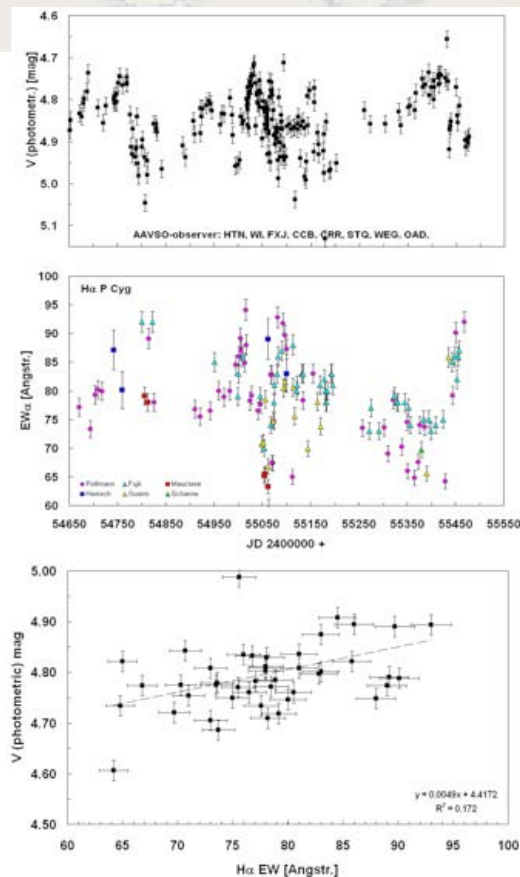
The proposed anti-correlation is based on a direct comparison of earlier photometric and spectroscopic observations (Markova 2001). If the equivalent width of the H α line decreases, the stellar brightness increases and vice versa (Figure 1). It is assumed that the variability of the width of the line profiles is more likely caused by variations of the continuum flux and not by variations of the density of the stellar winds. Therefore, the influence of the variability of the continuum flux will be our primary concern, if the properties of the stellar winds and rate of mass loss are studied.

Figure 1. Plot of the photometric V magnitude versus H α -equivalent width (from Markova *et al.* 2001). An anti-correlation is found from the graph.



So far, our own results (Figure 2) well represent the anti-correlation results of Markova. Strict anti-correlation is expected if the variation of the continuum flux is independent from spectroscopic variations. If the photometric flux of the spectral line is constant over time, an increase of the continuum flux will yield a smaller flux from the evaluation of the equivalent width found in the line profiles. A simplistic normalization of the continuum is a typical source of the problem. The lower plot of Figure 2 shows this anti-correlation as V versus H α EW. The small coefficient of correlation of only 0.17 has at least two causes:

Figure 2. In analogy to the results in the investigations of Markova *et al.* (2001, in Figure 1) the comparison of the behavior of EW and V during our campaign.



- differences in the continuum fluxes. Strictly applied, the continuum flux at 6563Å should be used. But here ΔV is a good approximation since the color indices of P Cygni do not vary greatly.
- further intrinsic components (temperature, density, velocity).

To find out if and how the flux obtained from the spectral line profiles varies, the equivalent width measurement is corrected for the effect mentioned in the previous section.

From the definitions of equivalent width $EW = \sum \frac{F_c - F_l}{F_c} \Delta\lambda$ and the photometric stellar magnitude $J2/J1 = 10^{-0.4(m2-m1)}$ the relation yields: $F = EW / 10^{(0.4 V_{phot})}$.

In practice, EW is corrected with a simple division by $10^{(0.4 V_{phot})}$. It is important to consider the absolute flux of the line because its variations are caused by the effects of mass loss, stellar wind density, and changes of the ionization of the chemical elements in the outer gas shell. In the current campaign we have already obtained 46 nearly simultaneous measurements of the equivalent width EW and the photometric flux in the visual (V) spectral range.

Figure 3 attempts to display if and to what extent the intrinsic line flux (a continuum-corrected EW) depends on V_{phot} . From a statistical point of view one can say that the low 0.12 correlation coefficient (which should be zero after the continuum correction), with consideration of the measurement uncertainties, suggests the conclusion that the H α line flux is independent of V_{phot} .

This would confirm that the uncorrected EW variations with (almost) constant line flux predominantly result from changes in V, and (if so) confirms the anti-correlation of EW to V_{phot} shown in Figures 1 and 2.

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P CYGNI CAMPAIGN
CONTINUED...

Figure 3. The relationship between line flux and V magnitude; correlation coefficient is only 0.12, thus showing anti-correlation.

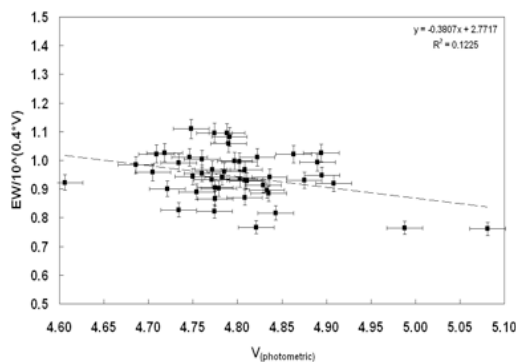
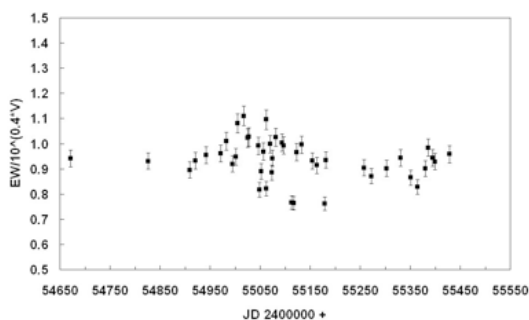


Figure 4. Intrinsic flux of the H α line since 2008/11 to 2010/11.



The temporal variation of the absolute line flux of H α is found to be at a nearly constant level with a certain deviation (Figure 4). This kind of plot represents changes of the mass loss, stellar wind density, and changes of the ionization. The 46 EW and V-measurements of the current campaign are, of course, from a statistical point of view, still not sufficient to make firm statements regarding the simultaneous temporal behavior of V and the intrinsic line flux. In order to achieve this aim further, multiyear, simultaneous spectroscopic and photometric measurements are needed. Please keep observing P Cygni!

Table 1. Participating observers in the P Cygni project.

AAVSO (V_{phot})		Spectroscopy (H α -EW)
Adrian Ormsby	David Williams	Mitsugu Fuji (Japan)
Robert E. Crumrine	E. G. Williams	Benjamin Mauclaire (France)
Jim Fox	Charles L. Calia	Joan Guarro (Spain)
Kate Hutton	Thomas L. Peairs	Lothar Schanne (Germany)
Nick Stoikidis	Jeffery G. Horne	Bernd Hanisch (Germany)
		Ernst Pollmann (Germany)

Acknowledgements

We are grateful to Dr. Dietrich Baade (ESO-München), Dr. Otmar Stahl (Landes-Sternwarte Heidelberg), and Prof. Dr. Edward Geyer (formerly Director Observatorium Hoher List, University-Bonn) for their critical comments which led to essential improvements of this work.

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- Markova, N. 2001, *P Cygni 2000, 400 Years of Progress*, ASP Conference Series, Vol. 233.
 Markova, N., Morrison, N., Kolka, I., and Markov, H. 2001, *Astron. Astrophys.*, **376**, 898.

Z CAMPAIGN REPORT

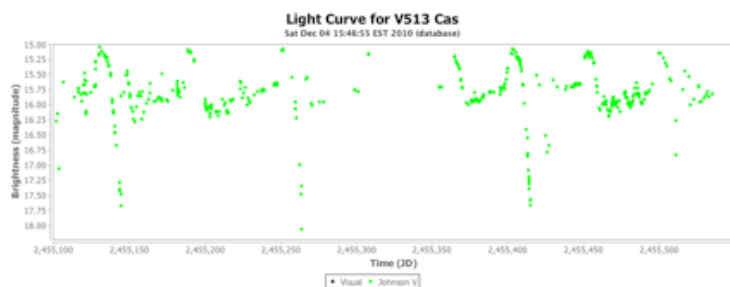
MIKE SIMONSEN (SXXN), AAVSO

At the first quarter point of the second year of this campaign we have some interesting results and publications in print and in preparation. I'd like to take this opportunity to thank all the observers reporting their data on Z CamPaign stars. Your data is driving this project, and I appreciate the time and effort you have invested in it.

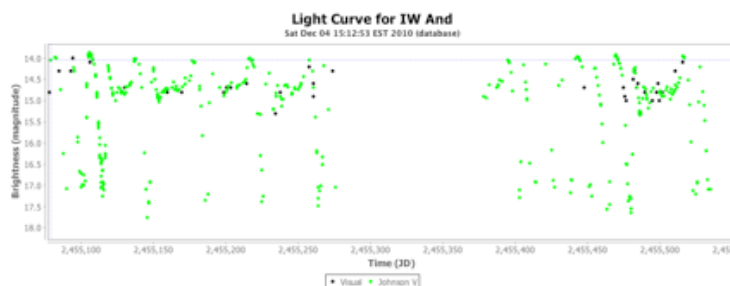
Most of the following light curves are roughly January 2009 to the present. They were all plotted using VStar.

WW Cet WW Ceti is in standstill as of this writing. This is the first historical standstill of this CV, and as such has given us the chance to classify this dwarf nova unambiguously as a Z Cam. Our paper on this standstill and WW Ceti's new classification has been accepted by *AAVSO* and is available on the AAVSO website (<http://www.aavso.org/ejaavso132>) and on the arXiv pre-print server (<http://arxiv.org/abs/1012.1545>). Special thanks go to John Bortle and Rod Stubbings for their invaluable data.

V513 Cas This IW And star continues to exhibit quasi-periodic fades that resemble eclipses every 3–4 months, as well as brief maxima that have gone from ~60 days apart to ~45 days on average lately.



IW And The cousin to V513 Cas, IW And exhibits a similar behavior, with eclipse-like features every 39 days or so and short outbursts every 40 days apart on average.



The pattern for this season changed to deep fades 11–16 days apart and outbursts every 20–30 days, but it looks like the star is transitioning into the prior behavior pattern in the last few weeks.

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Z CAMPAIGN REPORT CONTINUED...

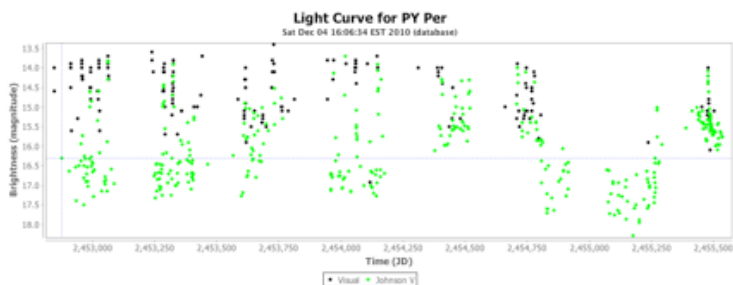
RX And RX And has remained in UGSS mode, with outbursts every 2 weeks. No standstills in 2009 or 2010.

TW Tri Nothing remarkable happening here, but coverage is improving. It appears this star has a similar outburst cycle to many Z Cams at 12–15 days. If we do eventually observe a standstill I think it will get stuck around 15th magnitude. Keep the data coming!

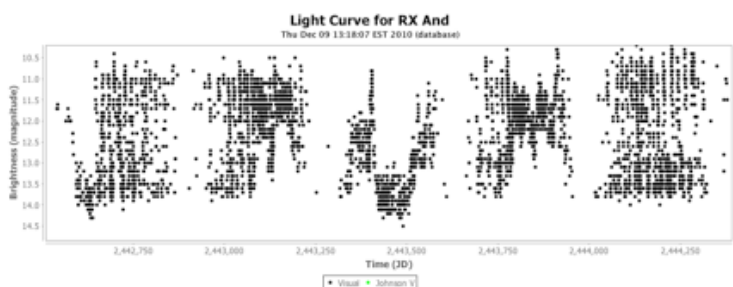
AY Psc AY Psc has outbursts approximately every three weeks. This star also exhibits eclipses, so it affords us the chance to determine orbital parameters, geometry of the system and masses of the components. It might be a worthwhile effort to observe eclipses while AY Psc is still well placed. The orbital period is 5.2 hours, so eclipse observations are a significant time investment.

TZ Per The trend this season seems to indicate TZ Per's outburst amplitude is damping down. This could be indication of a coming standstill. I'm going to go out on a limb and predict TZ Per will experience a standstill within the next 90 days, on or before March 15, 2011. We'll see how that turns out. Predicting CV behavior is pretty risky.

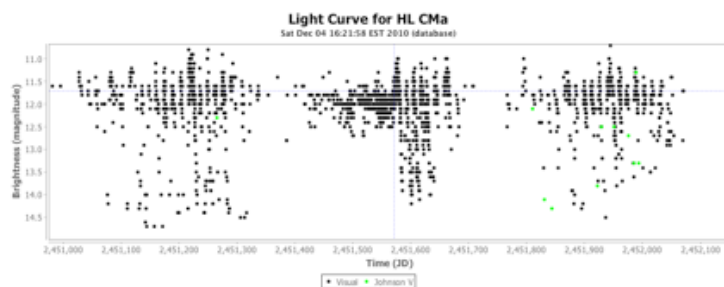
PY Per I am beginning to suspect this star might actually be a VY Scl star hiding amongst the Z Cams. The recent prolonged low state is reminiscent of VY Scl. Does accretion just temporarily shut off for these stars? If so, what kicks it back on again?



Then again, RX And has been seen doing this kind of thing in the past. This is discussed in 2002A&A...384L...6S, RX And: An intermediate between Z Cam and VY Scl stars, Schreiber, M. R.; Gänsicke, B. T.; Mattei, J. A. You can see one example below from 1993. Southern Observers, We Need You Too!

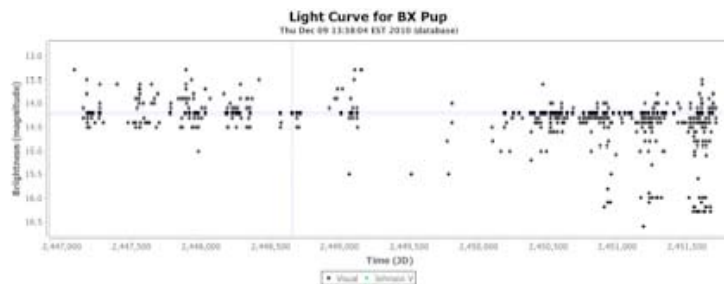


HL Cma HL Cma is a bona fide Z Cam I found this standstill in the data from June 1999–January 2000. It too seems to be damping down in preparation of an upcoming standstill. This effect is also seen in the light curve. Note how the amplitude between max and min decreases leading up to the standstill.

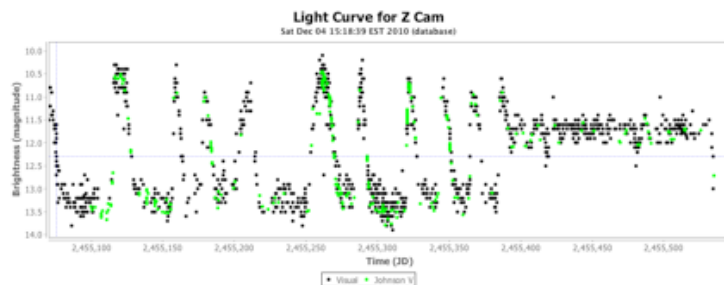


WZ Cma Simply put, we need more data for this star. There aren't enough current data to talk about and there aren't enough historical data to make the call as to WZ Cma's membership in the Z Cam class.

BX Pup BX Pup is classified as a Z Cam and I have to agree based on the historical data. It appears there were standstill in 1992 and 1997. We could certainly do with more coverage, and the standstill level is ~14.2, so it's within reach of visual observers with moderate sized telescopes.



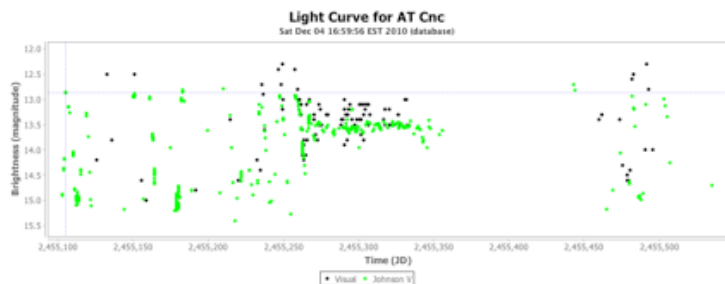
Z Cam After being in standstill since August this year, it looks like Z Cam has dropped back down to quiescence and is ready to start the roller coaster ride all over again. Get your tickets for 2011 now folks. It will no doubt be another fun ride.



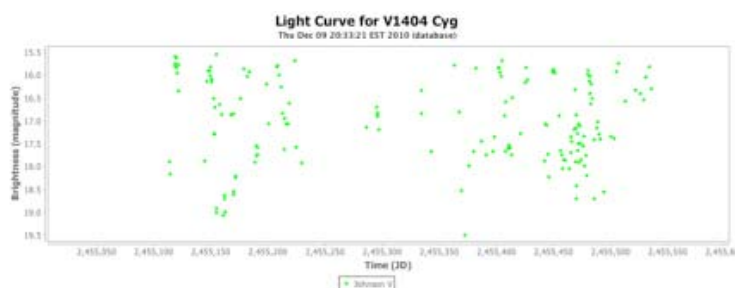
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Z CAMPAIGN REPORT CONTINUED...

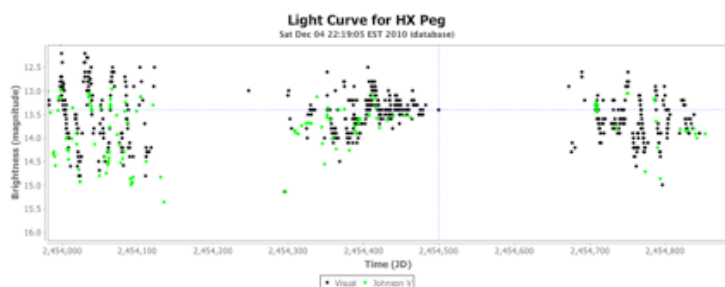
AT Cnc Below is the light curve for the time covering the Z CamPaig, September 2009 to present. As you can see, we had a nice standstill last season, and AT Cnc is becoming well placed for observers now.



V1404 Cyg This one is getting covered quite well. So far, all that has shown up is a fairly consistent outburst cycle of 25 days. It's possible that there was a brief standstill in April 2010.



HX Peg This star had a standstill from December 2008 to January 2009. It looks like it may be heading for another one. This UGZ appears to have standstills almost annually.



For the full summary report for 2010 see:

<https://sites.google.com/site/aavsovcvsection/z-campaign/z-campaign-update-december-2010> ★

CATAclysmic VARIABLE SECTION UPDATE

MIKE SIMONSEN (SXN), AAVSO, SECTION LEADER

CVnet Discussion The discussion list has 244 subscribers. The past year's activity is best described as an announcement list. Actual discussion seldom takes place. Notes from *AAVSO Alert Notices* and *Special Notices*, *IAU Circulars*, and *The Astronomer* telegrams are forwarded here also.

CVnet Outburst The outburst list has 227 subscribers. This list has daily activity and is used by observers to announce outburst detections and unusual behavior of CVs, as well as Z Cam standstills and time series results.

CVnet Circular The *Circular* has 154 subscribers and is edited and maintained by Chris Watson and Mike Simonsen. Daily average magnitudes of all the CVs in the AAVSO International Database are calculated and tabulated for a 30-day period and distributed automatically via email each Monday morning at 00:00UT.

Section co-leaders Mike Simonsen and Gary Poyner moderate all the CVnet mail lists.

CV Section Website The CV Section website is hosted by Google at:

<https://sites.google.com/site/aavsovcvsection/Home>

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

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

Activities The main activity of our observers has been to monitor the CVs in the AAVSO program for activity and report their data to the AAVSO International Database. Little or no analysis of the data is done by AAVSO members or staff. The only exception to this being the Z CamPaig, which has bi-monthly or quarterly updates reported to the section on the campaign targets. Two papers resulting from the Z CamPaig have been accepted for publication in *JAAVSO*. ★

CHARTS AND SEQUENCES UPDATE

MIKE SIMONSEN (SXN), AAVSO, SECTION CO-LEADER

The Team The charts and sequences team is made up of volunteers who work countless hours each month revising old sequences and creating new sequences. Our most active team members account for about 90% of the work, notably Tom Bretl, Tim Crawford, Robert Fidrich, and Keith Graham. Bob Stine deserves to be mentioned as our team visual sequence evaluator and Sebastian Otero provides invaluable insight into bright star catalogs and photometry. Our newest team member, Sherrill Shaffer, is learning the ropes and becoming very active.

CHARTS AND SEQUENCES UPDATE CONTINUED...

Coordination with headquarters has improved to the point that whenever there is an upcoming campaign we are notified in advance and can check the sequences of the target stars to provide the best possible results from our observers.

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

Files and notes on sequences are shared through the sequence team mail list. Simonsen collects and archives the files, and once or twice per week evaluates the submissions, uploads the data to VSD, checks the resulting charts, and notifies the team of implementations via the mail list.

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

Changes are all tracked online in a Google spreadsheet accessible to the public at:

<https://spreadsheets.google.com/ccc?key=0Ar0ujdSb5ufQdEhkTE5jREhWRm95dDRialM0R1ZGREE&hl=en&pli=1#gid=0>

CHET, the chart error tracking tool, which allows observers to report and track the progress of chart issues, has been offline since implementation of the new website. Re-launching this important component of the chart team is expected sometime in early 2011.

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

<https://sites.google.com/site/aavsosequenceteam/Home>

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

As results come in from the AAVSO Photometric All-Sky Survey (APASS) it becomes ever more obvious that this will be a fantastic one-of-a-kind catalog, a prestigious AAVSO asset, and a priceless legacy from our Director, Arne Henden. An all-sky photometric catalog from 10th to 17th magnitude has been the Holy Grail of AAVSO chart makers since the dawn of variable star observing. I feel lucky to be around as it becomes a reality.

Results The results speak for themselves in the improved quality of the sequences available to observers and the speed and efficiency with which revisions and new sequences can be implemented with the system in place now. If you need a quantitative measure, the team has implemented 742 new or revised sequences since November of 2008—two years.

Priorities and Future Plans We plan to continue to improve existing sequences as new photometry becomes available. We have prioritized the

AAVSO Eclipsing Binary Program and RR Lyr Program stars and are working on those sequences as photometry becomes available. We have several known special cases that need notes in the footer of the charts or special one-of-a-kind charts plotted to address close companions, embedded nebulae, or proximity to bright stars like Sirius. And when CHET comes back online we will continue to address observers' concerns with charts. ★

SOLAR SECTION UPDATE

PAUL MORTFIELD, SECTION LEADER

While the Sun continues to be mostly inactive, much has gone on within the Solar Section. In late 2009 Daniel Williams stepped down as Sunspot Analyst after 3½ years of service to the group. Solar observer Kim Hay from Kingston, Ontario, Canada has taken over this task beginning May 2010. The sunspot observers contributed 8,062 observations (October 2009–September 2010) in spite of the minimal solar activity. Their efforts should be applauded as they continue to monitor our nearest star.

The report of the Sudden Ionospheric Disturbance (SID) group that monitors solar flares with radio equipment follows below. Mike Hill who has been the SID analyst since 2000 has transferred those tasks to SID observer Rodney Howe beginning this month. We thank Mike for his ten years of service to the committee.

We hope that over the next six months, to work with AAVSO Headquarters in proposing and developing an online sunspot data entry system and bring this area into the modern online age. This would tremendously help with data submissions, analysis and real time information to current and future observers.

SID Report (September 2009–August 2010)

Michael Hill, AAVSO SID Analyst (2000–2010)

For the last twelve months overall SID Activity has been quite low. The year started off somewhat active with 27 and 24 correlated SIDs in January and February but then the number dropped off significantly with only 9 or 10 events per month. Our observer ranks have remained consistent and we still have a good number of observers remaining vigilant in their watch for the next solar flare events. We also added two new observers this year. There were a total of twenty-four observers submitting reports and a total of 208 reports were sent in. Thanks to all observers for their efforts in monitoring, data analysis and report generation. This will be my last year as SID Analyst. After ten years of working in this position I have decided to pass the torch and starting in October of this year the new SID Analyst will be Rodney Howe from Fort Collins, Colorado. I have enjoyed my work in this regard immensely and will continue to monitor the sun for solar flare activity with the comfort that the SID group is in good hands with Mr. Howe.

One observer is eligible for an award this year, he is Francois Steyn A102. SID Observer awards are given to observers after having submitted 40 reports to the group. ★

SOLAR CYCLE 24—WILL IT BE UNUSUALLY QUIET?

RODNEY HOWE (HRHA), SID ANALYST, AAVSO SOLAR SECTION

Scientists have been counting sunspots since Galileo Galilei began 401 years ago! The Royal Observatory in Greenwich, England, and the Zurich Observatory have been keeping sunspot count records since 1749. Daily observations were started at the Zurich Observatory in 1749 and, with the addition of other observatories, continuous observations began in 1849 (<http://astro.ocis.temple.edu/~alan/WolfMathIntel.pdf>).

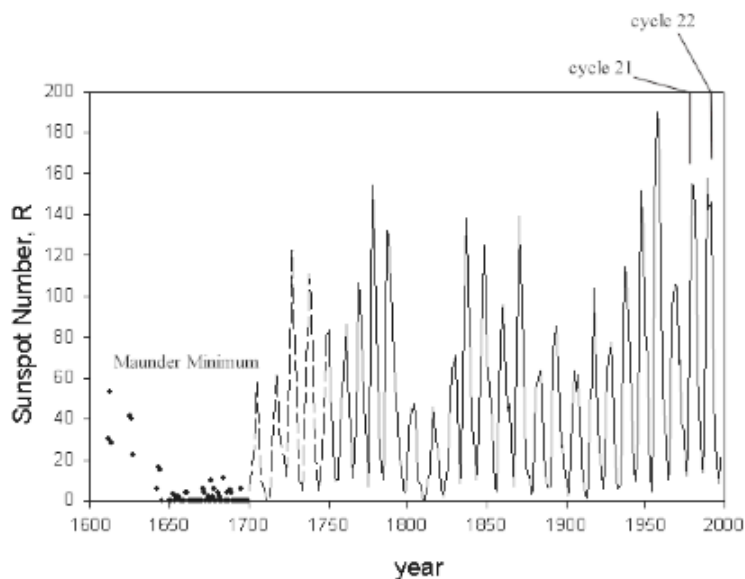


Figure 1. Since the mid 18th century, 23 solar cycles have passed, and we are now in solar cycle 24 (see page 10 of this thesis, <http://www.geo.umass.edu/climate/theses/waple-thesis.pdf>).

According to independent space weather researcher Jan Alvestad, “Solar cycle 24 has initially displayed much less activity than recent cycles. Based on statistical models the monthly smoothed sunspot number is likely to peak between 50 and 70 in 2013. The comparison with recent cycles is interesting to track the development of cycle 24.” (<http://www.solen.info/solar/cyclcomp.html>)

In October 1944 the AAVSO established the Solar Division (later renamed the AAVSO Solar Committee, currently the AAVSO Solar Section), and its observers have since been regularly contributing to the National Geophysical Data Center (NGDC) datasets for sunspot numbers, and since the early 1960s Very Low Frequency solar ionosphere disturbances (SID) data as well.

The solar sunspot number data Solar Section chair Paul Mortfield and all the previous Solar Division/Committee chairs—from Carl Fehrer back to Joseph Lawrence, Elizabeth Stephenson, Robert Ammons, Peter Taylor, Casper Hossfield, Harry Bondy, to the original chair Neal J. Heines—have collected data since 1944 which are submitted to NGDC as numbers in the American Relative Sunspot Number Program. The method of computing these numbers was revised in 1951.

Beginning with 1951, the observations collected by the AAVSO Solar Division have been reduced according to a new procedure,

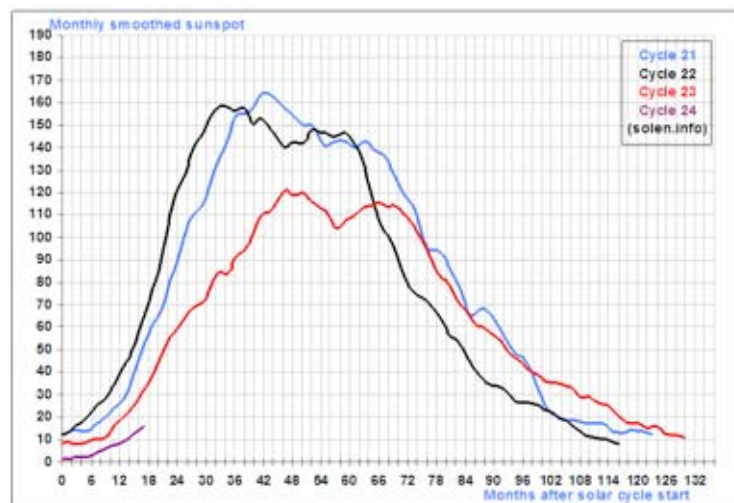


Figure 2. Evidence that this cycle 24 will be far less active than the last 3 cycles (<http://www.solen.info/solar/cyclcomp.html>).

such that only high quality observations of experienced observers are combined into RA'. Observatory coefficients for each of the 23 selected observers were recomputed on data for 1948–1950, years when there was a wide range of solar activity. Otherwise, the procedure is that outlined in *Publications of the Astronomical Society of the Pacific*, vol. 61, p. 13, 1949. The scale of the American numbers in 1951 will differ from that of the reports for earlier years because of these changes, and the new series is designated RA' rather than RA. (<http://www.ngdc.noaa.gov/stp/solar/ssndata.html>)

Since the advent of radio in the 1930s, it was noticed that the Earth's ionosphere was affected by solar flares in the Very Low Frequency wavelengths, and it was found by Jansky and others that there was detectable radio noise caused by the sun's solar activity (http://en.wikipedia.org/wiki/Radio_astronomy).

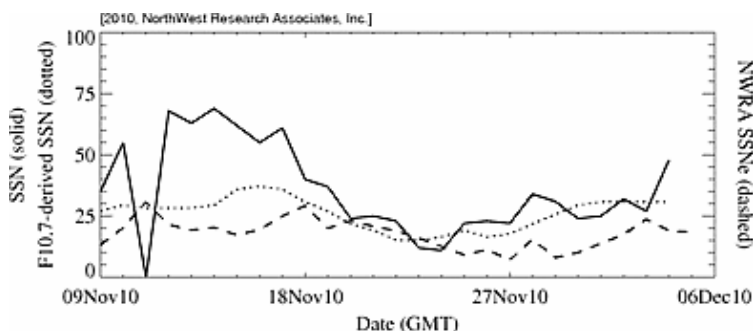
In 1947, when looking at the sun with World War II radar, Penticton found his radar unit, at the 10.7 cm line, could measure solar flux densities (in Janskys). Scientists also noticed that these readings varied from year to year, and that these variations matched closely to the sunspot count numbers, and decided that the 10.7-cm radio band should be adopted as the “solar flux index”:

These solar radio noise indices are published in accordance with a CCIR Recommendation originally from the Xth Plenary Assembly, Geneva, 1963 (maintained at XIth through XIVth Plenaries), which states “that the monthly-mean value of solar radio-noise flux at wave-lengths near 10 cm should be adopted as the index to be used for predicting monthly median values of foE and foF1, for dates certainly up to 6, and perhaps up to 12 months ahead of the date of the last observed values of solar radio-noise flux.” (ftp://ftp.ngdc.noaa.gov/STP/SOLAR_DATA/SOLAR_RADIO/FLUX/Penticton_Absolute/docs/penticton.txt)

Figure 3 illustrates the differences between the “real” sunspot number (SSN),

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SOLAR CYCLE 24 CONTINUED...



which is calculated from optical observations of the sun, a sunspot number derived from the 10.7cm solar radio flux (SSNf), and a sunspot number derived from fitting an ionospheric model to ionospheric measurements. All of these indices are used as inputs to models of the ionosphere for use in communications-performance predictions—this plot shows that they don't always agree as to what the SSN should be in that particular context (<http://www.nwra.com/spawx/comp.html>).

When the AAVSO became involved in contributing to NGDC these VLF solar ionosphere disturbance datasets, there was a need for some kind of index for the VLF SID contributions. In 1964 Virginia Lincoln created the "Importance Rating" and AAVSO has used this index for their SID data (*Planet. Space Sci.*, vol. 12, p. 419, 1964) (ftp://ftp.ngdc.noaa.gov/STP/SOLAR_DATA/Sudden_Ionsospheric_Disturbances/IREADME.TXT).

Much of these solar activity data became important to NASA in their need to understand how solar flares might affect astronauts during space flight. The Skylab observatory (launched in 1973) was specifically designed to monitor the solar flare activity during solar cycle 21, which, unfortunately, arrived early in the mission. And because cycle 21 was so active, it caused the ionosphere to expand, and brought Skylab down earlier than expected (<http://en.wikipedia.org/wiki/Skylab>).

In recent years there have been additional methods of measuring solar events. Since 1995 the GOES satellites have continually had Space Environment Monitors, and starting in 2000 Mike Hill, AAVSO observer and SID Analyst, made an effort to coordinate the VLF SID data with the GOES events data (<http://www.swpc.noaa.gov/ftpmenu/indices/events.html>).

SID observers and AAVSO contributions to the American Relative Sunspot Number Program may suffer this upcoming solar cycle (cycle 24) if the predictions from Jan Alvestad are correct, (see Figure 2). It may be that when there is little activity in the upcoming Cycle 24, solar observers and VLF SID observers alike may go into hibernation! ★

OBSERVING CAMPAIGNS UPDATE

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

Photometry of Edwin Hubble's first Cepheid in M31, M31_V1 Dr. Keith Noll and members of the Hubble Heritage Team who are studying Hubble's Variable (see *AAVSO Alert Notice 422*) that you have been monitoring since July contacted us with good news about the campaign. In early December, Noll wrote: "We are just about to have our M31_V1 observations scheduled on HST. Right now we have windows, the first on Dec. 16–17 with subsequent windows on Dec. 20²¹, 29–30, and the last on Jan. 6–7. Scheduling will narrow the time down from the day + windows to a specific orbit.... We made good use of the data collected by the AAVSO campaign to schedule our visits to sample the lightcurve. Our last check was just over a week ago using all four [cycles] observed by AAVSO members. As you can imagine, with only one shot at getting it right, the ground based data has been essential."

Max Mutchler, Space Telescope Science Institute, writes: "I'm another member of the Hubble Heritage Team at STScI, and I just wanted to thank you for the observing campaign for Hubble's Variable. It fell to me to use your light curves to find good dates for our HST visits (a peak, a trough, and two dates in between). I had to submit my best guesstimates a few weeks ago, so the first visit could be scheduled (for a trough on Dec 17). But I just checked the latest light curve to see if I properly predicted the Nov 21 peak—I did. So this gives me confidence our upcoming HST visits are well-timed. I'll still be a bit nervous until we get the data in hand, and I encourage AAVSO observers to keep monitoring it throughout our observations (ending on Jan 7) so we can verify which parts we sampled."

I recently worked with Max to assess his interpretation of the most recent data you have contributed in regard to upcoming HST observations, and I was impressed with the light curve—a light curve never obtained before! I know this object is becoming difficult to observe, but your continuing observations are very important. Please keep up your coverage of Hubble's Variable as best you can at least through the end of January so the astronomers will have a good ground-based light curve for correlation with their HST observations. Many thanks!

FS Aurigae The monitoring campaign on the peculiar cataclysmic variable FS Aurigae was announced by Dr. Matthew Templeton on November 30, 2010 (*AAVSO Alert Notice 428*), and only four days later the star went into outburst, activity caught and reported immediately by AAVSO observers. Thanks to the observations made throughout the outburst and reported to the AAVSO International Database, the astronomers were able to obtain "extremely interesting data," according to Principal Investigator Dr. Vitaly Neustroev. A second outburst was detected and reported on December 20, and good coverage is continuing. This campaign relies on AAVSO observers' detection, quick reporting, and coverage of outbursts and intervening quiescences to enable the astronomers to study the extremely unusual brightness and radial velocity behaviors of FS Aur.

Observing Campaign on BM Ori and the Trapezium region This campaign is underway, begun November 23, 2010, at the request of AAVSO's own Dr. Matthew Templeton with the goal of searching for low-amplitude variability

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OBSERVING CAMPAIGNS UPDATE CONTINUED...

in the bright, young stars of the Trapezium region of the Orion Nebula (M42) and surrounding constellations, in conjunction with upcoming observations with the MOST satellite (see *AAVSO Alert Notice 427* for more details, observing instructions, and the list of target stars). There is a wide range of target stars, ranging in brightness from 6th magnitude to 12–13 and fainter. There are very specific observational guidelines for these targets to maximize the scientific value of the observations, so please be sure to read the *Alert Notice*.

Eclipse of epsilon Aurigae The eclipse of epsilon Aurigae—and the campaign to observe it featured in the Citizen Sky project (www.citizensky.org)—is continuing. Its superb light curve continues to be extended, thanks to the hundreds of variable star observers worldwide who are contributing new visual and instrumental observations in many passbands. Thank you! Please keep up your excellent work!

Photometry of HMXBs Observers have been contributing very well to the stars in the latest stage of this ongoing, open-ended campaign of Dr. Gordon Sarty's to study High-Mass X-ray Binaries (HMXBs). Since the request for observations was issued October 20, 2010, (*AAVSO Special Notice #220*) eleven observers have contributed 66,880 multiband observations of the nine stars in this target set. Keep up the good work!

Long-term monitoring of the Young Stellar Objects HBC 722 and VSX J205126.1+440523 Since the request by Dr. Colin Aspin for the monitoring of these two objects (to continue through late 2011) was issued October 1, 2010 (*AAVSO Alert Notice 425*), 15 observers have contributed 580 visual and multipassband observations. We join Dr. Aspin in saying thank you and ask you to keep up the good work so that the optical and infrared spectroscopy planned for 2011 can be carried out.

Monitoring of V455 Andromedae This request by Dr. Paula Szkody for observations of V455 And in support of HST observations was originally issued August 30, 2010 (*AAVSO Alert Notice 423*), rescheduled due to HST spacecraft problems, and announced again October 5, 2010 (*AAVSO Alert Notice 426*). Unfortunately, it had to be postponed a second time. We will notify you when the HST observations have been rescheduled again.

As Dr. Matthew Templeton said in the previous Observing Campaigns Update, the AAVSO Observing Campaigns Program exists to serve both the researcher and the observer. If you are a researcher (amateur or professional) with a well-defined and well-justified science plan that would benefit from the observations of the amateur community, please let us know! And if you are an observer looking for new and challenging things to try, please look over our campaigns page to see what interesting new science you can contribute to!

You can learn more about AAVSO Observing Campaigns on our website:

<http://www.aavso.org/observing-campaigns>

Many thanks for your observing efforts and valuable contributions! Clear skies, and good observing. ★

PHOTOELECTRIC PHOTOMETRY PROGRAM UPDATE

MATTHEW TEMPLETON (TMT), AAVSO SCIENCE DIRECTOR

Hello everyone, This is a short report of the activities of the AAVSO PEP observers for the quarter beginning on October 1, 2010. PEP observers submitted a total of 158 observations since October 1, including both optical and near-infrared photometry. The observations were made by seven observers: Thomas Rutherford (RTH, 50 observations), Adrian Ormsby (OAD, 45 observations), Jim Fox (FXJ, 38 observations), Brian McCandless (MBE, 14 observations), Charles Calia (CCB, 11 observations), John Martin (UIS01, 10 observations), and Hans Neilsen (NHS, 1 observation). The stars with three or more observations during the season were: epsilon Aurigae (53 observations, in multiple filters), P Cygni (28 observations), R Lyrae (15 observations, mostly IR), beta Lyrae (14 observations, mostly IR), alpha Orionis (5 observations), IM Pegasi (3 observations), and V1339 Cygni (3 observations).

Epsilon Aurigae continues to be the most popular target for PEP observers, and is also being observed with the greatest diversity of filters, including the standard Johnson-Cousins, Wing, and near-IR (*J*- and *H*-band). P Cygni is also a frequent target; we note that the campaign to observe P Cygni begun at the request of Bernd Hanish and Ernst Pollman of the BAV continues, and observations of this star are encouraged. Of the 158 observations submitted, 50 were near-infrared observations made by Thomas Rutherford (RTH) with the Optec IR photometer.

Finally, we remind our PEP observers that they may continue to send PEP reports to the AAVSO for processing—we hope to have PEP Obs online early in 2011, but until that time we will be happy to process any observations you may have.

Clear skies! ★
































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





























JULIAN DATE / MOON PHASE CALENDARS

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



























DECEMBER 2010

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JANUARY 2011

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FEBRUARY 2011

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Moon calendars courtesy StarDate online
<http://stardate.org/nightsky/moon/>

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