

# N V A C

THE NEWSLETTER OF THE NORTHERN VIRGINIA ASTRONOMY CLUB

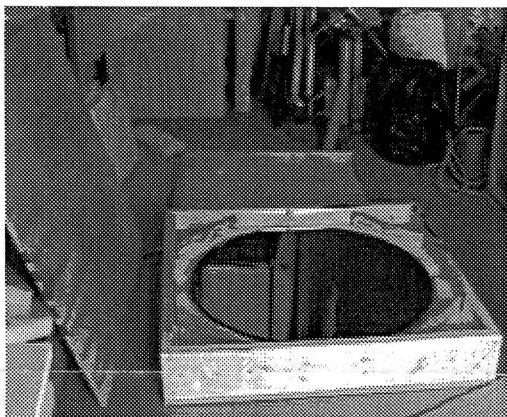
NO. 101 • VOL. 22 • MAY/JUNE 2002

## Progress on the Powers mirror

by Michael Mills

There has been some progress made on the club's major ATM project: building a 34.5" telescope using the surplus mirror that was donated by Bill Powers late last year.

The mirror needed to have its f/2.8 surface reground to a slower curve before our club's ambitious mirror makers would have a chance of turning it into a reasonable telescope primary. Several optical fabricators around the country were contacted to find out who could do the work and how much it would cost. Only three shops were willing to take on a mirror of that size. Newport Glass Works, in Stanton, California, quoted a very reasonable price, but it appeared at first that shipping the mirror all the way to



The mirror is test fit into its new crate. The original crate is in the background.

see "Mirror" on page 5

## The FCPS Planetarium Program

by John Avellone

The core curriculum of the Fairfax County Public Schools includes astronomy units for all fourth, fifth, and sixth grade students. This applies to about 40,000 students each year. Planetarium field trips and classroom visits by the Planetarium Directors provide this instruction. Here is an outline of the program of study:

### Grade 4: The Sun and its neighbors

- Apparent motion of the Sun across the sky/reason for night and day
- Cardinal points of the sky (I)
- Moon, visible planets
- Polaris, Big Dipper, four seasonal zodiacal constellations

### Grade 5: Stars and Constellations

- Diurnal motions of Sun and stars
- Cardinal points of the sky (II)
- Seasonal and polar constellations

### Grade 6: Astronomy/The Solar System

- Rotation/revolution of the Earth
- Phases of the Moon
- Organization of the Solar system

Fairfax County has the greatest concentration of planetaria in the United States, with the exception of Dallas, Texas. The nine FCPS planetaria were constructed from 1961 to 1969, using funding from the

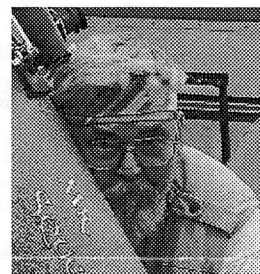
see "Planetarium" on page 3

### MESSAGE FROM THE PRESIDENT

## Practice, practice, practice

How long does it take to become a good observer? Usually about three years before you have trained your eye and brain on what they are actually seeing.

Here in NVA it might even take longer due to lack of observing opportunities from weather. If you can regularly observe even from the back



NOVAC President Ed Karch

yard, this scope time will improve your ability to suck something out of our soup that passes for night sky. The same thing applies for binocular and bare eyeball observing. You have to put in the observing practice to get good.

Bob Bunge, our observing guru, recently put it this way on a list discussion about collimation:

*"Collimation is a skill that is learned over time, like tasting wine. Seeing the fine detail provided by perfect collimation, great optics and great seeing is also a skill that is gained over time with experience. I just believe, for a lot of people, the hyperactive focus we see today in regards to perfect collimation for every observing session can be counter productive to some—especially newcomers. I'd almost rather see them buy another eyepiece then drop 100–200 bucks on a collimation device. I'd rather they spend the time star hopping to another object or two."*

# NOVAC

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# A review of "The Chromatics"

by Steve Johnson

This newsletter does not normally carry concert reviews. But I think you'll agree that this one is definitely on-topic for astronomy enthusiasts. Sure, there are other concerts under the stars, and other concerts with laser shows. But how many concerts . . .

... Include lyrics telling us that the sun's equatorial region rotates in 25 days, but the polar regions take 36 days?

... Name the astronomer Edwin Hubble and the physicist Hans Bethe?

... Include a song all about an upcoming gamma-ray and X-ray astronomy satellite (the SWIFT mission)?

... Include a slide show showing you the lyrics together with educational pictures of solar-system and deep-sky objects?

... Take place inside a planetarium?

... Feature performers who are real, live rocket scientists and astrophysicists?

Believe it or not, these were all part of the concert by the Chromatics on March 23 at the Montgomery College planetarium. The Chromatics are an a-cappella singing group of 3 men and 4 women. From their web page:

*This group of techies (engineers, scientists, computer geeks, and NASA employees) performs pop and rock covers and original songs inspired by our modern world. The World Wide Web, television, and fast food—they're all subjects of Chromatics originals. The Chromies have also written astronomically-correct a cappella songs to be used in classrooms for a project called AstroCappella.*

This free concert had the Chromatics standing and crouching around the projector in the middle of the planetarium, inches from the nearest audience members, and maybe 12 feet from the farthest ones. The laser show consisted of an electronically modulated HeNe laser—sort of a junior, junior Laserium show—superimposed on the star field on the dome. So we mostly heard the Chromatics—we didn't see them much.

Their original songs are very educational as well as entertaining. They cover a wide range of astronomical topics, from the Doppler Shift, to the Solar System, to specific NASA missions. They also include covers of some pop songs, such as one of the Beatles' Eastern philosophy songs, and Sting's "Synchronicity." At a previous concert (not devoted to astronomy), they included Rush's "Subdivisions" and Right Said Fred's "I'm Too Sexy." You know you're at a Chromatics show when you see a real, live NASA astronomer (and bass singer) strut across the stage singing that he's "too sexy for your party."

One thing you won't hear at a Chromatics concert is musical instruments—acoustic, electronic, or percussive—only the sounds produced by the singers' vocal chords

## How many concerts

## name the astronomer

## Edwin Hubble and the physicist

## Hans Bethe?

and hands. It's amazing how many rhythms, sound effects, and harmonies can be produced by a good a-cappella group. The Chromatics perform in a high-energy, versatile style I would call "modern pop a-cappella," which you can also hear from groups like Rockapella, The Bobs, and another local quartet, DaVinci's Notebook.

The Chromatics have recorded 2 CDs with all their educational astronomy-oriented original songs. Their latest is called AstroCappella 2.0. Besides playing 13 songs in an audio CD player, this CD-ROM also includes html files with the lyrics, images, Powerpoint shows, and movies about all their astronomy-related topics. For example, there's an MTV-style video, showing a fast driver getting stopped by a policeman, which demonstrates the Doppler effect. As cars whiz by, their sounds decrease in pitch; and the radar gun of course determines her speed using Doppler.

For more information, including dates of future performances, see the Chromatics' web site: [www.thechromatics.com](http://www.thechromatics.com). \*

# Planetarium, from page 1

National Defence Education Act. About \$10 million has been invested in facilities and equipment. The continuing costs to operate the facilities are small, on the order of \$300,000 per year. This figure includes the annual cost of maintenance for the two SPITZ A4 and seven SPITZ A3P projectors. The planetaria are staffed by nine full time directors. All are specialized teachers and are responsible for operating the facilities and providing instruction. For more details go to [www.fcps.k12.va.us/DIS/OHSICS/planet](http://www.fcps.k12.va.us/DIS/OHSICS/planet).

The adverse economic pressure on the FCPS system, due to growing enrollment and reduced funding by the Commonwealth of Virginia, has contributed to an unprecedented public school budget deficit. The County Board of Supervisors, are scheduled to meet on 22 April (a week in the future as this is written) to approve some sort of budget for the FCPS. If the County Board does not make good the entire school budget, using part of the county's "rainy day" fund (for example) to make up the

deficit, a shortfall of \$65 million will exist. To address this potential shortfall, the Superintendent of Schools proposes terminating the Planetarium Program along with

## If the planetarium program goes, the elementary school classroom teachers won't be able to fill the gap

other items. (See "Potential Budget Reductions," [www.fcps.edu/news/list.html](http://www.fcps.edu/news/list.html).)

Please note that the "savings" listed in this budget for terminating the Planetarium Program (\$800,000) is contrived. Most of this amount is pay for the planetarium directors, who would be retained for other assignment. The "real" cost, more like \$300,000 per year, breaks down to less than \$8 per year per student (grades 4, 5, and 6). If the planetarium program goes, the ele-

mentary school classroom teachers won't be able to fill the gap, so the students will suffer the loss in this part of the "core" curriculum. Last year support from NOVAC members, acting individually as concerned citizens, blunted a previous threat to terminate the planetarium program. If you are interested in having a say in this issue, consider contacting your local representatives. \*

### School Board hearings schedule

May 6, 2002

**School Board budget work session**

May 13, 2002

**School Board public hearing**

May 20, 2002

**School Board budget work session**

May 23, 2002

**School Board adopts FY 2003 Approved Budget**

## New observing site for members

NOVAC has completed negotiations for a new observing site—Camp Highroad. This site will be available for use on May 1, 2002.

**Name:** Camp Highroad

**Location:** Near Mickie Gordon Park

**Directions:** Complete driving directions are available from the members-only section of the NOVAC website: [www.novac.com/members.htm](http://www.novac.com/members.htm). If you cannot access the web page, contact NOVAC's observing site coordinator, Tilly Smith (see page 2 for contact information).

### Rules and regulations

1. **Unlimited access to the observing site. No time restrictions**
2. **No advanced notification required.** However, request that members e-mail Rick Dawson (Director) at [rick@camphighroad.org](mailto:rick@camphighroad.org) through May to give the Camp advanced notice so they can get used to us.
3. Plan is to install a NOVAC flag (similar to a mail box flag) at the turn off to the

observing field to alert Camp personnel that we are observing. First observer in turns the flag up; last observer out turns the flag down. Once this is done, no further notification required.

4. In gratitude for use of the observing field, NOVAC will provide outreach events at the Camp. In addition, NOVAC will assist the Camp in maintaining their telescope(s).
5. **Use of Camp Highroad is for NOVAC members and their guests only.** The public is not permitted unless specifically approved by the Director.
6. Loud radios, alcoholic beverages, and/or loose pets are not permitted.
7. NOVAC is requested not to drive across the fields. If driving to a different field, drive close to the tree line, not across the field. Once at the designated field, cars should be parked as close to the dirt roads as possible.
8. We may be requested to use a different field than the prime field when some of the fields are planted with crops or in the case of a large camping group at the Camp, This information will be placed on the Web Page and the e-mail list server.
9. NOVAC members will clean the area of all litter prior to departure.
10. Camp Management may revoke this agreement at any time due to the lack of adherence to the camp's rules and regulations.
11. NOVAC shall provide Camp Highroad a Certificate of Insurance to cover the Camp from liability issues.
12. It is permissible for a NOVAC member to camp overnight at the observing site at the conclusion of observing. This is **not** permission for general camping; rather it permits the member to sleep at the site until morning, when it is safer to drive home.
13. NOVAC will provide a Portajon at the observing site and will be responsible to pay all associated costs. \*

# Calling all Loudoun County NOVAC members!

by Ed Karch

The time has come for club members who live or own property in Loudoun County to write the Loudoun County Board of supervisors protesting our loss of access to Mickie Gordon Park (MG) as an observing site. Although you need to be polite, please feel free to express your level of upset and your frustrations.

To give you background for your letters, e-mail and phone calls, here are the facts, as we know them:

It all began when large numbers of the public came to MG and the surrounding area in an impromptu manner to view the highly publicized Leonid meteor shower. This apparently brought to the Park management's attention that NOVAC was using the park "after hours," and without a county employee present as a guard. The county decided that this was a violation of park policy, even though a memorandum of agreement between NOVAC and Loudoun County Parks authorized this use.

When the memorandum of agreement was originally drafted, MG was administered as an athletic park. There was an administrative reorganization within the parks department and our memorandum of agreement now falls under "Other Uses." The NOVAC board was told that the gates at MG were to be locked "after hours" and that we were to pay for a county employee at \$14 per hour whenever any NOVAC member was present. "After hours" has never been clearly defined to us.

The NOVAC board felt this was impossible because we can't afford it. Given our use during the last year, it would take our entire budget. Even if we could afford it, it is not a reasonable request given our use patterns.

We have had several discussions with the Cindy Welsh, the Parks Department Director. She was adamant that we must pay for a guard. We then used our contacts with the board of supervisors and opened a three-way discussion between NOVAC, the director and the two members of the Board of Supervisors, with the same result.

Here are the basic sticking points:

The Director's position is that she has not denied us legal use of the park. Our position is that while she may not have denied us *de jure* use of the park, she has certainly denied us *de facto* use of the park by putting unreasonable barriers in place.

Astronomy is not an organized sport.

With the exception of a few public events that take place no matter what, observing is weather dependent and may also be initiated on the spur of the moment in response to unpredictable events (new comet, supernova, aurora, unusually good seeing conditions, etc.).

Further, observing is not done at a single scheduled time. Individuals arrive at various times, depending on what each observer is trying to see and when that object is available to be seen. The costs would be exorbitant, and even if we could afford it, this type of scheduling would be logistically impossible.

The Director's position is that her policy applies to everyone. Our position is that this is a discriminatory policy because it is not being applied uniformly. For instance, athletic events use the park "after hours," as any club member who has waited for the baseball games to end and the lights to go out can testify. After hours athletic events at MG do not have guards at the gate, yet this is one of her requirements for us.

The Director's position is that she cannot make an exception for us without making an exception for everyone. She cites the use of guards at evening Boy Scout meetings as an example. Our position is that NOVAC is a special group, and that a special use exception is appropriate. NOVAC is organized, insured, and responsible. We are not children requiring adult supervision, but very serious adults with tens of thousands of dollars invested in specialized scientific equipment. We are not random members of the public showing up at night for whatever purpose, but an identifiable, organized entity with a track record of responsible park use at MG and other parks in Loudoun, Fairfax, Prince William, and Fauquier counties.

Furthermore, Loudoun County already has special use exceptions. Camping is

allowed at some parks, but not all. Fishing is allowed at some parks, but not all. Nighttime baseball fields are provided at some parks, but not all. Allowing astronomy at MG fits in with special use management and should not be an issue.

The Director's position is that this is done for safety and to protect against vandalism. Our position is that the park is actually safer when we use it. In the years that we have used MG, we have a proven track record of responsible park use.

We are now sending a packet of our proposed agreement to all of the supervisors and asking Loudoun county NOVAC members to support these efforts by contacting their supervisor. Members in other counties may be called upon if these efforts fail.

Our proposal to the Board of Supervisors is this:

- We are willing to have the gate locked (which it is not now) with a padlock keyed to NOVAC just as we have in other parks.
- We are willing to have a log/sign-in sheet for members observing at MG.
- We are willing to do a negotiated number of public events for them.
- We will provide proof of insurance so they have no liability from us as a group.

The following table lists contact information for the Loudoun County Supervisors.

## Member, district & e-mail

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# Mirror, from page 1

California (and back) would cost more than the optical work. Luckily, Bob Parks found a shipping company that offered a very attractive rate, and in March the board approved sending the mirror to Newport.

Shipping the mirror required a very sturdy crate. This crate will be used at least four times (one round trip to Newport, and then another round trip to get the mirror aluminized), so it had to be built to last. I built a frame out of two-by-eights and 3/4" plywood. Its corners were reinforced with 3/4" plywood gussets and the bottom lid

**[The] crate will be used at least four times (one round trip to Newport, and then another round trip to get the mirror aluminized), so it had to be built to last.**

was glued and screwed to the frame. I was able to scrounge some scraps of high-density foam to pad the glass on all sides, and expanding foam was used to make the padding conform to the curved back of the mirror. The finished crate was then bolted to a pallet donated from Ed Karch's woodpile and set in the back of my pickup to receive the mirror.

Once the crate was ready, members John Avellone, Guy Brandenburg, Bob Hand, Pete Johnson, Steve Johnson, Mike Lewis, and Bob Parks helped to get it out of my basement and into the crate. The mirror then stayed out of the weather in the back of the truck until it could be driven to the shipper's terminal in Baltimore. The mirror was finally taken to the shipper on Saturday, April 13, where it tipped the scales at 292 pounds, crate, pallet, and all. The mirror will be delivered to Newport Glass on April 22, and Newport quoted a turn around time of five to ten days, so we may get the mirror back, ready for grinding, by mid-May.

Keep your fingers crossed! \*

## Upcoming NOVAC meeting programs

Sean O'Brien

### May 10, 2002

#### Preparing for an Observing Session • Ed Witkowski

Experienced amateur astronomer (and NOVAC Outreach Director) Ed Witkowski illuminates some of the factors that go into maximizing your night beneath the stars. These include the weather, charts, and observing lists.

### June 9, 2002

#### The Life Cycle of Our Sun • Dr. Jack Greenblat

Join Jack Greenblat, scientist and amateur astronomer, as he examines the birth, long life, and future death-throes of our home star. How do astronomers think they know the details of the Sun's multi-billion-year life cycle? Come to the meeting and find out!

### July 14, 2002

#### Poetry Under the Stars • Patty Seaton

Join Patty Seaton, amateur astronomer and poet, tonight to enjoy selections of what we call "Poetry Under the Stars." It's a little "literary" and a lot of "fun."

NOVAC meetings are held at 7:00 PM on the second Sunday of each month in Room 80 of the Enterprise Hall at George Mason University in Fairfax, Virginia. See [www.novac.com/GMU.htm](http://www.novac.com/GMU.htm) for a map and directions. **Please note:** The schedule of speakers is subject to change. Please check at [www.novac.com/craig/speakers.htm](http://www.novac.com/craig/speakers.htm) for the latest info prior to the meeting.

What's YOUR interest? Let [sean.o'brien@nasm.si.edu](mailto:sean.o'brien@nasm.si.edu) know. Come share and learn about your favorite topic!

## National Capital Astronomers meetings

### May 4, 2002

#### Gamma-ray Bursts, Galaxies, and Supernovae • Jerry Bonnell USRA/GSFC

"Gamma-ray bursts—sudden unpredictable flashes of high-energy photons coming from space—were serendipitously detected by satellites in the 1960s. Sources of the bursts, the most powerful explosions seen in the Universe, are now known to lie in galaxies billions of light-years distant. However, recent developments indicate that some fraction of the bursts may originate only(!) a few hundred million light-years away and be associated with a peculiar class of supernovae. I will present a brief overview of gamma-ray burst astronomy and new developments in understanding the signatures of what may prove to be relatively nearby gamma-ray bursters."

Dr. Jerry Bonnell is an astrophysicist at Goddard Space Flight Center's Laboratory for High-Energy Astrophysics in Greenbelt, Maryland. There he studies gamma-ray bursts ([www.pbs.org/wgbh/nova/gammaamillyway.html](http://www.pbs.org/wgbh/nova/gammaamillyway.html)), co-organizes astronomical debates ([antwrp.gsfc.nasa.gov/diamond\\_jubilee/debate.html](http://antwrp.gsfc.nasa.gov/diamond_jubilee/debate.html)), and co-edits the Astronomy Picture of the Day Web site ([apod.gsfc.nasa.gov](http://apod.gsfc.nasa.gov)).

### June 15, 2002

The topic for the June 15 meeting was not known at press time, but will include recent Science Fair winners describing their projects.

NCA Meetings are now held at 3:00 PM in the Bethesda-Chevy Chase Regional Services Center of Montgomery County, 4805 Edgemoor Lane, Bethesda, MD, at 3:00. For future meeting programs and more information about NCA, see [www.capitalastronomers.org](http://www.capitalastronomers.org).

**About NCA Meetings:** NCA has regular monthly meetings September through June on the first Saturday of the month (unless it is a holiday weekend). They do not have a monthly meeting in July or August.

# Announcements

## Franklin Park events

by Bill Burton

There is one event in May being sponsored by the Barns at Franklin Park Performing Arts Center and NOVAC. It will be held at Franklin Park, in Purcellville, Virginia.

### Solar System Festival

Saturday, May 18 • 8 PM to Midnight

Five planets and the first quarter moon will be visible starting at sundown. This is great opportunity to take a tour of the solar system!

**Public admission:** \$3/carload; NOVAC members with telescopes will be admitted for free

**Directions to Franklin Park:** Take Route 7 west to the Round Hill exit; turn left and go east on Business Route 7 for about a mile; the entrance to Franklin Park is on the right. Pass the swimming pool on the right; turn right at T-intersection and proceed to parking lot above theater and silo.

## Annual picnic: June 15, Crockett Park

NOVAC will hold its annual picnic and swap meet on June 15 at the Panorama Shelter at Crockett Park. Burgers, hot dogs, and drinks will be provided by the club. Please bring a hot dish or dessert to share, and bring any astronomical equipment you would like to sell or trade. The swap meet will begin at 3:00 and food will be served at 4:30.

## New article available on the Web

**"Reflections in the Eyepiece—Observing Variable Stars,"**  
by Robert Bunge

There are many ways to pursue the hobby of amateur astronomy. Many amateurs are content with exploring the sky for their own pleasure, but some are driven to contribute to the science of astronomy. Bob describes one simple way to make such a contribution: watch variable stars and report your observations. Such an observing program requires only a little experience and remarkably simple equipment. [www.novac.com/nl/articles/aavso\\_index.html](http://www.novac.com/nl/articles/aavso_index.html)

**Correction:** In the March/April issue, new member Alex Hazzouri's e-mail was misspelled. The correct address is alex@balloonyideas.com.

## NASM/Einstein Planetarium public observing

### 2002 Schedule—Sky Meadows State Park, Paris, VA

Join Sean O'Brien, staff astronomer of the Albert Einstein Planetarium, and other local amateur astronomers, for public telescopic observing under dark, star-filled skies, away from city lights. The evening begins with a short night sky orientation at dusk, followed by telescopic observing of various astronomical objects, ending at 11 pm.

**Directions to Sky Meadows State Park:** Sky Meadows State Park is west of Washington, D.C. on US Route 17 North, 1 mile south of US Route 50, or 7 miles north of Interstate 66, Exit 23. The park contact phone number is (540) 592-3556. There is a \$4 parking fee per car. Please cover flashlights with a red filter or a brown paper bag. Dress warmly. In case of clouds or rain, an amateur astronomer will lead a short alternate program.

Date (all Saturdays)	Comments
May 4	Last Quarter Moon
June 1	1 day before Last Quarter
July 13	3 days after New Moon
August 10	2 days after New Moon
September 7	1 day after New Moon
October 5	1 day before New Moon
November 9	2 days before 1st Quarter

**Editor's note:** This is a fun program for NOVAC members to help out with. Sky Meadows park has great skies, and the public is always very receptive.

## Newsletter now available via e-mail

As an added convenience, members may now elect to receive their newsletter in electronic form via e-mail. The electronic version will be in Adobe PDF format and will typically be 500 to 800 kilobytes. Photos will appear with much better resolution in the electronic copy.

If you would like to receive the newsletter in PDF format, send your name, mailing address, and the e-mail address to which you want the newsletter delivered to [mjmills@fpcc.net](mailto:mjmills@fpcc.net). Please put "Newsletter PDF" in the subject line. Changes will take effect with the July/August issue. Please note: if you choose to receive the electronic copy, you will not receive a paper copy.

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# Meeting highlights

## General Meeting, January 13, 2002

George Mason University

- \* **The bylaws were amended** to remove term limits for the office of treasurer and to raise the single-signature check limit to \$800.
- \* **Pedro Martinez** was re-elected treasurer for 2002.

## Board Meeting March 5, 2002

Arlington Planetarium

- \* **Crockett papers** arrived and were filled out at the meeting. They will be copied and returned to County.
- \* Alex Lim is coordinator for this year's **Messier Marathon**. There was some discussion of having a Messier contra-thon or a doubles contest in the fall.
- \* **Astronomy Day** will be April 20 at Crockett Park.
- \* **The fight for Mickey** is now at the Supervisor's level. John is researching how to proceed with the request for a policy waiver. When this is presented to the board there may be need of Loudoun Members to rally for support.
- \* **The meeting topic for May** will be "Planning Your Observing Session." There will be three presenters with their methods of planning. So far it is Ed W. and either Ed K or Laquetta and? John A? I missed number three.
- \* **Loaner scopes** are being used. We will continue to market their use to the membership.
- \* The **34" mirror** will be shipped to Newport for re-grinding the curve. The future expenses for this project were reviewed by the board and we will proceed. We will end up with either \$700 worth of glass shards or a mirror worth about \$10,000 in a large club telescope.

*Meeting adjourned at about 9 PM.*

Ed Karch, Acting Secretary

## Board Meeting April 2, 2002

Arlington Planetarium

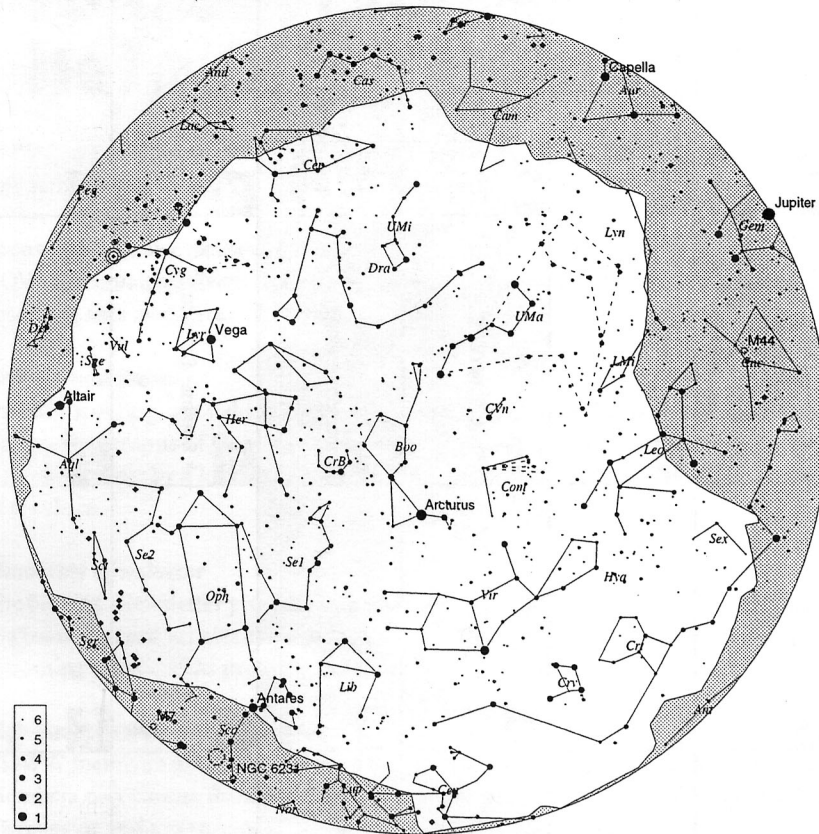
- \* **Treasurers report** by Pedro Martinez. Report on file with Secretary.
- \* **Astronomy Day** report by Tilly Smith. Tilly brought Astronomy Day flyers, which contain all pertinent information. A tent will be supplied for the slide show.
- \* John Avellone will be hosting a second **mini-astronomy day** at Huntley Meadows Park and requests an opportunity to call for volunteers at the monthly meeting.
- \* **Tilly Smith** requested more business cards; he was directed to contact Pete Johnson as he last had the template.
- \* There will be a **Messier Marathon make-up** scheduled for April 13 at Crockett Park.
- \* A date for the **Annual NOVAC Picnic** was set for June 15 at the Panorama Shelter at Crockett Park. 3:00p.m. Swap meet, 4:30p.m. Burgers begin.
- \* Alan Figgatt will be attending a meeting Wednesday April 3 of the **Analemma Society**, he will report back to the Board via email.
- \* Ed Witkowski will conduct the **Sky Tour for April**
- \* Discussion of the cost of the *his.com* **NOVAC email list** and how we could obtain usage of other major domo lists to replace those on Yahoo.
- \* The **West Virginia land** that was for sale has not been investigated at the time of the Board meeting.
- \* John Deriso reported on the findings for **Camp Highroad** that was found (again)

by Bob Garrett. Camp would like to trade observing privileges for some outreach by NOVAC members there at the campground. Another contact is planned within the next week to finalize an agreement.

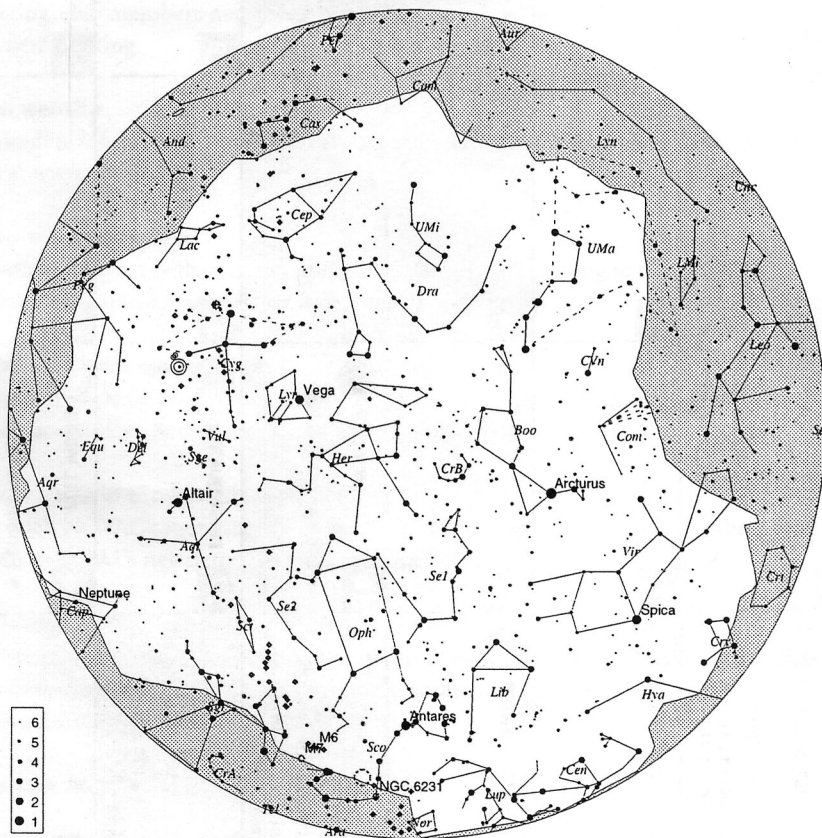
- \* **Membership report** by Joe Pierson. February saw 12 new members and 17 renewals. March brought 7 new members and 25 renewals.
- \* **John Deriso** is investigating another site, off Rt. 611, in the Foxcroft (private school) area that is also private property.
- \* **Mickie Gordon situation** is at a stalemate at this time and will likely require the contacting of the Board of Supervisors.
- \* A letter written by **Laquetta Karch** was read as an example of the type of letters Loudoun County NOVAC members could write. Tilly Smith suggested some slight editing of the letter to make it more amenable. Tilly will be assembling a packet of info (as requested by Ed Karch) to send to county Supervisors, a similar packet will be available to NOVAC members.
- \* Sean O'Brien gave a synopsis of **upcoming speakers and programs**: August and September to be topics on "Heavy Duty" observing. October, Elizabeth Warner: Deep Impact project.
- \* Alan Figgatt transferred the **Meade 10" SCT club loaner scope** to Renée Pleasant, after his assessment and evaluation of the scope.

*Submitted by Renée Pleasant, Secretary*

## May skies from Savage Farm



## June skies from Savage Farm



# Jeff's observing report

Jeff Stetekluh

Jeff's astronomical calculations are made for the Northern Virginia area. See [www.novac.com/jeff/jrefs.html](http://www.novac.com/jeff/jrefs.html) for calculation references and further details.

### Jupiter eclipse events

May 31 21:52 to Eclipse End

### The Sun

May 12 rises at 05:59 sets at 20:11  
 Jun 9 rises at 05:43 sets at 20:32

### The Moon

May 4 Last Quarter  
 May 12 New Moon  
 May 19 First Quarter  
 May 26 Full Moon  
 Jun 2 Last Quarter  
 Jun 10 New Moon  
 Jun 17 First Quarter  
 Jun 24 Full Moon

### Events

May 4 Mercury at Greatest Elong: 21.0°E  
 May 6 The η-Aquarid meteor shower peaks (active Apr 19 to May 28)  
 May 26 Pen. Lunar Eclipse; mag=0.686  
 May 27 Mercury at Inferior Conjunction  
 Jun 9 Saturn-Sun Conjunction  
 Jun 10 Annular Solar Eclipse; mag=0.992  
 Jun 21 Mercury at Greatest Elong: 22.7°W  
 Jun 21 Summer Solstice  
 Jun 24 Pen. Lunar Eclipse; mag=0.199

### The Planets

May 12	Rises	Transits	Sets
Mercury	06:52	14:17	21:43
Venus	07:36	15:06	22:35
Mars	07:34	15:01	22:28
Jupiter	09:21	16:43	00:09
Saturn	07:27	14:42	21:57

June 9	Rises	Transits	Sets
Mercury	05:00	11:57	18:54
Venus	08:17	15:42	23:06
Mars	07:04	14:32	22:00
Jupiter	07:56	15:16	22:36
Saturn	05:50	13:07	20:24

Each map depicts the sky at 0 hours for the 15th day of the respective month. The shaded area approximates the local horizon obstruction at the site.

# Events in May and June

Shading indicates days that Crockett Park is open

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
5 Prime observing	6	7	18 MAY 1	2	3 Prime observing	4 LAST QUARTER Public observing @ Crockett Park * Mercury at greatest eastern elongation
12 NEW MOON Mother's Day Prime observing General meeting 7pm @ GMU	13	14	15	16	17 Prime observing	18 Prime observing Solar System Festival @ Franklin Park
13 FIRST QUARTER	20	21	22	23	24	25
Prime observing ATM-SIG meeting (location TBA)	26 FULL MOON	28	29	30	31	JUNE 1
2 LAST QUARTER	3	4	5	6	7 Prime observing	8 Prime observing
9 Prime observing * Saturn-Sun conjunction General meeting 7pm @ GMU	10 NEW MOON * Annular solar eclipse	11	12	13	14 Prime observing	15 Public observing @ Crockett Park NOVAC picnic @ Crockett Park
16 Prime observing ATM-SIG meeting (location TBA)	17 FIRST QUARTER	18	19	20	21 * Summer Solstice	22
23	24 FULL MOON * Penumbral lunar eclipse	25	26	27	28	29

# "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 the Lecture Hall 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" reflectors of different focal lengths, one 10" f/6 reflector and a couple of SCTs. Also available for loan is a 7x50 binocular.

## Large club library

NOVAC maintains a well stocked library near the lecture hall at GMU. At a monthly meeting, club members may check out books and observing guides and use them until the next meeting.

## Club website

Up to date information about club events and activities is maintained on the club website at [www.novac.com](http://www.novac.com).

## Private e-mail listserv

Members keep up with current club information by subscribing to the NOVAC e-mail list, without fear of flame wars or spam e-mails.

## 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 and books

Subscriptions to *Sky & Telescope* and *Astronomy* magazines are offered to club members at a considerable discount. Also, astronomy books purchased through the club are eligible for a 10-25% discount.

See your *Membership Guide* for more details.

# NOVAC

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. Contact:

Joe Pierson  
15091 Jarrell Place  
Woodbridge, VA 22193  
703-680-6343  
[jmpierson@comcast.net](mailto:jmpierson@comcast.net)

## Change of address

All notices of change of address should be sent to Joe Pierson. 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, Michael Mills, at [mjmills@fpcc.net](mailto:mjmills@fpcc.net). **The deadline for submissions is two weeks in advance of publication: June 14 for the July/August 2002 newsletter.**

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## In this issue...

**News and articles** • Progress on the Powers mirror • The FCPS Planetarium Program • A review of "The Chromatics" • New observing site for members • Calling all Loudoun County NOVAC members!

**Announcements** • Franklin Park events • Annual picnic, June 15, Crockett Park • New article available on the web • NASM/Einstein Planetarium public observing • Newsletter now available via e-mail

**Regular features** • President's message • Upcoming NOVAC & NCA meetings • New members • NOVAC meeting highlights • Sky maps • Jeff's observing report • Events in May and June



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