

# NOVAC

THE NEWSLETTER OF THE NORTHERN VIRGINIA ASTRONOMY CLUB

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## Telescopes are the real stars at Stellafane

by Guy Brandenburg

Along with Brenda Corbin Jones, John and Glenna Avellone, Bill Burton and family, John and Bobbie Stewart, and Jerry Wolczanski—all members of either NOVAC and/or NCA, I attended this weekend's Stellafane convention in the beautiful countryside around Springfield, VT.

I had the audacity, or perhaps hubris, to enter two homemade scopes into optical competition, but did not win. I saw the mirror of the woman who did win the optical competition, and as far as I could tell it was *perfect* in the star test. I see now that mine are not. I really need to get better at collimation, since I lost a lot of points on that. It really helped me to get feedback from the judges, and to be able to look at that perfect mirror's star test. (At least mine are really, really smooth because of the use of rouge.) The viewing on Saturday was wonderful, and I found a number of new Herschel objects. At the Saturday evening presentation, I didn't win anything in the lottery, which is really too bad—they were giving away several sets of Televue eyepieces, including Naglers.

The only thing I "won" was a CD-ROM of variable stars, which I received because I was also representing the National Capital Astronomers, one of the older astronomy clubs in attendance. If I can figure out how to do so,

see "Stellafane" on page 3



John Dobson, David Levy, and others pose for photographs in front of Stellafane's Pink Clubhouse. Dobson, at 86, was the oldest person in attendance at the convention.

### MESSAGE FROM THE PRESIDENT

## Where Are We?

Members:	600
Observers:	100?
Meetings:	50
ATM:	15
Outreach:	6 (regulars)

### Where do you fit in?

Now is the time for all good Nomads to come to the aid of NOVAC and become volunteer leaders. We need Officers, Trustees, and appointees, to carry on (actually to make it better).

Contact the nominating committee or e-mail me with your interests and I will see it gets to them. [ekarch@karch.com](mailto:ekarch@karch.com) ★



NOVAC President Ed Karch

### NOTED WITHOUT COMMENT



# NOVAC

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# My mirror cell adventure

by Ralph Marple

My entry into telescope making began one winter night in 1994 when I dropped my 4.25" "department store" Newtonian telescope. It's poorly functioning 0.965" focuser was trashed in the fall and I was forced to upgrade to a 1.25" focuser and eyepieces. When the new focuser arrived I discovered that it wouldn't reach focus because it was nearly an inch taller than the old one. I either had to cut a new hole in the tube to relocate the focuser or cut the end of the tube to move the mirror to the proper location. I opted to cut the tube.

The views through the new eyepieces were tremendous, but the wobbly mount became a real irritant. I resolved this issue by building a dobsonian mount scaled down from one for a 10" scope in Richard Berry's book *Build Your Own Telescope* (published by Willmann-Bell). The improved viewing I obtained from these upgrades cannot be overstated. The scope went from barely useable to a respectable instrument with which I observed most of the Messier objects.

Finally, during the summer of '99, aperture fever drove me to build the 10" scope in Berry's book. I deviated from the basic design in several areas. Most significantly, I used an aluminum tube instead of cardboard and I didn't include the flanges at the ends of the scope. I also shied away from the collimation adjustment design for mir-

ror cell that included three pairs of push-pull bolts. This was similar to the collimation adjustment on my 4.25" scope, and I'd never liked it because the adjustment would move when the final bolts were tightened.

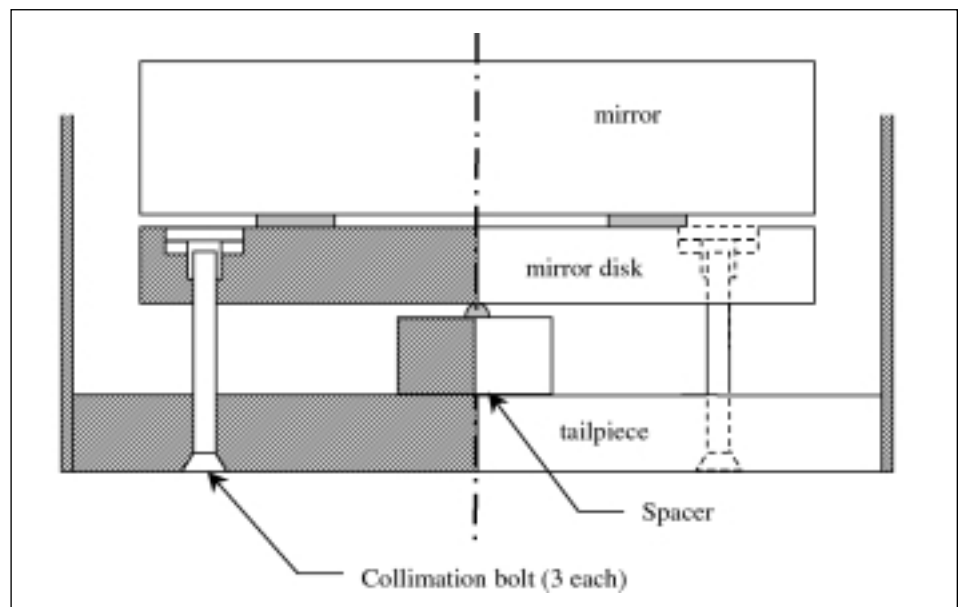
Instead, I opted for collimation bolts that each passed through the center of a spring. The springs were held in compression by the alignment bolts, but the collimation was never "locked" down. This arrangement worked very well even though I could hear the mirror moving every time I moved the scope. The sound of the moving was disconcerting, but the collimation was surprisingly stable. It did not need tweaking very often.

### Cement woes

During the process of constructing the scope I made numerous trips to Hechinger's (which was still in business) and Lowe's trying to locate the recommended parts and materials. One item of particular concern was the silicon cement needed to fasten the mirror to the mirror cell, which in my 10" is made from 1/2" plywood. I purchased what I thought was the right stuff, and meticulously followed the instructions for attaching the mirror.

With supplies in hand, I carefully placed spacers on the plywood disk, fastidiously applied little puddles of cement at the

see "Mirror Cell" on page 10



Ralph Marple's mirror cell design. Note the countersunk flat head screws that pull on T-nuts in the mirror disk.

# New members

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# Stellafane, from page 1

I'll make a copy for NOVAC. (They didn't quite have enough copies for every single club represented. They gave out the CDs pretty much in descending order of age of founding. NOVAC was founded in the 1980s, and NCA in the 1930s.)

One member of NOVAC, Myron Wasiuta, won fourth place in one of the mechanical competitions, and was unaware of it until I informed him after the awards ceremony.

I got to meet Carolyn Shoemaker and David Levy and talk with them a bit, watch them get interviewed, and watch John Dobson "perform." Amateur astronomy owes John Dobson a great debt, because of his invention of the inexpensive alt-az "Sidewalk" telescope (or "Dobsonian"), but I frankly think he is a little daft, even though he may be smart and an original thinker. He gave an "explanation" of why the Big Bang is incorrect that makes no physical sense whatsoever as far as I could tell, and his own alternative seemed even less sensible than that. I thought that the audience was very much more tolerant of his behavior and eccentricities than they would have ever been had he not made such original contri-

butions in the past. Shoemaker and Levy were very nice, considerate people, by contrast. I did not hear all of the presentations, however, and missed at least one of Dobson's and one of Shoemaker's.

John Avellone brought along Sweet 16, which got a lot of attention, as well as his famous Astrocan. John Stewart brought along the 12.5" scope whose mirror he made in the NCA mirror-making workshop. He made a classic Kriege-and-Berry truss-tube Dob, and it looks very, very nice. He didn't enter it into any competition, though. Myron's scope looked very, very good, and deserved to win something. Mine look like homemade Berry-style little Dobs, and are not pretty at all. But I like to think they work pretty well. The #1 scope in the optical competition was also a work of art physically. The owner didn't make very much of it—the tube, for example, was a fiberglass one from Parks—but she had it painted by a really good autobody shop, and they painted it an emerald shade with metal sprinkles. It's gorgeous.

I didn't see the scopes belonging to other members, partly because I was set up near the Pink clubhouse, which I think is over half a mile from the main camping ground and observing stations. After dusk, this has to be navigated on foot with anything you didn't feel like leaving next to your scope during daylight.

I also got to talk a bit with some of the Nagler family. Among other things, they had one of their wonderful new short-tube refractors focused on the sun with a Coronado H-alpha sun filter and a binoviewer. It was *incredible*. I have never, ever seen relief like that on the surface of the sun—not sunspots, but fissures, valleys, storms, and so on—and also prominences



A very well-crafted homemade Dobsonian telescope on display

and other pink phenomena around the edge. I could not take my eyes off of it, and got several other people to come and look.

Bill Burton and another person won one of the sets of Televue eyepieces—both had the same lottery number (those lottery or carnival tickets)! So they had to split it. Aww, shucks. Since Bill didn't win the whole thing, I'm sure he's highly disappointed and will give them away to anybody who asks.

I had a great time, and didn't get sunburned. I even learned some tricks about figuring, polishing, and testing mirrors. Maybe I will refigure one of my mirrors? Donno. I really liked an auto-collimation interferometer testing for parabolas using a reference flat with a hole in the middle, so I bought a 7" flat. If I perforate the middle and it is also actually 1/8 wave as advertised, it might be useful for null-testing small mirrors for parabolic figure. It supposedly originally was priced for \$600; I purchased it for \$55. ★



John Stewart and his 12.5-inch diameter homemade Dobsonian. He made the mirror in the NCA mirror-making workshop here in DC.

# **NOVAC**



***NORTHERN VIRGINIA ASTRONOMY CLUB***

## **20th ANNUAL STAR GAZE**

**Saturday, October 12**

**4 PM - Midnight**

**Franklin Park, Purcellville, VA**

**Activities, talks, sky tours, and lots of telescopes  
to look through!**

**Directions: take Route 7 Bypass west  
to Round Hill exit, go east towards Purcellville  
1 mile, entrance to park on right.**

# Announcements

## The Year-Long Star Party at Spruce Knob

by John Nusbaum

NOVAC is now the proud owner of a brand new, “no frills” star party at the premier observing location in the Eastern US! The Year-Long Star Party (YLSP) is held for 4 nights each month from March through November. The Star Party is held at the Gatewood Group Camping Area just west and slightly below Spruce Knob, the highest peak in West Virginia. Gatewood sits on top of a knoll at 4,338 feet.

The skies at the Year-Long Star Party are truly dark. M33, the face-on spiral galaxy in Triangulum is a naked eye object and the Milky Way stretches from horizon to horizon in both summer and winter! If you have never observed in truly dark, magnitude 7 skies, you will be in for a real treat!

### 2002 Schedule—Spruce Knob, WV

September 5–8	Thursday–Sunday nights
October 4–7	Friday–Monday nights
November 1–4	Friday–Monday nights

The Star Party is free to NOVAC members and there is a nominal cost for non-members.

For more information see the NOVAC website at [www.novac.com/spruce](http://www.novac.com/spruce) or contact John Nusbaum at [john@nusbaum.com](mailto:john@nusbaum.com).

## Bear Alert!

A black bear has been frequenting Gatewood Campground and damaged some NOVAC members’ equipment at the August YLSP session. Please be aware that interaction with potentially dangerous wildlife is a possibility if you decide to go to Spruce Knob (or any other observing site, for that matter.) See [www.yahoo.com/group/spruceknob](http://www.yahoo.com/group/spruceknob) to get the complete story.

## 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
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 September/October issue. Please note: if you choose to receive the electronic copy, you will not receive a paper copy.

# Mason Neck Park agreement renewed

By Bob Parks

NOVAC has just renewed its observing special use permit with Mason Neck SP. There are several changes that all users should note.

We now can observe any night without advance notice. There will be a logbook at the rangers contact station at the main gate. You must fill in the requested info prior to entering the park. If you don't you will be trespassing and may be fined, arrested or whatever they do to trespassers at state parks. In addition, they will terminate the observing agreement with NOVAC.

The second change is actually a correction to the original permit terms, which were made in error. All users of the park are required to pay the parking fee unless they are participating in a scheduled public program. I have been told that we must use the "honor" method and deposit the fees in a provided envelope with your name. The fees are currently \$1 off-season (September–May) and \$2 during the rest of the season. Please verify these dates and amounts as they are subject to change.

We will be scheduling two public programs during the year. The first event will take place on September 14. The second will be scheduled some time in early Spring. ★

## Leonid Showers

Patty Seaton (17 November 1998)

*A trail of light  
Invokes the night  
To open up its heart,  
To lay it bare  
Its wonders share  
So we can be a part.  
My mind's a haze,  
But in the blaze  
I briefly see my worth—  
Eternity  
Is part of me,  
The sky, the sea, the Earth.*

## Upcoming NOVAC meeting programs

Sean O'Brien

September 8, 2002

### Amateur Telescope Makers (ATM) Night

Several NOVAC members will display telescope-making projects dear to their hearts. This is a great opportunity to ask questions and get illuminating answers about building your own telescope.

October 13, 2002

### Deep Impact and Amateur Astronomers • Elizabeth Warner

Wait till you see our fireworks! On 4 July 2005, the eighth NASA Discovery mission Deep Impact is going to excavate a crater in comet 9P/Tempel 1. This talk will briefly describe the mission and will then highlight the role small telescope facilities/amateur astronomers have had and will have in the mission. Our speaker, Elizabeth Warner, is the liaison between the Deep Impact mission and the amateur astronomy community. In addition, she is part of the Deep Impact web site team. Elizabeth is also a member of NOVAC.

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!**

## Local astronomy events

September 6–7, 2002

### Big Meadows Stargaze

The Rappahannock Astronomy Club is hosting a two day star party called the Big Meadows Star Gaze at Big Meadows in the Shenandoah National Park in the Blue Ridge Mountains of Virginia on Friday and Saturday nights, September 6–7. Full details can be found on their web page at [www.raclub.org/BMSG/2002/BMSG.html](http://www.raclub.org/BMSG/2002/BMSG.html).

September 14, 2002

### Urban Star Party at Mason Neck Park

NOVAC will host its biannual public observing event at Mason Neck State Park on September 14. The public festivities will start around 6 pm. We had a huge turnout for the Spring event and hope to repeat it this time. Mason Neck is actually planning to promote the event, so the ratio of NOVAC folks to general public may not be quite as lopsided this time. For those not familiar with Mason Neck SP, this is a great way to get acquainted. The facilities are quite good, there are rest rooms (with running water) and soda machines near by and the viewing field is easily accessible. The moon will be about 60%, sets around midnight and will be very low on the horizon. So if the weather cooperates we may be able to do some serious observing after the public session is over at 9 pm.

October 5, 2002

### 2002 Virginia Association of Astronomical Societies (VAAS) Convention

This year the VAAS Convention will be hosted by the Richmond Astronomical Society and will be held at Randolph-Macon College in Ashland, Virginia. Activities include speakers and workshops on ATM, CCD imaging, navigation, among other things. See <http://www.richastro.org/vaas.htm> for more information.

October 12, 2002

### NOVAC Star Gaze

NOVAC's annual Star Gaze will be held October 12 at Franklin Park in Purcellville, Virginia from 3:00 pm until midnight. This is a low key, informal, get-together for anyone interested in astronomy. Activities will include solar observing (including H- $\alpha$ ), hands on demonstrations, guest speakers, and tours of the night sky. See [www.novac.com/gaze/](http://www.novac.com/gaze/) for full details.

# Northern Virginia Astronomy Club Statement of Cash Received and Disbursed For the period January 1, 2002, through August 4, 2002

## CASH RECEIVED:

### Membership Dues:

#### Regular and Additional:

Renewals	\$4,900.00	
New Members	1,720.00	
Supporting-Renewal	100.00	
Patron-New Member	<u>150.00</u>	\$6,870.00
Interest Income		167.43

T-shirt & Sticker Sales		476.00
Spruce Knob		134.00
Dept. Store Telescope Making Kits		0.00
Donation		32.00
Kalmbach Book Discount		<u>0.00</u>

Total Cash Received \$7,679.43

## CASH DISBURSED

### Newsletter:

Printing & Assembly	1,750.10	
Postage	<u>285.59</u>	2,035.69

### Astronomical League

Astronomical League Dues		1,672.50
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### Astronomy Day

Publicity		13.59
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### NOVAC Picnic

Baroque Food & Supplies	148.59	
Picnic Permit-Crockett Park	<u>120.00</u>	268.59

### Observing Site Improvements:

Savage Farm		
Porta-Jon Rental-Savage	512.05	
Porta-Jon Rental-Camp Highroad	87.45	
New Observing Site Search	207.78	
Lock for Mercer Park	14.61	
Spruce Knob Site Rent	<u>840.00</u>	1,661.89

### Big Monster-34 1/2" Telescope Project

		614.57
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### Webpage Expenses

		0.00
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### International Dark-Sky Association (IDA)

		100.00
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### Science Fair Prizes

		58.40
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### 70mm EQ Refractor Dept. Store Telescope

		221.40
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### T-Max for SolarMax 40

		109.00
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### Camp Highroad Telescope

		100.00
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### Green Laser Pointers

		200.00
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### Postage for Mailing T-shirts

		10.50
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### Administrative:

Printing-Membership Applications	0.00	
Printing-Administrative	25.29	
Postage	219.33	
Supplies	50.20	
Bank Service Charge	<u>30.00</u>	324.82

Total Cash Disbursed 7,390.95

EXCESS OF CASH RECEIVED OVER CASH DISBURSED 288.48

Cash at beginning of period: 13,261.44

CASH AT END OF PERIOD 13,549.92

Cash At End Of Period

Checks Received, Undeposited		0.00
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Checking Account		1,509.27
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Savings Account		4,578.44
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Certificate of Deposit Due 1/3/2003		3,034.09
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Certificate of Deposit Due 11/2/2002		2,365.18
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Certificate of Deposit Due 5/2/2003		<u>2,062.94</u>
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13,549.92

Respectfully submitted,  
/s/  
Pedro Martinez, Treasurer

# Meeting highlights

NOTE: Minutes were not taken for the July 2 Board Meeting and July 14 General Meeting.

## Board Meeting August 8, 2002 Arlington Planetarium

- ★ Meeting called to order at 7:30p.m. by **President Ed Karch**.
- ★ **Board members in attendance:** John Avellone, Tilly Smith, John Deriso, Joe Pierson, Renée Pleasant, Alan Figgatt, Alex Kim, Ed Witkowski, Pedro Martinez, and Sean O'Brien.
- ★ **Members in attendance:** Bill Burton and Ella Joe.
- ★ Pedro Martinez gave the **Treasurer's report**.
- ★ Joe Pierson gave the **membership report**. A discussion of the number of complimentary memberships followed.
- ★ An **official observing night** was discussed. Joe will add this to the welcome letter and Ed W. will add to the monthly announcements.
- ★ **Board voted to sell 6" flat** to an Arkansas amateur astronomer for the price of \$250.
- ★ **Star Gaze:** Bill Burton reported on the ongoing arrangements for the October Star Gaze. Tents and food have been arranged. Civil Air Patrol may be providing volunteer help for set up and traffic control. Bill is trying to arrange for NOVACers to be able to stay late, if possible. Speakers at this time include Harold Geller and representative from JPL. Bill will be contacting the Meteorite display person. Club table will need to be manned. Guided Sky Tour at 8 and 9.
- ★ **Possible meeting location changes** were discussed. Ed Witkowski shared his proposal for a variety of meeting locations, as well as holding meetings on different days. After discussion, the proposal

was tabled for further action at a later Board meeting.

- ★ **Elections** are coming up; the **nominating committee** will include John Deriso and Ed Witkowski.
- ★ Meeting adjourned 8:57 p.m.

*Submitted by Renée Pleasant, Secretary*

## Monthly Club Meeting August 11, 2002 (32 members present)

- ★ **Star Gaze** 10/12/02 at Franklin Park. Four speakers have been arranged so far, along with observing stations, and information table. Still need volunteers for stations and tables.
- ★ Board has set **official club observing night** as the Crockett Public night. Check website for the date, as the schedule varies.

- ★ John Deriso has the **NOVAC Library**. Contents will be posted to the website later this month.
- ★ John Avellone awarded **Astronomical League Messier Certificates** to Ellen Bryson and Laquetta Karch.
- ★ John Avellone gave a brief **Stellafane** update.
- ★ Alan Figgatt handed out a finder chart for the new **comet C/2002 04 Hoenig**. Also covered the upcoming Perseid Meteor Shower and asteroid near-Earth approach
- ★ Guest speaker **Dr. David DeVorkin** described the NASM exhibit "Explore the Universe."

*Submitted by Renée Pleasant, Secretary*

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## Silhouette

*Patty Seaton*

*For just a moment,  
I saw myself—  
A silhouette against the multitude of stars;  
I heard my life  
Over ripples of the water.  
For a time  
I found myself  
in a fantasy of worlds yet to come.  
Even now  
I cannot describe my silent joy,  
Cannot pierce the cosmos of words to say.  
So in the dark,  
in the lullaby of the lighthouse,  
I fade into stars.*



# Mirror cell, from page 2

proper places, and gently lowered the 11 pound mirror into position. I then patiently waited 48 hours for the cement to set before removing the spacers that held the mirror about 3/32" above the plywood disk. The idea is that the silicon cement dries to form small, resilient pads that support the mirror and isolate it from any deformation of the plywood disk that might occur during collimation or over time. Imagine my horror when I removed the spacers and watched as the mirror slowly compressed the pads of silicon and settled onto the plywood disk!

I stared at the mirror for a long time trying to decide what to do. In the end, I left it securely cemented to the plywood disk. I decided to wait and see if it created a noticeable problem, and to fix the problem if it did. I'm happy to report that I've been very pleased with the performance of my homemade scope, and have never noticed any performance degradation that I could attribute to the improperly mounted mirror.

## The mirror remounted

However, this imperfection has nagged at me. Not enough to motivate me to remount the mirror, but I couldn't forget that it was there. Subsequently, other items came to my attention that increased my desire to remount the mirror. First, was the collimation method I employed. It worked well enough, but it could be more stable. And I hadn't considered the fact that the springs will lose tension over time so the eyepiece focal plane will slowly work its way closer to the tube.

Second, was achieving mirror temperature equilibrium with the external environment. This was not considered in Berry's book, but it's a major concern among telescope makers because heat induced air currents within the telescope's tube can significantly degrade image quality. I've discovered I need to let my scope cool down for at least two hours in order to obtain high quality views of Jupiter and Saturn, so I was very interested in improving the mirror cell design to obtain better heat exchange between the mirror and the outside air.

## A better design

I'd been contemplating this effort for 18 months or more with the idea of tackling the

project during the summer when it was too hot and hazy to do much observing. Therefore, I was elated when I received the May issue of *Sky and Telescope* and saw that it featured an article on "How to Build a Better Mirror Cell" by Gary Seronik. Seronik's design is similar in principle to a mirror cell with push-pull adjustment bolts, except the three separate "push" bolts are replaced by a single fixed point behind the center of the mirror. The mirror is free to tilt in any direction about this point, and the three collimation bolts are tightened or loosened to get the tilt just right. I liked this approach even better than one proposed by Bob Bunge which used a central pull bolt and three push ones, so I started planning the job. First off, the late July weather cooperated extremely well. I wasn't even tempted to go out observing. Then I posted a message on the NOVAC email list looking for some help to reduce the diameter of the plywood disk holding the mirror.

Bob L'Hommedieu graciously offered to lend a hand, so I made a date with him and the project was off the ground. Separating the mirror from the plywood disk was a real pain. In the end, I found I could pry it up and the cement would yield; however, it took a lot of elbow grease and a sharp knife to scrape away the silicon residue. Once that was finished the job went smoothly. I popped over to see Bob, and he had the disk cut to the required 10" diameter in about ten minutes. Thanks a lot, Bob! Then all I had to do was cut three 2.5" holes in the pair of plywood disks that form the cell, drill a few additional holes for the collimation screws, slap on some flat black paint, and the job was done.

I did deviate from Gary's design in the *S&T* article. The collimation bolts in Gary's cell are flat head machine screws that pass through the disk with the mirror attached and protrude out the rear of the scope, where wing nuts are used to make the collimation adjustments. I had several concerns with this approach. First, I was concerned that the wing nuts would be easy to bump and the collimation would be disturbed. Second, I place the mirror end of the tube on the ground when I transport the scope. My original cell used flat head bolts that didn't protrude so there weren't any obstructions at

the rear of the scope. I decided to use tee-nuts recessed in the disk with the mirror attached so I could again use flat head bolts. I made sure that the flat head bolts were short enough so they wouldn't protrude and push directly on the mirror.

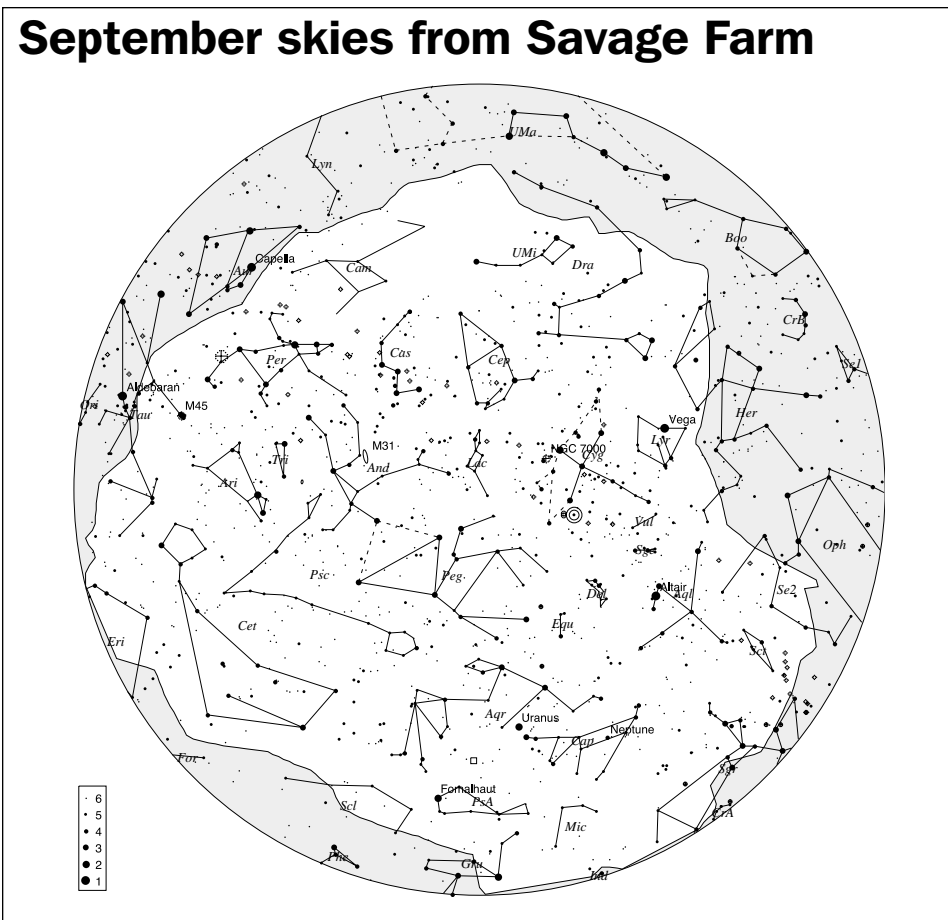
## Get the spacing right

When a mirror cell is modified, the surface of the mirror must return to the same place it was originally or the eyepiece focal plane will move. I put a spacer between the tailpiece and the mirror disk to accomplish this. Doing this reminded me that determining the position of the hole to be cut in the side of the tube for the focuser is tricky. Careful calculation and measurement is required. It occurred to me that the mirror cell could be made to slide in the end of the tube and allow adjustment that would take the worry out of accurately positioning the focuser hole. When the scope was finished there would be a recess at the end of the scope, but I don't think this would be much of a problem. Next time I build a scope I'll keep this in mind.

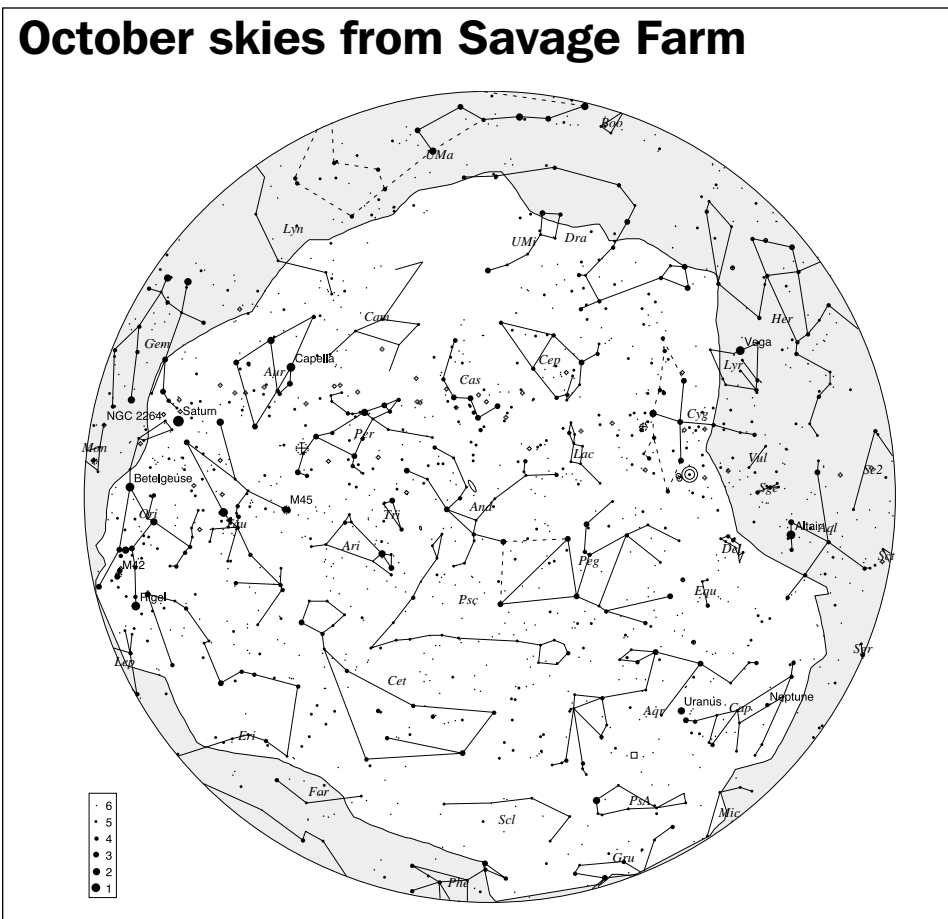
The modified cell went back into the scope without a problem and my first impressions were very good. I took advantage of the clear skies during the first week of August and spent a couple of hours at Savage. Collimation was easy and there isn't any movement or squeaking when I carry the tube. The only thing that isn't perfect is the spacer. It's about an eighth of an inch thicker than it should have been which seems a lot bigger at the eyepiece than I expected. I'll leave it alone for now, but I expect to disassemble the cell so I can paint the exterior of the tailpiece and take some pictures, so I might reduce the spacer height then.

Now that my upgrade is complete, I'm ready for clear, transparent skies to see if I notice any difference in mirror cooling. There is one thing I'm sure of—I won't be nagged by construction errors. This time I used aquarium cement to attach the mirror to the plywood and it worked perfectly. It made the cutest little buttons! Just like I wanted. ★

# September skies from Savage Farm



# October 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

Sep 29	3:53 am	Io Eclipse start (S -36 J 89 15)
Oct 6	5:47 am	Io eclipse start (S -17 J 111 41)
Oct 19	4:26 am	Europa eclipse start (S -35 J 105 33)
Oct 26	7:00 am	Europa eclipse start (S -6 J 154 64)
Nov 3	1:43 am	Callisto eclipse start (S-56 J 97 23)
Nov 3	6:28 am	Callisto eclipse end (S -3 J 186 67)

### The Sun

Sep 8	rises at 6:43 am	sets at 7:28 pm
Oct 13	rises at 7:16 am	sets at 6:33 pm

### The Moon

Sep 13	First Quarter
Sep 21	Full Moon
Sep 29	Last Quarter
Oct 6	New Moon
Oct 13	First Quarter
Oct 21	Full Moon
Oct 29	Last Quarter
Nov 4	New Moon

### Events

Sep 23	Autumnal Equinox
Sep 27	Mercury at inferior conjunction
Oct 13	Mercury at greatest elong: 18.1° W
Oct 21	The Orionid meteor shower peaks (active Oct 2 to Nov 7)
Oct 27	EST starts
Oct 31	Venus at inferior conjunction

### The Planets

Sep 8	Rises	Transits	Sets
Mercury	08:57	14:25	20:12
Venus	10:33	15:46	20:58
Mars	05:56	12:32	19:08
Jupiter	03:36	10:41	17:46
Saturn	00:32	07:51	15:09
Oct 13	Rises	Transits	Sets
Mercury	05:45	11:51	17:56
Venus	09:41	14:23	19:04
Mars	05:29	11:37	17:44
Jupiter	01:48	08:48	15:47
Saturn	22:15	05:37	12:56

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 September and October

Shading indicates days that Crockett Park is open

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<b>SEP 1</b> Prime observing	2	3	4	5	6	7
8	9	10	11	12	13	14
Prime observing <b>ATM-SIG meeting (location TBA)</b>	Prime observing <b>YLS@ Spruce Knob General meeting 7pm @GMU</b>				Prime observing <b>Urban Star Party @Mason Neck Park</b>	Public observing @Crockett Park NASM observing @Sky Meadows <b>Big Meadows Star Gaze @Shenandoah, N.P.</b>
15	16	17	18	19	20	21
Prime observing <b>ATM-SIG meeting (location TBA)</b>						FULL MOON
22	23	24	25	26	27	28
<b>ATM-SIG meeting (location TBA)</b>	Autumnal equinox				Public Outreach @Herndon Community Center	
29	30	<b>OCT 1</b>	2	3	4	5
LAST QUARTER					Prime observing <b>YLS@Spruce Knob</b>	NASM observing @ Sky Meadows Richmond Astro. Society VAAS Convention @Ashland, VA
6	7	8	9	10	11	12
Prime observing <b>YLS@Spruce Knob</b>	Prime observing <b>General meeting 7pm @GMU</b>				Prime observing	<b>NOVAC Star Gaze @Franklin Park</b>
13	14	15	16	17	18	19
Prime observing <b>ATM-SIG meeting (location TBA)</b>						
20	21	22	23	24	25	26
		FULL MOON				
27	28	29	30	31		
Start of EST		LAST QUARTER				

# “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” 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 that members may borrow from by contacting John Deriso (seaotter@bellatlantic.net). A full list of titles is available from the club website.

## 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 list-serve

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.**



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  
[jmperson@comcast.net](mailto:jmperson@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@fpc.net](mailto:mjmills@fpc.net). **The deadline for submissions is two weeks in advance of publication: October 18 for the November/ December 2002 newsletter.**

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**News and articles** • Stellafane highlights • Mirror cell adventure • Mason Neck Park agreement renewed • Financial statement from the treasurer • Stellar poetry

**Announcements** • The Year-Long Star Party at Spruce Knob • NASM/Einstein Planetarium public observing • Local astronomy events • NOVAC Star Gaze

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



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