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EYEPIECE VIEWS #316

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1. INTRODUCTION

It is mind blowing how fast time flies! It is fall again and we find ourselves gearing towards a very busy season of the year with the annual meeting preparations.

Fall means so many things to so many people from changing colors to cooling temperatures from harvest to Halloween. Here at the AAVSO, it also means that the annual fall meeting is closing in!

This year it will be held Newton, MA on October 26-28. To find more information about our annual meeting, please visit:

<http://www.aavso.org/aavso/meetings/fall06.shtml>

Our current issue is again full of neat articles. Our avid observer Eric Broens is taking us to a wonderful journey with his article "Visual Variable Star Observing from Belgium" while our observer Kate Hutton is sharing her experiences with her article "From the Learning Curve". Eric Broens generously contributed yet another article "Chi Cygni's Bright Maxima" which we all will enjoy reading.

We wish you a very enjoyable season!

Thanks and good observing!
Gamze Menali, AAVSO Technical Assistant (MGQ)

2. VISUAL VARIABLE STAR OBSERVING FROM BELGIUM – Eric Broens

This is maybe not a regular topic for Eyepiece Views but I would like to take the opportunity to introduce the VVS Working group Variable Stars and some of its observers to you. The acronym VVS is often misinterpreted for Variable Star Section but the careful reader will notice that there is a double "V" instead of a double "S" in the acronym. VVS is the acronym for "Vereniging Voor Sterrenkunde", which is Dutch for "Astronomical Association". The VVS is a Belgian amateur astronomical association counting about 2000 members, most of them are amateurs from the Dutch speaking part of Belgium. The VVS was founded in 1944 with the aim to study, promote and disseminate astronomy and related sciences. Until 1968 the VVS was mainly lead by professional astronomers but in 1968 for the first time an amateur became president of the VVS. One year later the first 7 working groups were founded, among them the Working group Variable Stars (WVS). The VVS currently has 15 working groups. Other working groups include Astrophotography and CCD imaging, Occultations, Comets, Light Pollution, Sun, among others.

Frans Van Loo founded the VVS Working group Variable Stars in August 1969. Frans is still an active observer and his observations are marked with the initials VNL in the AAVSO database. The original aim of the working group was to make as many observations as possible of a small number of long period and semi-regular stars using small telescopes. The current observing program is of course greatly expanded with respect to these early days. Most observations are still done by visual observers, but sporadically also CCD observations are reported. The observations are included in an electronic database and are available online via our webpages (<http://www.vvs.be/wg/wvs>). The database contains only observations made by VVS members. Currently about 400000 observations, dating back to Frans Van Loo's first observations are included in the database.

During the first years of the working group observers reported between a few hundred and a few thousand observations annually. From 1991 on the number of reported observations increased rapidly, ranging between 20000 and 35000 observations annually during the last decade, made by 15 to 25 observers. All observations are also reported to the AAVSO.

The observing program is for the major part a subset of the AAVSO observing program. AAVSO charts are used to observe the variables. A look at the DB statistics shows that about 40% of the stars observed are Mira stars, 18% are cataclysmic variables and about 12% are semi-regular variables. The remaining 30% consist of irregular stars, symbiotic stars, RCB stars, and others. If we look at the number of observations, then the Mira stars account for about 35% of the totals. The CVs account for about 37% of the observations. I am wondering whether this reflects also the statistics for the AAVSO International DB or not.

Some observers are focussing on specific types of variables. The most active Mira star observers in our working group are Alfons Diepvens (DPA) and Hubert Hautecler (HHU). Alfons started observing in 1984. His main instrument is a 15 cm f/15 refractor. Hubert Hautecler used several instruments and started to observe in 1999. Johan Van Der Looy (VDL) is our binocular observer. Using a 20 x 80 binoculars Johan is focussing (or should I write de-focussing) on the brighter Mira stars and quite a lot of semi-regular stars. He has also a special interest for symbiotic stars. He reported 4789 observations in 2005, using only his binoculars! If you surf to our light curve generator and plot the light curve of TX Dra or V UMi starting from January 2000, one can see what a motivated observer can achieve just using binoculars. Almost all observations in those light curves are made solely by Johan. Marc Biesmans (BMM), also known for his chart making activities for the AAVSO, observes mainly very faint Mira stars. Another well-known observer is Eddy Muylaert (MUY) who is monitoring mainly CV's. Other active observers in our working group include Antoine Baillien (BIE), Patrick Cloesen (CPS) and Siegfried Ver Eecke (VEE). Another member is Patrick Wils (WLP). Patrick has been a very active observer from 1975 to 1986 and was director of the working group from 1981 to 1986. Patrick is now mainly a data-miner, but once and a while when an interesting star or nova goes off, he will collect some photons and report his observations.

Once a year we gather for a meeting. The last 2 years this meeting was a joint meeting with our KNVWS WVS colleagues from the Netherlands. In May we were happy to welcome Dr. Arne Henden at this meeting. Pictures and presentations from this meeting are available on our website <http://www.vvs.be/wg/wvs>. More information on our working group and its members can be found on those pages too.

3. CHI CYGNI'S BRIGHT MAXIMA – Eric Broens

The last couple of months the Mira variable Chi Cygni treated us with a marvellous display. On average the star peaks at magnitude 5.2, but this summer it got brighter than the 4th magnitude star eta Cygni, which is just NW of chi Cygni. This slightly changed the view of Cygnus.

It is not uncommon that Mira stars show large variations in maximum brightness but it happens only very rarely that chi Cygni gets brighter than 4th magnitude. The maximum magnitudes given in the GCVS are the brightest recorded ones, for chi Cygni the GCVS lists a maximum magnitude of 3.3 [1]. This maximum was recorded at the end of 1847 (JDmax=2396014.8) and was observed by Argelander, Heis and Schmidt [2], [4].

Other maxima brighter than magnitude 4 are listed below. I selected the maxima brighter than magnitude 4.0 by visual inspection of the historical light curve of chi Cygni dating back to the date of discovery by Gottfried Kirch in 1686 [2], [3]. The dates of maxima are taken from [4], with exception of the last one for which the date is estimated from the quick look data.

Date of Max	JDmax	mag.	Observers
Apr. 21, 1702	2342812.9	>3.8?	Gottfried Kirch
Oct. 1, 1845	2395205.6	3.8	Argelander, Heis, Schmidt
Dec. 19, 1847	2396014.8	3.5 (3.3)	Argelander, Heis, Schmidt
Jan. 1, 1858	2399680.7	3.6	Argelander, Heis, Schmidt, Winnecke
Oct. 17, 1864	2402161.6	3.9	Heis, Schmidt
Aug. 3, 2006	2453951.2	3.7	AAVSO observers

I guess the historical magnitude 3.3 maximum as listed in the GCVS is based on the brightest estimate. By visual inspection of the historical light curve I rather judge the mean maximum magnitude for this one as magnitude 3.5. It is striking that, up to this summer, such bright maxima were only recorded in the "ancient" observations. I compared the magnitudes of the comparison stars as they are listed in the references mentioned below with the ones on the AAVSO charts, and they cannot account for a discrepancy. Maxima reaching up to magnitude 4 are more common. I counted the maxima brighter than magnitude 4.5 in the time span from 1900 up to now and they occurred about 15 times. During this period all maxima were well observed.

AAVSO charts for chi Cygni can be found at

<http://www.aavso.org/cgi-bin/searchcharts3.pl?name=chi%20cyg>

The light curve for the most recent cycles can be found at

<http://www.aavso.org/cgi-bin/newlclg.pl?name=chi%20cyg&lastdays=400&obstotals=on&type=ps&width=600&height=450&style=points&mag1=&mag2=&visualunvalidated=on&visualvalidated=on&fainterthan=on&v=on>

References: [1] General Catalogue of Variable Stars, <http://www.sai.msu.su/groups/cluster/gcvs/gcvs/>

Samus N.N., Durlevich O.V., et al.

[2] Long-term visual magnitude estimates of the Mira variable chi Cygni I. 1686--1900
C. Sterken, E. Broens, 1998, Journal of Astronomical Data 4

[3] Long-term visual magnitude estimates of the Mira variable chi Cygni II. 1900--1998
E. Broens, C. Sterken, D. McAdam, M. Watanabe, 1998, Journal of Astronomical Data 4

[4] On the period history of Chi Cygni
C. Sterken, E. Broens, C. Koen, 1999, A&A 342, 167-172

4. FROM THE LEARNING CURVE – Kate Hutton

“When they weren’t speechless with joy over parallax shifts, they were mesmerized by the fluctuations of variable stars, or the slow orbits of a few easily resolved binaries.”

From Diaspora by Greg Egan, describing a race of “Star Puppies”

I’ve joined the AAVSO twice. The first time, I was in high school. I probably didn’t even send in that much data. I don’t really remember. But when I open up the star atlas I used then, there are all my “b charts” neatly drawn onto the maps by me. I suppose that I read about the group in Sky & Telescope, and that I joined so that I could contribute some data “to science”. I don’t remember much about my learning curve, which means I must have got through it without too much frustration. I had a 3-inch Newtonian. I do remember that Carolyn Hurless set me up with two teen observer pen pals, which was a lot of fun (Cindy Bowling or Lynn Raynor, are you still out there?). Teen age astronomers have a lot of fantasies involving street lights and BB guns. I let my membership lapse when I went away to college (to study astronomy, as it turns out, although I eventually ended up in the earth sciences).

Six months ago, pushing 40 years after I got my first blueprint charts in the mail, I somehow got a bug in my ear to get back into variable stars. Actually, to get back into amateur astronomy, as I’d done nothing at all in a very long time. It must have happened because I read science fiction, including one called Supernova by Roger MacBride Allen and Eric Kotani. I wanted to refresh my memory on the various types of supernovae, which led me David Levy’s Guide to Variable Stars.

I found the learning curve to be somewhat tougher in middle age. I no longer, for example, seem to have enough sense to start with easy stars. I live under awful light pollution. I need reading glasses to see the charts. And so on. The only telescope I had was a tiny Meade “goto” that I’d bought at Costco to take on camping trips with me.

The first star I tried to estimate was a naked eye star, Betelgeuse. It may not be the easiest star in the universe to estimate, but at least I could find it! Even in Los Angeles. I estimated it every clear night for a month or two, to get my eyes and brain in shape and to get a feel for how sky conditions (read smog and light pollution), twilight, elevation, and other factors that might arise would affect my estimates. After that, I started downloading charts (black and white, not blue!). I had it in my head that everyone would be looking at the Miras, so I’d do semi-regulars instead. Some of those turned out to be “easy” and some “not so easy”. Some have only very old charts that are positively impressionistic. The “goto” on my little “goto” stopped going to, so I put a Telrad on it. I also bought a 5-inch Newtonian. A month or two ago I acquired a 10-inch Dobsonian, which I think is my favorite scope, except for the fact the finder is reversing, which makes star hopping a challenge.

I joined the Los Angeles Astronomical Society, mainly to get access to their dark sky site in the mountains. I hit it off well with these like-minded people, and actually ran into a few that I already knew. Through the LAAS, I met my variable star mentors (“Gee, maybe she can go out with Pam to look at variables ...”).

Pam turned out to be Pam Gonzales, who observes with Greg Thomas at Clinton Ford Observatory, a little known AAVSO facility in the San Gabriel Mountains (on Mt. Peltier, no less). In addition to their dedication to snowshoe up the mountain in the winter, these folks also have a loony sense of humor and a lot of patience (“In spite of what we may say, take as long as you need at the eyepiece.”). Pam and Greg have offered a lot of advice on finding star fields and other topics, not the least of which is the operation of a “classic” visual observatory which Greg has restored and maintains. After three or more of us (Pam has hooked two other “star puppies”) have all made an estimate on each star, we may or may not compare notes. Only rank beginners are allowed to go back to the eyepiece and try again! These folks observe mainly stars listed as needing observations, so some are good challenges. Having at least one mentor is a big plus. I understand that the AAVSO has mentors (and pen pals) available.

My biggest struggles have been in the area of pattern recognition, a mental function that seems to be the first one to go when I’m fatigued. Sometimes I can be looking right at a clear asterism in a field and not see it because I have the chart turned the wrong way. Reversing telescopes compound the problem and get sworn at fairly regularly. There was one particular occasion when Pam and I had the little “goto” out at the LAAS Wednesday night gathering at Garvey Park, trying to locate V Boo. V Boo is extremely easy to find since there’s a naked eye star in the field, but we could not, much to the amusement of other members who were busy admiring Jupiter, Alberio, and other bright objects suitable for Los Angeles. Later, while surfing the chart data base, I realized that V Boo has a reversed chart!

The nice thing about the learning curve this time is that I know I got through it once, and that things would get easier. A few months ago, I could spend two hours on one star and still not find it. Now I’m making an estimate about every 10 or 15 minutes, maybe faster on a really good night when I have more naked eye stars for “Telrad fodder”. My “hopping secret” is the same one I used in high school: drawing my charts onto (this time) photocopies of my star atlas.

The e-mail discussion group (AAVSO-DIS) and the chat room have helped me a lot, although the latter seems more oriented to CCD observers than visual observers. One day I may make that leap, maybe when I have a better sky, more money to invest, or when the lure of better data overcomes the aggravation of trying to use a computer on very little sleep. Meanwhile, I’m enjoying sitting in the back yard or on the ladder at the observatory, checking up on my stellar friends once a week. I’m recalling a cartoon which is pinned up on a bulletin board at the LAAS clubhouse: in a suburban house at night, the woman is flipping channels on the TV, complaining “There is absolutely nothing to watch!”. Her husband has slipped out the window onto the roof and is admiring the stars, planets, comets, etc. Enough said!

5. BLUE & GOLD – Kate Davis, AAVSO Web Master

On September 1, 2006, the AAVSO announced the release of Blue&Gold, the new password protected section of the website reserved for AAVSO members (those who pay dues) and observers (those who contribute observations). It is called Blue&Gold in honor of the AAVSO’s colors, blue and gold. The section is designed to give paying members GOLD access, which is FULL access to all features within the section. Non-paying observers have BLUE access, which is limited access to specific features within the section. The URL is:

<http://www.aavso.org/bluegold/>

The most popular feature of Blue&Gold right now is *WebObs*. This has replaced the old WebObs and is where you should go to report observations online. If you are a former WebObs user, you may log in with the same username and password as before. There are several new features in this new version of WebObs, including the ability to make changes to your observations submitted within the last three months. This feature gives access to ALL users.

Another popular feature of the new Blue&Gold is to *Update Your Personal AAVSO Information* which you can use to check and modify your personal information in our database. This new feature enables you to change your email, address, phone number, and other information so we will have the most current records as possible. This feature gives access to ALL users.

You may also *Update Your MyNewsFlash Profiles* within the Blue&Gold section. If you are a MyNewsFlash subscriber you may edit your profiles here.

There will be more features coming soon to the Blue&Gold section. One of these is to *Request to use the Sonoita Robotic Telescope for Observing*. The AAVSO has a share of the Sonoita Robotic Telescope observing time that will be made available to AAVSO members via a form posted in Blue&Gold. More information will be posted to the discussion group and web page as the exact application procedure is defined. Access to the observing time is limited to Gold users. Another feature that is coming soon is to *Submit an Article to the JAAVSO with No Page Charge* which is also for Gold users only. Non-members will still be able to submit to the JAAVSO, but must pay for page charges. Additionally, there will be *Special Deals on Books and Stellar Gifts* that will be for Gold users only.

This section will continue to evolve over the years, with many of the current features being enhanced and new ones added. If you have any suggestions for current or future features, please send them to webmaster@aavso.org. Please report any bugs you find with Blue&Gold to Bugzilla: <http://www.aavso.org/bugzilla/>.

I hope you enjoy using Blue&Gold!

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Good observing!

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