

NOVAC

THE NEWSLETTER OF THE NORTHERN VIRGINIA ASTRONOMY CLUB

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President's Message

Tilly Smith

Well now that 1998 is over and we are getting into 1999, I wanted to review some of the things that were initiated in 1998 and what our plans are for 1999.

1998, a very good year

- Development of a slide presentation package for public events.
- Greater emphasis on public programs, including a Public Events Director.
- Programs to improve new member orientation.
- NOVAC sponsored Annual Picnic, with food and drinks provided.
- New observing site - Mickey Gordon Park.
- Improved observing schedule for Crockett Park.
- Greater emphasis on NOVA Star Party.
- New and improved process of printing and mailing Newsletters.
- Strategic planning session to develop a five-year plan.
- Social hour prior to general meetings.

While continuing all of the above initiatives, we plan to narrow our focus on new initiatives

1998, A Very Good Year 1999, Projects

a bit in 1999. Our strategy will be to emphasize these main areas:

1999 Proposed Projects

- Reduction of light pollution projects.
- Improve conditions at all NOVAC observing sites, especially Savage Farm.
- Improve orientation programs for new members.
- New location for General Meetings.

These items and others will be discussed at the NOVAC Annual Meeting on Wednesday January 13 at 7:30 p.m. at the Arlington Planetarium. See you there.

// tilly

Official Notice

The Annual Meeting of the Northern Virginia Astronomy Club will be held on January 13, 1999 7:30 P.M. E.S.T. at the Arlington Planetarium, 1426 North Quincy Street, Arlington, VA

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One Great Star Party

Barry Wolfe and Jeff Cook

On September 26, 1998, the Northern Virginia Astronomy Club hosted the NOVA Star Party at C.M. Crockett Park near Manassas, Virginia. The weather was warm and the sky cooperated with only a slight haze throughout the evening. The 6-day-old moon was only a moderate problem for viewing many deep-sky objects, and presented an excellent object in itself that impressed many first-time viewers.

The attendance at this star party was the best yet. Afternoon talks drew early attendance, with the parking lot beginning to fill up before dark. Estimates of the attendance ranged from 400 to 600 people. In the large club tent that was set up in the field, several NOVAC members gave lectures enjoyed by the public, including observing with solar, radio, photo & video techniques and Internet astronomy. Peter Chen from the Goddard Space Flight Center discussed plans for

(Continued on page 2)

NOVAC Programs at the Arlington Planetarium

Pete Johnson

All meetings start at 7:30 P.M.

January 13, 1999
NOVAC Annual Meeting

January 20, 1999
General Meeting - Advanced Deep-Sky Observing Techniques - Bill Burton

February 17, 1999
General Meeting - Telescopes on the moon - Dr. Peter Chen

March 17, 1999
General Meeting - Dr. David Atkinson, NASA Investigator on Galileo and Co-investigator on Cassini/Huygens

April 21, 1999
General Meeting - Ron Parise, NASA Mission Specialist (tentative)

One Great Star Party

(Continued from page 1)

constructing lunar telescopes. Marc DeFrancis gave an early evening talk to 30 or 40 kids in which he told the Greek legend of Perseus and Andromeda. When he got to the part where Cetus the Whale was approaching Andromeda to gobble her up, the kids supplied enthusiastic gobbling noises.

Pete Johnson gave talks on things to consider when purchasing a telescope and when building your own telescope. He also gave a talk for adults, about the constellations, to try to get people oriented to the upcoming viewing sessions. At one point the chief organizer of the star party and Master of Ceremonies for the evening, Jeff Cook, wowed the crowd with a "right on time" announcement that the space station MIR would be appearing "right over there, traveling in that direction". Many thanks to club members Jim Cook and Jeff Stetekluh for the late-breaking satellite reports. Live hourly sky tours rounded out the formal activities.

There were at least 100 scopes of all types arrayed in four rows across the large, open field at Crockett Park. Attendees interested in road testing a number of possible scope types for potential purchase had a veritable warehouse to sample from. Reflectors ranging from a 3" with a tube made from coffee cans up to Bob Bunge's 20" homemade truss tube Dobsonian were there. Many homemade reflectors of 6" to 8" apertures and several commercial reflectors in the 6" to 15" range were set up and ready for viewing. A number of Schmidt-Cassegrain type telescopes were present. Most of these were 8" in aperture but a few 9¼", 10", 11", and 12" and one 14" were present. Refractors in apertures from 60 mm all the way up to an 8" Astro Physics refractor from Company 7 were seen. The views of Jupiter and Saturn in the latter were outstanding.

In the first row were a dozen or so "Observing Stations", designed to give the public a quick comparison of every type of celestial object. Viewers could choose from seeing a globular cluster (M13 and M15 were popular), a galaxy (M31 was the easiest), a double star (Alberio was the showiest), a planetary nebula (M57 and M27 were shown), or an open cluster (M11 was beautiful). Several NOVAC members manned these stations throughout the early evening and hundreds of people took advantage of the viewing opportunities provided. A junior member, 10-year-old Michael DeFrancis, manned his 3" coffee can reflector pointing out the moons of Jupiter to more than 20 people.

NOVAC member Craig Tupper was set up at the south end of the field with an 8" Cassegrain on a very stable G-11 mount. Craig had his SBIG CCD on the scope and was capturing images of Jupiter, Saturn, M11, M57, M1, NGC 6826, and NGC 7454 which could be seen on his laptop computer. He gave away a number of floppy disks with

For Sale

Small Scopes for Sale Meade 8" SCT for Sale

1) A 3" f/6 (18" focal length) rich field Newtonian reflector.

Excellent Edmunds mirror.

16 mm wide angle (homebrew) eyepiece (30 power / field of view = all of the Pleiades). PVC & metal tube, helical focuser. Table top Alt/Az mount ("Frisbee" base). \$55.00

2) A 60-mm f/11 (700-mm focal length) refractor.

Older (sharp) Apogee objective.

Sheet-metal tube. 22-mm (homebrew)

Ramsden eyepiece (32 power, field of view includes all of the Pleiades).

Amici roof prism diagonal (up/down & left/right correct).

Slide focuser.

Simple Alt/Az table top mount. \$35.00

Both are excellent "grab & go" scopes for casual observing.

John Avellone (703)-768-8086

images he captured and had dozens of fans watching him capture and process these images. The ability to see dim objects even in a modest sky was impressive. At the NOVAC tent, Jeff Cook had a live video camera viewing through his C-8, which allowed people to attach camcorders for yet another memento of the evening.

The rest of the scopes set up across the field were ready to go for public viewing. Although the transparency of the sky was not the best, the air was quite still and the good seeing allowed high-power views of the waxing crescent moon and the gas giants, Jupiter and Saturn. On Jupiter there was a transit of the Great Red Spot just after 10 p.m. which was seen in a number of scopes. Several observers, using magnifications above 350X, reported two white ovals trailing the Great Red Spot. In spite of the only fair transparency, lots of deep-sky objects were shown to the public; with impressive views of globular and open clusters, planetary nebulae, distant galaxies, and supernova remnants seen through several large reflectors.

The visitors began to thin out after 11:30 p.m. but not before everyone congratulated each other on having one great star party. A number of NOVAC members, who just couldn't get enough, stayed until the wee hours of the morning, finding ever fainter and more esoteric objects. All the members felt that a special "Thank You!" was due to Jeff Cook, who did a spectacular job of organizing this stellar event.

Next year's 1999 NOVA Star Party will be Saturday, October 16, again at Crockett Park. Info will be available then on the NOVAC web site at <http://astro.gmu.edu/~novac/>.

NOVAC has been requested to assist in the sale of a relatively new, (less than one year old), Meade 8" SCT. Here are the details.

Meade LX 10 8" SCT \$995 list (plus \$65 shipping). For details please see the Meade ad in Dec. 1998 Sky & Telescope. It is just as shown in the ad:

6X30 finder

1 ¼" visual back

1 ¼" star diagonal

1 ¼" SP25-mm eyepiece

wedge

hand controller, battery (4 AA)

operated extremely portable

Additional items:

neutral moon filter - \$ 15.00-16.00

2X Celestron Barlow - \$ 45.00

field tripod - \$ 195.00.

I think this would be a great buy for around \$800.00 - \$900.00. Total cost new was \$1315.00.

Mrs. Rhine has asked us to help sell her late husband's telescope. Bob Rhine, a recent new member of NOVAC, had purchased the telescope around Dec. 1997 and used it only a couple of times prior to his unexpected death around March 1998.

Tom Dietz and I went out to look at the scope over Thanksgiving.

On the surface (we did not do a star test), it looked in "like new" condition.

I would very much like to help Mrs. Rhine to sell the scope and want to offer it to NOVAC members prior to going elsewhere.

Please contact either Tilly Smith (703-920-1157 smithwt@navsea.navy.mil) or Tom Dietz (703-938-0283) if you are interested.

// tilly

Editor's Note

Elliott Fein

Please keep those articles coming in!

The 10th of the month preceding publication is the cutoff. Material that I receive after the 10th will appear in a later newsletter. Copy (in ASCII, please), not previous published, for the March/April issue must be in my hands by February 10.

New Observing Sites Rules

Mickey Gordon Regional Park Observing in horse country

Pete Johnson

Mickey Gordon is the latest addition to NOVAC's list of observing sites. Located one mile east of Middleburg on Rt. 50, the park is right in the middle of horse country. Oddly enough, it appears that astronomy and horse breeding have a lot in common. Horses need quiet, wide-open spaces to flourish, seldom stay up late with the lights on, and usually have little to do with shopping malls, super highways, and bright city lights. It is interesting that the sky is so dark only one mile from Middleburg. In an attempt to keep Middleburg an exclusive, quiet hamlet the town has resisted the encroachment of bright lights, condos, gas stations, 7-11s, and such. Being the home of many of Washington's rich and famous probably has not hurt either.

Now the good part. The skies are quite good. It is the opinion of several club members that the park is darker than Crockett in many parts of the sky. The east offers an excellent example of light pollution to about 30+ degrees above the horizon. The south, west, and north are good almost to the horizon. Directly overhead is very good. One experienced observer rated the sky at 5.5, but I don't know what constellation he was evaluating. I have observed 6.0 in several parts of the sky.

To give you a feel for the size of the park and horizon, imagine a field containing four soccer fields and a baseball diamond with the surrounding area wooded. There is a light pole on the road entering the park, and it is a problem toward the entrance of the park. I recommend you set up further back in the park or on a lower field behind the baseball diamond to

Crockett Park Lights

Tilly Smith

I just wanted to make a note on the motion sensor lights on the gate guard building.

1. We have permission from Crockett Park to unscrew the light bulbs on the light sensor fixture on the side of the gate guard building facing the observing field (south side).
2. Please leave the lights on the far side (north side) active so people can see the gate.

This should resolve any issues with the security lights around the gate bldg.

The lights on the far side are not a problem to our observing.

// tilly

escape the light.

The park is located fifteen miles west on Rt. 50 from the intersection of Rt. 28 and Rt. 50. It is only a 20-minute drive from the Centreville area and should be a convenient site for most members in western Northern Virginia.

Directions to the park: take Rt. 66 west to Rt. 28 north. Take Rt. 28 to Rt. 50 West. Go 15 miles until you see the brown Mickey Gordon Regional Park sign. Make a right on Rt. 627, Carters Farm Lane. Go a few hundred yards to the park entrance on the left. The park has a gate, but should never be locked.

The park is available without notice to all members seven days a week. As sports season begins we will post the schedule when the lighted baseball facility will be in use.

Mickey Gordon is an excellent addition to our club observing site and should be significantly closer than Crockett and Savage for many members. I have found it convenient for spon-

Memorandum of Agreement for September 1, 1998 to June 30, 1999

The purpose of this Memorandum of Agreement is to outline the agreements between C. M. Crockett Park and the Northern Virginia Astronomy Club (NOVAC) concerning the use of Crockett Park by NOVAC for the purposes of astronomy observing sessions.

Crockett Park and NOVAC agree that the members of NOVAC shall be permitted access to the park viewing area according to the schedule detailed below for the sole purpose of conducting astronomy observing sessions. The park rules and regulations of Crockett Park and Fauquier County shall govern NOVAC's use of the park for observing purposes as outlined below:

NOVAC Observing Rules and Regulations

1. Weekend Observing (Fri./Sat. only)
NOVAC is granted access to the Park on all weekends (Friday and Saturday nights), excluding holiday closure periods, for the purpose of conducting Astronomy observing sessions. These weekend sessions will be open to the public who will pay an admission fee. Fees for the public will be posted at the gate. No fees will be charged to NOVAC members for conducting these viewing sessions for the public. The gates will be locked and will not be

(Continued on page 7)

taneous observing on week-nights and dark enough for long serious deep-sky observing. Give it a try and let us know what you think.

NOVAC Officers 1999

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NOVAC's Web Page
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Jeff's Observing Report

Jeff Stetekluh0

Jeff's astronomical calculations are made for the Northern Virginia area. See credits at the end of this article.

| The Sun | rises | sets |
|---------|---------|---------|
| Dec 16 | 7:20 AM | 4:48 PM |
| Jan 20 | 7:23 AM | 5:16 PM |
| Feb 17 | 6:57 AM | 5:48 PM |
| Mar 17 | 6:17 AM | 6:17 PM |

The Moon

| | |
|--------|---------------|
| Jan 1 | Full Moon |
| Jan 9 | Last Quarter |
| Jan 17 | New Moon |
| Jan 24 | First Quarter |
| Jan 31 | Full Moon |
| Feb 8 | Last Quarter |
| Feb 16 | New Moon |
| Feb 22 | First Quarter |
| Mar 2 | Full Moon |

Events

| | |
|--------|-------------------------------------|
| Jan 3 | Quadrantid meteor shower peaks |
| Jan 21 | Neptune-Sun Conjunction * |
| Jan 31 | Pen. Lunar Eclipse; mag=1.002 * |
| Feb 2 | Uranus-Sun Conjunction * |
| Feb 4 | Mercury at Superior Conj.* |
| Feb 16 | Annular Solar Eclipse; mag=0.987 * |
| Mar 3 | Mercury at Greatest Elong: 18.2°E * |

(* from Espenak)

The Planets

| | rises | transits | sets |
|---------|----------|----------|----------|
| Jan 20 | | | |
| Mercury | 6:58 AM | 11:41 AM | 4:23 PM |
| Venus | 8:33 AM | 1:42 PM | 6:51 PM |
| Mars | 12:21 AM | 5:56 AM | 11:30 AM |
| Jupiter | 10:01 AM | 3:54 PM | 9:46 PM |
| Saturn | 11:25 AM | 5:53 PM | 12:26 AM |

Jan 20 magnitude notes

| | | |
|---------|------|----------|
| Mercury | -0.7 | |
| Venus | -3.9 | SW, 16* |
| Mars | 0.7 | |
| Jupiter | -2.2 | SSW, 44* |
| Saturn | 1.8 | SSE, 58* |

| Feb 17 | rises | transits | sets |
|---------|----------|----------|----------|
| Mercury | 7:31 AM | 1:05 PM | 6:39 PM |
| Venus | 8:10 AM | 2:02 PM | 7:56 PM |
| Mars | 11:19 PM | 4:45 AM | 10:07 AM |
| Jupiter | 8:25 AM | 2:25 PM | 8:25 PM |
| Saturn | 9:39 AM | 4:10 PM | 10:41 PM |

Feb.17 magnitude notes

| | | |
|---------|------|----------|
| Mercury | -1.2 | WSW, 9* |
| Venus | -3.9 | WSW, 23* |
| Mars | 0.1 | |
| Jupiter | -2.1 | WSW, 29* |
| Saturn | 1.9 | SW, 53* |

(* degrees elevation at sunset taking into account atmospheric refraction)

Jupiter Eclipse Events on Club Observing Nights

| | | |
|--------|----------|---|
| Nov 15 | 12:52 AM | Ganymede Eclipse Start (S -66 J 263 7) |
| Dec 11 | 6:19 PM | Europa Eclipse End (S -17 J 190 46) |
| Dec 13 | 5:02 PM | Ganymede Eclipse Start (S -3 J 166 44) |
| Dec 13 | 8:05 PM | Ganymede Eclipse End (S -38 J 227 38) |
| Dec 16 | 10:01 PM | Io Eclipse End (S -60 J 255 18) |
| Dec 18 | 6:17 PM | Europa Eclipse Start (S -17 J 198 45) |
| Dec 18 | 8:58 PM | Europa Eclipse End (S -48 J 244 27) |
| Dec 20 | 9:05 PM | Ganymede Eclipse Start (S -49 J 247 25) |

References for Jeff Stetekluh's Corner

Sun and moon rise and set times, moon phases and Galilean moon events are calculated using my software that is based on algorithms from the book "Astronomical Algorithms" by Jean Meeus, 1991. This includes Bretagnons and Franco's VSOP87 (the 1987 version of Variations Seculaires des Orbites Planetaires) planetary theory, the Chapront ELP-2000/82 (ELP means Ephemerides Lunaires Parisiennes, although this work is not an ephemeris (a list of calculated positions), but rather an analytic theory (a series of periodic terms)) lunar theory and Lieske's theory E2 and E2x3 of Jupiter's satellites.

The Preliminary NOVAC Observing Reports are created using my software. Some of the algorithms are listed above and in the following as noted.

From Espenak: Fred Espenak's Twelve Year Planetary Ephemeris: 1995 - 2006 (NASA Reference Publication 1349, available at <http://www-lep.gsfc.nasa.gov/code693ol>: the International Meteor Organization calendar.

New Members - October 10 through December 13, Changes and Corrections

Kevin Brown *This directory is not to be reproduced or be used for any commercial purpose*

| | | |
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The Leonids of 1998 An Observer's Report

Myron E. Wasiuta

Day 1

Nothing could have prepared me for what I was about to see. Knowing the debris from comet Temple-Tuttle was still hundreds of thousands of kilometers and 24 hours ahead of me, my hopes were to see a few streaks of light cross the sky during the 90 minutes I planned to observe. Perhaps if I was lucky, I might see one as bright as the star Sirius, which was twinkling high in the south. I stepped out of my truck and recorded the time. It was 2:40 A.M. Monday morning, November 16, 1998.

Glancing up at the sky, I noted that the faintest stars I could see were about 6th magnitude; not bad for western Spotsylvania County. Just then a searing dagger of light flashed the landscape in a cold, flickering light. I turned just in time to see the fireball explode in the northeast, with such a brilliance that it dazzled my vision for several seconds. In its place was a fading line of light floating among the stars. I counted to ten, then got to twenty before it faded! I looked up toward the Sickle of Leo, which is where the radiant was located and imagined myself hurtling toward a dust storm at 155,000 kilometers per hour. We would be entering this swarm nearly head-on. This explains why the Leonid meteors race across the sky at such incredible speeds and can attain such brightness. No sooner had I contemplated this, when another bright, fast Leonid flashed across Orion. And so it went this first morning: every second or third meteor was a fireball. Most were not as bright as the first one, but many were in the -1 to -4 range. This was still brighter than any star visible on this morning. I also noticed the meteors seemed to be arriving in groups of two or three within a minute, then several minutes of nothing. And so it went that morning. By the end of the 90 minutes, I had recorded 21 Leonids. On the drive home, I knew somebody, somewhere was going to get a real show, if this much activity had occurred 24 hours before the peak.

Day 2

The next morning, as luck would have it, central Virginia was one of the few clear places on the East Coast as two storm systems brought clouds to most of the Eastern Seaboard. Once again, I observed from Spotsylvania County, this time with Mark and Laura Slade. Together, we witnessed one of the most amazing meteor showers we had ever seen. Although not a storm, rates did approach 150 per hour! The sky was rarely quiet for more than 30 seconds at a time. Many were brilliant fireballs, leaving trains which persisted for 30 seconds and longer. Sometimes they would arrive two or three at a time, or would fade only to reappear

Library Listings

Craig Tupper

New Library Books

The NOVAC library has been stocked with a number of recent acquisitions. New titles include:

A Manual of Advanced Celestial Photography
Amateur Astronomer's Handbook
Astronomical Algorithms
Astronomical Formulae for Calculators
Burnham's Celestial Handbook, vol. 1-3
Celestial Charts
Deep-Sky Observer's Handbook Vol. 1-8
Guide to Observing the Moon
Meteor Showers: A Descriptive Catalog
Star Ware
The Amateur Astronomer's Handbook
The Guide to Amateur Astronomy
The Light-Hearted Astronomer
The Starry Room
The Study of Variable Stars Using Small Telescopes
Universe Guide to Stars and Planets
Uranometria Vol. I & II
Nearby Galaxies Catalog
NGC 2000.0
Sky Catalogue 2000.0, Vol. 1 & 2
Skysighting - Photography for Amateur Astronomers
The Astronomers
The Soul of the Night - An Astronomical Pilgrimage
A complete listing of books available to members can be found on the NOVAC Web at www.erols.com/ctupper/NOVAC/library.html, or just come browse after a monthly meeting!

further along the sky. Many produced terminal bursts, which could also be seen as distant flashes near the horizons. I even saw a pseudo-point meteor. This is a meteor headed straight for you! It appeared as a short, bright line about one-half degree long near the center of the Sickle of Leo. It brightened, then faded in about one second. While Mark took pictures, I kept track of the counts. By 5:30 on November 17, after a little less than 2 ½ hours of counting, I had recorded 210 meteors! Undoubtedly, many were missed while recording.

Day 3

Encouraged by the wonderful show a day earlier, my wife Terry and I returned once again on the morning of the 18th. Sipping coffee and eating doughnuts, we watched and watched, but the sky was quiet. We did see a few meteors, and a couple were very bright, but most were fainter than in previous mornings. After an hour, we called it quits. We had recorded 11 meteors. The peak was obviously over. The show of 1998 was awesome, and we made a vow to be here again in 1999!

NOVAC Library Selling Out!

Recently, the NOVAC library received a HUGE donation of used astronomy-related books and other stuff. We couldn't use it all, but we still had to clean out our existing shelves, and are now offering for sale over 100 books, a selection of magazines, and other items of interest.

Many of the books for sale are by such authors as Sagan, Feynman, Ferris, Hawking, etc. They are just not consistent with the Club/library motto of "To Observe, and to Help Others Observe", so we aren't keeping them!

The sale is open to NOVAC members only. Please check out the items and the rules of the sale, at <http://www.erols.com/ctupper/NOVAC/booksale.htm>

Anyone without Web access can call (301-773-4386) or e-mail (ctupper@erols.com) me, and I will forward a list of items by fax or e-mail.

A Night at The Mickey

Jon Stewart-Taylor

It looked like I was finally going to have the time, energy, and good weather to go observing. I wanted to check out NOVAC's newest observing site, Mickey Gordon Park, so Friday I put a message out on the e-mailing list boldly announcing my intentions to the world. It promptly clouded up, of course, and stayed that way through Saturday night when I'd planned to observe.

The forecast was still calling for clear skies, so I loaded the Coulter and gear into the car despite the thick overcast. Heading down the Fairfax County Parkway, glances up through the windshield revealed a few "sucker holes". I figured the evening probably wouldn't be entirely wasted (what can I say, I'm a sucker). I'd never paid much attention to the little town of Lenah before, but it apparently has strong weather magic. When I entered, the sky was still at least 50% overcast. When I came out the other side, it was clear.

I arrived in Macsville without serious incident, and turned onto the access road. The actual entrance to the park isn't that clearly marked for finding in the dark. Go slowly once you pass the Horrible Orange Streetlight (HOS), and look for the park entrance on the left. I followed the winding graveled park road on running lights for quite a way, looking for the NOVACers I was expecting to find, on such a beautifully clear night. When I sighted a van, I pulled in beside it.

Stepping outside, I discovered that the occupant of the van was Ralph Marple, clearly visible in the glare from the HOS. We discussed the sky conditions a while, and I was amazed by the quality of the sky. At first glance it looked much darker than the old Parcels site had been, possibly even darker than Crockett on November 17, when I'd estimated the limiting magnitude to be about 5.5. I asked Ralph whether there was anywhere in the park to escape the HOS, but it was his first visit after dark as well. We went exploring.

The road continued deeper into the park, and we followed it on foot. As we walked, the HOS would periodically be eclipsed by individual trees. Unfortunately, the park is remarkably flat, and there aren't any hills or even bumps to block the HOS from view. At the very end of the road, on the far side of the ballfields, is a building, but I'm not sure I'd want to drive a car across the field to take advantage of its bulk as a light shield. There appear to be a couple of drainage ditches through that area.

The best location seemed to be near the soccer field, where a small stand of trees partially blocks the HOS (in the summer when the

leaves are full, it's probably better). Even more helpful was setting up so we could hide in the shadow of Ralph's van. At that point I did a formal star count using the International Meteor Organization charts, and got a limiting magnitude somewhere 5.8 and 6.0.

Then we were ready for some serious observing. I pointed the Coulter at M31/32/110 in Andromeda, and was rewarded with a lovely view of the three galaxies just fitting in the eyepiece. The dust lane of the main galaxy was clearly visible, and the faint outer reaches extended two eyepiece-fields to each side. My next target was M77 in Cetus.

As I was comparing the tiny eraser smudge to the previous galaxies, a car with its headlights on turned into the park. We waited, hiding from the glare as much as possible, and hoping the lights would go out soon. It was soon apparent this wasn't a NOVAC member, since the lights stayed on. That meant either a member of the general public, or . . . yep, they just turned on the flashing lights. At least we were spared the sirens.

The officer was very pleasant as he inquired whether we had permission from the park authority. He inspected our NOVAC observing passes, then accepted our invitation to view some objects. Ralph showed him Saturn, and then I took him on a short tour of deep-sky objects. After that he had to continue his rounds, and we went back to observing.

Over the next hour or so I collected faint fuzzies in Pisces, Andromeda, Triangulum, and Eridanus, including a number of NGC objects I'd never observed before. About that time Bill Bryson arrived, and we stopped observing for the obligatory discussion of how dark the skies were. I did another star count, and found that the transparency had deteriorated a bit: it was now down to about 5.5. It was getting colder too, and I was wearing out. After a quick tour of Orion from bottom to top I started packing up. Ralph was also giving up, and Bill was making noises about leaving soon as well.

Overall, I was very pleased with the site. It is quite dark and has good wide horizons. It is much faster to reach than either Crockett or Savage (it takes me about 45 minutes, compared to an hour for Savage, and an hour and a quarter for Crockett), and won't have Savage's access problems during the winter. The only real drawback is the HOS; perhaps NOVAC can address this as part of its responsible lighting campaign. In any case, I plan to make Mickey Gordon Park a regular observing site.

Enjoyable Book!

John Avellone

Seeing and Believing by Richard Panek. Viking, ©1998. ISBN 0-670-87628-3. Catalog # 522.209.

I recommend this new little book, only 198 small 4" X 7" well written and researched pages, that traces the philosophical impact of the telescope from Galileo's "tube of lead, two discs of glass" to the Hubble Deep Field.

If the following (from the last paragraph of the book) interests you, get the book and read the rest!

"When Galileo first pointed his tube of long seeing at the Moon, in a garden of Padua on a clear autumn evening in 1609, the question of whether the heavens were variable might have been present, but not pressing. Instead he learned what questions to ask by looking at the answers . . . The answer, it turned out, was what we don't know, the question was the telescope, and the rest was history."

John (you can never have too many telescopes) Avellone

Hidden Hollow '98

Bill Jensen

The 1998 Hidden Hollow Star Party reminds me of a recurring nova, appearing at two year intervals without much notice, but with a bit of uncertainty left for its future return. But like a nova, it is a wonderful experience to behold. Or so I tell myself, after driving more than 16 hours round trip with my friend and fellow NOVAC member Jim Fitzgerald for a couple of cloudy nights.

Two years ago, I traveled to central Ohio to Hidden Hollow 96, and enjoyed fine speakers, many vendors, and a nice turnout of the Buckeye state amateurs. In 1998, the fine speakers returned, including Brent Archinal, Stephen O'Meara, Don Parker, David Levy and Carolyn Shoemaker. The small sponsoring club, Richland Astronomical Society, holds the party at a wonderful site complete with on-site lodging, an indoor conference facility, that houses meal, speaker and vendor areas. Of course there is an observing area, capped off by the 31-inch reflector housed in the Warren Rupp Observatory; Brent's talk surveyed the history of the observatory. Although close to a small city, and its lights along I-71, the site is easy to reach for long distance folks like myself. Just like the prior party, Bob Summerfield of Astronomy To Go brought the Tectron Yard Scope, a wonderful 36-inch Dob, and its companion, the "half yard" scope. Joined around those scopes was the usual collection of Dobs, SCT's, and refractors. All scanning vainly for breaks in the clouds. Still, wandering around the scopes gave Jim and me ample opportunity to kick the tires of many of the offerings, and view some neat little improvements. For example, we admired the Telrad dew inhibitor made up of a blackened cardboard tube from a potato chip container attached with the ever versatile velcro. Jim paid close attention to the 15-18 inch Dobs, as he is in the market for a high quality scope. We also chatted with fellow NOVAC members Bob Bunge and Cathy Mansperger, who again returned to Ohio to help show off the observatory's scope.

The browsing really was serious on the vendor floor. Like the overall crowd in attendance, there were fewer vendors than before. I took advantage of the swap-minded fellow in charge of the Pocono Mountain Optics booth, and got a homemade wooden binocular mount. I was tempted by an inexpensive laser collimator for less than \$90 made by the folks of Tech 2000, known for Dob driving systems. Jim was drooling over a very stable bino mount by a small company from Ohio, but managed to hold onto his wallet. I bought a few books written by Mr. Levy, and he was kind enough to autograph them. Some folks joined David Levy and Bob Summerfield in building PVC housed 60-mm refractors for bargain prices.

But the vendors really were a distraction from the real stars: the speakers. As previously mentioned, Brent put the Warren Rupp observatory in historical perspective, O'Meara highlighted the process of writing his new Messier field guide, Don Parker chatted about CCD imaging,

Memorandum of Agreement for September 1, 1998 to June 30, 1999

(Continued from page 3)

unlocked unless a NOVAC member enters the Park; after which time the outgoing-gate will stay open to 11:00 p.m. when a NOVAC member will ask the public to leave. The gate will then be locked by a NOVAC member, and should remain locked through the rest of the evening. Each and only NOVAC members are to be given the combination to the gate. NOVAC members may remain until they are finished with their observing session.

2. Weekdays (M-Th. & Sun.)

NOVAC members need to "notify" Asst. Park Mgr. Bonner Davis by e-mail (crocketcow@aol.com) or phone (540-788-4867) by 2:00 pm the day the member would like to be a park guest. Approval is "assumed" unless a park official notifies the member in the negative. The weekdays will not be open to the public. The gate will remain locked after the NOVAC member enters the Park and throughout the member's observing session. Weekdays when the assistant park manager will be off-site are excluded. A list of these excluded dates will be sent to NOVAC in advance.

3. If any NOVAC member notices any member of the public violating Park policy, he or she is to notify the Asst. Park Mgr., who lives in the house adjacent to the end of the parking lot or by calling his home phone 540-788-9779 or paging 540-341-5291. For emergencies, dial 911 on a cell phone and Fauquier County Sheriff will respond. In addition, there is a pay phone at the concession building (deck-side) that will accept emergency calls.

4. During EDT, set up only in the large field to the left of the paved parking lot.

5. During EST, NOVAC can set up either in the large field or in the paved cul-de-sac 200 yards past the entrance gate. NOVAC members are asked to use their best judgement in driving into the fields. Rain/snow or recent thaws can soften soils and create conditions for tire ruts and stuck vehicles.

David Levy enchanted the crowd with a poetic talk about comets and their coincidental impacts on his life and others. And the other member of his comet seeking team, Carolyn Shoemaker, wrapped up the show with a poignant speech. As an encore, the entire group of speakers gathered for a wonderful open forum, answering questions from the audience, with humor, and a special moment as Carolyn thanked the astro community for helping her after her loss, as David Levy leaned over and held her hand. Wendee Levy, the newest member of the comet seeking team, also joined in the session. All of these activities ended with

Calling All "Old" Newsletters

Attention!!!! Do not throw away your back issues of the Newsletter just yet!! I am saving all the back issues of the Newsletter in a notebook as a way to preserve club history. At present, I have a full set of Newsletters from the years 1992 through 1995 and 1997, 1998. I am looking for several Newsletters from 1996 as well as any Newsletters prior to 1992; I have nothing earlier than 1992. Below is a listing of the back issues that I do not have and need to put in the record book:

Prior to 1992 need all back issues

1996: need Mar./Apr.; May/Jun.; July/Aug.; and Sept./Oct. issues

Pls assist me in keeping this valuable, and probably only, record of NOVAC history. It is quite interesting to go back and read some of the earlier issues and understand the background of NOVAC. Please let me know if you have any of the requested back issues. Thanks // tilly

6. No loud radios, alcoholic beverages, or loose pets permitted.

7. Please do not leave trash or debris behind.

8. NOVAC is in partnership with Crockett Park in conducting these sessions; Park Mgt. may revoke this agreement at any time due to the lack of adherence to the Park's rules and regulations.

9. Crockett Park reserves the right to cancel sessions without notice due to conflicts of use, emergencies or extenuating circumstances, though every attempt will be made to notify NOVAC well in advance of any such event.

10. NOVAC shall provide Crockett Park the number of NOVAC members and public attendees to NOVAC observing sessions within three days of the observing session. This participation data will be used to assist the Park in determining public attendance and future requirements.

NOVAC – Tilly Smith, President

Crockett Park – Bonner Davis,
Asst. Park Manager

the door prizes being awarded, and of course Jim won an autographed copy of a Levy book. I have gone to two star parties with Jim, and he's won door prizes at both. But we both lost out in the weather department, with clouds on both Friday and Saturday nights, and even rain later on Saturday. And like the weather, Hidden Hollow's return seems always in doubt. But to encourage the small group of Richland Astronomical Society volunteers, David Levy told them if they gather again, he would do everything he could to join them. And speaking for this northern Virginia escapee, so will I!

Fight light
pollution.
Support
the
IDA!

Join the International Dark-Sky
Association

3225 N. First Ave.
Tucson, AZ 85719

<http://www.darksky.org>

Highlights of NOVAC Board Meetings and General Meetings

Kevin Brown

October 14 Board Meeting

19:36 Tilly Smith called the board meeting to order and introduced the two new members of the board, Tom Dietz and Jonathan Bein.

Jonathan Bein has volunteered to fill the newly created position of Public Events Director. Tom Dietz is filling on an interim basis the Trustee position vacated by Nicole Mastej when she moved out of the area.

Tilly Smith discussed the upcoming election of officers. Kevin Brown, currently filling in as Secretary, will run for 1999 and also retain the Membership Director's duties. Tom Dietz will run for the trustee position he is currently filling as interim. Jonathan Bein has agreed to run for the trustee position currently held by Bill Burton as well as retain the Public Events Director's duties.

Tilly Smith recapped the NOVA Star Party that was held on 26 September. The good points were reviewed along with some lessons learned.

Pedro Martinez presented the financial report for the period 1 January 1998 through 14 October 1998. Pedro and Tilly will work to draft a budget for 1999 that will be discussed in detail at the November board meeting.

Pete Johnson presented an update on the new observing site at Mickey Gordon Regional Park. Pete has sent a use permit to the park authorities. For the time being, we will submit requests for two-month blocks of observing dates.

Tilly Smith noted that the observing schedule for 1999 has been completed for inclusion in the newsletter.

The board decided to propose to the membership at the October meeting that we continue membership in the Astronomical League.

Tilly Smith led the new business discussion. Topics were the duties of the Secretary and Treasurer, the donation of a large number of books to the NOVAC library by a former member, and a new process for printing and mailing of the Newsletters.

Submitted by Kevin Brown,
Secretary (interim)

October 21 General Meeting

19:35 Tilly Smith, President, called the meeting to order. The prospective and new members introduced themselves. Tilly congratulated all the people who helped with the NOVAC Star Party on 26 September with a special thanks to Jeff Cook for making the event such a success. Tilly also introduced the new club officers. Tom Dietz is filling the trustee position vacated by Nicole Mastej. Jonathan Bein has volunteered to be the Public Affairs Director.

Bill Burton talked about the upcoming elections at the December meeting and requested that any nominations be given to him.

Tilly Smith informed the members about the arrangements at Crockett for the Leonid meteor shower in November. Crockett will be available the nights of 16 and 17 November. The public is invited on 17 November.

Brent Archinal presented a donation of the Hubble Atlas of Galaxies to NOVAC by a former member. He also announced the 1998 Outdoor Lighting Workshop, sponsored by the Virginia Section of the IDA, being held on 13 November at the Virginia Aviation Museum in Richmond.

Pete Gural talked briefly about the Leonid meteor shower and his upcoming trip to Mongolia to observe the Leonids.

Tilly Smith described the new procedure for printing and mailing the Newsletter that will be introduced with the November/December issue.

Jeff Cook passed along a request for volunteers to help with the Monday night public tours at the Naval Observatory.

Tilly Smith discussed the Astronomical League vote and recommended that we remain in the AL unless a majority objects. A voice vote was taken and a majority concurred.

Officers' Reports:

Pete Johnson discussed the upcoming program schedule.

Kevin Brown announced that orders are being taken for The Year in Space 1999 Desk Calendar. The order will be placed after the November meeting.

Jeff Stetekluh gave the observing report.
Brent Archinal gave the sky tour.

The main program was a presentation about the Wabar meteor impact site in Saudi Arabia by Dr. Jeff Wynn of the U.S. Geological Survey.

Submitted by Kevin Brown,
Secretary (interim)

November 11 Board Meeting

19:30 Tilly Smith called the board meeting to order.

Tilly Smith discussed the results of the new printing/mailing process for the Newsletter. Everyone was pleased with the results and so we will continue to have Budget Communications handle this process.

Pedro Martinez presented the financial report for the period 1 January 1998 through 11 November 1998.

Tilly Smith and Pedro Martinez led a discussion of the proposed budget for 1999.

Submitted by Kevin Brown, Secretary (interim)

DINNER BEFORE THE MEETINGS

Brent Archinal

So that members may get together socially other than at a crowded meeting or while observing in the dark, NOVAC has a planned dinner before all of our regular meetings on the third Wednesday of each month. The place is the **Santa Fe Cafe in Rosslyn, at 5:45 P.M.** This is a nice Mexican restaurant with good food and reasonable prices, although credit cards are not accepted. Smoking is allowed in one part of this (large) one room restaurant, but NOVAC members have not been smoking and few others usually are. If you arrive first, please sit in the front in the non-smoking section.

The restaurant is located at 1500 Wilson Blvd., in Rosslyn, with entrances off of both Wilson Blvd. and Clarendon Blvd. It is just west of "downtown Rosslyn", on the southwest corner of Wilson Blvd. and N. Oak St., where Wilson splits becoming Wilson one-way west and Clarendon one-way east. On street parking is often available in front of the restaurant, around the long block (make two left turns) on Clarendon just before it ends by the restaurant, or one block north. Be sure to feed any parking meter if you arrive before 6 P.M. This location is quite close to the Rosslyn Metrorail station. So we'll know about how many are coming, or for more information, or in case of cancellation due to weather, please contact Brent Archinal, at baa@casa.usno.navy.mil, or (evenings) at 703-237-0201.

November 18 General Meeting

19:35 Tilly Smith, President, called the meeting to order. The prospective and new members introduced themselves. Tilly asked for comments on the Leonid meteor shower.

Jon Stewart-Taylor will be running for the trustee position being vacated by Bill Burton.

Officers' Reports:

Pete Johnson presented the upcoming general meeting programs.

Pedro Martinez gave the Treasurer's report and handed out the financial statement for the period January 1 - November 16.

Kevin Brown gave the Secretary's report.

Pete Johnson gave the observing report.

Following the Officers' Reports, Ian Keith gave the sky tour.

The main program was a series of presentations by various club members on the star parties they had attended this past year.

There were 55 in attendance, 5 of whom were not members.

Submitted by Kevin Brown,
Secretary (interim)

NOVAC Notices and Benefits

Discounts on *Sky & Telescope* and *Astronomy*.

As a member of NOVAC, you can get astronomy magazine subscriptions at a discount. To obtain *Sky & Telescope* for \$27.00 (instead of the standard \$36.00), make your check out to "Sky Publishing Co." You can subscribe to *Astronomy Magazine* for \$29.00 for one year (Note price increase from \$24.00, effective November 1). Make your check payable to "Kalmbach Publishing Company". In each case, note on the check: "new subscription" or "renewal." If a renewal, include your customer number. Send your check to Treasurer Pedro Martinez, Jr., 6319 Anneliese Dr., Falls Church VA 22044.

You can also order any publication directly from Sky Publishing at a 10% discount. Just mention the Club Discount Plan and that you are a member of NOVAC.

Discount on Books

NOVAC is participating in the discount book sales program offered by Kalmbach Publishing. They will sell our members any astronomy-related book in their catalog for 25% off the list price when we send in a group order. Kevin Brown is coordinating the sales. If you are interested, please see him at a meeting, or call him at home (703) 503-9523 to place an order. Make your check payable to "NOVAC" for the price of the book minus the discount, when you place the order. We anticipate doing this 3 - 4 times a year if demand warrants.

Club Telescopes and Binoculars

NOVAC makes available two six-inch (f/5) Newtonian reflectors for club members to check out, free of charge, and use for a limited time.

One telescope is a Celestron model SP-C6 on a Super Polaris German equatorial mount and wood tripod. The telescope comes with Orion Ultrascope 10mm and Meade MA 25mm eyepieces with 1.25-inch barrel sizes.

The other telescope is a homemade six-inch reflector on a Dobsonian mount, and

comes with a 25mm Kellner eyepiece. It is easy to transport to dark sky sites, and easy to use.

To borrow a telescope you will need to show your NOVAC observing pass and leave a \$500 (for the Celestron) or \$250.00 (for the Dobson) security deposit. To borrow the Celestron, contact Doug Mistler at (703) 437-0513; for the Dobson, contact Bob L'Hommedieu at (703) 978-0946. Note: Checks must be made payable to "NOVAC". The club also has a pair of 10x50 binoculars available for members to borrow. They are kept in the club library in the back of the planetarium, and can be checked out after the regular monthly meeting, for a period of one month. Please show your observing pass.

NOVAC Library

NOVAC has established a library at the Arlington Planetarium for use by NOVAC members. Books may be checked out and returned only at the monthly meetings. Members may check out books for one month at a time. To borrow books, see NOVAC Librarians Pedro Martinez or Craig Tupper at the monthly meeting.

The NOVAC library seeks book donations to the library. If you have any astronomy books or materials you are thinking of discarding, please consider a donation to the NOVAC library.

A complete list of all library holdings is available upon request.

General Membership Meetings

General Membership Meetings are held at the Arlington Planetarium, 1426 N. Quincy Street, Arlington, VA, on the third Wednesday of every month. To reach the Planetarium, take Interstate 66 to exit 71 West, North Fairfax Dr. (Rt. 237). Go east on Rt. 237 to the 5th stoplight, N. Quincy Street (about 0.8 miles). Turn left onto N. Quincy Street (at the funeral home). Go 6 blocks (about 0.5 miles). The planetarium is the low white domed building on the left.

Trustee Meetings are held the Wednesday before the week of the General Membership Meeting. Non-trustees interested in attending should contact a club officer or board member for further

information.

NOVAC On-line

NOVAC maintains an e-mail mailing list. Messages sent to the list include reminders about scheduled observing sessions, announcements for unscheduled sessions, requests for quick observing session summaries, MIR observability predictions, etc. For more information, send a message to Chewing Toulmin, pct@his.com.

NOVAC Observing Site Rules

C. M. Crockett Park:

We have permission from Crockett Park to unscrew the light bulbs on the light sensor fixture on the side of the gate guard building facing the observing field (south side).

Please leave the lights on the far side (north side) active so people can see the gate.

Weekends (Fri./Sat. only), NOVAC has unlimited access to the park for all weekends. The weekends will also be open to the public. The gate will be locked and will not be unlocked unless a NOVAC member enters the park; after which time the gate will stay open to approx. 10:00 p. m., when the Assistant Park Manager will ask the public to leave. The gate will then be locked, and should remain locked through the rest of the evening. NOVAC members may remain until they are finished with their observing sessions.

Weekdays (M-Th & Sun.), NOVAC members need to notify Assistant Park Manager Bonner Davis by e-mail (crocketcow.aol.com) or phone (540-788-4867) by 2:00 p.m. on the day they plan to observe. Assume approval unless the park notifies you in the negative. The weekdays are not open to the public. The gate should remain locked after you enter the park and throughout your observing session.

If any NOVAC member notices any member of the public violating park policy, he or she is to notify the Assistant Park Manager, who lives in the house adjacent to the end of the parking lot. During EDT, set up on the large field to the left. During EST, set up on the paved

(Continued on page 11)

(Continued from page 10)

cul-de-sac 200 yds. past the gate. No loud radios, alcoholic beverages, or loose pets permitted. Please do not leave trash or debris behind. We are guests of the park; Park Management may revoke our observing privileges at any time due to carelessness of one person.

Savage Farm Site: The Savage Farm site is reserved for NOVAC use on nights listed in our schedule at the back of this newsletter. For unscheduled observing sessions, contact the park manager, Paul McCray, at (703) 729-0596 or <wodtrail@erols.com> at least 24 hours in advance, and leave a message with your phone number or e-mail address. You may use the site for that session *unless* you hear from Mr. McCray stating otherwise.

No loud radios, alcoholic beverages, or loose pets. Pick up after yourself, and do not leave any trash behind. Make sure the gate is locked whenever you are in the park, and when you leave. We are guests of the NVRP and could have our access to this site revoked at any time if it is abused.

Mickey Gordon Regional Park:

(Pete Johnson) There is a light pole on the road entering the park and it is a problem towards the entrance of the park. I recommend you set up further back in the park or on a lower field behind the baseball diamond to escape the light.

The park is available without notice to all members seven days a week. As sports season begins we will post the schedule when the lighted baseball facility will be in use.

Directions to NOVAC Observing Sites

C. M. Crockett Park: From the Washington, D.C./Northern Virginia area, go west on I-66 to Exit 43A in Gainesville onto Rt. 29 South toward Warrenton. After 11.8 miles on Rt. 29, stay left (toward Culpeper), to bypass Warrenton (but still on Rt. 29 S.) Go about 1 mile to the Rt. 643 exit, Meetze Road. Turn left (East) on Rt. 643. Go 7.5 miles on Rt. 643. Watch for the C.M. Crockett Park sign on your right, and turn right into the Park Entrance Road.

Alternate directions to Crockett.

From Washington, D.C./Northern Virginia, go West on I-66 to exit 44. (234 bypass around Manassas). Take 234 bypass to Rt. 28 West. Stay on Rt. 28W for about 13.7 miles, through Nokesville, Catlett and Calverton. Turn right at Rt. 643 (store on corner). Go 1 mile to Crockett Park entrance road on left.

Savage Site:

From D.C. I-66 West to Route 17 North. Stay on Route 17 North until it intersects with Route 50 at Ashby Gap. Turn left onto Route 50 and go 1.0 mile and turn right on Route 601. Continue on Route 601 (Blue Ridge Mountain Road) and go two miles past the main gate of the FEMA installation. Turn right at the park entrance after passing the gateposts with *Belle Allee* and *Ball Alley 1875* on your right.

The park entrance on Route 601 is marked by a small brown and white NOVAC sign. The neighbors periodically pull up the sign, so it may not be there. As you turn into the park, go straight ahead until you reach the gate, which is secured by both a keyed padlock and a combination lock. These locks are located to your left behind the gate as you face it from the outside. The combination is on your NOVAC observing pass. **Always** lock the gate behind you. The NOVAC lock **must be locked to the keyed lock, not to the chain**, to allow emergency access by the fire department. Drive to the observing area (the stone patio next to the house). There is very limited parking at the observing area itself, so please park in the parking area on the right as you face the patio.

Mickey Gordon Regional Park:

The park is located fifteen miles west on Rt. 50 from the intersection of Rt. 28 and Rt. 50. It is only a 20-minute drive from the Centreville area and should be a convenient site for most members in western Northern Virginia. Directions to the park: take Rt. 66 west to Rt. 28 north. Take Rt. 28 to Rt. 50 West. Go 15 miles until you see the brown Mickey Gordon Regional Park sign. Make a right on Rt. 627, Carters Farm La. Go a few hundred yards to the park entrance on the left. The park has a gate but should never be locked.

Site Locations

Here are the locations of four observing sites as provided by NOVAC members:

- Savage: 39° 04.7' N; 77° 51.7' W
- Crockett: 38° 37' N; 77° 43' W
- Big Meadows: 38°32' N, 78°26' W
- Little Bennett Regional Park: 39°17.0' N, 77°17.5' W

The NOVAC Newsletter is the official publication of the **Northern Virginia Astronomy Club** and is published six times per year at 5 Carter Court, Rockville, MD 20852-1005, Elliott D. Fein, Editor and Publisher. The *NOVAC Newsletter* is sent to members of NOVAC as a regular membership benefit.

Membership in the Northern Virginia Astronomy Club is \$18.00 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 \$6.00 per person. Contact Secretary Kevin N. Brown, 5755 Walnut Wood Ln., Burke, VA 22015, 703-503-9523.

All notices of change of address should be sent to Kevin N. Brown. Please include both old and new addresses.

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

NOVAC members are invited to submit articles for publication in the *NOVAC Newsletter*. The editor reserves the right to edit all materials submitted.

Article submissions, in ASCII please, may be sent to Elliott Fein at elliott.fein@erols.com, or to Elliott's address in Rockville, given above. Questions? Call 301 762-6261, or send e-mail.

Deadline for submissions is three weeks in advance of publication, e.g., December 10 for the January/February newsletter.

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1999 NOVAC Observing Schedule

C. M. Crockett Park

All weekend nights (Friday/Saturday)
Astronomy Day - Saturday, May 22

NOVAC Picnic - Saturday, June 12
NOVA Star Party - October 16

Savage Farm

January 8, 9, 10, 15, 16, 17, 22, 23, 24

February 12, 13, 14, 19, 20, 21

March 12, 13, 14, 19, 20, 21

April 9, 10, 11, 16, 17, 18

May 7, 8, 9, 14, 15, 16

June 11, 12, 13, 18, 19, 20

July 9, 10, 11, 16, 17, 18

August 6, 7, 8, 13, 14, 15

September 3, 4, 5, 10, 11, 12, 17, 18, 19

October 1, 2, 3, 8, 9, 10, 15, 16, 17

November 5, 6, 7, 12, 13, 14

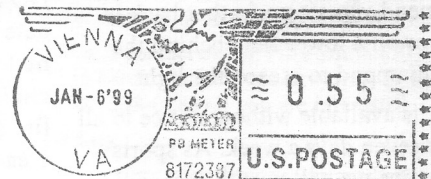
December 3, 4, 5, 10, 11, 12, 31

January 1, 2



The Northern Virginia Astronomy Club

c/o Kevin Brown
5755 Walnut Wood Lane
Burke, Va. 22015-2710



Inside:

The Leonids of 1998

Mickey Gordon Regional Park

Crockett Lights

And much, much more . . .

Laquetta Karch
4817 Marymead Drive
Fairfax, VA 22030-6255
Membership Expiration: 04/99