ISSUE NO.40 | APRIL 2009 WWW.AAVSO.ORG

AAVSO Newsletter

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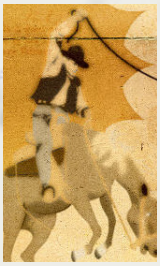

THE INTERNATIONAL YEAR OF ASTRONOMY...

The United Nations officially declared 2009 to be the International Year of Astronomy. The AAVSO is proud to be taking part by leading a capstone project: the monitoring of the rare and mysterious 2009–2010 eclipse of Epsilon Aurigae. In the summer of IYA 2009, third-magnitude Eps Aur will experience its next eclipse, which occurs every 27.1 years and lasts 714 days, nearly two years! Projects are being developed to include three audiences: amateurs, the general public, and educators, in this exciting observing campaign. For more info on the IYA check out www.astronomy2009.org.

FROM THE DIRECTOR'S DESK

ARNE A. HENDEN

All of the announcements over the past quarter-year might make it look like the AAVSO is suddenly becoming active in many areas. In reality, we've been working hard on a lot of projects for quite a while, and they just happen to be reaching the announcement stage at the same time!

One of the key pieces of software for the Sequence Team is SeqPlot, a nifty program that takes a MySQL database of all of the stars that I have calibrated at USNO-Flagstaff and Sonoita, and makes plots of each observed field. The user can click on any star, obtain its basic astrometric and photometric information, and optionally create a file in the format necessary for input in the Variable Sequence Database (VSD) that is used by the chart plotter. Sara Beck created both this Java application and the MySQL database of calibration stars. There are literally hundreds of fields for which we need to update sequences based on this photometric database, so there is plenty of work for any volunteer who joins the Team. Talk to Mike Simonsen to sign up and register for the mail-list.

The AAVSO Photometric All-Sky Survey (APASS) is something that I've been working on for about a decade, and finally convinced a granting agency (in this case, the Robert Martin Ayers Sciences Fund) to get involved. Bob Ayers is really interested in the project as necessary both for astronomy and for educational purposes, and is putting substantial funds towards its success. We've got some excellent volunteers on-board to help out on the software and operations. The astrographs will arrive by March 15, and the CCD cameras are due a few weeks afterward. We hope to be running during May, with initial results presented at the SAS/AAVSO meeting, as well as in a poster at the Pasadena AAS meeting. *Sky & Telescope* is also interested, and will publish an article about the project later in the year. APASS will give us photometric calibration over the entire sky, so that with the aid of the Sequence Team, we will be able to create reliable sequences for all stars currently in our program, and for all future targets.

Our podcasts in 365 Days of Astronomy have a good audience. Another educational king-pin, *Variable Star Astronomy* (a modern version of our *Hands-On Astrophysics* package), was released in March with enthusiastic response. We have a couple of methods of funding the final piece of VSA, the VSTAR software program, so with luck, the entire HOA package will be modernized and available to teachers and students at minimal cost. I hope this draws attention to the use of variable stars as a teaching tool, and brings in a youthful crowd to the AAVSO.

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PRESIDENT'S MESSAGE

PAULA SZKODY

With all the gloom and doom with the economy, I find it's a good time to escape it all by observing my favorite CVs or or just watching the Milky Way on a moonless night. That seems to put everything into a better perspective. At the University level, faculty will be teaching more students as positions are not filled, students will be paying more for tuition, but learning will go on. For organizations like ours, surviving off endowments and contributions is a challenge but observations will go on and the database will continue to grow for the future.

On the national level, astronomers are gearing up for the Decadal Survey. Over 300 white papers were submitted last month, giving the committee a lot of bedtime reading. Town hall meetings will be taking place throughout the coming months as the group tries to optimize community input and figure out the correct roadmap for the future. This time around, they want realistic budgets for projects in conjunction with the wish list. In the mix are large projects like the 8m Large Synoptic Survey Telescope (LSST), the James Webb Space Telescope (JWST), a 30-meter telescope, and the

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THE 97TH AAVSO ANNUAL MEETING

Access the full archive and highlights of the AAVSO's 97th Annual Meeting now online at: http://www.aavso.org/aavso/meetings/archivefall08.shtml. You can check out photos, watch video of key talks, the data mining workshop, MMO sessions, and access the PDFs and PowerPoint presentations from the scientific paper session, and also read comments from MMO Director Vladimir Strelnitski and AAVSO Councilor Kate Hutton.

FROM THE DIRECTOR'S DESK
CONTINUED...

Many publications have been released, including the first two fully electronic *JAAVSO* issues. With our Print-on-Demand option, we've been attentive to those who want a printed copy, as well as being frugal with AAVSO expenses. I think everyone wins! John Percy is a great replacement for Charles Whitney as Editor, and he will have some good ideas for the journal's future. Be sure to order your 2009 AAVSO Calendar, and download a copy of the 2008 *Annual Report*, too. We're working on several translations of material, with the Russian version of the *Visual Observing Manual* well underway and a German translation of the Telescope Simulator completed. Kate Davis is working on a redesign of the AAVSO website, and we expect that to be released in a few months.

The AAVSOnet group of robotic telescopes is growing. The two telescopes donated by Paul Wright's family are installed and running at Tom Krajci's observatory in New Mexico. These have a wide variety of filters and off-load some of the time series observations from Sonoita. Another telescope, the Bright Star Monitor, will head to New Mexico during April to survey bright variables, with some time available for the membership. We've gotten good response from the membership, with dozens of proposals for use of the telescopes. Remember—time on AAVSOnet is one of the benefits of membership, so submit your observing proposal and watch the data flow in!

Nicolai Samus of Moscow's Sternberg Astronomical Institute (SAI) will be coming to HQ for a week in April. He is the head of the *General Catalogue of Variable Stars* effort at SAI, and is coming to talk with me about the future of the *GCVS*, along with discussions about items of mutual interest for the upcoming IAU General Assembly. Elizabeth Griffin (Herzberg Institute of Astrophysics) visited Headquarters for a few days in February to work on a new spectroscopic database proposal.

In general, we're moving forward in many areas, utilizing volunteer help wherever possible to lessen the load on local staff. We're fully aware of the economic crisis, and are hoping that some of our grant proposals will be awarded and help us through this period. The AAVSO is a healthy and vibrant organization, and with the support of our membership and observers, will weather this storm in good fashion. ★

PRESIDENT'S MESSAGE
CONTINUED...

instruments for our national observatories of Kitt Peak and Cerro Tololo and Gemini, as well as infrastructure and support for a balanced suite of telescopes. The outcome will guide which projects receive highest funding in the future. This in turn has some impact on what the future interplay of professionals and amateurs will be. If LSST goes forward, there will be heightened interest in all types of variable objects. JWST will be geared toward IR so ground-based data will be needed to provide that portion of the spectrum.

Last month, Arne and I and several other AAVSO members attended the 14th North American Workshop on Cataclysmic Variables and Related Objects (Wild Stars in the Old West II) meeting in Tucson. There were many international attendees, and we heard about the latest data and theories from around the world. One output of this meeting was a paper dealing with the major unanswered questions in this field. This paper should appear in the PASP before the end of the year.

Another approaching event in the near future is the joint meeting with the Society for Astronomical Sciences (SAS) at Big Bear. This will be an interesting venue and a longer meeting due to the larger group. With two workshops and three days of talks, we should come back with many interesting new ideas and plans. The Council will be dealing with ways to move the AAVSO forward within a limited budget and evaluating the progress of the new committee structures. I hope to see you there or hear your ideas for how the AAVSO can contribute to the future of variable stars.

Happy Spring! ★

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. Additional photos in this issue courtesy of Steve Howell, Albert Jones, and Michael Simonsen.

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

AAVSO
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Cambridge, Massachusetts, 02138, USA
617-354-0484 / 1-888-802-STAR(7827)
www.aavso.org

SPRING 2009: BIG BEAR, CALIFORNIA

The 98th Spring Meeting of the AAVSO

This year the spring meeting of the American Association of Variable Star Observers (AAVSO) will be held as a joint meeting with the Society for Astronomical Sciences (SAS) and their 28th Annual Symposium on Telescope Science. This joint meeting will take place from May 19th to May 21st, 2009, at the Northwoods Resort in Big Bear Lake, CA. The meeting will emphasize amateur research and pro-am collaboration, with amateurs and professionals discussing the use of CCD cameras, software, hardware, and the latest techniques in data acquisition and analysis. If you want to know more about photometry, astrometry, spectroscopy, and CCD imaging, and the newest hardware and software techniques, this is the conference you will NOT want to miss!

The meeting will include: a Monday AAVSO Council Meeting, daily paper sessions on varied astronomical topics, a Tuesday evening workshop on Data Mining by Arne Henden and Paula Szkody, a Wednesday evening workshop on photometry by Jerry Foote and Brian Warner, a Thursday afternoon membership meeting of the AAVSO, and a Thursday night Banquet featuring keynote speaker and longtime AAVSO member John Percy.

WORKSHOPS

Two workshops have been scheduled, one each on Tuesday and Wednesday evenings, May 19 and 20. *Please note that there is a fee for attendance. See registration prices below for specifics.*

Data Mining with Paula Szkody and Arne Henden *Note: For this workshop you will need a laptop and web browser.*

We are entering an era when much data on variable stars exist in the public domain. The data mining workshop is designed to make observers comfortable with using available data to enhance their observations as well as to provide a resource for work on cloudy nights and/or lack of telescope access. The first hour of the workshop will focus on the AAVSO data. Their web site is changing along with the usual tools available and this hour will provide instruction on how to best use the new site. The last two hours will center on the Sloan Digital Sky Survey data. We will explore how to access the photometric and spectroscopic data, make finding charts, find magnitudes of comparison stars, find and classify new variables, and make simple queries with the SQL language used in many databases. New material beyond the Nantucket Data Mining Workshop will be included, so this workshop will be of interest to all attendees.

Photometry Essentials with Jerry Foote and Brian Warner

Note: For this workshop you will need a laptop with MS Excel or Open Office Spread Sheet installed. The necessary software must be installed before the workshop begins.

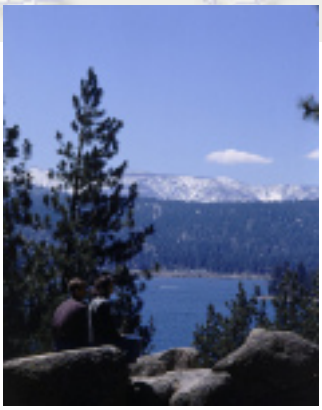
Jerry Foote will cover the essentials of what's required for good photometry in regards to exposures, signal-to-noise, preparing and measuring images regardless of the software used. Brian Warner will cover what's required to reduce observations onto a standard system and work through some basic examples using simple spread sheets.

CALL FOR PAPERS

The deadline for abstracts to be submitted for this meeting has passed. If you have submitted an abstract please remember that final papers are due no later than May 3, 2009. There will be an abstract booklet provided at the meeting. Presented papers will be included in the SAS proceedings CD (a non-refereed publication.) Presenters have the option of submitting their variable star related papers to the refereed Journal of the AAVSO in addition to the SAS proceedings CD. You must notify us that you wish to submit your paper to the JAAVSO, as all joint meeting presentations will not automatically be submitted. If you have any questions it may be helpful to visit the SAS homepage (www.socastrosci.org) and click on "Presenters Information."

HOTEL RESERVATIONS

The Northwoods Resort (www.northwoodsresort.com) is an elegant mountain resort offering full amenities. Enjoy and learn in comfort and style! You must make your own guest room reservations by contacting the Northwoods Resort at (800) 866-3121. Rooms have been blocked at the following daily rate: Single/Double: $99.00. Occupancy taxes are 8.25%. The cutoff date to make your reservation is April 29, 2009. If you wish to stay over at the Northwoods through the weekend the same rates will apply. Interestingly the Riverside Telescope Makers Conference (RTMC) Astronomy



Expo (http://www.rtmcastronomyexpo.org) is being held in Big Bear immediately following our joint meeting, so you may want to stay to enjoy this meeting as well! When you call to make your reservation, please be sure to mention that you will be attending the SAS/AAVSO meeting in order to receive the group rates.

TENTATIVE SCHEDULE

AAVSO Council Meeting (Monday):	0830–1730
Morning Paper Sessions (Tue-Thu):	0900–1200
Afternoon Paper Sessions: (Tue & Wed):	1330–1630
Data Mining Workshop (Tue):	1830–2130
Photometry Workshop (Wed):	1830–2130
AAVSO Membership Meeting (Thu):	1330–1500
Banquet/Speaker (Thu):	1800–2130

REGISTRATION

Meeting registration is being handled through the SAS office. You may register online by going to the SAS site (www.socastrosci.org) and clicking on the PayPal link under Registration. You may also print the form included in the "Registration Materials" document (also under Registration) and mail it to the SAS office with payment.

Society for Astronomical Sciences
8300 Utica Ave., Ste 105
Rancho Cucamonga, CA 91730

E-mail program@SocAstroSci.org

Prices: *(Please note that the pricing structure is a bit different for this meeting. Although there is a fee to attend each workshop, the overall registration fee is substantially lower than usual.)*

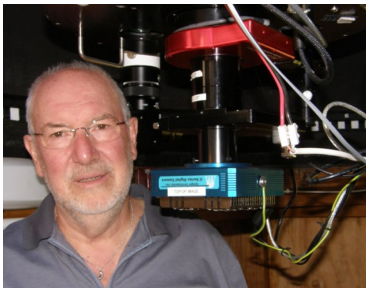
Symposium Registration Fee (Member)	
before May 1	$30.00
after May 1	$40.00
Symposium Registration Fee (Non-member)	
before May 1	$50.00
after May 1	$65.00
Thursday Banquet—Steak, Chicken, or Salmon	$32.00
Data Mining Workshop	$50.00
Photometry Workshop	$50.00
Vendor Fee (Includes 2 Registrations)	$150.00

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

NEWS FROM THE RASNZ VARIABLE STAR SECTION

BY DR. TOM RICHARDS, DIRECTOR, VARIABLE STARS SOUTH

It was 1927 when the late Frank Bateson started organizing variable star research in the Southern Hemisphere, and set up what became the Variable Star Section of the Royal Astronomical Society of New Zealand (VSS-RASNZ). It was 2005, 78 years later, when he retired from its Directorship. Under his control, the VSS-RASNZ effectively became responsible for all variable star observation south of a Pope's Line of 30 degrees south declination, and developed a database of over two million observations, over a thousand charts and comparison sequences, and a large number of publications. Guess who "owned" the other side of the Pope's Line!



Dr. Tom Richards

From the 1970s onwards, however, a new breed of variable star observer was emerging, who made use of electronic instrumentation and later, computers. This growing and productive stream was never properly integrated into the VSS, however, and with no clear succession plan in place, the Section was in the doldrums by the time of Frank's retirement. Pauline Loader, a Council member of the RASNZ, heroically kept the Section ticking over, receiving observations and publishing newsletters, even though she was not a variable star person. All this time, the hope was that the Section could be renewed and reinvigorated, continuing its leading southern role but coming up-to-date with twenty-first century approaches to instrumentation, observing, and communications.

In January of this year, after discussions with key RASNZ members, the Council appointed me the second Director of the VSS-RASNZ, under the new name of Variable Stars South. They did this on the basis of a development plan for VSS in which I set out my plans and goals. The first goal was to retain and develop the international southern role of VSS—not a New Zealand group. Indeed I live in Melbourne, though grew up in Karori, Wellington, hardly any distance from where Frank once lived.

A second goal was to transform VSS into an electronic organisation working on group

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THE ASTRONOMICAL LEAGUE'S ALCON EXPO 2009

The Amateur Observers' Society of New York (AOS-NY: www.aosny.org) is hosting this year's Astronomical League Convention, ALCON Expo 2009. ALCON will be held August 7–August 8, 2009 at Hofstra University in Hempstead, New York, and a number of local activities are also planned for the week prior to the convention, beginning August 2, 2009. Pre-convention activities include tours of New York City and Long Island landmarks, and visits to the American Museum of Natural History and Rose Center of Earth and Space in Manhattan and Brookhaven National Laboratory on Long Island. The convention itself will feature dozens of talks and presentations by astronomers in diverse fields—including members of the AAVSO and ALPO—along with the annual banquet and the Astronomical League's annual awards ceremony. ALCON 2009 will also feature a surprise speaker to celebrate the 2009 International Year of Astronomy, marking the 400th anniversary of Galileo's first telescopic observations.

ALCON Expo 2009 will be packed with great events and activities, and you're invited to be a part of them! For registration and a full description of convention activities, please visit the ALCON 2009 website: http://www.alcon2009.org

We hope to see you there! ★

THANKS TO OUR SPONSORS!

RICHARDS: RASNZ
CONTINUED...

projects. It will use all the modern resources of the Internet to bring together variable star researchers and observers around well-planned, focussed projects. Projects are being developed and launched now. A feature of all of them will be group mentoring, which is so easily enabled by modern communications. Coordinators are being appointed for various fields of variable star work; the first are Stan Walker of Awanui (north of Auckland) for Long Period Variables and Alan Plummer of Sydney for Visual Research.

Membership, website, and communications are being set up, but are not yet all functional. We have an embryonic website, www.varstars.org which will be largely built around groupware/content management software to give us a high degree of online interactivity. Currently, southern observers (and northerners who wish they were down south) communicate via the AVSON egroup – join http://tech.groups.yahoo.com/group/AVSON/ to keep up to date with VSS developments and other southern variable matters.

Our current Newsletter, setting out some projects, discussing some interesting stars, and including a membership application form, is available from the Variable Stars page of www.rasnz.org.nz.

Developing a close two-way relationship with AAVSO is going to be vital. VSS is definitely not going to be a southern AAVSO any more. Indeed my first action as Director was to close down the collection of what I call "spot observations" – measurements of stars done outside of any VSS project. All these vital observations, from people like Albert Jones, Peter Williams, Rod Stubbings and many more, are now sent direct by the observer to AAVSO. Not to us. The entire electronic observations database of VSS has been transferred to the AAVSO, and some remaining boxes of paper observations will be shipped soon (if we can find money to pay the shipper!) The AAVSO database is now truly worldwide.

AAVSO members are increasingly working southern stars, as robotic telescopes become available down south, such as the AAVSO's at Mount John, and scopes of the GRAS project. I invite AAVSO members to join VSS (it's dirt cheap!) so they can partake in our projects – as observers, analysts, data-miners…. And if you have a southern project you would like carried out, contact me, we'll set it up together, and build a team around it.

I think we're in for an exciting ride down here, and I look forward to AAVSO members in the north as well as down here, coming aboard and tightening their seat belts.

Dr. Tom Richards Director, Variable Stars South

Tom.richards@varstars.org

www.woodridgeobsy.org

Ed. note: For more information, read the Variable South Newsletter at http://www.rasnz.org.nz/vss/vss.htm ★

THE AAVSO AND 365 DAYS OF ASTRONOMY

We're pleased to announce that the AAVSO has agreed to write and produce twelve podcasts for the IYA 2009 project, 365 Days of Astronomy.

The 365 Days of Astronomy Podcast will publish one podcast per day, for all 365 days of the International Year of Astronomy, 2009. The podcast episodes are written, recorded, and produced by people from around the world. Our show is called **Restless Universe** and features Travis Searle, Rebecca Turner, and Mike Simonsen. We'll be talking about variable stars and related topics. The first episode aired **January 7th, 2009**. Restless Universe will air on the 7th of each month throughout 2009. If you miss the original airing, you can find us in the archives for the rest of the year.

You can subscribe to both the 365 Days of Astronomy podcast and blog using the available RSS feed or via Apple's iTunes. 365 Days of Astronomy, that's what IYA 2009 is all about. We hope you'll tune in! ★

IN MEMORIAM

MEMBERS, OBSERVERS, COLLEAGUES, AND FRIENDS OF THE AAVSO

PAOLO MAFFEI
Foligno, Italy

Italian astronomer, former director of the Catania Observatory, and member of several European observatories including Asiago, Perugia, Arcetri, and Hamburg during his career. Maffei conducted research in many areas of astronomy during the last half century, including variable stars and blazars. He also wrote several popular books on astronomy including *The Universe In Time,* a cosmic history. Maffei was awarded the G.B. Lacchini Award of the Unione Astrofili Italiani in 2002. ★

Ed Halbach (HK)—100 Years and 100,000 Observations!

Edward Halbach (HK) at his Milwaukee observing station in the early 1930s

Ed in 1974

This year longtime AAVSO member and observer Edward A. Halbach marks his 100th birthday! Ed has also reached another "centennial" milestone—he has contributed over 100,000 visual variable star observations to the AAVSO International Database! Both achievements will be celebrated at a birthday party in Bloomington, MN, on April 4, where Gerry Samolyk will present Ed with a birthday card from AAVSO Headquarters (on behalf of AAVSOers everywhere), his 100,000 Visual Observations Observer Award, and a letter of congratulations from AAVSO Director Arne Henden.

Ed began observing variable stars in 1934 (his earliest AAVSO observation is R Sct, 5.7, JD 2427587.7 (30 May 1934)) and continued until June 2005—over 70 years! His total at the end of 2005 stood at 99,460, very close to the 100,000 mark but not quite there. So how did Ed reach 100,000 observations after he stopped observing??? Ed has been an active observer of eclipsing binaries for decades, sending thousands of observations to Marvin Baldwin and Gerry Samolyk for the AAVSO EB program. This year Gerry has been working very hard to upload the EB database to the Headquarters database (a very complex and labor-intensive project because of the format of the EB database and other aspects of the EB data), and in the course of the project, he found several hundred observations made by Ed that had never been reported to Headquarters for inclusion in the annual totals. Once we added those, Ed was over 100,000—100,006, to be precise. (We know this number will increase, as there is another year of EB data to be tracked down and added, and there are likely to be more "HK" observations therein.)

In addition to his contributions as an observer, Ed has served as AAVSO President, Vice President, and Councilor. He has mentored countless observers and contributed to areas of AAVSO activities ranging from chartmaking to building bookcases and other cabinetry for AAVSO Headquarters. Over the years his service to the AAVSO, the astronomical community, and the public have been recognized by the AAVSO with the Merit Award, the William Tyler Olcott Award for Distinguished Service, and the Director's Award. As late Director Janet A. Mattei wrote on the occasion of Ed's receiving the Astronomical Society of the Pacific's Amateur Achievement Award, "... The common denominator, however, in all of Ed Halbach's work as an amateur astronomer has always been his eager willingness to help all others who shared his interest in the stars. Through his observing, mentoring, dedication, and devotion to astronomy, he has always given generously of his time, wisdom, and abilities in every way he can. He is an inspiration to all of the amateur and professional astronomers he encounters."

Thank you, Ed, happy birthday, and congratulations! ★

Wild Stars in the Old West II

BY MIKE SIMONSEN (SXN) IMLAY CITY, MICHIGAN

Billed as the 14th North American workshop on cataclysmic variables, Wild Stars II was the first North American CV workshop in ten years. The last international meeting on CVs was nearly five years ago, so this meeting was long overdue.

In the years between these workshops a lot has changed. Of particular note, are results from space telescopes like GALEX, Spitzer, Chandra, XMM-Newton, INTEGRAL and Swift, large surveys like SDSS, and smaller surveys such as ASAS, ROTSE, and the Catalina Sky Survey. There have also been significant advances gained from ground based instruments and many theoretical and evolutionary refinements to our knowledge of CVs.

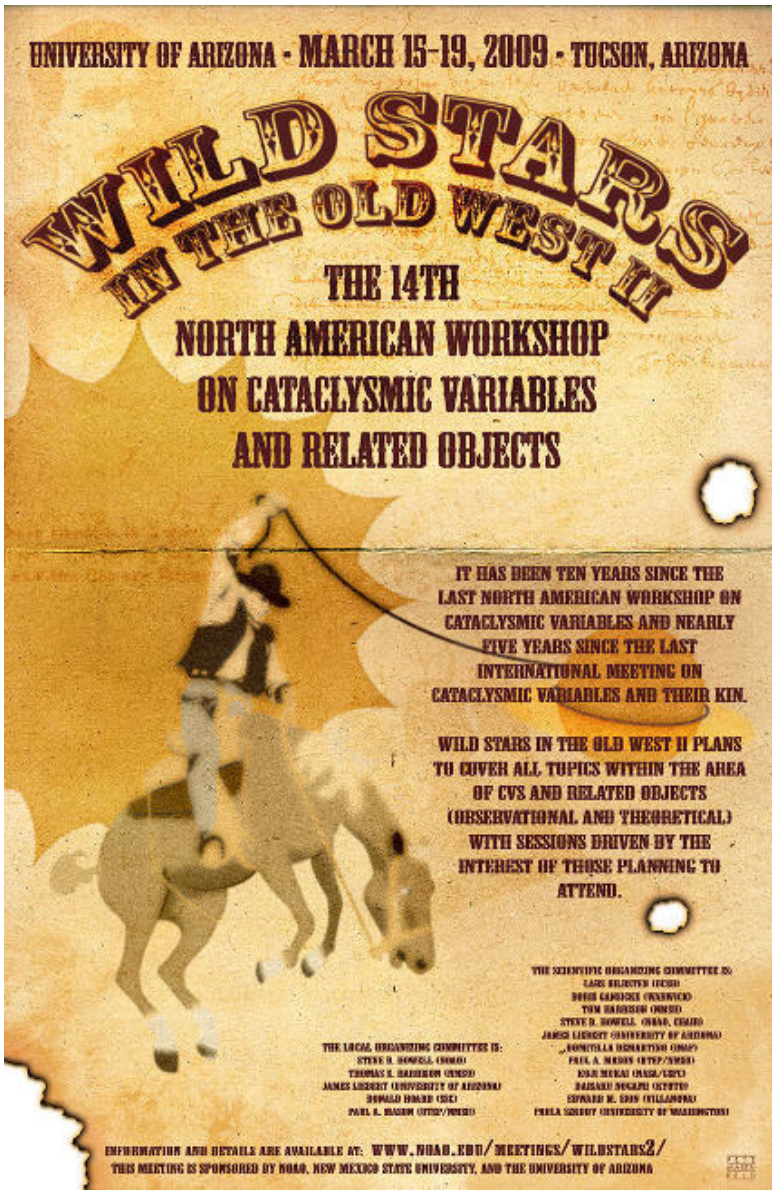
The workshop was organized topically from day to day, which, for me, had the affect of really driving home what we know and what we want to learn in each of the many specific categories of study presented.

The first day's talks were on "Primaries, Secondaries and Population Studies." In the morning, the talks all centered on the secondary stars in CVs. As it turns out, these red dwarf stars turned out to be much more interesting then I had ever thought before. Some of them are magnetically active, and most are believed to have star spots, winds, flares and all the wild activity we associate with our own Sun. The fact that they are tidally locked and being heated on one side to extremes by their white dwarf primaries, while being stripped of mass from their outer layers makes them a lot more sympathetic characters in the fascinating story of these binaries. Who knew the red stars in CVs would be so interesting?

Much of the rest of the day we heard about the white dwarf primaries, and the interesting and puzzling things we've discovered about them in the last few years. Paula Szkody talked about some interesting CVs discovered in the SDSS whose white dwarf binaries are actually pulsating. We don't know a lot about pulsating white dwarfs, but we really don't understand how a pulsating white dwarf can stop pulsating just when Paula gets time on the HST to observe it!

The other aspect of white dwarf binaries discussed at some length in a number of talks on Monday was the wild magnetic fields generated by these stars and their origin. As if to demonstrate just how well these talks were orchestrated, we also learned simultaneously about the "common envelope" phase of CV evolution. This is the time in a binary's evolution where the primary and secondary are spiraling in towards each other while evolving into the types of individual stars they will be in the CV portion of their lifetimes. Eventually, this envelope of gas and dust is blown away and the remaining stars evolve into the types of CVs we see today.

One of the most interesting and controversial talks of the day was Christopher Tout explaining the hypothesis that this common envelope phase may be the source of the magnetic fields we see in approximately 20% of all CV white dwarfs and 10% of individual white dwarfs. According to Christopher, there are four possible outcomes from this phase of binary evolution. A white dwarf, red dwarf binary, a pair of white dwarfs, a single white dwarf and interestingly, a single neutron star as the product of two white dwarfs merging. These certainly are "wild stars"!



Tuesday picked right up where Monday left off. First thing in the morning we were thrust into the strange realm of AM CVn type stars, or "Am Can Vans" as most presenters called them.

This is a rare class of stars that has been garnering more attention lately due to their extremely short orbital periods, (10–60 minutes), and the fact they are sources for low frequency gravitational waves.

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SIMONSEN: WILD STARS
CONTINUED...

AM CVn spectra are totally devoid of Hydrogen lines. They show a rich Helium spectrum along with processed heavy element lines. This makes them exciting to astronomers because Type Ia supernovae spectra don't show hydrogen, and AM CVn stars may therefore be supernovae progenitors.

There are several proposed channels for the evolution of these stars.

1—A detached white dwarf (DWD) system, formed through a series of Common Envelope evolutions, shrinks as a result of angular momentum losses due to Gravitational wave Radiation (GWR). Eventually, the less massive star fills its Roche radius and mass transfer commences. The system then evolves to higher periods due to redistribution of angular momentum.

...or, 2—a low mass helium donor transfers mass to a white dwarf accretor. The system passes through a minimum in period of ~10 minutes. The period increases after this minimum and mass transfer keeps falling. During this process the helium donor goes from being a non-degenerate to a degenerate star.

...or, 3—they may evolve from cataclysmic variables with evolved donors. After significant mass loss, the exposed Helium core of the donor in a CV evolves similar to #2 Helium star track.

What's truly amazing is the fact that we just can't find helium core white dwarfs right now. Since these may be members of binary progenitors for both supernovae and classical novae, astronomers are forced to model how these stars contribute to colossal cosmic explosions using math, physics and imagination. The second half of the morning we heard about several of the few known examples of Helium Core White Dwarfs. Four of these are in binaries we predict will reach a state of mass transfer in a few million years.

Don Hoard gave a talk about the dusty environments around CVs he and Steve Howell discovered not long ago. While using the Spitzer space telescope to investigate the red secondaries in low accretion rate CVs they found there were large amounts of dust gathered around these binaries.

SW Sex stars are another class of stars I wanted to learn more about. It seems that all eclipsing nova-like stars in the 3–4 hour period range are

Don Hoard explaining Dusty TOADs

SW Sex stars. But eclipses are simply a line of sight effect, so they can't be considered a pre-requisite for inclusion in the SW Sex club. Linda Schmidtobreick and her colleagues looked at a large sample of non-eclipsing stars in the 3–4 hour period range to see if they had the rest of the required characteristics for inclusion in the SW Sex category. What they found was that most of these stars are indeed SW Sex stars. Remember, the CV period gap is from 2–3 hours, so these stars may represent an important group of stars, with periods just above the gap, in a high mass transfer state which may cause the binaries to lose contact and stop accreting as they evolve through the period gap.

The final afternoon session concentrated on population studies of CVs. Boris Gaensicke described how SDSS has essentially found predicted population of minimum period stars we have been looking for for twenty years or so. Ulrich Kolb touched on this "period spike" a bit too, and then went on to discuss recent models and predictions of the post-common envelope stars. Lorne Nelson also addressed models of CV evolutionary tracks dependent upon the characteristics of the original, or "primordial" members of the binary. Their findings seem to contradict some other predictions, as they do not find a clearly defined period gap, nor can they produce a noticeable spike at the period minimum.

Tuesday night there was a reception at the NOAO building, right across the street from Steward Observatory, where we got to meet and talk about the day's topics over Tex-Mex dishes and beverages.

Day three was all about Magnetic CVs, Accretion Disks and Symbiotic Stars. The morning talks were dominated by observational results from polars and intermediate polars at all wavelengths, from optical to X-ray. We heard about XMM observations of Polars and saw lots of X-ray light curves, and heard about Steve Howell's favorite star EF Eri, and all we have learned from the long term monitoring of this one star with the SMARTS telescopes since 2003.

Polar Emission

Photo: S. Howell / P. Marenfeld/NOAO

The first talk after lunch described an exceptionally long Chandra observation of EX Hydrae and all the science they were able to glean from such a high signal to noise X-ray spectrum. They were able to explore the emission lines formed in the accretion column as well as first time ever views of a broad component that represents photo-ionization of the accreting column.

Chris Mauche reported on a multi-wavelength campaign on the amazing star AE Aquarii. The combined radio, optical, UV, X-ray, and gamma-ray results were presented eloquently. Knox Long described in detail his observations of the structure and source of winds in cataclysmic variables. The end result being, our current understanding is just about right.

The talk that generated the most interest and discussion day three was Graham Wynn's talk on RS Ophiuchi and CVs with massive white dwarfs, giant secondaries and massive accretion disks. He had six movies running at once, a conference record, demonstrating the fact that no matter what the rate of accretion, a disk was formed from the secondary wind. He then suggested some unique solutions to dramatic outbursts RS Oph and objects like it.

Big red secondaries and binaries with long periods remained the objects of interest for the last two talks on symbiotic variables. These interacting binaries present their own challenges

CONTINUED ON NEXT PAGE

SIMONSEN: WILD STARS
CONTINUED...

to astronomers trying to understand binary evolution.

Wednesday night we all piled into buses and were transported back in time to an Old West steak house for the conference banquet. Fortunately, our host, Steve Howell, warned us that one of the traditions of the place is to cut off the tie of anyone daring to dress up for such a place, and tack it to the wall like a trophy. There were no silk casualties thanks to the advance warning.

The day four talks were book-ended by two impressive astronomers from Japan, Daisaku Nogami and Izumi Hachisu.

First thing in the morning session Nogami presented impressive results of the superoutburst evolution of three very interesting CVs—WZ Sge, GW Lib, and V455 And. These are three of the most significant outbursts of dwarf novae in the last couple years. Nogami presented an impressive amount of optical photometric and spectroscopic information.

East Meets West: (l to r) Akira Imada, Kagoshima University; Daisaku Nogami, Kyoto University; Arne Henden and Mike Simonsen, AAVSO

The last talk of the morning session was about the source of negative superhumps, by Michele Montgomery. This is another topic I understand much more clearly after her excellent presentation.

Brad Schaefer stole the show with his talk after the morning coffee break. Brad does not need a microphone to be heard in a room of 200 people. He is enthusiastic and knowledgeable about his topic, recurrent novae, and he knows how to work a room.

Some of the most exciting results from Brad were previously undiscovered eruptions of RN in past years. He and his graduate assistant relentlessly scoured all the archival data in the world to find plates and observations of recurrent novae outbursts. They found three eruptions of U Sco (1917, 1945, 1969), RS Oph in 1907, V2487 Oph in 1900, and CI Aql in 1941.

From these intensive searches, and modeling the results, Brad is able to make some bold predictions about the timing of future eruptions. In the next decade he predicts no less than five recurrent novae eruptions—V2487 Oph, V394 CrA, V745 Sco, V3890 Sgr, and the one he is most excited about, U Sco. U Sco is predicted to erupt in 2009.3, which is RIGHT NOW!

After lunch we were shown amazing results of X-ray observations of recurrent novae and novae. There is a lot of interest in novae eruptions by professionals, more than I realized. What's more, they are making X-ray observations of these objects months and years after the initial outburst in an attempt to observe just when the accretion disk reforms and accretion begins again and what happens at this phase of the outburst.

From this, I realized, amateur observers need to follow these objects for much longer than we typically do as best we can. The AAVSO light curves sort of peter out after six months or so, and rarely is there much follow-up when a star reappears from solar conjunction. Unfortunately, this is about the time they become really interesting to professionals, and from what I was seeing there may be some very interesting observational phenomena we are totally missing, like sudden re-brightenings of the systems or flickering.

One of the final talks of the conference was from Izumi Hachisu, from the University of Tokyo. He presented the methodology and results of his search for a relationship between the t3 time of decay (the 3 magnitude decay time from optical maximum) and the turn-on and turn-off times of supersoft X-ray emission. He presented detailed light curve analysis of classical novae detected in X-rays, and proposed best fit models that reproduce the optical and supersoft X-ray observations.

The final talk was from Roger Wesson, University College, London. He described the interesting nova V458 Vul, which actually resides inside a planetary nebula. It was a fine and fitting end to a conference on wild stars if there ever was one.

The next CV conference will be hosted by Kyoto University in 2010. I would love to go to Japan with results from the first year of our soon to be launched AAVSO CV Section. ★

THE 2009 AAVSO CALENDAR

Now available: The official 13 month 8.5" by 11" wall calendar featuring images contributed by AAVSO members and observers. Julian dates are listed for each day of the year.

The calendars are shipped sealed in plastic. Limited supplies are available so order now! $11.99 plus postage.

OBSERVING CAMPAIGNS UPDATE

MATTHEW TEMPLETON AAVSO CAMPAIGN COORDINATOR

The past year has been a busy and productive one for the AAVSO and its observers, as more and more people become observers and submit their data. The AAVSO has assisted with a number of observing campaigns over the past year, and we're overdue for a review of AAVSO campaign activity and results.

The spring of 2008 saw the completion of one of our major campaign efforts, assisting Dr. Paula Szkody with Hubble Space Telescope observations of a number of dwarf novae believed to have pulsating white dwarf primaries. In order for those observations to occur, telescope operators had to be confident that these six objects were not in outburst during their observing windows. AAVSO observers monitored all of them, and provided the necessary data for HST operators to give these important observations the go-ahead. All the HST data were acquired successfully, and we're looking forward to seeing the results in print soon.

Another major observing effort last year was monitoring of high-mass X-ray binaries on behalf of a team led by Dr. Gordon Sarty. He and a number of AAVSO observers obtained photometry, and took high-resolution spectra obtained at the Dominion Astrophysical Observatory in Victoria, British Columbia, Canada. Sarty and collaborators are attempting to refine the periods of a number of HMXBs—binary stars consisting of a massive secondary star and either a neutron star or black hole primary. One paper on the star LSI+61 235 was recently published in *Monthly Notices of the Royal Astronomical Society* (2009; vol. 392, p. 1242), and we look forward to seeing more results in print soon!

A long-term campaign we're happy to present null results on thus far is the monitoring campaign for the recurrent fast nova U Sco, requested by Dr. Bradley Schaefer. Schaefer has asked for regular monitoring of U Sco and rapid notification in the event of an outburst. U Sco went behind the Sun at the end of last year, and it was feared that it might have erupted and faded away during solar conjunction. However, AAVSO observers did their best to detect this object shortly after it emerged from behind the Sun, and provided confirmation that not only was it not in outburst, but that it was faint enough that an outburst during conjunction could be safely ruled out! AAVSO observers are continuing to monitor this object, and (fingers crossed) we hope to catch this fast nova on the rise some time during 2009. If and when we receive a positive detection, we may set in motion a number of telescopes around the world (and some in orbit) to observe this star in earnest. It is hoped that multiwavelength observations may provide clues as to how and why U Sco and other recurrent novae behave the way they do.

Not all observations turn out the way we hope, and that's as true with satellites in orbit as it is in your back yard. In another campaign requested by Dr. Steve Howell, AAVSO observers did a fantastic job monitoring a number tremendous outburst amplitude dwarf novae (TOADs), but the Spitzer Space Telescope was not able to make the required observations when a few stars in his list went into outburst last year. Spitzer had extraordinarily strong constraints as to what objects it could observe and when, and in this case, the stars quite literally didn't align in our favor. As always, Dr. Howell was very appreciative of the work the observers did. And remember, as with all data submitted to the AAVSO, no observations ever go to waste—all data from campaign observers were submitted to the AAVSO archives, and thus the light curves for these stars reflect the increased coverage during the year. Regardless of whether there's an active campaign, these high-amplitude, infrequently-outbursting TOADs are interesting in their own right, and observations are always encouraged.

The AAVSO continues to support several other campaigns, with new campaigns being activated as others reach completion. As an example, we continue to monitor the dwarf novae YZ Cnc, Z Cam, and EM Cyg to support radio observations to be made by the VLA when the star goes into outburst. We receive data for all of these stars, but often there are gaps of a few days between observations, which is long enough that we haven't been able to trigger radio observations yet this year. Radio observations for the prior campaign on SS Cygni 2007 produced some exciting, novel results—the first known detection of a radio jet in a dwarf nova outburst—and it would be fantastic to be able to make a similar detection in another star. Please consider contributing observations to this campaign!

Several new campaigns have been initiated over the last few months as well, including long-term monitoring of the suspected eclipser V1412 Aql for Dr. Arlo Landolt. Although the campaign is a tough one, it is particularly exciting because the deep eclipses which Landolt and one other group observed in the 1980s suggest that the white dwarf may be completely eclipsed by an extrasolar planet. Detection of another eclipse would be the first confirmed transiting exoplanet around a white dwarf star. We don't know when or how often we expect to see eclipses, so if you have an open slot in your observing queue, please consider making a few measurements of this star!

As always, we maintain an up-to-date list of campaigns on the AAVSO website, and encourage you to browse this list and find something you might like to try. We have campaigns ranging from visual monitoring for outbursts all the way to requests for high-precision calibrated time-series, and there's something there for everyone. For more information, please visit our website: http://www.aavso.org/news/campaigns.shtml

Finally, I have to mention "the big one" coming up for 2009—the upcoming eclipse of the mysterious binary epsilon Aurigae. This star, which goes into eclipse once every 27 years, is being observed by a number of amateur and professional observers around the world during 2009 and 2010, and it's also a prominent part of the AAVSO's participation in the International Year of Astronomy. Epsilon Aurigae is a fascinating star: even though it's visible to the naked eye, its nature remains mysterious—we still aren't even sure what exactly is eclipsing what! For more information on epsilon Aurigae, please see the January 2008 Variable Star of the Season: http://www.aavso.org/vstar/vsots/eps_aur.shtml Hopefully, answers to this mystery will be forthcoming, and we hope that you will participate in this and all other AAVSO observing campaigns during the coming year!

CONTINUED ON PAGE 14

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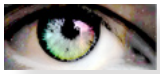
Subscribe online to receive AAVSO ***Alert Notices*** and ***Special Notices*** directly to your email's inbox. Stay on top of stellar activity and get detailed information on current and upcoming observing campaigns by visiting http://www.aavso.org/publications/email to subscribe today! ★



EYEPIECE VIEWS

GAMZE MENALI (MGQ), EDITOR

HAPPY EQUINOX!

Greetings All,

It is Spring for our Northern Hemisphere observers while folks down under are welcoming Autumn.

Speaking of Spring, don't forget to check the AAVSO Spring meeting announcement at:

http://www.aavso.org/aavso/meetings/spring09.shtml

In the Eyepiece Views section of the *Newsletter*, we have two charming articles: one by Albert Jones and one by Susan Oatney. Their unique styles are representative of our wonderfully diverse membership and give us a taste similar to what we would enjoy from our good old "Birch Street Irregulars" in the earlier issues of the *AAVSO Newsletters*. What a nice way to welcome a new season.

Enjoy Spring/Autumn!

Thanks and good observing!

Gamze Menali

A VIEW FROM DOWN UNDER

ALBERT F. JONES (JA)
NELSON, NEW ZEALAND

My Beginnings

As far back as I can remember, I was fascinated by the stars, and was eager to find out more. My parents could tell me a little, but unlike today, little was taught at school apart from planets, the seasons, phases of the Moon. Neither were there are many books and atlases. At high school I was too shy to ask more. Also I had the view that Astronomy would be out of the question for someone like me without a tertiary education. But at least, for my own knowledge and enjoyment, I could learn the constellations and the Zodiac to know where to look for the planets. After leaving school, and going to work, I began reading astronomy books and especially those with diagrams of the constellations. Then when an observatory asked people to send in reports of the Aurora Australis, I sent in detailed reports, which were enthusiastically received. I was so pleased to know that I could do something for Science.

Two years later, I asked the observatory if there might be an astronomical society that would be prepared to accept me as a member and the proposal for admission to the New Zealand Astronomical Society (now the RASNZ) was accepted. After Nova Puppis was discovered, the journal "Southern Stars" published an article with a chart for the nova and instructions on making magnitude estimates. By that time I had bought a pre-owned 5-inch reflector, so with that I started making some magnitude estimates on January 18, 1943, and later, submitted them. To my delight they were accepted for publication in the journal. That sealed my fate—after all, in spite of my doubts, I was capable of making useful observations of variable stars!

When the Variable Star Section of the RASNZ was revived the next year, I was supplied with charts of more stars, and so the list of stars being monitored increased. Over the years, each month, I sent my observations to the VSS of the RASNZ.

As I gained experience in locating variable star fields and making estimates I could make an observation and write it in my logbook much quicker so that allowed me to monitor more stars each night, and take on more stars, and as a result the number of estimates increased. However, detractors accused me of making more observations for the sake of big numbers. That is why I do not record the number of observations each month or year.

In 1997, a surprise email from the AAVSO invited me to attend the Spring Meeting in Sion, Switzerland. Neither Carolyn or I had been to Europe, so this was something special. There I had the pleasure of meeting members of the AAVSO for the first time—some I had got to know through emails, and as a bonus, there was the chance to make new friends. So it was wonderful to have the chance to meet them in person. In addition, it was a great experience for me to hear what was said at the sessions. For us it was such a memorable time at Sion that we often think about it

At the banquet at St. Luc, Dr. Janet Mattei announced and presented awards, and then she said the next recipient had done this and that and had made over 500,000 observations. That set me wondering who had done so much until she announced the name—people applauded and everyone looked at ME—I was overwhelmed—I had no idea that I had made that many estimates.

Afterwards, as we went to the buses to take us back to our hotels, the sky was dark and as I looked up at the unfamiliar northern sky, someone called out "Not another blooming observation—get on the bus." So I did what I was told!

Soon afterwards, I applied for membership in the AAVSO and began to submit monthly reports to the AAVSO as well as continuing to send them to the VSS, RASNZ.

Variable star astronomy has been such a rewarding hobby for me—in addition to the pleasure I have derived from the observing—and the unexpected awards that have been bestowed have indicated that my dedication to observing variable stars has been appreciated. I have met so many interesting people and visited fantastic places—Australia, Europe, London....

From Pencils to PCs

Over 60 years ago, when I started variable star observing, after making an estimate I would enter in the logbook the name of the star, the time and the estimate. Later the Julian Date and decimal of the day would be added. Then the observations would be copied onto separate sheets for each star. At the end of the month, the results were copied onto report forms and posted to Frank Bateson, the Director of the Variable Star Section

CONTINUED ON NEXT PAGE

EYEPIECE VIEWS

JONES: FROM DOWN UNDER
CONTINUED...

that he formed away back in 1927. As I became more proficient in locating variable star fields and making estimates of the variable stars, on request to Frank, he would supply me with more and more charts. When the number of stars under observation became much greater, the separate sheets for each star were dispensed with and at the end of the month; the estimates were taken from the logbook directly to the report forms so that the estimates of each star were together in chronological order. Then I started on the next star, then the next one until all the observations had been sorted and written on reports forms—all written by hand, copies for my own archives being made using carbon paper. To do all the stars took days of turning pages of the logbook to find the next observation of each star.

After the RASNZ Conference in 1993, Gordon Hudson told me that a computer would be most useful for entering and retrieving data, so he urged me to apply for an RASNZ Kingdon-Tomlinson Grant to obtain a computer—that arrived mid-March 1994 and with Ranald McIntosh's VSSOBS software installed, and started me on a steep learning curve to (a) learn how to use a computer, and (b) learn how to enter and retrieve data. As I was already a hunt and peck typist with over 40 years experience, all I had to do was learn the extra buttons on the keyboard so that was one hurdle I did not need to surmount. The other hurdle was getting the hang of the unfamiliar VSSOBS and other programs.

For the first few days I thought the old way of handling the data was better, but soon I was becoming faster at entering data and by the end of the month, all March estimates had been entered in the order that they had been written in the logbook. There was no longer a need to work out the Julian Date and decimal of the day, Ranald's software took care of that automatically. In addition, the software had a facility for sorting the observations so that those for each star were together. So I followed instructions, the PC whirred and indicated "Please Wait" for a few seconds, then stopped. Surely the sorting cannot have been done in that short time? On checking I found that all was well and the estimates of each star had been collated in chronological order—amazing! I was so pleasantly surprised.

To forward the data, it was a simple matter of saving the data on a floppy disk and posting the disk away to Ranald McIntosh, who had taken on the task of collecting observations on his computer. Meanwhile, besides forwarding observation to the VSS RASNZ, I was sending selected stars to overseas astronomers who requested data from me —mostly stars not on the VSS program but which I had started observing for my own interests. Two years later, I was urged to get connected to email and the internet—Grant Christie provided a modem, so from then on it was a simple matter of sending data away by email, sometimes receiving thank-you messages the same day. One time after I had sent a monthly report to an astronomer in Mexico, he replied immediately saying "Thank you for the data that you sent tomorrow."

When Ranald assumed the task of entering incoming observations into the VSS Database, that must have taken a huge load off Frank Bateson's shoulders. Ranald also took on the forwarding of data to the astronomers who contacted Frank and requested data.

Having the use of the computer has also been of great benefit for observing comets within the range of my instruments. After World War II, announcements of

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MY TELESCOPE *is the 12.5-inch Newtonian reflector that I constructed away back in 1948 I had bought the mirror and flat. The frame is made up of aluminium angles suitably braced, and covered with light wallboard—that keeps the mirror from dewing over. The fork mounting started off as an industrial pulley for flat belts—the fork was added by welding angle-iron tines.*

Albert Jones and his telesscope

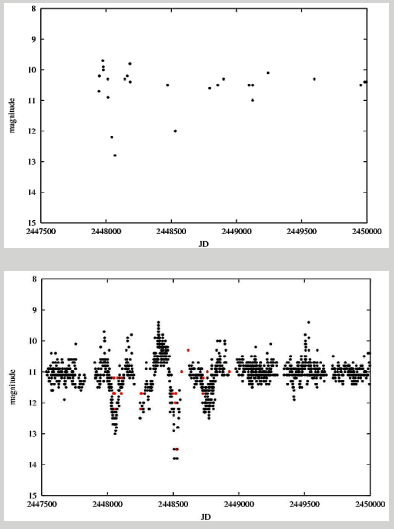
It was meant to be used as an equatorial—I had planned to add a motor drive, but meanwhile I became more interested in variable star observing than observing planets and so I never proceeded to finish the motor drive. For variable star observing I estimate a star, enter the details in my log book then point the telescope at the next star, so a motor drive would not be needed.

There are no setting circles—star hopping is aided by a 50mm finder for the widest view, then the 3-inch finder allows me to better locate the field before viewing through the main eye piece. The finders were made from old WW2 surplus optics.

As I work out in the open, when not in use the telescope is kept in a nearby shed. In the shed there is a bench on which I put the charts and logbook illuminated by a red light.

Especially now as I have had more birthdays than most people and am no longer safe on a ladder or stepping on a box to reach the eyepiece, I turn the whole mounting around until the eyepieces can be viewed while I am standing on the concrete. That may seem crazy but it works.

YOUR OBSERVATIONS CAN MAKE A DIFFERENCE!



Light curves of RU Lup: (top) without Albert Jones' observations, and (bottom) with his observations added to the AAVSO International Database

JONES: FROM DOWN UNDER
CONTINUED...

comets were received by telegrams or letters from Carter Observatory, then ephemerides started coming by air letter from the BAA Comet Section. These days, one can obtain such information by email. Instead of having to trace or copy a chart and plot the comet path by hand, that can now be done in a flash, thanks to PC software.

Back to the early days, when I wished to copy a chart, I had to trace it onto tracing paper. Then I found out about Ilford Reflex paper—that was a messy process—after exposing the light-sensitive paper, it had to be developed, fixed, washed, and dried to produce a negative-reversed copy, and then the process had to be repeated to make a nice positive copy. Some time later I used the Kodak Verifax process and although it still needed liquid developer, it was much faster and not so messy. Later still, a 3M dry-copy machine was even simpler to use and faster although the copies deteriorated with age. Some years later, photo-copiers using plain paper became available. But now, if one has a scanner, a PC, and a printer, they can be used to make copies. Modern technology is fantastic and makes one wonder what new facilities may become available in the future.

Albert Jones and wife Carolyn—"my best discovery."

When I was starting to learn how to use a computer, I could not believe that I would not need the typewriter again once I had got used to word processing, but I soon learned that was true—it is so easy to correct mistakes, to cut and paste sentences or paragraphs. Also with the calculator on board, I have forgotten how to use a slide rule or log and trig tables.

EYEPIECE VIEWS

New astronomers are so fortunate that now there are better and easier ways of recording and forwarding data and they are able to obtain information by email or the internet, produce charts, enlarge, reduce, or copy them, and I hope that some more amateurs will take up variable star observing. Even after over 60 years, I still get a thrill when I see dramatic changes in the brightness of stars, and the knowledge that the data are of value to Science makes the effort even more worthwhile.

Although we can obtain weather forecasts via the radio and TV, we still have to make the best use of what nature prepares for us and that brings to mind "The Astronomers' Lament":

Thirty days hath September,
April, June, and November.
All the rest have thirty-one
without a blessed gleam of Sun.
If any of them had two and thirty,
they'd be just as wet and twice as dirty !!!!!!! ★

"HITCH YOUR WAGON TO A STAR"

SUSAN OATNEY (OSN)
PARTRIDGE, KANSAS

Emerson said a lot of things and this one quote makes me again consider his judgment.

Being a variable star observer I respond: You can't imagine what you are saying! A cataclysmic variable? An eclipsing binary? A neutron star? Now that would be a really wild ride! How about our star, the Sun—6,000 Kelvin at the chromosphere—might burn your wagon, there, honey. Better look for a star that isn't very interesting and is sitting quietly, and slowly moving through the universe. Where might you find something like that and with atmosphere?

Here's another strange little ditty: Twinkle, twinkle, little star—how many little stars are there? And do you think that a gamma-ray burst is a twinkle? Did you ever think of the fact that in our country we call people who perform in the theater and movies "stars"? No wonder American children can't understand their science—why would you want to ascribe magnitude to the likes of most actors and actresses in Hollywood.

Here's another one: Shoot for the moon—if you miss you'll land among the stars! That simply isn't true! You'd have to pass through a lot of the interstellar medium before you'd come to any star, even the Sun. Doesn't anyone remember Apollo 13—waking up and wondering if they were going to come around that big reflective ball or not? What would have happened to those guys?

Have you ever sat dreamily at your windowsill and sang: "Star light, star bright, very first star I see tonight? Wish I may, wish I might, have the wish I wish tonight?" Ok, Sirius is the brightest star in the heavens—a negative magnitude and at least 8.6 light years distant. How realistic is it that a star could grant wishes—let alone TONIGHT? The star wouldn't even find out about your wish for a very long time if the wish traveled by light—let alone the return trip of the answer.

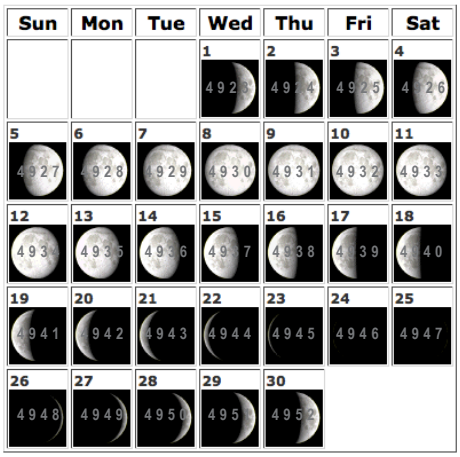
We humans are such funny, unrealistic creatures. Is it any wonder there are so few variable star observers? We are trying to hunt down the faintest point of light our telescope aperture can possibly detect and then trying to make sense out of what that light is telling us about the star that is so very far away. When we reach the limit of our detecting abilities with the lovely little telescope that helped to inspire us in the first place, we decide we need more photon-gathering ability and buy the largest aperture we can afford, secretly wishing we could come across a large sum of money to give us the ability to put up a research-grade telescope in a state-of-the-art facility. Tsk, tsk. There is a lot of science to do and we sure want to be a part of it. That is true—but if we are just looking out of the slit of an observatory every night through the eyepiece of that big behemoth doing science, we are missing something really wonderful.

Let's not forget to just go out and soak up all those little photons on some cold January night and marvel at the beauty of the Universe and all those stars and the science that you know. Take some little children out with you and translate all those little rhymes and ditties and inspire them about the wonder of the Universe and the beauty that is around you. You're going to need someone to leave that research-grade telescope to someday. ★

JULIAN DATE / MOON PHASE CALENDARS

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

APRIL 2009



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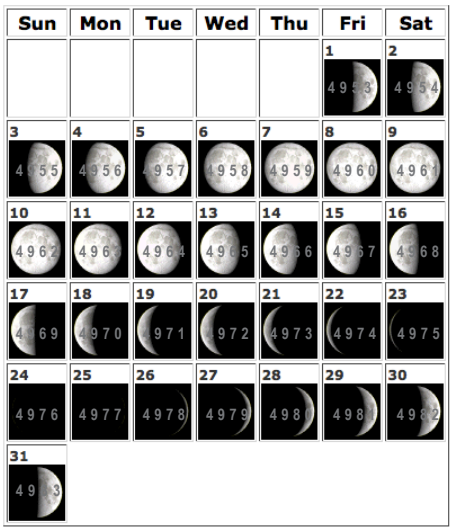

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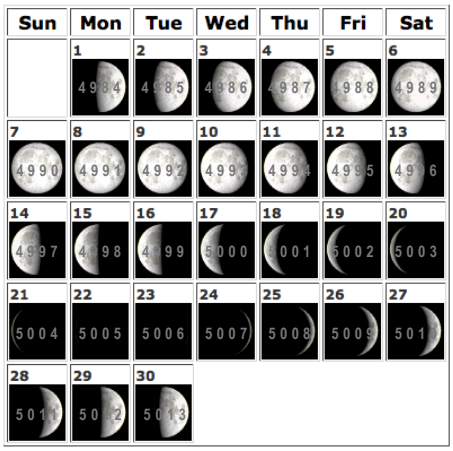

Moon calendars courtesy StarDate online http://stardate.org/nightsky/moon/

TEMPLETON: CAMPAIGNS UPDATE CONTINUED...

I have one final request to AAVSO campaign participants: if you have any comments or questions about AAVSO observing campaigns, please email me at matthewt (at) aavso.org. Also, I'd like to increase participation in campaigns and enhance the collaborations between AAVSO observers and the researchers requesting campaigns. If you have any suggestions, please let me know!

Many thanks to everyone who participated in AAVSO Campaigns during the past year!

Clear skies! ★

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How did you learn about the AAVSO? _____

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