



**FOCUS**

DELAWARE ASTRONOMICAL SOCIETY

**NEXT MEETING: OCTOBER 18, 2005 - WHITE DWARFS -- HARRY SHIPMAN, Ph.D.**  
**What's Up – Cepheus - Greg Lee -- Mini talk – Almost Heaven Star Party -- Dan Chester**  
**Mt. Cuba Astronomical Observatory at 8:00 P.M.**  
**BOARD MEETING AT 7:15 P.M., ALL MEMBERS INVITED**

Volume 50, No. 9  
OCTOBER, 2005

**FROM THE EDITOR**

I'm sure many of you have noticed that there are several items in the Focus which are seldom changed, but are repeated each month. I certainly notice them, and have thought about that situation many times, because I'd like to keep the publication fresh. After due consideration, I think we need to continue to do it, for at least three reasons: First, we always have some new members who aren't aware of the various activities in the DAS. Second, we need to increase participation in some of the activities if we can, making them more useful to more members of the organization. And finally, we all need reminders and invitations, now and then, to spur us into activities not routine to us.

Those reasons don't reduce the need to keep the Focus fresh and interesting. I am always very glad to have articles and items submitted by members, including, especially, people who have never contributed before. I will use articles, pictures, astrophotographs, classified ads (only for astronomical items, though, please), and will always be glad to hear about your astronomical activity while traveling. Please send me your ideas by e-mail or in writing.

The biggest astronomical event coming up soon is the Opposition of Mars on Nov. 7. Be sure to read the (slightly edited)

article on pages 2 and 3 (by Ian Musgrave, Southern Sky Watch, used by permission) and try to join Tom Sidowski in one of his Star Parties around that time.

**PRESIDENT'S MESSAGE**

The October meeting will feature a talk by Dr. Harry Shipman entitled 'White Dwarfs'. Dr. Shipman is a Professor of Astronomy at the University of Delaware, the Annie Jump Cannon Chair, a nationally-honored scientist, and a MCAO Trustee. The study of White Dwarf stars is Dr. Shipman's main research interest. He is a gifted speaker who also has the ability to make the very complicated very understandable. I expect a full house, so arrive early. Greg Lee will present What's Up in Cepheus and Dan Chester will present our Mini Talk about the 'Almost Heaven Star Party'.

All DAS members and others who wish to present a Main Talk or a Mini Talk at a future DAS meeting, which requires the use of POWER POINT, are requested to contact Max Peterson a few days prior to the meeting. This is to resolve any questions about how to set up power point. Please arrive early enough to insure proper function of the program prior to 8:00 PM. Slides and overheads should also be checked out and ready to go prior to the meeting start time.

The DAS needs your help. Please consider serving in one of the following positions

that will be open after the June 2006 meeting: DAS President. DAS Focus Editor.

The format for meetings this year will be as follows:

Board of Directors Meeting 7:15 P.M.  
Program Meeting 8:00 P.M.  
Fun and comradery after the meeting.

I would remind everyone that talking to others when someone is trying to give a talk, or has the floor, is very rude and will not be tolerated by this President. Thanks to all of you for your support.

Billie Westergard

#### UPCOMING MEETINGS

November 15, 2005 - Structure Formation In The Early Universe and The Hubble Ultra Deep Field - Billie Westergard; What's Up - Cassiopeia -- Greg Lee; Mini talk - Star Hopping -- David Swartout.

December 13, 2005 - Christmas Party-Caroline Hershel -- Lynn King (30 minute talk); What's Up - Taurus - Greg Lee; Mini talk - Off Axes Telescope -- David Groski (30 minute talk).

January 17, 2006 - The Messier Objects - Prelude To A Marathon -- Don Surles; What's Up - Auriga - Greg Lee; Mini talk - Sun Dials -- Bob Mentzer.

February 21, 2006 - Astronomy Forum - by Bob Karcha's Dickinson High Astronomy Club; What's Up - Canis Major - Greg Lee; Mini talk - Extrasolar Planets -- Glenn Bentley.

March 21, 2006; Green Bank Radio Astronomy -- Randall Detra; What's Up - Ursa Major - Greg Lee; Mini talk - Coming Attractions & Astronomical Events for 2006 -- Sara Baird.

March 25, 2006 - The Messier Marathon

April 18, 2006 - Galileo's Satellites -- Hank Bouchelle at Calvin R. McCullough Planetarium; What's Up- Bootes - Greg Lee; Mini talk - The Twin Quasar -- Billie Westergard.

May 16, 2005 - Dinner Meeting with Keynote Speaker Senior Editor Bob Naeye, *Sky & Telescope* Magazine; The Luther Porter Award; The Amateur Astronomer Of The Year Award; Location TBD.

June 20, 2006; The No Spin Space Shuttle -- Mike Borgia; What's Up - Draco - Greg Lee; Mini talk - Degenerate Matter.

June, 24, 2006 - Picnic at MCAO with a cookout and other activities.

New Member Tour of MCAO After Each Meeting.

#### WELCOME TO NEW MEMBERS

MICHAEL BRACHMAN -- GLEN MILLS, PA  
KIM CARPENTER -- HOCKESSIN, DE  
DYLAN STRAUB -- NEW CASTLE, DE

#### MARS - OPPOSITION -- NOV. 7, 2005

Mars, the red planet, holds a great fascination for humans. Associated with the god of war, this fascinating world has been the subject of endless speculation on whether life once inhabited it. Currently a bevy of spacecraft are circling its frigid and arid surface taking detailed images and searching for hidden water, while two robot explorers range over it.

This year is a good opposition of Mars. Not as good as the Great Opposition of Mars in 2003, but the best one until 2018. This year is an excellent opportunity for people to observe this fascinating world. What *is* an Opposition? Opposition refers to when a planet is opposite the Sun in the sky. This can only happen to outer planets, as earth must pass between the sun and the planet. The Earth passes Mars in its orbit every 26 months, and at this time we get a good view of the Red Planet.

When Mars is also making its closest approach to the sun, our view is very good indeed. While Mars is on average 228 million km from the sun, due to Mars's elliptical orbit this varies by 42 million kilometers. If Mars is at its furthest from the sun at opposition, Mars is also around 99 million km from Earth, while if Mars is at its closest to the sun during opposition, this value narrows to *only* 57 million km. Favorable oppositions occur only once in every 15 to 17 years. During the Great Opposition of 2003, Mars and Earth were a

mere 55.8 million km apart. This degree of closeness will not be achieved again until 2287. This year, Mars and Earth will be 64.9 million km apart.

Oppositions in the early months of the year, when Mars is furthest from the Sun, are always poor. The best oppositions occur around August. This year's opposition occurs during October and November. The visible disk of Mars increases in diameter, from 5 arc seconds, to 20 arc seconds. While this sounds astoundingly small, 20 arc seconds will give a reasonable disk in most amateur telescopes. This year, the Opposition (November 7) is later than the closest approach of Mars to Earth (October 30), so the best views will actually be on the days around October 30.

The best time to observe Mars is when it is highest in the sky; unfortunately this occurs well after midnight for a large proportion of best viewing times, and not long after midnight for the rest. Be prepared for some late nights if you want the best telescopic views.

Mars shows clearly visible markings in a 50 mm refractor telescope, and significant detail can be seen in a 4" reflector, while 6" and 8" instruments will give better detail still. No current Earth-bound telescope can reveal the huge volcano, Mons Olympus, or the huge valley of Vale Marensis, which are seen in many of the spacecraft images. However, significant features such as Syrtis major will be visible in even a small telescope. The Martian day is about 40 minutes longer than the Earth day, so if you observe at the same time each night, you can see the surface features rotating into and out of view. Dust storms can also occur, sometimes lasting days. Wind removal and deposition of the reddish, iron-rich dust can also reveal or obscure features, so Mars's appearance can be somewhat different between each opposition. Seasonal winds alternately covering and uncovering darker features with lighter dust were once interpreted as seasonal plant growth. Studying the Martian storms and the changing surface features is a valuable amateur activity.

For recording the appearance of Mars, all you need is a sheet of paper on a sturdy background, a pencil (or colored pencils if you want to try recording the colors you see), a small light covered in red

cellophane, and a watch. Make sure you and your telescope are located in a relatively dark place, and have modest circles pre-drawn on your paper (I use a 25 cent coin). Have your telescope out for a while beforehand so that it is at ambient temperature, to prevent air currents in the telescope from ruining the image. Record the date and time, and the weather (if it is windy, how much cloud, how much moonlight, what is the dimmest star you can see, etc.) Make sure you are wearing warm clothing, then make yourself comfortable at the eyepiece, preferably with a chair that allows you to sit and view comfortably, and start drawing. It may take you a few tries before you get the hang of recording what you can see by red light, but you will feel a warm glow of accomplishment when you can. The Ephemeris below [Ed. Note—no room here for the Ephemeris, but you can look it up on the web site below] gives the time Mars rises, its magnitude, and its altitude at midnight (6 degrees is equivalent to the distance covered by an outstretched hand, and its apparent diameter in arc seconds.

<http://home.mira.net/~reynella/skywatch/mars2005.htm>

### STAR PARTIES AT MT. CUBA

--Tom Sidowski

Mars is at opposition on November 7th, and it along with nebula, clusters and galaxies will be prime targets at DAS star parties at MCAO this fall. These star parties are primarily for DAS members, family and friends, but in reality we don't turn anybody away. If you want to learn a little more about the heavens, check out other telescopes, get help with that new telescope you recently acquired, or just enjoy the celestial sights, then come on out to a DAS star party at Mt. Cuba. The schedule for upcoming star Parties follows: (all events are weather-permitting, of course).

November 5 <sup>th</sup>	Saturday	7:30PM
December 3 <sup>rd</sup>	Saturday	7:30PM
January 6 <sup>th</sup>	Friday	7:30PM

### DAS 50TH ANNIVERSARY

--Emil Volcheck

In the Fall of 2006, the DAS will mark its 50th year of operation. It seems appropriate to have some sort of suitably grand

celebration for our being able to hang in there for that long, without being reduced to a small group of old men meeting for lunch, or booze, at a local watering hole occasionally!

To pull together such a celebration, will require participation from some of you. So, this message is an appeal for folks to volunteer to partake in the committee. The initial work will be brainstorming for ideas on what kinds of activities we should try to include in the celebration - then bring a proposed program back to the board and members for approval.

That would then be followed up by folks (including some members beyond the original group) who would take on the various elements of the proposal and make them happen.

I have agreed to get the process started and will need your help! So, please give me a call (610-793-5156) or email me (emilv@ccil.org) to let me know that you are interested and willing to be part of the first phase of the celebration.

#### ASTRONOMY SOFTWARE

MCAO still has a few copies of the retail versions of Imaginova's "Night Sky Explorer" - an introductory desktop planetarium program - and "Galaxy Explorer" - also an introductory program that lets you explore some 28,000 galaxies from the Tully Galaxy database. Either program can be had for \$8 (or \$9 if you want a copy mailed to you). Just give me a buzz (610-793-5156) or email me (emil@mountcuba.org). (Emil Volcheck).

#### LOANER TELESCOPES

Fall's mild weather months will be a good time to get out and try your hand with a scope. So, if you are new to the club and/or do not have a scope, you can get the loan of either:

- 1) a Celestron 8" Schmidt-Cassegrain
- 2) an Orion 6" Dobsonian reflector

The loan is for at least a month (depends on how long the waiting list is). To get on that list, promptly, contact Emil Volcheck, 610-388-1581.

OBSERVER'S HANDBOOKS – Bob Mentzer  
I am taking orders for the 2006 Observer's Handbook. The price is \$16. You can pay when ordering or on delivery. I will send the order in the day after the October meeting.

See me at the meeting or e-mail or call me at [robmentzer@comcast.net](mailto:robmentzer@comcast.net) or 764-1926.

MCAO PUBLIC NIGHTS – Emil Volcheck  
The Mt. Cuba Observatory Public Nights will continue right thru winter! You can pick up a schedule when you next come to a meeting - or get the latest updated version off the website at:  
[http://mountcuba.org/public\\_nights.htm](http://mountcuba.org/public_nights.htm)

#### LIGHT POLLUTION LEGISLATION

-- Greg Weaver

A new light pollution law, with which I was closely involved for the past year, was signed by the Governor on July 20 and takes effect 6 months after enactment. The bill places limits on outdoor light fixtures paid for by state funds. New outdoor lights paid for by private are not subject to these limits. This is a major weakness in the law and needs to be addressed in future legislation.

It is unclear how this legislation applies to the City of Wilmington and its associated light pollution. Senator Copeland, the principal sponsor, will have to investigate how this law applies to Wilmington as they get some state money but also get some money from their own taxes.

Retrofitting existing sources of light pollution is another topic to address in future legislation. The Delaware City refinery has hundreds of unshielded light fixtures whose glow can be seen for miles at night. Illuminated billboards are another major source of light pollution. If we can get shielded fixtures retrofitted as old fixtures wear out, light pollution will gradually decrease to far lower levels.

#### SAWIN OBSERVATORY REMINDER

-- Tom Sidowski

DAS members who are interested in becoming users of the Sawin Observatory and/or the Big Red DOB, should contact me at (239-1844) to arrange for some hands-on training in using the facility.

#### AMATEUR TELESCOPE MAKERS SPECIAL

## INTEREST GROUP – Bill Hanagan

The ATM SIG generally meets on weekends to discuss and work on many aspects of telescope making. We are now planning a series of meetings to bring participants steadily along on the path to complete a medium-size tube-based Dobsonian telescope. Apertures of 6" to 10" are typical. Our goal is to have this crop of telescopes completed in time for observing Mars in the fall. If you are interested in building your own telescope, please email me at the address below. If you are interested in joining this group, please e-mail your name, address, and phone number to me at: [HanaganW@attglobal.net](mailto:HanaganW@attglobal.net) using your preferred e-mail account to send the requested information.

## DAS FORUM/E-MAIL SITE ON YAHOO

--Don Shedrick

I would like to remind the users of the DAS Yahoo Email Group that the purpose of the group is for astronomy related discussions only. Other (off topic) discussions detract from the usefulness of the group to all members and in the end will lead to less productive use of the group forum concept. Off-topic ramblings are one of the most often cited complaints of group forums and one of the most common reasons for their poor participation by all interested parties. If group emails lead into an off topic discussion, please take this discussion off the group email to a private discussion with your own email accounts.

To use this site, go to <http://groups.yahoo.com>; search for [delawareastronomicalsociety](http://delawareastronomicalsociety); and click on the link that comes up. To join, you must have a Yahoo ID and password; if you don't, you can register at this time by following Yahoo's instructions. You will then be allowed to "Join the group" upon clicking in that box. You must then register for the DAS group and add your profile by clicking on "add new profile" and completing the form. When adding or editing your profile, you will need to enter your actual name in the "Real Name" box so you can be identified as a DAS member so Don Shedrick can approve your application to join the DAS group, and everyone will know to whom they are communicating. Finally, specify your desired e-mail address for delivery of messages. Note you may

choose to not have your name and email address displayed to anyone other than DAS members who are members of the Yahoo DAS email group. For more detailed instructions, go to the DAS web site under DAS Resource Links.

**MEMBERSHIP EXPIRATION NOTICES:** If the mailing label on the envelope containing your *FOCUS* is marked with Red Marker, your membership is expiring or has expired. To continue to receive the *Focus*, *Sky and Telescope*, and *Reflector*, send the renewal form on the back of this page with your check to:

DAS, c/o Robert Mentzer  
605 River Road  
Wilmington, DE 19809

Feel free to call any of us with your suggestions and questions. Also, we invite you to join in some of our committee activities to become more familiar with us and our organization.

## DAS CONTACTS

Membership: Any of the following:

President: Billie Westergard ----- home 302-366-0938  
Work 302-622-

7347  
Vice President: John Case ----- 302-836-4888

Secretary: Lynn King ----- 302-764-8816

Treasurer: Bob Mentzer----- 302-764-1926

DAS/MCAO Advisor: Emil Volcheck----- 610-793-5156

Messier Club: Lynn King ----- 302-764-8816

Observing: Greg Lee ----- 302-762-5358

Youth Coordinator: Sarah Baird ----- 302-292-8950

Archivist: Rene Van Caneghem ----- 410-392-3718

Board Members at-large:  
ATM and AP SIGs: Bill Hanagan ----- 302-239-0949

Chairman, Observatory Committee and Friday Night Star Parties: Tom Sidowski ----- 302-239-1844

By-Laws: Henry Bouchelle ----- 302-655-3230  
Light Pollution Strategist; Greg Weaver 302-239-1338  
Library Chair: Glenn Bentley ----- 610-869-0706  
Ad Hoc Star Parties: Sheila Vincent - --- 302-322-4739  
Elections Comm Chair: Costas Krikelis 302-478-9099

Awards Comm Chair – David Swartout 302-836-4618  
MCAO Web Page: [www.physics.udel.edu/MCAO](http://www.physics.udel.edu/MCAO)  
DAS Web Page: <http://delastro.org/>  
Focus Editor: Lee Kaser, Phone 302-995-6251  
Fax: 302-995-6805  
E-mail: [kaserlo@msn.com](mailto:kaserlo@msn.com)

--

### MEMBERSHIP APPLICATION FORM

If you have questions, call any of the member representatives listed above. Otherwise, just check the appropriate boxes and complete this form. Cut it off (after reading the other side, hopefully) and send it with your check to Bob Mentzer at his address above. The magazine prices are group rates to DAS members. Thanks, and welcome to the DAS if you're just joining us for the first time.

New Member   
Renewal

Senior/Family Membership \$20.00   
Junior membership (16/under) \$10.00   
Sky and Telescope Magazine \$33.00   
Astronomy Magazine \$34.00

NAME \_\_\_\_\_

STREET ADDRESS \_\_\_\_\_

Total Submitted -----

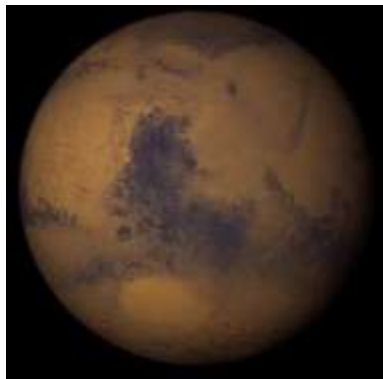
\$ \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_ TELEPHONE \_\_\_\_\_

E-MAIL ADDRESS (optional) \_\_\_\_\_

Do you have a telescope? \_\_\_\_\_ If yes, Please describe briefly. \_\_\_\_\_

Any Comments or Requests?



**Mars -- Syrtis Major (NASA Photograph)**