The Valley Skywatcher

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Contents

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CVAS members at the hill — Photo by T.Quesinberry

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President's Corner

By Ian Cooper

With the start of the New Year, I would like to set some goals for the club that need to be undertaken.

The new CVAS web site. Both Russ Swaney and Steve Fishman are well on their way to producing a world class site. Please make suggestions and comments to both Russ and Steve.

The repair of "Kunkel's Kermode" and tool shed. The poor building has stood the test of time and is in desperate need of repair. A weekend work session with **members involved** would take care of this.

Attempt to go after some grant monies to improve the IHO observatory facility. Bottom line on this one folks is a … PAVILLION and outhouse facility at the bottom of the hill. This would open up so many avenues for the club.

Complete the repair and restoration of the 10" Cave reflector. This telescope needs to be put back to its former splendor. Many thanks to Russ Swaney for sending both the primary and secondary mirrors off for coatings, and Larry Boros for the fantastic welding job on the broken pedestal leg.

A complete list of e-mail address: This should be an easy one! Λ

New CVAS Website

YOU NEVER GET A SECOND CHANCE TO MAKE A FIRST IMPRESSION!

By Russ Swaney

The CVAS website began in January of 1997 and although it has served us well over the years, it was becoming apparent it needed a "facelift".

Steve Fishman, who has faithfully maintained the site since its inception, and I have been working on this. The immediate conclusion was that the Content should stay, but the organization, layout, flow and usability could be improved on.

The original site used tables for page layout, which was "standard" at that time. However using Tables creates very complicated code that is tediously counter-intuitive to develop and often extremely difficult to maintain. This code is unnecessarily verbose, making for long downloads, and slower rendering time for browsers. This becomes a real issue with the move to wireless devices, as network speeds for these are going to be slow for some time, and their processing power is usually much less than that of the average desktop or notebook computer. (Note: Microsoft's Internet Explorer has a FIXED table width feature that speeds table display; unfortunately this is proprietary and does not work on Netscape's browser.)

So, we decided to re-write the site using Cascading Style Sheets (CSS). This allows us to separate content from appearance, create documents that have logical flow, build a light weight site, and reap the benefits of easier development and maintenance, and increased accessibility.

The first place we started was the home page which must immediately grab the attention of any visitor. We wanted it to provide initial information about us and provide a "hook" that tells them why they want to explore the site and CVAS further. We looked for suitable images to reinforce the message. As a 501c organization, we're "required" to tell people who we are.

After reviewing some site's that looked like a rainbow, we decided to use a color scheme with only a few colors to create unity within the different pages. We resized all the pictures for fast downloads. We will add links to higher resolution versions available in future.

Utilized page display speedups such as the WIDTH and HEIGHT attributes for images. Use JPEGs where possible and appropriate (continuous-toned images) and minimize the color palette of GIFs. We also added "long descriptions" so visually impaired people with Screen Readers can understand what's there.

We wanted an easy navigation system and chose a navigation-bar across the top and bottom to prevent uses from getting lost. You can also "click" on the Banner to return to the Home page.

Made an effort to stay away from animations. The current opinion is that these "annoying pictures" clog up a website's design and make them look completely amateurish. It's the first thing a website reviewer looks for. If the site has animations like this, its scores go way down. That said, there is a "revolver" animation showing recent connections on the "About Us" page.

We were careful not to scatter too many hyperlinks throughout the body text. We assume users want to read content, and then navigate to something else.

Setup pages vertically for a cascading load so they are more responsive.

Optimized the HTML by removing excess spaces, comments, tags and commentary, especially on your home page, to minimize file size and download time.

"New" features include:

- A Member Login area, were we'll keep information relevant to CVAS Members
- "The Sky" page, which is updated weekly, contains information and suggestions on viewing the Planets, Stars and Deep Sky objects. "Monthly Challenge Objects" are also included.
- An "Event Calendar" – this is a Google Calendar that you can access without going to the website.

The CVAS Website is, and will continue to be, a Work in Progress. It depends on your comments, suggestions and submissions to remain useful. Λ

A Few Memories of the Early Days of CVAS

By G.W. Gliba

I first got into astronomy in 1959 after seeing a fireball while camping in the backyard at my Dad's recently bought house on Cedar Street in Bainbridge, Ohio. We had just moved there from West Washington Street near downtown Chagrin Falls. The next year, I bought my first telescope with money I earned from my Cleveland Press newspaper route, which was a 2.5-inch F/10 Gilbert Newtonian reflector. This telescope showed me my first views of the Night Sky. In August of 1961 I observed the Perseid meteor shower for the first time alone there, but I didn't record my observations. That would happen in 1963, after Tony Mallama and I got together to observe the Perseids at the Portage Street baseball field across from his parent's house in Solon. He was the one who got me into observing meteors scientifically for the AMS. We made copies of the AMS chart for the region of Perseus from the book Stars, by Zim & Baker, using tracing paper at his kitchen table, and used them to do our first meteor plotting. We sent our first observations to Charles P. Olivier, the director of AMS, and we later joined AMS. We both became active meteor observers after that for a couple years at least. Although we did most of our meteor observing independently, we kept tabs of each other, which became a friendly competition between us.

The association between me and him started in the Fall of 1962. At the age of 14, I saw a copy of the Chagrin Valley Herald weekly newspaper that had an article on Tony, saying he lived in Solon, which was accompanied by a picture of a nice telescope, which was his 4.25-inch F/10 Edmund Scientific Palomar Junior Newtonian reflector in his bedroom, and a Map of the Solar System on the wall in the background. Although I was already very much into astronomy then, the biggest 'scope I had looked through up until then was a 3-inch F/10 Newtonian reflector that belonged to John Patton of Chagrin Falls. So, the prospect of observing with such a large telescope motivated me to call him. After several telephone conversations we decided to meet at his house in January of 1963. Instead of asking anyone for a ride, I decided to walk to his house, which turned out to be a long and cold 7 mile hike. What's more, is that it was not only cold, but was also snowing hard when I did it. I ended up getting frostbite, but we had a good first meeting and thankfully, his dad gave me a ride back to my parent's home in Bainbridge.

Tony's dad, Dominik, was instrumental in helping to form the CVAS. In those early years he took us to meetings of the Cuyahoga Astronomical Association, and the Cleveland Museum of Natural History, where we met Ralph Mueller Planetarium director Dan Snow. We also went to a public night there to look through the beautiful 9-inch F/15 Warner & Swasey refractor with a John Brashear objective. Dan Snow was the telescope operator and his enthusiasm was very contagious. Later, Dominik took us to a few public nights at the Case Western Reserve University's Warner & Swasey Observatory, where we heard lectures on various astronomical topics, followed by observing with the 36-inch Warner & Swasey Cassegrain, and the 9-inch F/15 Warner & Swasey refractor, which was the twin of the one at the CMNH Ralph Mueller Observatory. Later we heard about the OTAA, founded by George Dietrick,

and went to the Mahoning Valley Astronomical Society OTAA Convention in Braceville in August of 1963. It was during the return trip home that Tony and I decided to start an astronomy club and to call it CVAS, while driving on Route #422 by Lawson's near the CFHS. I got Rick Wilkins and Don Tuson, who were amateur astronomers from Chagrin Falls that I already knew, to join and we soon after held our first meeting.

In September of 1963, the first CVAS meeting was held at the home of Don Tuson on Kenton Road in Chagrin Falls. Besides Don, there was also Rick Wilkins, Tony Mallama, and myself. We elected the officers, and I was elected the first president. We decided the dues would be 25 cents a month. Soon thereafter we got other members, and by the end of 1964 Bill Gebhardt, Denny Jefferson, Clif DeMaskey, the Sabec brothers, Mark Pribanic, and Don Henning joined. The year 1965 brought in Tom Quesinberry, Andy Jackson, and Billy and Marty Edwards. So briefly, that is how it all started nearly 50 years ago.

Until 1965 the biggest telescopes in the club were all 6-inch Newtonian reflectors. In chronological order, they were owned by Don Tuson (1963), myself (1963), and Denny Jefferson (1964). Don's was an F/10 with a plate glass mirror made by Vernonscope, mine was an F/12 homemade with a Criterion mirror, and Denny's was a homemade F/8 that he ground himself with my help, although the mirror was not parabolized and was of poor quality. However, he was the first CVAS member to finish a mirror, and later became an accomplished ATM, thanks to Doug Caprette and Norman Oberle many years later. Doug gave him a complete 10-inch mirror kit for free, and Norm Oberle taught him the fine art of making good astronomical quality telescope mirrors. Denny got so good, that several years later he won an award for optical excellence at the annual Stellafane convention in the 80s.

It wasn't very long that Denny went from having the worst 6-inch in the club, to the biggest and best telescope in CVAS. He sold this scope (called Pioneer 6, which he wrote on a tripod leg) to Bill Gebhardt cheap. Then he saved up his money, and got an 8-inch F/8 Cave mirror, which he made into a superb Lunar & Planetary scope. It was fun helping him write the order letter to T.R. Cave, asking him to make a good mirror for the moon and planets. With that scope, which Denny let me use at his house on Franklin Street in Chagrin Falls, when I was observing alone late one night, I was able to independently discover the Northern Tropical Zone "Little Red Spot" disturbance on Jupiter in 1965, which was later "officially" discovered by the NASA Pioneer 10 mission in late 1973. Luckily, I made a drawing of it, which I still have.

The first CVAS star party was at the Portage Street baseball field across from Tony's home in Solon. The occasion was to see the occultation of the 5.8 magnitude star 80 Virginis on Sunday evening, June 18, 1964. Although I still remember seeing black and white pictures from that star party, they seemed to have gotten lost. Our second star party was at my parent's home in Bainbridge, just a mile from downtown Chagrin Falls, later that summer, on August 29, 1964. At that time you could still see the Milky Way and 6th magnitude stars from there. I made sure that it was a big CVAS event, and we had an astronomy game called "Pin the Name on the Messier Object", and lots of good food and sodas. My dad made a batch of his famous Sloppy Joes, and we had a large tub of ice full of soft drinks. I can still remember when Denny had arranged to have his father, Derwood, bring us a large block of ice. He arrived with his big iron hocked tongs carrying the big block of solid ice, which he broke up with an ice pick in the tub. Back in those days you couldn't just buy a bag of ice. The party ended when my dad showed us a short film of the NASA Ranger 7 mission, which was the first in a series of lunar impacts, which had just happened in late July, 1964. We were able to rent the short 8mm movie from Baker's Camera shortly after the event happened, in downtown Chagrin Falls. So, it was an epoch CVAS star party.

I can't write about these early times without mentioning the support of my dad. He actually helped me early on by bringing me home copies of Sky and Telescope magazine way back in 1961. He was a mailman, and one of the people on his mail route subscribed to S&T. He must have asked the guy if he could have the magazines for me when he was done reading them. I remember a note that came with one of the early issues from the guy when Dad gave them to me. In it he referred to me as a budding amateur astronomer. My dad also tolerated me digging holes in the backyard to put piers in for my 6-inch F/12 Newtonian, and my planned 10-inch F/17 modified Cassegrain that never

got finished because the primary mirror broke. The pier for this was still used for the 6-inch Springfield telescope I later had, and for my 8-inch Celestron SCT after I got out of the Air Force. He also had me do some extra work around the house to pay for the 6-inch F/12 Criterion mirror for my first good telescope, which he paid for, and he allowed me to sneak out to observe. One Christmas I asked him for many pieces of heavy duty water pipe to build my skeleton tube for my planned 10-inch, which turned out to be way too heavy and a bad idea, but he cut the dozens of water pipes by hand with a tube cutter anyway at the Chagrin Hardware, where he worked part time around Christmas every year, in addition to his regular job as a mailman, which was hard work that time of the year anyway. It must have been really hard extra work, but he did it because that is what I wanted for Christmas. He also supported the star parties at the house, like the epoch star party mentioned above, as well as others, and he bought all the food and even cooked it for us. These are just a few examples of how he helped me and CVAS out in the early days.

Our first public star party was held in Riverside Park in downtown Chagrin Falls next to the river sometime in 1964, which continued for several years in a row. Besides the usual array of telescopes that were set-up for viewing the night sky, we often had a movie or slide show as well as we had access to power. Our early favorite was the movie called "Universe", which was filmed at the David Dunlap Observatory in Canada, then the fourth largest telescope in the world. These star parties turned out to be very important because some of our "star members" were recruited that way. We got members like Dan Rothstein, Ian Cooper, and Doug Caprette, among others that way. It also helped to expand our effect in the Chagrin Valley area. As a result, these public star parties at Riverside Park were very successful for us in the early days of CVAS. Λ

Web Site Review: Mike Brown's Planets

www.mikebrownsplanets.com

By Aaron Worley

Dr. Mike Brown is a Caltech astronomer well-known for the discovery of Eris, Quaoar, Sedna and other large trans-Neptunian objects (TNOs). He maintains a very readable and interesting blog titled "Mike Brown's Planets" that discusses his work in detail.

Dr. Brown's blog covers varied topics in planetary research. The demotion of Pluto to "minor planet" status is a frequent subject. Considering that Dr. Brown's work set in motion the events that led to the demotion, it's enlightening to read his thoughts. He definitely revels in his role in bringing down Pluto's rein as a full-blown planet; his Twitter feed is named "plutokiller".

More recently, Dr Brown has had a series of "There is Something Out There" posts discussing Sedna and the implications of its distant and unusual orbit. Over several articles, he lays out the case that Sedna could not have arrived at its current orbit without interacting with a larger body. Intriguingly, he explains no known solar system object could have kicked Sedna out where it is now, and makes some educated guesses as to what form the mystery object (or objects) might take.

Dr. Brown has a great writing style, very engaging and accessible. It's great to read about the cutting edge in solar system research as explained by a well-known astronomer. This blog is highly recommended to anyone interested in planetary astronomy. Λ

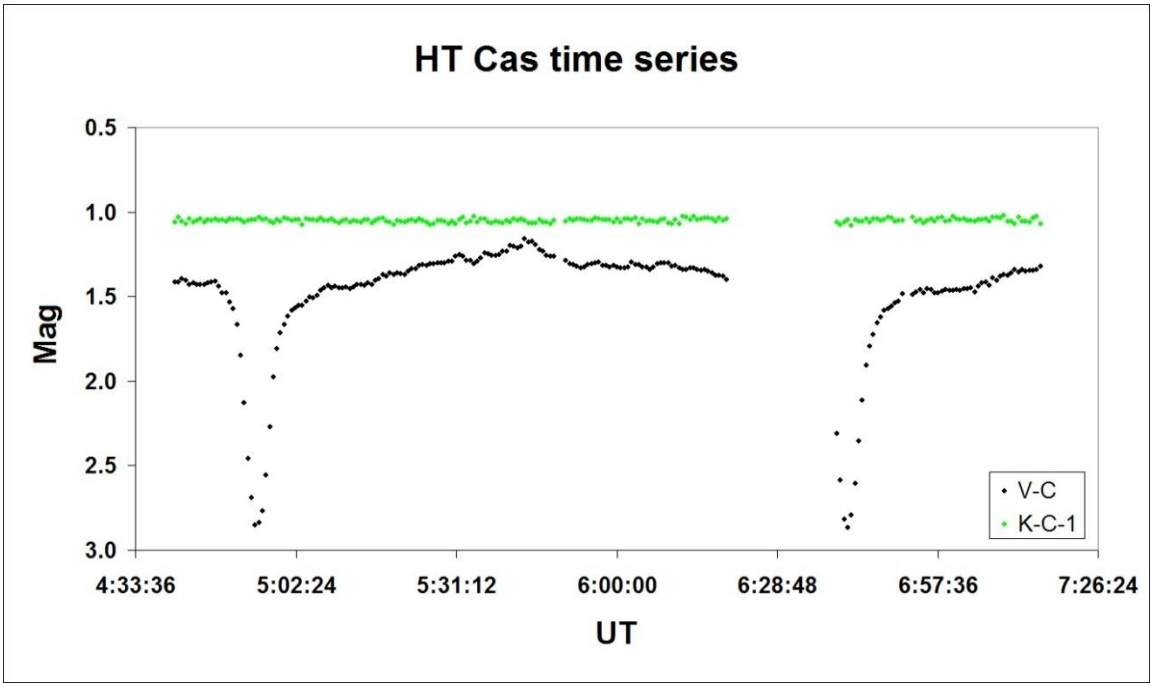
Variable Star of the Season: HT Cas

By Bob Modic

HT Cas is a dwarf nova located in Cassiopeia (1h 10m 13.12s, +60d 04' 35.7"). Dwarf novae are binary stars that orbit in close proximity to each other. One star of the pair is a white dwarf and the other a low-mass main sequence star. Due to their closeness, matter from the main sequence star is drawn towards the more massive white dwarf. This stream of matter collects around the white dwarf to form what is called an accretion disk. When the amount of matter in the disk reaches a critical point, an outburst or flare occurs, causing the system to brighten by several magnitudes. This outburst can usually last anywhere from a few days to a few weeks depending on the star. This process then starts over again with new matter being drawn into the accretion disk until another outburst occurs.

Outbursts of HT Cas typically occur every year or two. During an outburst, it brightens from magnitude 16 to 12. The rise to full outburst takes only a day. During an outburst, the brightness will fluctuate by a few tenths of a magnitude in a regular pattern that is related to the orbital period of the system. The two stars in the HT Cas system orbit each other every 106 minutes. What makes HT Cas even more interesting is the fact that the orbital plane of the binary system is pointed towards Earth, which means we can see the dimmer main sequence star eclipse the brighter white dwarf and accretion disk every 106 minutes.

In November, 2010, HT Cas had a bright outburst. I observed this outburst for several nights with my 8" f/5 Newtonian in my backyard as well as with the CVAS 16" f/7 Newtonian at Indian Hill Observatory. Below is a light curve of HT Cas made from 205 CCD images on the night of November 11, 2010. These images were 30 second exposures made with a ST-7XME + V filter and the CVAS 16" f/7 Newtonian. I performed differential photometry on this set of images using two nearby comparison stars. The comp stars' differential brightness is plotted also to show that conditions were good during the time series. There is a gap in the observations just before the second eclipse. I had to stop imaging for 15 minutes to remove dew that was forming on the secondary mirror (I've got to get a dew heater for the 16" next year!). Despite the brief interruption, I obtained a good set of data clearly showing two eclipses 106 minutes apart as well a pronounced orbital hump in between them. Λ



Project NeilBone

Asteroid Observations at Low Phase Angles

By Ron Baker

Dr. Richard Miles (Director of the Asteroids and Remote Planets Section of the British Astronomical Association) initiated an observing campaign in the fall of 2009 called Project NeilBone. The plan was to observe various asteroids which pass through opposition at very low phase angles (all less than 0.20 degrees). The project's namesake, 7102 Neilbone, reached the extremely low phase angle of 0.03 degrees in January 2010. In total, 14 asteroids were observed during Oct 2009 through Mar 2010.

The observing team consists of roughly 12 individuals. Most of the observers are located in the UK, but several are in different parts of the world. I supported the project throughout the fall and winter seasons by recording CCD images at the Indian Hill Observatory, and by reducing the observational data in those images to standard V magnitudes. Wide separation of the observing locations is beneficial since an object's rotational period (needed for the phase curve plot) can be difficult to construct if the period coincides with the earth's rotation. Observations from different longitudes are helpful in those cases.

The observing team concentrated their work in the days near each opposition, when the phase angle was near minimum. But additional observations for each object were recorded during the weeks and months before and after opposition as well. The preliminary phase curve plots (reduced V magnitude vs. phase angle) show some very interesting and surprising results. For example, some of the objects exhibited little opposition effect, but others showed a very large surge in brightness right at opposition. Such surges might have been missed if the minimum phase angle had been only slightly larger.

More information about Project NeilBone can be found in an article which appeared in the Aug 2010 issue of the Journal of the British Astronomical Association.

Permission to post the article on our website has been kindly given by author Dr. Richard Miles of the BAA. Please visit the "Scientific Activities" page. Λ

2011 Winter Skies

JANUARY

3	Mon	Earth at perihelion. (19UT)
4	Tue	Quadrantid meteor shower.
5	Wed	Latest sunrise at Indian Hill in 2011, 7:53 standard time.
8	Sat	Venus at greatest west elongation, 47 deg from sun. (16UT)
9	Sun	Mercury at greatest west elongation, 23 deg from sun. (14UT)
18	Tue	13 day moon occults 2.9 mag Mu Gem.
23	Sun	Asteroid (846) Lipperta occults 11.5 mag star UCAC2 38014093. Predicted shadow center 9 miles from IHO. (01:13UT)
27	Thu	Saturn begins retrograde motion. (07UT)

FEBRUARY

5	Sat	Jupiter crosses celestial equator into northern hemisphere. (14UT)
8	Tue	Alpha Centaurid meteor shower.
23	Wed	Jupiter and Saturn on opposite sides of the sun, heliocentric opposition. (2UT)
25	Fri	Zodiacal light, close to ecliptic in west after sunset. Gegenschein, close to ecliptic on meridian around midnight. (+/- week)

MARCH

5	Sat	Good opportunity to see very young moon (27 hours old). Look for it 8 degrees above horizon in the W, one half hour after sunset.
9	Wed	Mars at perihelion. (14UT)
16	Wed	Mercury at perihelion. (08UT)
17	Thu	Jupiter at perihelion. (17UT)
20	Sun	Vernal Equinox. (23:21UT)

CONSTELLATION QUIZ

By Dan Rothstein

1. Name 2 naked eye stars which lie fairly close to each other in the sky, each of which, before the standardization of the constellations, were shared by two constellations.
2. Which two bright stars represent mythical Chinese lovers who can only meet once a year on the Magpie Bridge over the River?
3. Name the three stars which form the line of "The Three Guides" that lie nearly along the Equinoctial Colure (the prime meridian of the sky).
4. Herschel's Telescope, which may be seen as the figure of a refractor on its stand, sits between these two constellations.

Answers to the last installment's questions

1. The rider on his horse refers to Alcor and Mizar, the visual double that is the middle star in the handle of the Big Dipper.
2. The various groupings of seven, such as the seven wise men, also refer to the seven bright stars which make up the Big Dipper.
3. The Laconian Key is the Greek name for the W of Cassiopeia.
4. Most star names are Arabic in origin. Mixing eras, Mohammed's Star was one of only three stars which were named by the Greeks- Canopus. Another was Sirius. Bonus points for recognizing the third, a bright orange star of late spring and summer.