

NOVAC

THE NEWSLETTER OF THE NORTHERN VIRGINIA ASTRONOMY CLUB

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Stargaze 2008

By Richard Grauel

The day was sunny and warm and the night was welcomingly clear for the Fall 2008 Stargaze at Crockett Park on October 4th. Some 325 visitors and NOVAC members participated in this event, according to Craig Johnson, Park Ranger. Our log book showed 120 NOVAC members, guests, and family members came out to enjoy our speaker program and host the public with views through a great variety of telescopes and binoculars. A Boy Scout Troop, Cub Scout unit, and a Girl Scout unit came to work on astronomy advancements. Also an astronomy class from Northern Virginia Community College got some first hand observing to complement their class and textbook learning.

Twenty-seven club members manned the main gate, club table, and directed cars into the observing area. Our speakers in the big tent, all NOVAC members, deserve special praise: Jethro Bodine (astrophotography), Phil Wherry (planetary software), Alan Figgatt (sky tour), and Ed Witkowski (sky tour under the

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Donovon Brock talks to one of the scout troops that attended the event.

PHOTO BY HAROLD STOVER

MESSAGE FROM THE PRESIDENT

Greetings NOVAC Members!



The wonderful fall months are approaching. Longer nights, cooler nights and many awesome objects are ready for all to discover, observe and share. Venus, Mars, Jupiter, Uranus and Neptune are nice targets for smaller telescopes. The “Summer” Milky Way is still visible and a delight to see. The Great Square of Pegasus with M15 a globular cluster and many galaxies zoom in on. Speaking of galaxies, the Andromeda Galaxy is visible overhead and is waiting for you to sneak a peak. Maybe this year add an extra treat the trick or treat this year, share a view of the night sky.

Speaking of sharing the night sky, this year was the first year that NOVAC was the primary sponsor of the Almost Heaven Star Party, AHSP. This year’s AHSP was a great success

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stars). Also, Barbara Whitehead led our publicity effort, which resulted in promos on NBC Channel 4 weather by Veronica Johnson and a listing in the *Washington Post Weekend* section. Barbara also took care of the catering, which was a big hit. Novacians seemed to really appreciate the sandwiches, snacks, and soft drinks. Rob McKinney ranked the food as best three of the top five activities. Lyle Mars and Rob McKinney helped lay out the observing field the day before the event. Photos of the event were taken by David Werth, Paul Derby, Bron Gervais, and David Polivka, and were posted on the list serve. If you didn't make it, you can check out these pictures.

Some 100 instruments were set up in long rows across the field to look at the evening sky that night. Rob McKinney counted about 50 people who observed through his rig that night. Alan Figgatt helped about 60 people enjoy the evening and located Jupiter during the daytime. Greg Piepol and his daughter setup his scope near the main tent and gave many people the opportunity to do some solar viewing. Donovan Brock, with the 30

inch Obsession, lost count after about 300 people climbed the ladder and looked at the beauties through his scope. At 11pm, there was still a line of people waiting quietly to observe. He was one of the last ones to leave at 3am, when fog started to roll in.

The surprise of the evening was the bright bolide around 10pm. You had to be looking in the general direction or you would have missed it as it lasted only a few seconds. The bolide traveled from NE to SW and flared into a green color when it burned out. It could have been re-entering space debris. Alan Figgatt mused that we should arrange for one of these every year!

We budgeted \$1,700 for the Stargaze and spent around \$1,500. The tent rental cost \$1,100, food \$300, and other expenses \$100. Crockett provided the small tent and two additional porta johns. This was club money well spent.

Thanks to all our members who came out for this event and helped to make it a memorable and satisfying evening. I think we are somehow happiest when we are sharing our passion for the cosmos with others. Let's keep doing it. ✪





The speakers at this event were NOVAC members: Christopher Bodine gave a presentation about astrophotography...



...and Phil Wherry talked about software.



Solar observing with Greg Piepol



NOVAC members on the observing field get ready for nightfall. [ALL PHOTOS BY HAROLD STOVER]



Book Review

By Alan Goldberg

When Sputnik launched in 1957, I was in elementary school. I couldn't understand how it was done, but, along with many others, I became interested in astronomy and engineering as a result. I studied physics, math, astronomy, optics and engineering through high school, college, and graduate school, and gradually came to believe that I did understand how it was done. Then I went to work on the Space Telescope program under NASA management, and realized I had no idea how anything can ever be successfully launched into space.

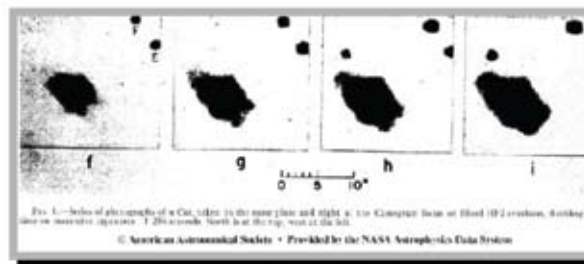
Robert Zimmerman addresses just that conundrum in *The Universe in a Mirror*. He has done an outstanding job in providing a narrative of how the Hubble Space Telescope (HST) program evolved and eventually succeeded. He describes the key science, engineering, and management issues which combined over the past 60 years to define the HST program. He explains the progress and setbacks. Most importantly, he defines the mission in terms of the personalities which made (or in a few cases, hindered) the program. He ties this all together with the thread of our increasing understanding of the Eta Carinae nebula from the first ground photographs to the digital images after the Hubble primary mirror aberration was compensated. He reminds us how much our common understanding of the universe has advanced due to Hubble.

Prof. Lyman Spitzer wrote about a telescope in orbit in 1946. A few others had thought of it earlier, and many understood the potential for an optical telescope above the atmosphere as soon as man-made machines were launched into orbit. But Spitzer had the stature, position, and understanding to initiate a specific program. Scientists play a central role in Zimmerman's narrative, managers play a supporting role—sometimes as villains, and engineers generally are

mentioned only in passing. This is probably appropriate for a scientific space mission, but the relative emphasis leads to some distortion in the narrative. The emphasis on scientists is also a result of the personalities and their availability: many of the scientists are still working on the program or have had their stories captured in program oral histories. Most are not shy about their opinions of their contributions

This is the third full book of Hubble history. Robert Smith wrote *The Space Telescope: A Study of NASA, Science, Technology, and Politics* in 1989 based on his work on the Smithsonian Space Telescope History Project, and issued an updated second edition (1993) after the mirror flaw was discovered. Smith's book is a clinical, formal history. Eric Chaisson wrote the more sensational *Hubble Wars* (1994, 1998), which emphasized the conflicts at the expense of precision.

Zimmerman's book has improved on these predecessors. More readers will find it both understandable and meaningful. *Universe in a Mirror* is well documented, but written in a lively, narrative style. I can find no significant errors of fact or interpretation. The individuals he profiles are true to the people I met or worked with on HST from 1978-1986. He has included just about every important turn in the program, from first concepts through the plans for the final repair mission coming this fall. He explains what happened, why it happened, why the event was important to the mission, and what impact it had on the people. He includes some significant



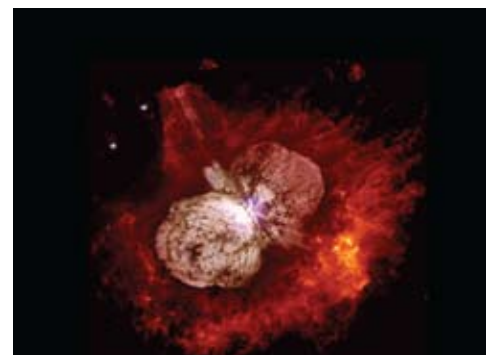
Eta Carinae imaged before HST (Gaviola, 1950)



The Universe in a Mirror: The Saga of the Hubble Space Telescope and the Visionaries Who Built It
by Robert Zimmerman
Princeton University Press, 2008, 287 pp., \$29.95 (\$19.77 Amazon)

color photos from HST and a few B&W photos of key scientists. Scientific and technical issues are described simply and well.

Universe in a Mirror looks at the big picture as well as the details. When NASA internal estimates placed the initial program cost at \$500M-\$900M, and the GAO estimated \$1.4B, NASA Administrator Fletcher misled Congress and the public with a \$300M budget estimate (through one year of operation) to get a "buy-in." Then NASA requested proposals from industry which were consistent with the baseless \$300M budget. The proposals from industry were on a cost-plus basis, and provided inadequate prototyping and



Eta Carinae imaged from HST/WFPC3 (NASA, 1996)

testing, underfunded program reserves, and invited unplanned cost growth. (NASA policy also assumed that Shuttle flights would be frequent and “cheap,” which significantly influenced HST parts reliability decisions. This point is not mentioned.) Zimmerman explains this history clearly and in context of other NASA and national priorities at the time. He explains how this early compromise led to many subsequent problems.

I find only two small weaknesses in the narrative. First, no book can include every important aspect, and Zimmerman has missed or underemphasized a few. In fairness, these are aspects which are not critical to understanding the interplay between personalities and results. The underemphasized points included (1) the role of previous classified missions, (2) the lack of cooperation between Marshall Space Flight Center and Goddard Space Flight Center, and (3) the nearly insurmountable engineering challenges which were solved to design and build a maintainable space telescope.

The second overall weakness was Zimmerman’s willingness to excuse the

participating scientists’ shortcomings as stewards for the mission. We all make professional and personal compromises in career decisions, and the scientists who are willing to make the “deal with the devil” to accept NASA funding are, on average, neither better nor worse. But they have made an explicit choice to tie their futures to the risks and rewards of a specific bureaucratic system. Some join as civil servants, some join as funded researchers, and some (mea culpa) join as contractors. The choice to join the system is not always altruistic or a sacrifice. And those scientists who choose to join the system are not always the best judges—by reason of technical expertise or temperament—of how the mission is best accomplished. One HST engineer lamented to me, recalling his work on national security spacecraft, that the colonel would always make a decision by the end of the meeting—not always 100% correct, but something which could be acted on immediately, and fixed if wrong; while the scientists’ meetings never finally decide anything.

The Universe in a Mirror works on several levels. Beyond the science and per-

sonalities, it illuminates the real processes which form the foundation of a large government program. I believe I learned systems engineering “street smarts” lessons from HST, but I’m afraid that others have not had that opportunity. I’ve been close to several large civil space missions since HST, including EOS, Landsat, and NPOESS. GAO has pointed out that NASA and other agencies are remiss in not collecting lessons-learned from their programs. *Universe in a Mirror* delivers an understandable story from which many can learn precautionary lessons, and provides a golden opportunity for others to learn about the interplay between science technology, policy and people.

Maybe the best lesson is that—after all the bluster, chicanery, foolishness, and delays—our society can produce and organize good people to achieve great things.

I strongly recommend this book to anyone interested in HST’s astronomical legacy, space missions, or the nitty-gritty of large government program management. ★

Message from the President *Continued from p. 1*

with supper reviews and comments from attendees. A great big “SUPER JOB!” goes out to all who helped make this event so great. Phil Wherry did an outstanding job coordinating the event and Bob parks must be thanked for starting the AHSP and working on coordinating the events. Thank You and we’re going to have a great ASHP 2009!

As the year comes to an end, yes it’s almost here there are a few things I would like members to think about, first off, The Volunteer of the Year Award, please think about nominees. Secondly, NOVAC officers and Board of Trustee positions. More information will be made available soon.

With the better weather coming(I’m hopeful) it’s time to get out the observing lists, the sky atlas, the telescopes, the eye-pieces and ENJOY THE SKY!

Ed Witkowski
NOVAC, President



The Almost Heaven Star Party (AHSP) is held at The Mountain Institute at Spruce Knob PHOTO COURTESY OF ROB MCKINNEY

Observing at GMU

By Ron Bashian

Jupiter Ephemeris estimate — modest star chart, binoculars, Sept 17:

I arrived at the George Mason Observatory Tonight (9/17/08) at 8:15 PM. The observatory was closed, (unforeseen illness of astronomy professor)

With the delightful weather, however, I happily set up on the GMU spacious balcony to test both my pairs of binoculars for use with star charts. Using Celestron Sky Maps, my project was to identify Jupiter's celestial position (of which I was totally unaware). The summer triangle provide basic orientation to begin with. The Canon 10x30 IS binoculars were won-

derful to work with. Fairly still images, and estimated mag 6-7 resolution with them, in spite of haze and surrounding lights. My old Nikon 7 x 50 were actually less helpful because of star movements. I suspect that the Canon's internal stabilizing mechanism allowed dimmer point sources to be perceived.

Nonetheless, working down from Altair was quite slow. Although seeing was fine, transparency was quite limited (adjacent lighting and streaky clouds developing). Therefore, I tried to use

whatever mini "asterisms" (I could glean from the Sky Maps) surrounded Jupiter. After a number of false starts, I finally got a likely location, matching the surrounding stars. I estimated Jupiter to be at RA 18:50, and Declination of -23 degrees. Checking on Starry Night Pro, I found the real figures for 9:30 PM to be RA 18:55 and Declination -23 degrees 8 minutes. Not bad for a simple star chart, basic binoculars, and less than optimal viewing! ★

ALCorner

by Rob McKinney

News from the Astronomical League | www.astroleague.org

During a recent General Meeting, one of our members asked me to look at observations he wanted to submit to the Astronomical League for his Messier Certificate. We looked at the notes he'd gathered over the years, I gave him a few suggestions, and we went back to enjoying the guest speaker. Thinking about our conversation, I want to take the opportunity to mention a few things if you're pursuing recognition for your observations.

First and foremost, the requirements are detailed, award by award, on the AL website. I'll give a few tips here, but the final word can be found at on the AL website's Observing Clubs page at <http://www.astroleague.org/observing.html>.

A couple items deserve emphasis. One is that there's no time limit on your observations. You can conduct your observing over years, scrounge up records from way back to add to recent observa-

tions, cram all your observing into a few months...it all counts.

The better organized your "notes" are, the easier it will be for the AL to approve your award. If you're in the habit of recording times, sky/weather conditions and so on, you're on your way. An easy method of organizing your notes is to use the AL forms available from the web. Or look at the format they use and categories of information required and make one of your own!

Remember to describe the object. You don't need to wax lyrical or write a whole dissertation, but a couple sentences saying what you saw through the eyepiece is a must. Some awards also ask for sketches, so know the rules.

Finally, the packet you send (or I send for you), after endorsement by myself or the NOVAC President, won't be returned to you unless you provide a return envelope with postage. It's better to send

copies of your material and keep your originals.

Thanks to the action of our Club Librarian (John Deriso) and the support of NOVAC's Board, we have some of the AL Observing Club material (pamphlets, guidebooks, submittal instructions, etc.) in our club library. It's great if you want to pay the small cost of ordering the material from the AL, but if you don't and if it's available, you can borrow some of those publications from John.

Think about the notes you've been keeping through the years. If you are interested in an AL certificate and pin for a specific Observing Club, you might already have earned it! I'd be pleased to look at your records and help you receive some recognition for all those nights under the stars.

"To observe, and to help others observe"

NOVAC is a non-profit, all-volunteer organization chartered to advance amateur astronomy in Northern Virginia. Members benefit from:

Access to dark sky observing sites:

NOVAC maintains agreements that provide club members with year-round access to observing sites away from city lights

Monthly meetings

Monthly meetings are held at 7 p.m. on the second Sunday of each month in Room 80 of the Enterprise Building on the campus of George Mason University. Each meeting features a lecture on an interesting topic by a local expert. See the web page or future newsletters for a schedule of speakers.

Bimonthly newsletter

The NOVAC newsletter provides information specifically for NOVAC members, as well as general interest articles on such topics as observing reports, equipment reviews, upcoming events, ATM projects, and more.

High-quality telescopes to borrow

NOVAC members may borrow one of the clubs several "loaner" telescopes at no charge. Members may choose from among three 6 in. reflectors, two 10 in. f/6 reflectors, an 8 in. SCT, and a hydrogen-alpha solar scope. Binoculars are also available for loan.

Club website

Up to date information about club events and activities is maintained on the club website at www.novac.com.

Large club library

NOVAC maintains a well stocked library that members may borrow from by contacting John Deriso (olgazer@verizon.net). A full list of titles is available from the club website.

Private email listserv

Members keep up with current club information by subscribing to the NOVAC email list, without fear of flame wars or spam emails.

Public outreach opportunities

Several times each year, volunteers from NOVAC present astronomy programs to schools, churches, Scout troops, and other public groups.

Membership in the Astronomical League

Through NOVAC's membership in the Astronomical League, NOVAC members gain access to the AL's newsletter, services, and observing programs.

Discounts on astronomy magazines

Subscriptions to *Sky & Telescope* and *Astronomy* magazines are offered to club members at a considerable discount. Contact Kent Allingham (see contact info at right).

Mentor Program

Young or old, new or experienced, this program is for everybody. If you would like to meet with a mentor, or think you would like to be a mentor, or have any questions about the program, write to: mentor@novac.com.

See your Membership Guide for more details.



The NOVAC Newsletter is the official publication of the Northern Virginia Astronomy Club and is published six times per year. The NOVAC Newsletter is sent to members of NOVAC as a regular membership benefit.

Membership

Membership in the Northern Virginia Astronomy Club is \$25.00 per year and is open to anyone interested in astronomy or the sciences. Additional memberships at the same address without additional copies of the newsletter are \$5.00 per person. Membership in the Astronomical League is an additional \$7.50 and includes the *Reflector* magazine plus access to their Observing Awards
Contact:

Kent Allingham
3510 Country Hill Drive
Fairfax, VA 22030
kent.allingham@verizonbusiness.com

Change of address

All notices of change of address should be sent to Kent Allingham. Please include both old and new addresses.

Advertising

NOVAC does not knowingly accept advertising for products of inferior quality nor does it accept responsibility for the quality of advertised products.

Submissions to the newsletter

NOVAC members are invited to submit articles for publication in the NOVAC Newsletter. The editor reserves the right to edit all materials submitted. Send article submissions to the Editor, Tim Nicholson, at newsletters@novac.com. The deadline for submissions is December 10, 2008 for the November/December 2008 newsletter.

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Next Meeting

December 14, 2008,
7 p.m.

Speaker: Dr. Takanori Sakamoto

Topic: The Goddard Robotic Telescope Project

General membership meetings are open to the public, and are held at Enterprise Hall, room 80, on the campus of George Mason University (see www.novac.com for directions) in Fairfax, Virginia. The meeting hall is in the basement floor of the building. Since Parking Lot B is now closed, you should park across the street in the far reaches of the Patriot Center's parking lot, then walk up the path to the rear of Enterprise Hall.

Do you have a story to tell?

Members are encouraged to submit photos, articles, tips and reviews of books, software and equipment. If you would like to submit an article for publication send an email to newsletters@novac.com.

c/o Kent Allingham, Membership Director
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