HARFORD COUNTY ASTRONOMICAL SOCIETY

AstroViews

Volume 28 Issue 6 July 2002

Minutes of the July 27, 2002 General Meeting

President Lucy called the meeting to order at 7:30 P.M. She has established a regular agenda outline to follow that should keep the meetings as short as possible while still allowing us to cover all necessary business. The agenda is posted at the end of these minutes for your reference.

The minutes of the June meeting were approved. Treasurer's report: $2078.12
At our most recent open house about 20 people and guests were able to view the skies through several member's scopes. Please remember to check the schedule and come out to support our monthly open house gatherings. Lucy updated us on several community outreach efforts, the most interesting being the recent Star Trek convention. It seems Lucy and her daughter were "trapped" in an elevator with some Klingon warriors…?

Observatory Update: Railing and painting is going on this next week. There may be a good possibility that the observatory will be operational by summer's end! TIME HAS ARRIVED TO MOVE ALL THE EQUIPMENT BACK INTO THE STORAGE AREA. While doing this, we intend to sort all the instruments and gear so we can keep what is useful and be ready to possible have a "sale" on excess or extra equipment. WE WILL BE CALLING FOR MEMBERS TO HELP, PERHAPS ONE EVENING DURING THE WEEK TO MOVE THINGS AND HELP TO SORT. Once operational, we discussed the possibility of a "Public Grand Opening" event for the observatory as a way to advertise and market the club.

Instrument update: We need a small group of folks to take charge of our observatory equipment and help to service, clean and maintain it in good working order. If we have several useful scopes available at the observatory, perhaps we

could use those for out public open house sessions. Bill Geertsen volunteered to check the status of our computer equipment and other radio telescope gear for our "Very Small Array". Please, any of you out there with the necessary skills, please contact one of the club officers to volunteer.

Astronomy Day 2003: Our club participation at the Harford County Farm Fair was discussed and an alternative suggested. Instead of the farm fair, which is expensive and perhaps not the best venue in which to showcase out club, Lucy suggested we explore holding an "Astronomy Day" at the Harford County mall. The cost for this is minimal, about $25, and we could time it to coincide with the national astronomy day held in the April to May timeframe. We'll investigate this as an option and report back to the membership.

In addition, we may have opportunity to participate during the Earth Day activities held at Swan Harbor.

Presentations: An excellent suggestion was made that we should perhaps hold a meeting at the Maryland Science Center in Baltimore in combination whit the Westminster Club. That club does so one meeting every year and it would be a great opportunity to visit the astronomy science exhibits as well as meet other amateur astronomers. President Lucy will contact that club to see about holding the combined meeting. By the way, did you know that one of our members is actually in charge of the space science exhibits at the Science Center? He informed all that every clear Thursday night, the science center's large refractor is open to the public and it is surprising what one can see from Baltimore's "less than dark" skies!
The sky this month: Several members present pointed out the excellent solar activity presently underway. Take the opportunity to use your solar filters and check out our nearest star! Increased solar activity can translate into great aurora displays. Several websites are available to keep you up to date on the sun's condition:
www.spaceweather.com; www.soho.com; and www.nasa.gov.

Lucy closed the meeting by "beta testing" the Space Telescope's newest video presentation titled Hubble Reborn. This 10-minute documentary had outstanding video of the recent Hubble repair and upgrade mission.

Standard Agenda for the General Meetings:

Approval of Previous Minutes and Treasurer's Report
Old Business
A. Reports: Open House and Star Parties
B. Community Outreach Updates
C. Observatory Update
D. Instrument Update
E. Upcoming Regional Events

New Business
Presentations

Logo, Anyone?

You may have noticed that I've placed a "logo" of sorts in the header for this newsletter. I've been barraged by newsletters from around the country (at my own request!!) and have been considering adopting some of those ideas into our own Astro Views. The idea is to make it more interesting to the members and to spark interest in prospective members. One thing I've seen consistently is that each club has some sort of logo that indicates their location, focus and etc. I haven't seen such a device for our club, so I'm trying out some ideas…on you all!! Here is the latest attempt:

So, the deal is, there MUST be someone out there that has more than my meager artistic design ability!! Perhaps you would take a stab at improving or even completely redesigning the above! I just converted a

picture of our observatory into a pencil sketch, and added the constellation "Leo" in honor of one of our founding charter members.

Star Parties of Local Interest

Black Forrest Star Party
September 6-8, 2002
For more information go to http://www.bfsp.org/starparty
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The Oil Region Astronomical Society ASTROBLAST
August 1-6, 2002
For more information go to http://www.oras.org/
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Stellafane
August 9-10, 2002
For more information go to http:/www.stellafane.com/
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Blackwater Falls Astronomy Weekend
September 6-7, 2002
For more details go to http://www.kvas.org/AstronomyWeekend%202002.htm
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Stella Della XVI
October 4-6, 2002
For more information go to http://bmaa.freeyellow.com/Sdv.html
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The Eight Annual Mid-Atlantic Star Party
October 28-Nov 4, 2002
For more information go to http://www.masp.org/maspindex.htm

Remaining HCAS Club Event Dates for 2002

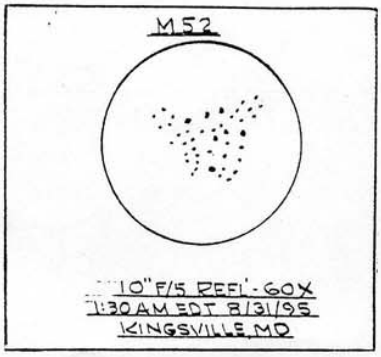
Open House
7/20, 8/17, 9/14, 11/19, 12/14

General Meeting
7/27, 8/24, 9/21, 10/9, 11/23, 12/21

Star Parties
7/16, 7/13, 8/3, 8/10, 8/31, 9/7, 9/28, 10/5, 10/26, 11/2, 11/16, 11/30, 12/7, 12/28

MESSIER NOTES: STEVE KRALL

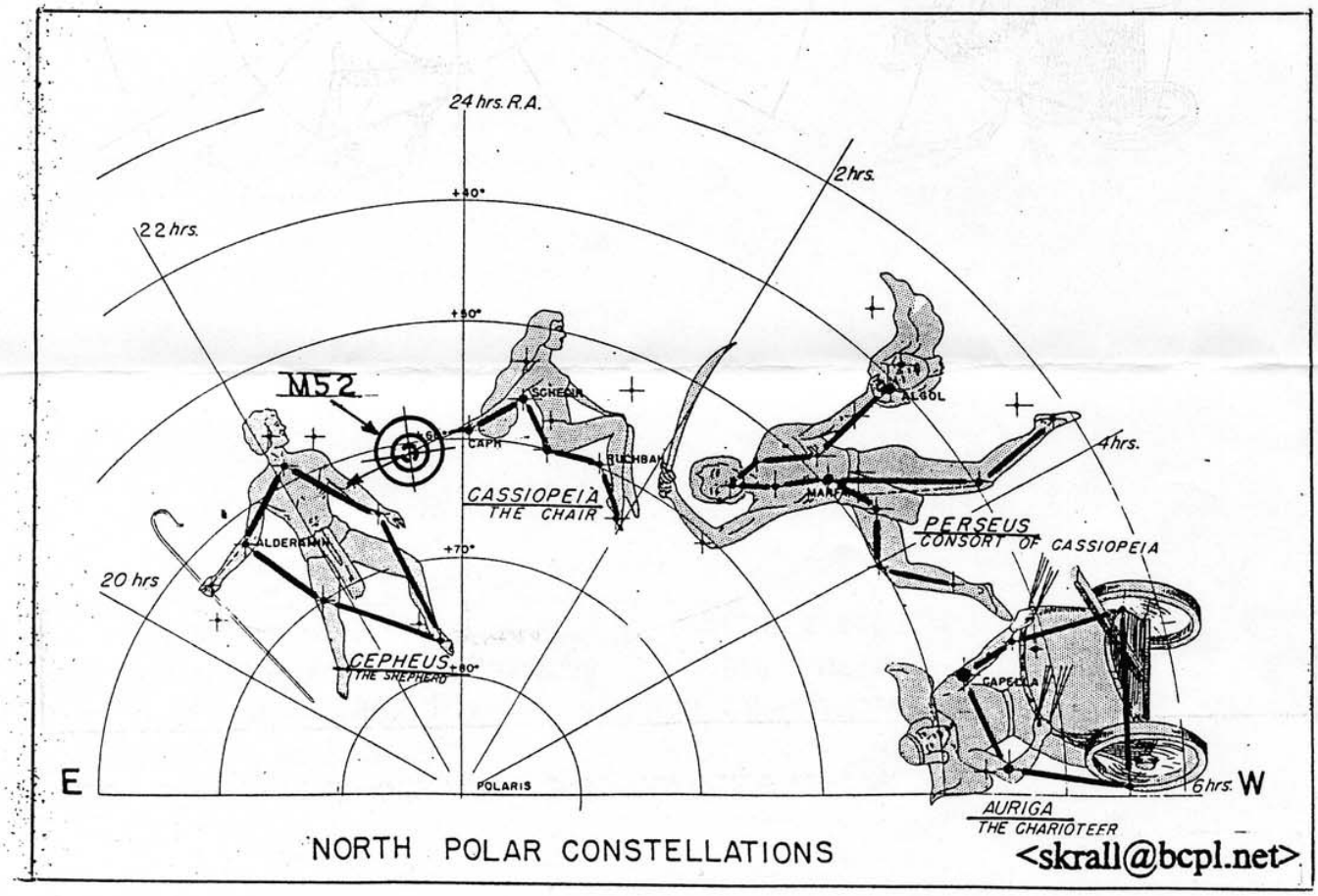
M 52--10/27/94--12:00 am--10inch F/5 Refl.



The autumn evening skies offer the messier buff some great looking open clusters. Probably, one of the finest is in Cassiopeia, namely M52. It is a large, bright, "Vee" shaped splash of stars, an easy target lying on a line from Schedir thru Chaph extended several degrees in the direction of Cepheus. Low power can be disappointing on this one but higher magnification easily revealed a mix of stars across the spectrum, it is numerically rich , a little compressed and dominated by a group of dazzling blue-white stars. M57 is also circumpolar from this latitude (never rising or setting) so you can observe it all year around but wait for this treasure when it is high above the pole where it can stand out in contrast to the black sky. I especially liked M52 for its unique shape, diversity of stars and its nice soft glow.

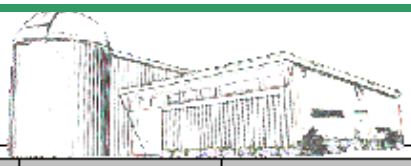
Note: Messier described M52 as "a cluster of very small stars mingled with nebulosity, which can be seen only with an achromatic telescope."

[NGC 7654--Type CI--Mag. 6.9-- Dist. 7kly--Size 13--Dia. 26 ly]



<skrall@bcpl.net>

August 2002



Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1 Last Quarter Moon	2	3 "Star Party" @ dusk Broad Creek and Observatory
4	5 Discussion Night Observatory 7:30 P.M.	6	7	8 New Moon	9	10 "Star Party" @ dusk Broad Creek and Observatory
11	12 Discussion Night Observatory 7:30 P.M.	13	14	15 First Quarter Moon	16	17 Open House HCC Dusk
18	19 Discussion Night Observatory 7:30 P.M.	20	21	22 Full Moon	23	24 General Meeting Joppa Hall, J76 7:30 P.M.
25	26 Discussion Night Observatory 7:30 P.M.	27	28	29	30	31 "Star Party" @ dusk Broad Creek and Observatory

Members Swap Meet

Items for sale/trade/barter. Open to members of the Harford County Astronomical Society Only Please. No commercial advertisements.

Bruce Wrinkle

TeleVu Naglers, like new condition 7mm ($115), 4.8mm ($90). Call at the Shop (Company 7): 301-953-2000

Bill Geertsen

Planetarium software. Guide 5.0 and 6.0 Call: 410-561-0973

Richard Hagenston

Meteorite specimens, incl. Mars fragments. Call: 410-939-4772

In keeping with the "Sky this Month" topic of the Sun, I found this article quite interesting. I had the misimpression that somehow solar flares were responsible for messing up my cell phone….maybe not! *Editor*

New Findings Challenge Beliefs about Solar-Terrestrial Physics

Eos Vol. 74, No. 52, December 28 1993, pp. 611-2.

J. T. Gosling,
Los Alamos National Laboratory, Los Alamos, N.Mex.

Solar flares are intense, short-lived brightenings that occur near sunspots on the Sun's surface. Large geomagnetic storms, intense auroral displays, large energetic particle events in interplanetary space, and major shock wave disturbances in the solar wind often occur in close association with large solar flares. Over the years, the common association of these events in near-Earth space with solar flares led to a paradigm of cause and effect in which large solar flares came to be understood as the fundamental cause of these disturbances.

Certain aspects of this paradigm were developed in the early 1930s, and by the early 1960s it had become part of the underlying dogma central to the discipline of solar-terrestrial physics. This paradigm still dominates the popular perception of the relationship between solar activity and interplanetary and geomagnetic events and continues to provide much of the pragmatic rationale for the study of the solar flare phenomenon.

We now know, however, that the above paradigm is and that most major, transient disturbances in near-Earth space are produced by solar events known as coronal mass ejections (CMEs), which involve the ejection of very large quantities of solar material (10^{+15}-10^{+16} g, equivalent to the mass of about 100,000 aircraft carriers) into interplanetary space. In contrast to solar flares, which are relatively easy to observe and have been studied for more than a century, CMEs are not detected easily. In fact, CMEs were not observed directly until special telescopes known as coronagraphs were first flown in space in the early 1970s shows two snapshots of a CME observed with the coronagraph flown on Skylab.

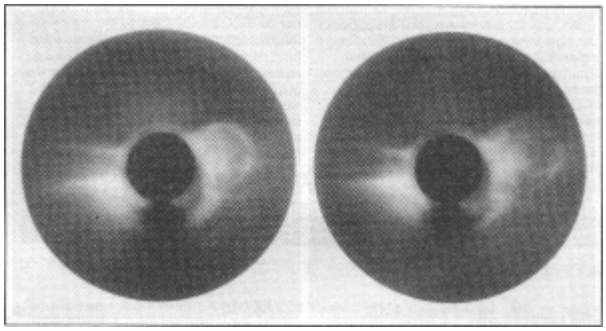


Fig. 1. *Two snapshots of a CME observed above the west limb of the Sun with the white light coronagraph on Skylab on August 10, 1973. The field of view of the photographs is 6 solar diameters, and the snapshots are separated in time by 24 minutes. As is common in many of these events, this CME was not associated with a solar flare.*

Many CMEs, including some of the more spectacular ones, erupt from regions well away from sunspots and any apparent flaring activity. Our present understanding of CMEs is that they are not produced by flares even though CMEs and flares sometimes occur in close temporal association with one another. It is likely that both CMEs and flares arise from instabilities connected with the evolution of the magnetic field in the solar atmosphere. CMEs probably result more from changes in the large-scale magnetic field that permeates the solar corona, and flares probably result more from changes in the stronger but smaller-scale fields associated with sunspot regions lower in the solar atmosphere.

CMEs move outward from the Sun into interplanetary space with speeds as low as 50 km/s and as high as 1200 km/s or greater. The slower CMEs do not produce significant disturbances in the solar wind, nor do they seriously perturb the Earth's magnetosphere or ionosphere. On the other hand, the faster CMEs, which account for a relatively small fraction of all events, usually produce very large disturbances in the solar wind. The faster CMEs typically contain shocks on their leading edges and strong magnetic fields in extended regions following the shocks. These strong fields are primarily a result of compression that occurs as a fast CME rams into slower solar wind ahead. When the Earth's magnetosphere intercepts one of these CME-driven disturbances, large geomagnetic storms and spectacular auroral displays often result, particularly when the magnetic field carried by the solar wind is directed southward.

The strong interplanetary shocks driven by the faster CMEs are also effective in accelerating solar wind ions they intercept to energies in excess of several millions of electron volts. Only a small fraction of the solar wind ions intercepted are accelerated to these energies, but the flux of these newly accelerated ions is quite large relative to the background flux associated with galactic cosmic rays. Recent work indicates that almost all major energetic particle events observed in the vicinity of the Earth are produced by acceleration at shocks in interplanetary space that are driven by fast CMEs rather than by acceleration at flare sites on the Sun.

It is now clear that most major transient interplanetary and geomagnetic events are produced by disturbances associated with fast CMEs. It is also clear that solar flares play no fundamental role in producing CMEs. Nevertheless, solar flares continue to be interesting events to study since a number of complex, energetic, and poorly understood processes, including particle acceleration, occur during flares.

References:

Gosling, J. T., The solar flare myth, *J. Geophys. Res.*, 98, 18,937, 1993.
Hale, G. E., The spectrohelioscope and its work, 3, Solar eruptions and their apparent terrestrial effects, *Astrophys. J.*, **73**, 379, 1931.
Kahler, S. W., Solar flares and coronal mass ejections, *Annu. Rev. Astron. Astrophys.*, **30**, 113, 1992.
Reames, D. V., Trapping and escape of the high energy particles responsible for major proton events, in *Eruptive Solar Flares, Lecture Notes in Physics 399*, edited by Z. Svestka, B. V. Jackson, and M. E. Machado, pp. 180-185, Springer-Verlag, New York, 1992. As is common in many of these events, this CME was not associated with a solar flare.

AstroViews is the official publication of the Harford County Astronomical Society, P.O. Box 906, Bel Air MD 21014. For the year 2002 any items for publication in any issue are due to the editor **by the 15th of the preceding month.** Please send all contributions (electronic format is STRONGLY encouraged) to Steve Channel at EMAIL: srccac2@comcast.net, regular mail at; 602 Roxburch Terrace, Bel Air, MD 21015. Permission is not necessary for non-profit use of this material, although proper acknowledgment is required. Address changes should be brought to the attention of the editor at the address given above.

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