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# AAVSO Newsletter

SINCE 1911...

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

## FROM THE DIRECTOR'S DESK

**ARNE A. HENDEN**

The past two months have been busy ones for the AAVSO. Aaron Price, Matthew Templeton, and myself have been working with Joy Nichols of Chandra on some variable stars that they have been able to follow with the Chandra Aspect Camera – a small 5-inch telescope with CCD system used to guide the spacecraft, but which can perform photometry on bright stars. They have some neat light curves, but need guidance from variable-star experts to classify the stars. We'll have more about this project at the Nantucket meeting.

I visited Germany in mid-September for about a week. The first half of the trip was to visit Tautenburg, where I've worked with some of the astronomers on GRB afterglow follow-up. They



*The 2-meter telescope at Tautenburg.*

have an interesting Schmidt telescope that can be converted into a conventional 2-meter telescope when wide-field imaging is not important. The second half of the trip was to attend the BAV conference in Potsdam, Germany. I had a chance to talk with many active observers, as well as the officers of the organization, and I think we have a better understanding between the two organizations. I'm very hopeful that this will be a long and fruitful collaboration between our groups. Their main complaint was that weather conditions seemed to have changed for the worst on the European continent, and they are having long spells of cloudy weather. Because of this, they were very interested in our robotic telescope network!

Speaking of that, the robotic telescope network is progressing nicely. Sonoma always goes into a 2-month shutdown during the Arizona monsoon (July and August); this year the monsoon is extending pretty far into September. Soon, it will return to normal activity and new calibrations will be forthcoming. The Mt. John 24-inch telescope is nearly refurbished, with the new 12-volt dome slit motor installed in mid-September. Dirk Terrell and I will head south shortly for an engineering run to test everything out. The Lowell/Morgan 24-inch telescope building construction at Dark Ridge Observatory is underway, with the concrete slab (with radiant heating for maintenance work) now poured and the walls being built. Tom Smith



*The nearly completed slab foundation for the Morgan telescope at Dark Ridge Observatory.*

hopes to have everything weather-tight before snow flies, so that he can complete the telescope refurbishment in comfort.

The final large installment of calibration photometry was added to the comparison star database, and VSP/VSD was "frozen." This means that all observers should update their charts to ensure that they are using the most recent calibrations of the sequences. We will be making incremental changes after this point, such as touching up existing sequences and adding new sequences for transient objects, but the majority of our charts should be in pretty good

CONTINUED ON NEXT PAGE



Lunch with the BAV in Potsdam, Germany.

shape. This was a major effort for many people, from the comparison star database team, through those folks involved in the development and maintenance of VSP, and those helping in updating the photometry and writing the software to make the calibrations available to our observers. Kudos to everyone!

Doc Kinne has now moved to Boston to become our full-time IT person. His first duty was to attend a two-week summer school in Albuquerque, New Mexico, on the [Virtual Observatory](#). The AAVSO will play a major role in transient events for VO, and we hope to have our database available through their interface (and also via [Google Sky](#) and [Microsoft's WorldWide Telescope](#)). Aaron continues as a part-time IT person, but in the future will be more involved in campaigns and science education as he nears the end of his PhD program at Tufts University. Aaron is spearheading the IYA2009 efforts, so you will see epsilon Aurigae mentioned quite often over the upcoming months.

Fall in New England always is a pretty time, with clear, blue skies and colorful leaves. It puts everyone into a good mood, and with the excellent papers and workshop at the Nantucket meeting. I think the enthusiasm will carry into the work at headquarters. I'm anticipating lots of new things and improved tools for our observers over the next few months. Keep tuned – these are exciting times! ★

## PRESIDENT'S MESSAGE

### DR. PAULA SZKODY

I hope everyone has had a good warm weather observing season. My UW telescope in New Mexico suffers from the rains and humidity coming up from Mexico during the summer months. But it has been a busy time and interesting time for travel and data reduction. In May, I had the opportunity to attend the 8th Pacific Rim Conference in Phuket, Thailand, along with several cataclysmic variable enthusiasts and members of the AAVSO. We heard about new IR results on the superoutbursts of GW Lib and V455 And and about the evolution of close binaries. There were many impressive talks by students in countries that previously had little or no astronomy. The internet is allowing great progress. Even though Thailand only has 30 people in astronomy now, they are building a 2.4m telescope in Chiang Mai and hope to have 480 astronomers by 2016. In June, I was able to cross the equator nine times with my family on a small boat in the Galapagos Islands and catch glimpses of the southern sky, although the weather pattern was cloudy during most nights. Another highlight of my summer was talking and observing with a bird group at the Nisqually Delta, an hour's drive south of Seattle. I ended up looking up all the bird names in the sky (constellations and nebulae) and came up with 12 (let me know if you know of more!)

Soon it will be time for the Fall meeting and its an exciting one. I'm looking forward to my first visit to the famous Maria Mitchell Observatory and to looking through its telescopes. It's a privilege to share in their 100th anniversary celebration and to hear about their rich history during a special session. While part of this meeting is focused on the past, the other part is the future. We will be having a data-mining workshop to highlight the benefits and use of all types of existing archives that are available to enhance our knowledge of variable stars. And the banquet speaker (Sky and Telescope magazine's own Bob Naeye) will talk about a new aspect of variability that some members are involved with - that of transits of exoplanets.

While there are several databases in existence now, such as the Sloan Digital Sky Survey (SDSS) in the optical and the High Energy Astrophysics Science Archive Research Center (HEASARC) in the X-ray, there are many more ambitious plans

for the future. The Panoramic Survey Telescope and Rapid Response System ([Pan-Starrs](#)) should start operation of their first of 4 telescopes next year. The 27.5 foot diameter mirror for the Large Synoptic Survey Telescope has been completed and if all the funding comes through, should be in operation in about 5 years. So, we have about 5 years to figure out how to deal with 100,000 variables per night streaming out over the internet to the public. This is a first step in that process.

I hope to see many of you take a last long fall weekend to enjoy Nantucket before the winter weather descends. For those of us in Seattle, that means rain until next June, so that telescope in New Mexico, with its clear winter skies, starts to look pretty good. ★

### THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS

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<b>DIRECTOR</b>	

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 [travis@aaavso.org](mailto:travis@aaavso.org). Additional photos in this issue courtesy of the Maria Mitchell Association, Arne Henden, Tim Crawford, Gamze Menali, Sara Beck, and the AAVSO Archives.

# DEVELOPMENT UPDATE

MICHAEL SIMONSEN

Even though we will never turn away your generous cash contributions, there are many ways you can contribute to the AAVSO.

## Speakers Bureau

<http://www.aavso.org/education/speakers.shtml>

This is part of the Education Committee's initiatives. We have several speakers lined up to give talks to astronomy clubs, Scout Troops, star parties, science centers, etc. We can always use more engaging, informative speakers, and I can use help administrating it in various ways. Contacting astronomical societies, planetariums, science centers, and star party organizers, responding to email requests, raising the profile through PR and marketing efforts are all things you can help with.

## Writers Bureau

Another AAVSO Education Committee initiative, the Writer's Bureau is a private, astronomy content site, created for use by newsletter editors of astronomy clubs, science centers, and other interested organizations. Maintaining this site involves scanning the content of some 30 astronomy blogs per week and copying relevant articles to the Writers Bureau pages, responding to requests to join the bureau, searching out new authors, and negotiating copyright arrangements with them, following up on how editors are using the bureau and what we can do to improve the service, and helping to publicize the bureau.

## Mentor Program

<http://www.aavso.org/aavso/about/mentor.shtml>

This is the program for training new observers. The volunteers we need to keep this program running should be experienced observers, either visual or CCD, who have good communication skills, and plenty of patience. A sense of humor is a major bonus for you and your students. We typically get one to three requests for mentors every month. Mentors generally have one or two students to assist per year and are typically assigned students based on geography and the type of observing. The rate of inquiry does seem

to be climbing, so offer your help if you feel you can.

## Newsletter Content

We can always use content for the AAVSO *Newsletter*. Articles that would have been appropriate for *Eyepiece Views* and articles on variable stars or research are welcome. A regular column or two is something we've discussed in meetings.

Scanning the astronomy pre-print server and distilling new research is one idea we would like to see a regular feature on, but none of the staff has time to do it. We'd really like to hang some scientific meat on the bones of our new *Newsletter*. If you are interested in assisting with this or would like to contribute written material or your editing skills, please don't hesitate getting in touch with us.

## Sequence Team

The chart team is no longer engaged in creating paper charts in art programs, or checking, cataloging and publishing them, so the skill set required to assist in the chart and sequence process has shifted.

We need volunteers who are willing to be trained to create new sequences for novae and transient objects as well as revise and repair existing sequences. A basic understanding of photometry, astrometry and computer skills will serve you well. The primary task is to select comparison stars from new or existing photometry, and then document these sequences in a specific file format for the variable star plotter to read. Because of the training involved, this would require a fairly long-term commitment.

## LPV Section

We will be launching an LPV Section with a Wiki, working groups, projects, a science advisor, etc., as a proof of concept towards revising the committee structure of AAVSO. There will be lots to do once this begins rolling along. Helping to build the pages to the Wiki initially, set up a

library of essential links to scientific papers and resources, analyzing light curves, not to mention supplying content and enthusiasm are all things that will be needed. I can't be more specific at this time because it is still in the planning stages.

## The Journal of the AAVSO (JAAVSO)

As anyone who has ever published a science journal can tell you, there are never enough referees to review and critique papers submitted to the journal.

If you are a professional astronomer, let us know what your area of expertise is, or what kinds of papers you would be comfortable reviewing and we'll find something for you to do.

## Fundraising

I haven't begun drafting volunteers to help with this yet, but the day is coming. You wouldn't necessarily be asked to beg for money from anyone, but there is lots of work to do, and at the moment I am a committee of one. We want to raise about eight million dollars in the next five years, so this is a serious and important job you can help with.

## Office and Administrative

If you live in Massachusetts, and would like to help out at headquarters part-time, there are always mailing, filing and administrative tasks that pop up at irregular intervals throughout the year.

If you would like to contribute to any of these important, meaningful projects or programs, contact AAVSO Headquarters at [aavso@aavso.org](mailto:aavso@aavso.org) or call us at 617-354-0484 or use our toll free line at 1-888-802-STAR(7827). ★

Did you know that you can also contribute by representing the AAVSO at star parties, meetings, and conventions? Headquarters can provide brochures and other materials, including the professional AAVSO display. For a look at AAVSO's Kate Hutton's recent trip to Pacific Astronomy & Telescope Show, [click here](#).

# THE AAVSO AND THE INTERNATIONAL YEAR OF ASTRONOMY

## AARON PRICE

Two years ago the American Astronomical Society setup a Program Committee to plan activities for the 2009 International Year of Astronomy. The AAVSO was invited to join because of our ties to amateur astronomers and our experience in citizen science. The committee and program has grown significantly since our first telecons in fall of 2006. In the process, we were designated the chair of the Research Experiences for Students, Teachers and Citizen Science working group. This group consists of eleven astronomers and E/PO specialists with citizen science experience. They include myself plus:

**Dr. Chris De Pree:** Agnes Scott College

**Dr. Lucy Fortson:** Adler Planetarium

**Mark Hartman:** MIT Kavli Institute for Astrophysics and Space Research

**Suzanne H. Jacoby:** LSST

**Dr. Rica French:** MiraCosta College

**Dr. J. C. Lochner:** CRESST/USRA/NASA-GSFC

**Dr. Brian Mendez:** University of California, Berkeley

**Jordan Raddick:** Johns Hopkins/SDSS

**Dr. Robert Stencel (Scientific Advisor):** University of Denver

**Ryan Wyatt:** California Academy of Sciences

Everyone in the working group is working on volunteer time. As a result, we decided to focus our efforts on a few citizen science projects instead of spreading ourselves too thin. Our first project was first suggested to us by Rick Feinberg, former Sky and Telescope Editor-in-Chief.

### Eps Aur

This main project regards monitoring 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. The cause for the eclipse has eluded astronomers. This could be an opportunity to take quality data and help untangle the mystery of this system.

The project will begin with training programs of

several types of binary and transient variable stars that are easy to observe from suburban locations with the naked eye. We are calling this the “Ten Star Training Program”. The goal is to train a complete novice in making naked eye variable star estimates. The AAVSO Sequence Team is currently working on refining our sequences for these stars. The new sequences will be loaded into VSP. In addition, we will create static charts for each of these stars so that novice users will not be forced to use VSP. A short tutorial and guidelines for observing these stars and reporting data will be included with the charts.

A very large grant application was submitted in June to the National Science Foundation (NSF) to cover this project for three years. We are still awaiting word on a decision. However, NSF applications tend to have an acceptance rate of 10-20%, so we are actively looking for other sources of funding. If you know of any source we can approach (or are willing to donate something yourself), please contact us soon!

We would like to kick off the campaign by holding a special workshop in the summer of 2009 at the Adler Planetarium in Chicago. The Adler has kindly agreed to offer their facilities and service as an in kind donation to host the meeting. Thus, all we need are funds for travel for staff, speakers and attendees. We would like to organize it similar to our previously successful High Energy Astrophysics Workshops for Amateur Astronomers. Our goal is to raise \$15,000 to pay for our expenses plus twenty \$500 travel grants for amateur astronomers. Of course, if we raise even more we can offer more travel grants.

If the NSF grant is fully funded, then we plan on hosting other workshops on data analysis and publication. In fact, we plan to scale up this project to make it the largest citizen science project in history to involve “active research”! By that we mean that participants will not be passively participating in citizen science or only contributing to one component (such as data collection). Instead, they will be involved in the

project from start to finish, including coming up with their own research questions, collecting data, analyzing data to test theories, and publishing results in a peer-reviewed journal. New Java-based data analysis tools will be created based on our Zap, TS, and WWZ programs. Also, a large, novice-friendly web site will be designed by Jordan Raddick and built by our webmaster, Kate Davis. We also plan to organize participants into teams so that complementary skill sets can be used together. These are just a few of the many ideas we have, but they are all reliant upon proper funding.

Ryan Wyatt, the director of the Morrison Planetarium at the California Academies of Science, has agreed to donate resources to create a short visualization of some of the current models of the Eps Aur system. Keep an eye on the AAVSO web site for what will surely be a cool video.

Donna Young has agreed to include Eps Aur and variable stars in her Science Olympiad Division 3 Curriculum for 2009-2010 and 2010-2011 competitions. About 150,000 children in 14,000 teams participate in the Division 3 competition annually (Science Olympiad Inc., 2007) and the astronomy activity is one of the most popular among the teams. This will be a great way to get the word out at the grassroots level.

Mike Simonsen and the Speakers Bureau is working on a PowerPoint Presentation about Eps Aur. Anyone will be able to download the presentation from the Speakers Bureau web site (<http://www.aavso.org/education/speakers.shtml>) and give a talk on the subject at their local club or you can invite a member of the bureau to visit and give the talk.

Please stay tuned and visit <http://www.aavso.org/iya/> for updates. Lots of materials will be posted in the coming months as we ramp up for a kick off around the new year. We will include an update in the next issue of the *Newsletter*. If you have an idea or question, please send it to [aavso@aavso.org](mailto:aavso@aavso.org). ★



## MEETING AGENDA

**Data Mining Workshop:**

From Wikipedia: "Data mining is the process of sorting through large amounts of data and picking out relevant information. (This process) is increasingly being used in the sciences to extract information from the enormous data sets generated by modern experimental and observational methods." Astronomy is certainly among those sciences with masses of virtually untapped data. Experts will lead a Friday morning workshop teaching you how to best tackle those large astronomical datasets and get results.

**Special Session on MMO and its History:**

2008 marks the 100th Anniversary of the Maria Mitchell Observatory (MMO). In honor of this memorable occasion we will hold a special session Friday afternoon on the MMO and its 100 year history. There will be a lineup of speakers including MMO alumni, staff and historians.

**MMO Open House/Dinner and Star Party:**

Friday evening Maria Mitchell Observatory will open its doors to us as we celebrate the 100th anniversary of MMO. Transportation will be provided from the Nantucket Inn. The evening will start with an informal buffet dinner at the main Maria Mitchell campus. Much of the main campus (Mitchell House, Library, Natural Science Museum, new 17 inch telescope, etc.) will be open for tours with staff on hand to answer questions. Later in the evening we will move to Loines Observatory for a tour and star party. Loines is a ten minute walk from the main campus -- shuttling will be available in case of rain or for those who feel that they can not make the walk.

**Membership Meeting:**

All attendees are invited to this gathering, which will be held Saturday morning, October 18th. The purpose of this meeting is to inform attendees of the activities of the Association, and will include reports from the Secretary, Treasurer, Committee

## THE 97TH ANNUAL MEETING OF THE AAVSO



WITH THE MARIA MITCHELL OBSERVATORY

NANTUCKET, MASSACHUSETTS

OCTOBER 16-19, 2008

We are very happy to invite our members, observers, and friends to the island of Nantucket, MA for the 97th Annual Meeting of the AAVSO. The meeting will take place at the Nantucket Inn, October 16-19, 2008. The AAVSO annual meeting gives both newcomers and longtime attendees the opportunity to share ideas, experiences, and tips on variable star observing. Attending the AAVSO annual meeting is an excellent way to stay informed about the many activities and accomplishments of the Association, so whether you have attended dozens of AAVSO meetings or are a first-time attendee, we hope to see you at the Annual Meeting.

Join us on the beautiful island of Nantucket to help the Maria Mitchell Observatory celebrate its 100th Anniversary! For more information visit the AAVSO website, or contact Headquarters.

Chairs, and the Director. We will also announce ballot results during this meeting.

**Scientific Paper Session:**

Members and friends are invited to present papers on variable stars and related topics. Papers will be presented Saturday afternoon, October 18th. Timeslots will range from 10 to 20 minutes. Those planning to present papers at this meeting should complete the online abstract form or call the AAVSO for a paper form to be submitted no later than October 3rd, 2008. We also encourage authors to submit poster papers.

**Annual Banquet, Award Presentation, and Keynote Speaker:**

The Annual Banquet will be held at the Nantucket Inn on the evening of Saturday, October 18th. The banquet will be preceded by a cash bar and followed by an award presentation. The evening will culminate in a presentation focusing on the collaboration between amateurs and professionals in the hunt for transiting exoplanets by our keynote speaker and the new Editor of Sky and Telescope magazine, Bob Naeye.

**Tour of Nantucket:**

Sunday morning attendees have the option of signing up for an hour and a half bus tour of the beautiful island of Nantucket. The tour will leave from the Nantucket Inn at 9:30 am.

**Spouse Birding Tour:**

We are attempting to arrange a birding tour of Nantucket on Saturday for interested spouses. Guests would travel the island's diverse habitats with expert ornithologist, Dr. Bob Kennedy to discover first hand the variety of birds that call the island of Nantucket home. We must reach a minimum registration to hold this tour. If interested, please indicate so on the registration form. We'll see you in Nantucket! ★



## THE HOFFLEIT CENTENNIAL: A YEAR OF CELEBRATION.

The Hoffleit Centennial: A Year of Celebration is the title of the proceedings of a conference celebrating Dr. Dorrit Hoffleit's centennial year. Dorrit's astronomical career spanned more than 75 years, the first 25 at Harvard and the following 50 plus years at Yale. Her research spanned a wide range of interests including meteors, spectroscopic parallaxes, variable stars, astrometry, providing research opportunities for young women at the Maria Mitchell Observatory, which she directed for 20 years, reporting on current astronomical research to the amateur community and the history of astronomy.

Most observers will be familiar with her through the Bright Star Catalogue on which she labored painstakingly to ensure the accuracy of all entries. She had a major impact on those who collaborated with her or took the time to stop in her office to say hello. As one well-known astronomer put it, Dorrit is our bridge to the beginnings of modern stellar astronomy and one of the many things that make her so wonderful is that no matter how glad you are to see her, she always left you feeling that she was even happier to see you. At the time of her passing on April 9, 2007 she had just celebrated her 100th birthday at a luncheon attended by 94 of her friends and colleagues. This volume of 206 pages contains thirty-two papers that constitute the proceedings of the centennial conference.

*A. G. Davis Philip, William F. van Altena and Rebecca A. Koopmann, editors. L. Davis Press, Inc., Schenectady, New York, 2008 Price: \$15.00 plus shipping.*

## AVAILABLE EXCLUSIVELY FROM THE AAVSO

### MISFORTUNES AS BLESSINGS IN DISGUISE



*The Story of My Life by Dorrit Hoffleit*

Hardcover, 176 pages, 18 pages of photos, with references, complete bibliography, and a foreword by late AAVSO Director, Janet A. Mattei. Order Online from the AAVSO today [http://www.aavso.org/store/st\\_dorrit.shtml](http://www.aavso.org/store/st_dorrit.shtml).

## THE WALTER A. FEIBELMAN GUEST SUITE AT AAVSO HQ

### Longtime Dream of the AAVSO Now Fulfilled!

When the floorplan of the "AAVSO ideal headquarters" was drawn over 50 years ago, included was a dormitory for visiting astronomers, members, and students. However, none of our rented locations were spacious enough for such a luxury. The need to find temporary housing for a visitor to the AAVSO often came up over the years, and we searched for bed-and-breakfasts, hotels, apartments, etc., that were affordable and suitably located.

Now, at last, in the AAVSO's current home at 49 Bay State Road in Cambridge, a longtime dream has been realized: a guest suite exists for AAVSO visitors! Thanks to the foresight of the AAVSO Council, meticulous planning, oversight, and hands-on work by Arne and Linda Henden, in concert with the architects, physical labor by the contractors - and thanks to longtime AAVSO member and colleague Dr. Walter A. Feibelman, whose very generous bequest made the project possible - visitors to the AAVSO may now have a place to rest their weary heads and write up their research notes.

The Walter A. Feibelman Suite, which is sunny, airy, and located on the second floor of Headquarters, consists of a bedroom/living room with one queen bed, a kitchenette, and a full bathroom with tub/shower. We were delighted to have our first guests, AAVSO Historian Thomas R. Williams and his wife, Anna Fay Williams, were in residence for the month of July!

AAVSO members in good standing and colleagues interested in reserving the Feibelman Suite should check availability on the google calendar and then contact AAVSO Headquarters for details about reserving time. Since we are a non-profit, we cannot charge a rate for the room. However, we can accept a donation to help cover expenses (someone has to clean the room, do the laundry, replace supplies, buy new linens, etc.). We have tentatively set the suggested donation at \$50 for single night stays, and can adjust that as necessary for longer stays. You may also consider upgrading

your membership level to "sustaining" in appreciation of your visit. Please remember that these are optional donations and you are not required to pay anything to stay in the suite.



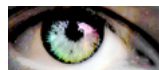
We look forward to seeing some of you in residence in the coming months! ★

## REJUVENATING THE PEP TEAM

Headquarters has noticed recently that the number of PEP observations has decreased dramatically over the past year. PEP observing is still viable and extremely valuable for many of the stars that have been traditionally on the AAVSO programs. As an example, the upcoming eclipse of Eps Aur is a great opportunity for high-quality PEP observations, and we'll soon announce a continued campaign for P Cygni.

PEP observing is simple, requiring no flatfielding or image processing, and can be accomplished even without a computer or software. You can write down the raw numbers displayed on an SSP-3 photometer and upload those measures directly through WebObs - we'll take care of the processing! PEP is ideal for visual observers who wish to extend their skills to digital photometry; to those who are computer-illiterate; to those who really prefer to be out under the night sky; for observers interested in variable-star prototypes like Mira or delta Cep. Many of the targets of amateurs with spectrographs are bright stars, so you can help them in understanding their observations. The drawback of PEP observing is that it requires photometric skies, so for many observers, you may only be able to use your PEP system once a week or so.

Contact the AAVSO if you have PEP systems that you no longer use, that are in good working order, you can donate them to us, get a tax break, and give us the opportunity to lend them to people who can make use of them. ★



## EYEPIECE VIEWS

**GAMZE MENALI, EDITOR**

Here we are again! You can smell the changing seasons in the air. While we northern hemisphere based observers are moving into the beautiful clear skies of the fall, the southern hemisphere is starting to warm up for more comfortable summer observing experiences.

Of course fall means something else for the AAVSO, the Fall Meeting is closing in. This year it will be held in Nantucket, MA on October 16-19. To find more information about our annual meeting, please visit: <http://www.aavso.org/aavso/meetings/fall08.shtml>.

Join us on the beautiful island of Nantucket to help the Maria Mitchell Observatory celebrate its 100th Anniversary!

Hope you will enjoy the articles under Eyepiece Views section as well as all other articles in our AAVSO Newsletter.

Best wishes for clear skies!

— Gamze

## THE ROLL-OFF ROOF DESIGN vs DOME STYLE OBSERVATORIES

BY TIM R. CRAWFORD (CTX) ARCH CAPE, OREGON

As we all quickly learn the best telescope set up is the one that get's used and the one that will get used the most is the one permanently located close to home or capable of being remotely operated at the operators discretion.

Once a decision is made to commit to a permanent observatory the first major decision will be whether or not to construct a roll-off roof design or a dome style.

My first observatory, built north of Anchorage, Alaska, was a self designed and constructed roll-off roof style while my second and current observatory, located in Arch Cape, Oregon, was put together from a commercial "kit" and placed on a self constructed deck.



Based upon my own personal experiences and conversations with others I have come to the conclusion that neither style is to be preferred in itself but that based upon the observers geographical location and preferences there is a one best design to meet that individual persons situation. In other words, there are pros and cons for each style. I will discuss some of these pros and cons as well as offering a few hints on the construction of each style.

The first issue you will need to address is whether or not your local zoning or home owners association will permit the installation of either design on your property; the answer can very well determine your choice without consideration of any of the other issues.

Assuming you have the option of constructing either design the first major consideration is



whether or not you live in an area with significant dewing throughout the year. If you live in an area where dewing occurs with some frequency throughout the year then the roll-off roof design, when open, essentially exposes your equipment, accessories and papers to the same dewing that

you note on the grass, cars and other exterior surfaces. My roll-off in Alaska, because of the low air moisture air content most of the year, only had this problem for about three weeks in the fall and some of those nights it was like it was raining inside because of how damp everything became; but it was a short period and not that hard to live with.

My dome on the north west coast of Oregon is exposed to frequent dewing, however, with the exception of some non-objectionable dewing on the inside of the dome some nights, the interior remains dry and is therefore a wiser choice, for dewing environments.

One of the more significant advantages of the roll-off roof design is that it allows you to have full sky views and enables a much greater connectivity to the sky than do the domes. However, if you have neighbors with yard lights this can be a major disadvantage which is ameliorated with the dome design; in addition to aiding shielding of neighbor's yard lights, unless directly in front of the slit, the dome design, somewhat partially dependent upon the shutter design, can be a great aid in shielding out direct moon light.

While on the subject of yard lights and even porch and window lights I have had great success with inviting neighbors over to view eye candy whereupon I take the opportunity to point out, if necessary, that their outside porch, window or yard lights are troublesome and they universally have always worked with me on a solution. Just ask! I had a most unusual problem with my roll-off roof observatory in Alaska in that I was on the high ground of one side of the lake and on the other low side (about 1/2 mile away) a neighbor had mounted a large yard light on a tall pole such that the light was directly in my eyes when looking west; once I explained the problem to him and showed him a catalog of yard light shields he allowed me to order one and install it... problem solved. JUST ASK!

The roll-off roof design has the obvious advantage of a more rapid cooling of the interior than do

CONTINUED ON NEXT PAGE

## CRAWFORD: ROLL-OFFS VS DOMES CONTINUED FROM PAGE 7...

the domes. While on the subject of cooling, regardless of the design you choose, I would highly recommend that the floor be wood raised decking so that cooling is more readily enabled; cement holds heat and releases it slowly. Regardless of the design chosen or floor choice you want to insure that your pier is isolated from the floor otherwise vibrations will be a considerable nuisance as you move around.

Normally, the dome design offers better wind protection than does the roll-off roof design, and yet the wall height of the roll off will have considerable influence on how much or little your scope will be affected by the wind. If you will check the roll-off photo above you will note that my scope projected above the wall height and was affected in stronger winds. While it is rare for winds to be troublesome with my dome, they can be if directly flowing through the slit and then more so for the CCD cables than the scope itself. While some manufactured domes give you the option of controlling the wall height, many do not and that is one of the potential advantages of the roll off design in that, if you self construct, you can control your wall height.

When it comes to construction there is much less work involved in the erection of a manufactured dome than there is in either assembly of a manufactured roll-off kit or a self constructed one. I think that generally speaking the self constructed roll-off design will prove to be the least expensive option; although there is the alternative of purchasing a low cost dome and then building your own walls and support structure for the dome. This last option should be cost competitive with the roll off design. I have not taken into consideration, regarding costs, where the manufactured roll-off kit design would fall.

To summarize the advantages of domes: protection from dewing; shielding of neighbor's lights; shielding of direct moon light; better wind protection and simpler construction, if manufactured.

To summarize the advantages of the roll-off roof

design: Rapid cooling; full view of the sky with its greater "connectivity" to the sky; control of wall height and normally less expensive. Obviously, if you have a roll-off roof on your own property there is little need for automation, which is another advantage of that particular design.

As I have no experience with remote automation, from what I read and know of the two designs, the dome design would appear to lend itself more readily to remote automation; however, there are several firms/individuals who would appear to have solved the remote automation challenges of the roll-off design.

An excellent online source of Amateur Astronomical Observatories designs; note that the vendors are an incomplete listing: <http://obs.nineplanets.org/obs/obslist.html>.

If you want some reference books I highly recommend the following which can be obtained at Amazon using the AAVSO link: [www.aavso.org/aavso/support/amazon.shtml](http://www.aavso.org/aavso/support/amazon.shtml).

- 1) Small Astronomical Observatories, Patrick Moore.
- 2) More Small Astronomical Observatories, Patrick Moore.
- 3) Setting-Up a Small Observatory: From Concept to Construction, D Arditti & P Moore.
- 4) Building a Roll-Off Roof Observatory: A Complete Guide For Design and Construction, John Hicks.



## EYEPIECE VIEWS

Pier height is one of the first issues to be resolved once you have chosen a design. Pier heights are always going to be a compromise in that depending upon the pier height chosen you are either going to be bending over when nearing the zenith or climbing a ladder when progressing towards the horizon; it's hard to find a compromise that best suits all positions of the sky. While I can provide you with the height of the pier that I chose for my 12" SCT you would be advised to experiment with your own scope on a tripod or a friends to see what height seems best to suit you. With both of my observatories the same pier was used which measures ~43" above the floor of the observatory with an overall length of 63 inches. With this J bolt mounted pier ~ 1200 pounds of cement were poured into the ground.



While not an issue with a roll off roof design it is important to understand that when you mount an SCT in a dome that the pier is not going to be the center of rotation for the polar mounted telescope. The center of rotation will actually be your Declination axis. Therefore you want to offset your pier to the South so that the Dec axis actually is located in the center of your observatory. That center point is going to depend upon your pier diameter, your latitude and the size of your instrument. The only foolproof way that I know of to insure you measure the center correctly is to install your pier, mount your telescope, polar align it, and then drop a plumb bob down from the center of your Dec axis to find the center; then construct your floor after the center of the dome

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## SHRINE TO THE STARS

BY GAMZE MENALI (MGQ) QUINCY, MASSACHUSETTS

The [Springfield Telescope Makers](#) is an active amateur astronomy and telescope making club located in Springfield, Vermont. They put on the annual Stellafane Convention in July or August and hold mirror making classes in the fall and winter as well as few public star parties each year.

According to the Stellafane's webpage, Stellafane is the contraction of two Latin words: stellar (means star), and fane (means shrine). Shrine to the Stars, indeed! Coming from the light polluted skies of Boston, Stellafane was the first ever place I got to see the Milky Way in its magnificent beauty. It was also the first ever place that I got to see the Pleiades and Andromeda with unaided eye. It is almost impossible to describe the beauties of night sky there. The heavens seems so close to Earth, and the stars, looking like diamonds casually thrown on a velvety background, there at Stellafane. The night sky is not the only thing that makes Stellafane just irresistible though. My husband and I have been regulars at the Convention for the past eleven odd years and the people of Stellafane are what make us go back again and again and again. When you match the beauties of Heavens with the good hearted, wholesome people of Stellafane, you feel like there is no place on Earth that would make you feel so much at home.

This year's convention took place between Jul 31-Aug 3. There were two good nights of observing, with the exception of Saturday! It rained a good part of Saturday and into the evening, too. There was no observing on that evening, but thanks to the Flanders Pavilion, afternoon talks and the Saturday evening program were not affected by rain. The pavilion kept us safe and dry and for that I am sure all Stellafaners were grateful for the hard work that went into it. Because it rained Saturday night, the optical judging was done on Friday evening however mechanical competition took place Saturday morning and the turnout was good. Luckily, the rain didn't start until around early afternoon and all worked out beautifully.



*The AAVSO at Stellafane: L-R, Gamze Menali, Mike Mattei, Mario Motta, Tom Williams, and Paul Valleli.*

To make this year's Stellafane even more special was the fact that they had many AAVSO'sers in the program. Dr. Mario Motta delivered the most liked talk, "The Shadowgram". Shadowgrams are the most anticipated and one of the most important talks of the entire convention for their purpose is to give a bit of history, personal reflections, and describe what Stellafane is all about. Mario did a superb job delivering. His talk was well received and much appreciated by the attendees.

Our own Tom Williams, past president and long-time member and benefactor, delivered the keynote speech Saturday evening, titled: "Resources for ATM: Albert G. Ingalls and his Team of Experts." It was wonderful. I remember when Tom was making the opening remarks but then I was lost at the beauty of words, remarkable history, and a commendable presentation. By the end of it, my husband was poking me and telling me to come back Earth, I loved it so much! I took a great ride into history, learned so much and had good fun too. It was the last talk of the night and we went back to the hotel while I was still under the spell of Tom's gracious delivery, combining historical facts with a storyteller's special touch. It was remarkable.

Mike Mattei was the recipient of this year's Walter Scott Houston Award of the North East Region of the Astronomical League (NERAL) and he

CONTINUED ON NEXT PAGE

## EYEPIECE VIEWS

CRAWFORD: ROLL-OFFS VS DOMES  
CONTINUED FROM PAGE 8...

has been determined in this manner.

With a roll-off roof design it is advised to have



structure parallel with the North South line with your roof rolling off to the North in as much as you will infrequently be viewing in that direction so the raised roof represents a lesser obstruction than if a different orientation were chosen. In my case I used V groove wheels with an inverted angle iron track for the roof to roll on; three wheels on each side with the wall height at 72 inches and the overall size of 10' x 12'. The roof was built rather stoutly in anticipation of a heavy snow load.

The photo to the right shows one of the corners and how I used a turnbuckle to secure the roof when not in use. The dark piece in front of the wheel was a simple rubber boot that I used at each corner over the track slit to keep out blowing dust.



The siding for the roof overlaps the lower section and I had to make a small door on the south end of the roof to clear the scope when opening while allowing a "seal" when closed.

I hope that some of this has been informative for you and if you have further questions (remember, there is no such thing as a dumb one) please contact me at: [StarBoyCTX@yahoo.com](mailto:StarBoyCTX@yahoo.com). ★

## MENALI: SHRINE TO THE STARS CONTINUED FROM PAGE 9...

## EYEPIECE VIEWS

received the award at Stellafane. Those of us who know Mike know that this is a well-deserved award given to a man who always takes the time to pass on his knowledge to so many amateurs while working alongside many professionals and researchers in astronomy. Congratulations Mike!

Also in the schedule, was my dear husband of 15 years, Haldun Menali! Giving a talk at Stellafane was a dream of his since his childhood years, he says. He delivered a well received talk together with Dick Parker, who got the 1st place compound optical, mechanical design, craftsmanship and innovative component (Novel 9" Thrust Bearing) awards at this year's competition at Stellafane. They talked about the state of amateur telescope making in developing countries and shared their experiences of a workshop that took place in Istanbul, Turkey, last summer. They did a great job. Haldun often says that he has been deserving of the title "geeky" while growing up. He says While his friends were going after girls, he was dreaming about how to build his first telescope. He also had a distant dream, which he always thought he was going to make it come true somehow. Well, that little geeky boy's dream (and after 30 some years too) finally came true on a magical Stellafane day. He was on cloud nine and so was I watching what a great job he did. And this while he was fighting with the pains of a kidney stone! Anybody but him could have canceled the talk but not him, not after 30 years of dreaming. When I look at him, I see each and every one of our observers out there; same passion, same love, same commitment. You guys are what make AAVSO truly one of a kind indeed.



The AAVSO's Mike Mattei received the Walter Scott Houston Award from the Noth East Region of the Astronomical League.

If you haven't been to Stellafane, make the effort to give it a try. You can find all the information you need on their web page: <http://stellafane.org>.

Best wishes for the darkest, most clear skies. I am most grateful to the Springfield Telescope Makers for allowing me use some of the information from their web page. ★

## JD / MOON PHASE CALENDARS

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

### OCTOBER 2008

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

### NOVEMBER 2008

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

### DECEMBER 2008

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

**SKY EVENTS:** October 17 - Pleiades Occultation, early morning, western North America. October 21 - Orionid meteor shower peaks in the early morning.

**SKY EVENTS:** November 2 - Daylight-saving time ends at 2a.m. for most of the United States and Canada.

**SKY EVENTS:** December 1 - Conjunction of Moon, Venus, and Jupiter. December 21 - Winter Solstice 21:12 UT.

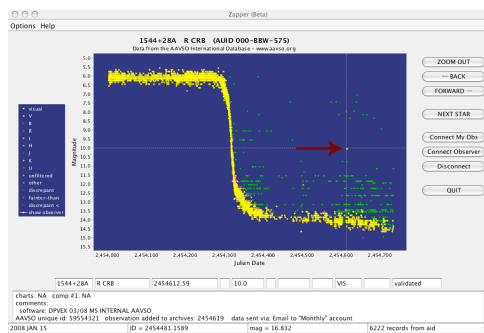
## ZAPPER UPDATE

By Sara Beck and the AAVSO Technical Staff

On June 20th, AAVSO Headquarters (HQ) released a new data validation tool called Zapper. Using Zapper, members and observers have been able to plot light curves and mark discrepant data points. With the click of a mouse, the suspicious observations were sent on to HQ where they were brought to the attention of the technical staff. To date, there have been 18 loyal Zapper users who have marked 393 observations in 146 different stars. Through checking original records at HQ or contacting observers to ask them to check their notes, over 57 typographical errors marked by Zapper users have been caught and corrected so far. Many more data-related problems were found and corrected at the same time.

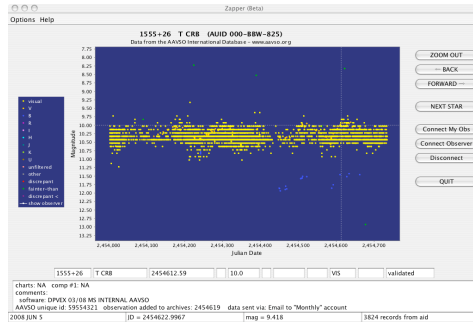
Here are just two examples of the kinds of problems found and corrected:

In the figure below, note the 10.0 magnitude observation of R CrB that was flagged by a Zapper user:



When contacted by HQ staff about this observation, the observer of this point checked his original records and wrote: "I checked my data. This is an error. I am sure that T CRB was intended." The observation looks much better now.

In another case, a Zapper user was unable to load data for several stars. The observer ended up sending an email to AAVSO HQ.



*The errant observation corrected.*

The email read: "I have a problem while querying data for some very popular stars, such as SS Cyg, CI Cyg, R CrB. With SS Cygni, I usually get an error 'Problem with the ResultSet. There may be a problem with the JD...'"

Upon further investigation, HQ staff discovered several problems with data formatting which caused the data not to load properly into Zapper. Here are a few examples showing incorrect formatting in the JD and magnitude fields:

```

+-----+-----+-----+
| name | JD | magnitude |
+-----+-----+-----+
| R CRB | 2454685.3000 | &lt;12.2 |
| CH CYG | 2454626.456 | 9.0 |
| SS CYG | 2454718..5694 | 9.5 |
+-----+-----+-----+
    
```

These observations and others like them were corrected and, in addition, the data submission software was modified to prevent such problems from occurring in the future.

Thanks to help from our Zapper users, much staff time spent looking for data problems has been already saved and more observations have been corrected.

If you would like to be a part of this exciting project and help HQ staff with the enormous task of data validation, please follow this link on the AAVSO website for more information: <http://www.aavso.org/news/zapper.shtml>

It's a great way to spend a cloudy night! ★

## ASTRO-BLOG ROUNDUP

TRAVIS SEARLE

Our very own Mike Simonsen howls at the moon and admits to being a variable star junkie. [http://simostronomy.blogspot.com/2008/09/howling-at-moon\\_21.html](http://simostronomy.blogspot.com/2008/09/howling-at-moon_21.html).

Slacker Astronomy discusses SOPHIA and Hubble in a recent video podcast. Watch for Phil Plait and Mike Simonsen cameos, and some self-described "inappropriate questions". <http://www.slackerastronomy.org/wordpress/2008/09/video-sofia-and-hubble/>.

Always timely and to the point, the Universe Today takes a look at some Hubble issues and weighs the pros and cons of making repair mission a priority. <http://www.universetoday.com/2008/09/29/major-failure-on-the-hubble-space-telescope-repair-mission-options-being-weighed/>.



*An eye in the sky like no other: Hubble.*

The always on point Chris Lintott also weighs in on the Hubble Servicing mission: <http://chrislintott.net/2008/09/30/sky-at-night-curse-hits-hst-servicing-mission/>.

Pamela at Star Stryder is rethinking the Magellanic Cloud at <http://www.starstryder.com/2008/09/28/rethinking-the-magellanic-clouds/>.

Mothballs in Space? It makes more sense over at Professor Astronomy's Blog <http://blog.professorastronomy.com/2008/09/mothballs-in-space.html>. ★

## IN MEMORIAM

MEMBERS, OBSERVERS, COLLEAGUES,  
AND FRIENDS OF THE AAVSO

### CHARLES L. RICKER (RQ) Marquette, MI

A supportive AAVSO member and observer from 1954-1992, Charles rejoined the Association in 1997. He submitted 1884 observations to the International Database.

## VSOTS: A WHITE DWARF IN THE MAKING...

"Everything changes. Even the stars in the sky." FG Sge was first noted as a variable in 1944 by Cuno Hoffmeister, but the star received scant observer attention (at least in printed papers), until 1960. It's the topic of the current season of the AAVSO's Variable Star of the Season. <http://www.aavso.org/vstar/vsots/fgsge.shtml>.

## AAVSONet NOW ONLINE

### The AAVSO Robotic Telescope Network (AAVSONet)

AAVSONet is available free-of-charge to AAVSO members only and is available through the Blue&Gold section of the website. AAVSO observers and members may use Blue&Gold, but only members will be able to access AAVSONet. The common feature of all AAVSONet facilities is queue-scheduled observations of scientific targets, using MaxImDL for image acquisition, TheSky for telescope control, and ACP for queue scheduling. We do not support interactive telescope use, and discourage "pretty picture" observations. Because of the scheduling flexibility, the optimal targets are those where an observation needs to be made once or twice per night over extended periods of time. We can do high-cadence time series of targets, but since this ties up the telescope, we usually require a good justification for such observations.



observations. Because of the scheduling flexibility, the optimal targets are those where an observation needs to be made once or twice per night over extended periods of time. We can do high-cadence time series of targets, but since this ties up the telescope, we usually require a good justification for such observations.

To request observations, submit the request form. After review, we will let you know if time has been awarded. After that point, observations are made and images are fully processed (dark subtract, flat field) and stored on our ftp site for your download. We also will automatically extract and perform photometry on all stars in your images; you can either access these starlists or perform your own photometry. Each project will be reviewed periodically, and those groups who are not utilizing their images may be subject to cancellation. For more info: <http://www.aavso.org/news/aavsonet.shtml>. ★

## SUPPORT THE AAVSO!

In order to sustain the AAVSO and its operations, we rely on the generous support provided by members, sponsors, donors, and staff. Together we are the AAVSO! Every dollar given benefits the AAVSO in a necessary and unique way. Leave your mark, make a gift today!

**The General Fund:** This fund is an unrestricted fund and supports the general operations of the Association.

**The Endowment Fund:** This is a professionally managed fund, invested for the perpetuity of the AAVSO. From time to time, transfers from this fund into the General Fund are made as necessary to meet operating deficits of the Association.

**The Building Fund:** This fund is dedicated to replenishing the Endowment Fund for the cost of purchasing the new headquarters building (49 Bay State Road), to provide funds to refurbish the building, and to cover other costs incurred with the purchase. Our goal is 1.2 million dollars by the fall of 2010.

**Janet A. Mattei Research Fellowship Program:** This fund enables a visiting scientist, postdoctoral researcher, or student to perform research at AAVSO Headquarters with the goal of disseminating the results throughout the astronomical community.

**Margaret Mayall Assistantship Fund:** This fund helps finance a summer student at AAVSO Headquarters who works on variable star-related projects and research while learning about the AAVSO and variable stars in general. Only the accumulated interest and not the principal may be used.

**Member Sponsorship Fund:** Funds donated to this program pay the membership dues for those active variable star observers who want to become members of the Association but cannot afford the dues.

**Restricted Fund:** Gifts and contributions made to the Association for restricted purposes as specified by the donor thereof. All such restricted funds of the Association shall be administered in strict accordance with the instructions of the donor. The Association is not obliged to accept any assets so offered.

Full Name:	Amount of Gift:	Fund Designation(s):	
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Fax	Email	Age	Birth Date
		Vocation	

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To donate online, please [click here](#), or simply fill out and return this form to: AAVSO, 49 Bay State Road, Cambridge, Massachusetts 02138, USA We accept checks (drawn on a US bank), money orders, and Visa/Mastercard credit cards. You may also set up recurring payments. The AAVSO is a recognized 501(c)(3) charitable organization. Your donations are tax deductible.

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