

NOVAC

THE NEWSLETTER OF THE NORTHERN VIRGINIA ASTRONOMY CLUB

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September/October 1998

President's Message

Tilly Smith

Well, the summer is winding down and what a summer it has been. I hope all of you have enjoyed the viewing as much as I, although a few more clear days would have helped. From the sound of the reports, Stellafane had some great skies throughout the weekend.

NOTE!!!! The last big event of the summer, the NOVA Star Party and Telescope Meet, is scheduled for Saturday, September 26. This should be an excellent event, as I know Jeff Cook is planning some interesting activities, including some afternoon talks and demonstrations. We hope to make this our signature event and eventually expand it to a weekend event instead of just one day. At any rate, you'll come and bring your scopes.

I feel the NOVAC Picnic was a great success. I had a great time and I hope all that attended did as well. We could not have asked for better weather. My sincere THANKS to Nicole and her

"The last big event of the summer, the NOVA Star Party and Telescope Meet, is scheduled for Saturday, September 26."

team as well as to others who assisted in the activities. Lots of hard work by all. By the way, I have already reserved the Panorama shelter (the large one) for next year's picnic, Saturday, June 12, 1999. Mark your calendar.

Last item. I have included a couple of separate articles: "NOVAC Needs You" and "Five Year Plan." Please take the time to read these and respond, if possible.

Thanks,
tilly

New Observing Arrangements for Crockett Park

As announced on the NOVAC listserver (novac@his.com):

- * Weekends (Fri./Sat.) - NOVAC will have UNLIMITED use of the park for observing. (No longer limited to just scheduled weekend nights.)
- * Weekdays (M-Th, Sun.) - Notify Assistant Park Manager Bonner Davis by e-mail (crocketcow@aol.com) or phone (540-788-4867) by 2:00 p.m. the day you plan to observe. Assume approval unless the park notifies you in the negative. (A two-week advance notice is no longer required.)

I feel this is a significant improvement in the flexibility of observing arrangements for NOVAC at Crockett.

// tilly

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What's Up?

Al Schumann

March went out like a lamb this year. Not only that, but it did so during the dark of the moon. On March 28, the sky was clear, reasonably dark, and the temperature was unseasonably mild. My thoughts flew to northern Virginia as I rolled the 13-inch telescope from the garage. I figured that on such a night, Crockett Park would be alive with avid stargazers. (My suspicions were confirmed when I read in the May/June newsletter that Tilly counted forty attendees that night.)

I planned on searching out at least a few more objects I had not seen before. Gemini was heading for the trees, so that was a good place to start. My Mag 6 Star Atlas showed four NGC objects in the vicinity of Castor and Pollux. First up was NGC 2420, a small, somewhat lackluster open cluster. It was easy enough to find, but it wasn't much to write home about. Burnham's Celestial Handbook credits the cluster with 30 stars from 10 to 18 magnitude which gives the cluster an overall brightness of magnitude 9. A short distance away is NGC 2392, a small, fairly bright planetary nebula. The bluish disc clearly sets it apart from the other stars in the area. It had a circular appearance, but it was indistinct and had an out-of-focus look. At the time I thought it looked like a fuzzy Neptune. Later, when I checked Burnham's, I discovered the object was the celebrated Eskimo Nebula. It is 40 seconds in diameter and shines at mag 8. Had I known at the time what I was looking at I would have goosed up the power and studied it longer. The central star is mag 10, so it ought to be visible in most telescopes. The Eskimo Nebula is quite renown, so I can't imagine why I hadn't looked for it years ago. Probably

(Continued on page 2)

**NOVAC Programs at the
Arlington Planetarium
Pete Johnson**

September 16
Astronomy on the Internet
October 21
TBA

What's Up?

(Continued from page 1)

thought it was one of those things requiring a much bigger telescope and Arizona skies.

Next up was NGC 2371-2. It is a bit more than a Telrad circle southwest from Castor. It's listed as a planetary, but I couldn't make out anything like a disc. At 148X it was still a faint smudge that I thought looked more like a diffuse nebula. At 50 X 30 seconds it is a decent size. However, at mag 12.5 it is something which could be overlooked very easily. After that, I spent a lot of time hunting for NGC 2266, a mag 9.5 open cluster just two degrees north of Epsilon Geminorum. Given the star field, it should have been a snap to locate, but I'll bet I spent a good 30 to 40 minutes searching for that rascal. By then, Gemini was settling well into the trees, so I had to break it off. Isn't that always the way? Sometimes you can go right to the toughies and then strike out on what should be an easy find. Frustration, thy name is astronomy!

I moved over to Leo for a galaxy fix. On the way I had to take a quick look at M-67 and the Beehive in Cancer. The Beehive, M-44, is so large, you get a better look through the finder-scope than the telescope itself. It is quite a

"The Eskimo Nebula is quite renown, so I can't imagine why I hadn't looked for it years ago. Probably thought it was one of those things requiring a much bigger telescope and Arizona skies."

sight in the Astroscan, because the wide field of view in that telescope enables you to see the whole thing.

Anyhow, on to Leo.

NGC 2903 is a favorite of mine. It is a spiral galaxy located just below the last faint star at the tip of the "sickle". It usually seems brighter than its 9.7 magnitude would suggest. However, it looked a bit washed out. The sky wasn't as dark as I had hoped it would be. Several

years ago, Myron Wasiuta, a former NOVAC president, pointed out to me a small cluster of galaxies in the sickle of Leo. This tight knot of four galaxies, which Burnham's calls the 3190 group, is pretty near exactly halfway between Gamma and Zeta Leonis. The area is very easy to find, but the trick is to see all four galaxies. As usual, I was able to spot only two of them. I expect they were NGC 3190 and 3193, which are mag. 12 objects. The other two, NGC 3185 and 3187, are mag 12.7 and 13.0 respectively. I guess it will take super dark skies or a bigger mirror to get them. There are a couple other galaxies, NGC 3226 and 3227, just one half degree east of Gamma. They also are quite faint, but someday, I shall give them a try. While in Leo, I visited a few old friends, including the M-95/96/105 grouping and M-65 & 66 back in Leo's haunches.

It was well after midnight before the Big Dipper circled its way out of the trees, so I swung the telescope around for a look at a few northern objects. I found M-108, and M-97, (the Owl Nebula), but both were very puny looking, as was M-51, the Whirlpool galaxy. M-101 was invisible even with my lowest power eyepiece. Unfortunately, the skies over the driveway aren't dark enough to pull in any of the dim, low surface brightness objects.

So, it was off to Plan B: just have some fun for the rest of the night. Two globular clusters were in the clear, so I spent some time studying M-3 and M-53 with a variety of eyepieces. From M-53, I edged over to Rho Virginis and sneaked into the Virgo cluster of galaxies. Virgo is so dim that I find it hard to identify what I'm looking at if I simply charge right into the area. So, for me, Rho is the ideal entry point. A slight nudge of the telescope to the north and, voila, M-59 & 60 appear. With those known references, I can generally pick and poke my way around and find (and identify) many of the other galaxies in Virgo. Getting started in Coma Berenices can be tricky as well, because there are no convenient bright stars around. The lazy man's technique calls for centering Denebola (Beta Leonis) in a low power eyepiece and nudging the telescope half a degree north. Then, pour a cup of coffee and visit with friends for a few minutes. M-98 should pass through the field of view. With the C-8 and its equatorial mount, the task is pretty easy. However, with so few bright stars in the vicinity, it is always a challenge to get started with the Dobsonian.

I mentioned Burnham's Celestial Handbook several times, above and in previous articles, and I'd like to reiterate that it is a very useful tool for any amateur astronomer to have. The three-volume set looks very impressive, but it isn't scary. In fact, it is very easy to use. Most of us will only be able to see a tiny fraction of the objects covered in the books. However, there is a lot of good information, which will help explain all the things that we can see through backyard telescopes. Nice pictures too. Check it out.

NOVA Star Party September 26

Jeff Cook

September 26 will see our NOVA Star Party & Telescope Meet, NOVAC's largest annual public gathering, return to Crockett Park. There will be afternoon and evening activities, including buying, making and using scopes; a skywalk tour; "closet hunt"; and beginner's huddle, light pollution, solar, photo, CCD, video and radio astronomy demos, a slide talk, swap table and snacks offered by the park. We are still looking for volunteer presenters for some topics. If you'd like to give a 20-minute talk on any topic, or to display any items, please contact Jeff Cook at jcook@his.com or (703)524-5333. Publicity flyers will be available at the September club meeting, or can be downloaded at the NOVAC web site at <http://astro.gmu.edu/~novac>.

New Members June 7 through August 9, 1998

Pedro Martinez

Dan & Donna Boring
Richard Campbell
Tom Defino
Karl & Dorothy Funkhouser
Bob Gent
James Huddle
Patrick Kennedy
Hannah Kirchner & Robert Byrne
Jack MacDowell
Stephen Martin
Robert Orr
Sa'ad Razouky
Dwight & Robin Roberts
Christopher Treptow
Jim Yang

The complete information about their addresses, telephone numbers, and e-mail addresses can be found in the membership directory.

How to Contact the Savage Park Administrator

Dale Cabaniss passed on this message from Paul McCray, Park Administrator for Savage Park:

If your group has many members online, they may want to know that they can notify us of special outings to Savage by e-mailing me at wodtrail@erols.com. This e-mail is checked morning and afternoon.

Paul McCray

[Ed. Note: this information has been added to the "Notices" section at the end of the newsletter]

NOVAC Officers 1998

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Important NOVAC Numbers

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Savage Park (Paul McCray) 703 729-0596
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Arlington Planetarium 703 358-6070
NOVAC's Web Page
<http://astro.gmu.edu/~novac>

NOVAC Five-Year Plan

In an earlier issue and at the May meeting, I mentioned that the Board plus a handful of other members met in April to do some brainstorming, or strategic planning, on where NOVAC should be going over the next five years. We asked facilitator Mary Grandgeorge to assist us and keep us on track.

Below are some of the results on the strategy session. The specific list of NOVAC Goals is broken into three groups: Items 1-3 received the most interest, items 4-10 was the next break point and items 11-29 received significantly less interest. The actual item number is for tracking purpose only and is not meant to indicate rank within the group.

Mission: "To Observe and Help Others Observe"

Although this was not originally intended to be a mission statement when first stated years ago, it does in fact state our mission as cleanly as any I have seen.

Principles:

- Present a welcome environment to all
- Interesting meetings
- Place to observe
- Newsletter
- Education - both in the club and the general public

We feel these are things every member has a right to expect once they join NOVAC.

List of specific GOALS:

1. New Observing site
2. Fight Light Pollution
3. Mentoring Program & Special Interest Groups (CCD, ATM)
4. Large Club Telescope
5. Membership Survey
6. Improve AL Involvement
7. Develop Alliances with Other Clubs or Organizations
8. Larger Meeting Room
9. Keep It Fun - Hobby
10. Development of New Members
11. NOVAC Best Astronomical Resource in DC Area
12. Club Member As Officer of AL
13. Improve Club Functionality/Operations
14. Observing Site Manager
15. Non-observing Functions (field trips, expeditions)
16. Encourage Greater Member Participation
17. Club Publicity Chairman
18. NOVAC Play Key Role in FPO
19. Map of Club Members Residences
20. Coordinator for Public Programs
21. Fiscal Responsibility
22. Standardize Handouts (new members, public functions)
23. Upgrade All Publications/Photos Etc.
24. NOVA Star Party A Major Event
25. Provide Free Red Tape for Lights
26. Purchase Club Computer and/or

NOVAC Needs You

Due to the increased size of the NOVAC membership (now over 320) and the numerous requests we have for public outreach programs, I plan to establish two new permanent positions to help run NOVAC: Membership Director, and Public Events Coordinator.

1. Currently the Treasurer maintains the membership database and mailing list in addition to the normal duties of Treasurer. The time has come to split these functions. The Treasurer can then focus on the club's financial issues and the Membership Director would maintain the membership database, renewals, new member applications, mailing lists etc. I am asking for a member to volunteer to help as Membership Director.

2. I also would like to create the position of Public Events Coordinator. Regardless of whether it is the Boy Scouts, Cub Scouts, Girl Scouts, school groups, church groups or just interested public parties, our members always try to accommodate all public outreach requests. Just keeping track of what is going on and when is a big job, not to mention making sure we have proper coverage. I am asking for a member to volunteer to help as Public Events Coordinator.

I ask that any interested parties please contact either myself or Pete Johnson. // tilly

Upgrade Software

27. Outreach to High School Astronomy Clubs
28. More Public Observing
29. Name Tags for Members

I would like to ask each of you to please take a few moments to circle YOUR TOP 10 items on the list and then send your marked-up list to either me or Ron Cook. While this impromptu survey is not meant to replace the membership survey noted in item 5, it will help me know your views of where NOVAC should be heading. The initial group will be meeting again in the fall to further develop the plan. Any input you may have should be directed to your Board members. Thank you for your help.

// tilly

Montgomery County MD Locations

Elliott Fein

In response to my query about the Lat/Long for LBRP (Little Bennett Regional Park) and/or Black Hills Regional Park, Jim Ross replied: Yes: LBRP is at 39 degrees 17.0 minutes north, 77 degrees 17.5 minutes, west.

Jeff's Observing Report

Jeff Stetekluh

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

The Sun rises sets
 Sep 16 6:50 AM, 7:15 PM
 Oct 21 7:24 AM, 6:22 PM

The Moon
 Aug 30 First Quarter
 Sep 6 Full Moon
 Sep 12 Last Quarter
 Sep 20 New Moon
 Sep 28 First Quarter
 Oct 5 Full Moon
 Oct 12 Last Quarter
 Oct 20 New Moon
 Oct 28 First Quarter

Events
 Sep 6 Penumbral Lunar Eclipse (not very noticeable)
 Sep 10 Mercury passes 4° north of Venus
 Sep 15 Jupiter at opposition
 Sep 16 Jupiter at Opposition (from Espenak)
 Sep 23 Autumnal Equinox (from Espenak)
 Sep 25 Mercury at Superior Conjunction (from Espenak)
 Oct 21 Orionids ZHR=20, active
 Oct 02 to Nov 07 (from IMO)
 Oct 23 Saturn at Opposition (from Espenak)
 Oct 25 EST starts
 Oct 29 Venus at Superior Conjunction (from Espenak)

The Planets

	magnitude	Aug 19	Sep 16
		rises	rises
Mercury	2.9	5:49 AM	6:08 AM
Venus	-3.9	4:50 AM	5:53 AM
Mars	1.7	4:08 AM	3:47 AM
Jupiter	-2.9	9:11 PM	7:13 PM
Saturn	1.8	10:48 PM	8:56 PM

	magnitude	Oct 21	Nov 18
		rises	rises
Mercury	-0.3	WSW, 6*	9*
Venus	-3.9	7:12 AM	2*
Mars	1.6	3:17 AM	1:49 AM
Jupiter	-2.8	ESE, 18*	31*
Saturn	1.3	6:32 PM	14*

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

Jupiter Eclipse Events on Club Observing Nights
 Sep 14 1:21 AM Io Eclipse Start (S -47 J 190 47)
 Oct 24 8:36 PM Io Eclipse End (S -28 J 154 40)

Hidden Hollow '98

Brent Archinal

Friday and Saturday, September 18-19, mark this year's Hidden Hollow astronomy convention and star party, held biannually near Mansfield, Ohio. A few hundred amateur, and many professional, astronomers from across North America and beyond will converge in north central Ohio, just as Ohio skies reach their crisp and clear best, and the scenery of Autumn begins to unfold.

Since 1986, the Hidden Hollow meetings have always been some of the best, if not the best, gatherings of amateur astronomers on the planet. I should warn you that you're listening to someone who is quite biased in his opinion, since these meetings are put on by friends and members of my old astronomy club, the Richland Astronomical Society. Still, you would be hard pressed to find such a combination of reasonably dark skies, large aperture telescopes, and a list of excellent speakers at any other astronomy get-together. All this, as well as a friendly atmosphere and warmth and hospitality unlike any other meeting in astronomy.

Although the weather can, of course, never be guaranteed, mid September brings Ohio's best weather of the year, as crisp, cool Canadian air begins its descent into the Midwest. The Hidden Hollow site is also blessed with one of the largest and best astronomical telescopes available to amateurs, the 31-inch f7 reflector of the Warren Rupp Observatory. Many other folks come to the HH meetings and set up their telescopes, as well. This year, "Crazy" Bob Summerfield plans to be present with the 36-inch "Yard" scope.

Yes, this isn't the Texas Star Party, and there is some light pollution to the northwest from Mansfield, but this is otherwise a fairly dark site for the eastern U.S.

And then there are the speakers. Yours truly will be there, just as I have been at almost all HH conventions, this time talking about both the new Celestial Reference Frame, and my recent work on cataloguing star clusters. But it's the rest of the list that's truly impressive:

- ◆ Don Parker, one of the greatest amateur (and professional) astrophotographers in the world

- ◆ Stephen James O'Meara, contributing editor to *Sky & Telescope*
- ◆ Well-known visual observer and author David Levy, comet discoverer and visual observer, (one of the co-discoverers of Comet Shoemaker-Levy 9), who is also a well known author, and science editor for *Parade* magazine
- ◆ and in a very rare appearance, Carolyn Shoemaker, the most prolific discoverer and co-discoverer of comets in history, (also a co-discoverer of Comet Shoemaker-Levy 9).

The location for the meeting is, appropriately enough, the Hidden Hollow camp, located several miles southeast of Mansfield, Ohio (on Possum Run Road, reachable at the intersection of I-71 and state route 13). Large cabins will be available for dormitory style use by individuals and small cabins available for families or groups. Space for tent camping and (self-contained) RV's will also be available. The large "Sky High Lodge" will be used for talks, telescope displays, and flea market. (Several motels and restaurants are also available at I-71.) And if you should care to roam beyond the camp itself, then (literally) just over the hill is the world famous author Louis Bromfield's "Malabar Farm", while just a little farther is "Copus Hill", made famous in Ohio amateur astronomer Leslie Peltier's book, "Starlight Nights".

For registration information, write to: Hidden Hollow '98, P. O. Box 217, Ashland, Ohio 44805. Some information is also available from the RAS web site at <http://junior.apk.net/~matto/hh98.htm>. By the time this appears in print, the September 5 deadline for pre-registration will have passed. Regular registration rates are \$45 for adults and \$25 for children (under 16).

I hope you all can make the Hidden Hollow meeting, if not this year, then soon in some future year. To my mind, this is amateur astronomy at its best.

References for Jeff Stetekluh's Observing Report: Galilean moon events are calculated using his software that is based on algorithms from the book *Astronomical Algorithms* by Jean Meeus, 1991. This includes Bretagnon and Franco's VSOP87 planetary theory and Lieske's theory E2 of the satellites. Sun and Moon rise and set times are calculated using software he converted to the C language from the basic program SESSION.BAS. SESSION.BAS is available through Compuserve and is by Michael A. Covington, 1984 and revised by Leonard Abbey, 1986. The Moon's phase values are calculated by software he adapted from *lunisolar.c* by John D. Ramsdell, May 1990. *lunisolar.c* is available on the Internet.

Editor's Note

Elliott Fein

Please keep those articles coming in! And a reminder, 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) for the November/December issue must be in my hands by October 10. Copy received on October 11 or later will not make it into the November/December issue.

Rescuing Andromeda

Marc DeFrancis

For Young Astronomers ages 8 and up

Parents, note: This article recounts a typically violent Greek legend, including one severed head.

In our last newsletter column, we talked about the Milky Way, our own personal galaxy, which was long believed to be the only galaxy in the universe. About the time your grandparents were born, astronomers discovered that the many small fuzzy patches seen through their telescopes were not nearby patches of gas after all, but other giant galaxies like our own. Clearly, they are very, very far away.

The closest large galaxy, and the only one you can easily see with binoculars, is the one we call Andromeda. She's named after the constellation where you can find her. I say "her" because Andromeda is also the name of a beautiful princess. Rather than talk about star science, this time let's hear about the ancient Greek legend of this princess, her terrible tragedy, and her final rescue.

The Greeks, whose constellation names we still use, relied on stories of their heroes and gods to remember and locate many star patterns. In the case of Andromeda and five other nearby constellations, the story wraps them all together in a way that will help you remember them, too.

Long ago, in northern Africa, probably along the coast of the Red Sea, there was once a great kingdom. It was ruled by a Queen named Cassiopeia (sounds like "Casio payuh") and her husband, King Cepheus ("Sefay-oos"). Their daughter, Princess Andromeda, was quite beautiful, and Queen Cassiopeia, unable to leave well enough alone, bragged about her daughter at every opportunity. "My Andromeda is so fine," she said one day, "she even makes the sea nymphs look ugly." Well, the sea nymphs were the proud and lovely servants of Neptune, god of the sea, and this last boast set Neptune's temper boiling.

With little thought for fairness, Neptune punished the whole kingdom for the queen's boasting. First he sent a hurricane to ravage the coast, drowning many inhabitants. Then he awakened the sea monster Cetus from his cold slumber on the sea floor. King Cepheus, desperate to save his kingdom and innocent lives, visited the High Priestess of Ammon for an answer. The Priestess told him the only way to end Neptune's wrath would be to sacrifice his most precious daughter Andromeda as a meal for hungry Cetus.

So King Cepheus and Queen Cassiopeia chained their daughter to a cliff at the sea's edge and waited with broken hearts for Cetus to arrive. Just as Cetus appeared in the distance (you can imagine Cetus any way you want, as a swimming dragon or as a great

white shark, since no one drew us a picture 3,000 years ago), a young stranger arrived just in the nick of time. His name was Perseus, and he flew in on a winged horse named Pegasus. (In another version of this legend, Perseus flies with a pair of winged shoes.)

Seeing how pretty Andromeda was, even on the brink of death, Perseus made a deal with her parents. "I'll kill the sea monster, but you must promise to let me marry your daughter." How could mom and dad refuse? They accepted, and they probably asked Perseus to hurry up too. Before we finish the story, you ought to know more about Perseus. He was the great-grandfather of Hercules, and a son of Zeus (the top god) and Danae (a human mom). So Perseus had super-powers. If you're beginning to see a resemblance to Superman here (flying shoes, super powers, rescues maidens), you're onto something. In addition to inventing math

"PEGASUS is easiest to find. Look for a large square. That's his body."

and science, the Greeks may have invented the first comic books.

Perseus had been flying home from another super-mission when he spotted Andromeda. He had just killed the monster-woman Medusa. With writhing snakes for hair, she turned everyone who looked at her to stone, and Perseus managed to lop off her head without turning to stone himself by (1) using his magic helmet to make himself invisible and (2) watching Medusa's reflection in his polished shield. (Do you see a resemblance to James Bond and his top-secret gadgets?)

So, flying home on his winged horse (or in his ultra-Nikes), and carrying the bloody, snake-haired head of Medusa in a bag, Perseus found Andromeda and offered to rescue her. Some say he killed the sea monster by flying about overhead, confusing it with his shadow on the water. In any case, he killed Cetus, unchained Andromeda, and married her.

Although the two will live happily ever after, the story isn't over yet. It seems that Andromeda had an earlier boyfriend, who showed up at the wedding with a gang of well-armed thugs, determined to prevent the marriage. A big brawl took place. When it was over, the only people left standing were (guess who)

Perseus and Andromeda. The End.

Now, every character in this story, (even the head of Medusa!) can be seen in the September night sky (by 11 p.m.) and October (by 9 p.m.) as a constellation. Ask your parents to show you a star map for these months, and look just east of the sky's center.

PEGASUS is easiest to find. Look for a large square. That's his body. His neck and head, as well as two front legs, all extend from the square. If you're facing South, the horse is flying upside down.

ANDROMEDA looks more like a long pair of tweezers than a woman. It's just her two legs you see, although a few dim stars mark one arm outstretched, holding the Andromeda Galaxy in it hand. The head, where the tweezers come together, is the same star that marks the left corner of Pegasus's square. (Pegasus has no backside or rear legs. Andromeda takes up that space instead).

PERSEUS doesn't look much like a man either, though maybe you can see a kiwi bird (two long bird legs, no arms, and a long beak) standing to the left of Andromeda. Perseus has a few dim stars to the right that almost touch the leftmost stars of Andromeda, as if he is unlocking the chains on her ankles. Search Perseus with binoculars and you'll see lovely star clusters.

ALGOL is the name of the second-brightest star in Perseus. It is an easy-to-watch variable star, which means its brightness changes through the year. Algol actually changes very fast, dimming for ten hours once every three days. We now know that this is because a companion star circles it very fast, and partly blocks our view. Without knowing this, it is understandable that some earlier people thought of the star as bewitched! The Greeks viewed it as marking the severed head of Medusa, which Perseus is still carrying around for bragging rights.

CASSIOPEIA, the queen, is easily seen as a bright "W" hovering over Andromeda's feet (the ends of the tweezers). It's easiest to imagine her if you think of the "W" as the outline of her throne, with a cape blowing back from the top. Looking toward the South, if you think of Andromeda as chained to the ground, it looks as though someone has toppled her mother's throne to dump the foolish queen onto the earth.

CETUS the sea monster, can only be seen in an especially dark sky. He is safely tucked underneath everybody else in our story, much closer to the Southern horizon. Perhaps Perseus has vanquished it, and it is sinking. Or ... perhaps it's just preparing to leap to the surface!

Fantasy Vacation

Barry Wolfe

Late last winter, when we accumulated enough frequent flyer miles for one ticket to anywhere in the US, my wife suggested that I use them for a trip to the Star Hill Inn in northern New Mexico (Did I say wife? I mean, Wonderful Wife). The Star Hill Inn is located at 7000 feet in the Sangre de Christo mountains two hours north on I-25 from Albuquerque. It is run by Phil and Rae Ann Kumelos-Mahon. Phil is an avid amateur astronomer who has collected a set of excellent telescopes which are all for rent on a nightly basis. The accommodations are super with \$70-120 per night (I paid \$70, but his literature lists this range) getting you a nicely decorated studio (bedroom, living room, and kitchen all in one) among the evergreens with a queen-sized bed and a futon couch (if you bring kids). Additionally, near the observing site is a great warming hut containing an excellent library of (mostly) astronomy books. For info and a nice web page, see www.starhillinn.com.

Remarkably, I was able to get plane, car, inn, and telescope reservations for three nights at the July New Moon. Leaving Dulles at 8:00 a.m. on Tuesday, I arrived at the Inn at 3:00 p.m. giving me time for a good nap prior to the evening viewing. At dusk, I walked down to the observing deck, where Phil has two 8", one 11", and one 14" Celestron Schmidt Cassegrain telescopes, two of which (8" and 14") are computer-controlled. Additionally, he has a 7" Meade refractor, a 17.5" Sky Designs Dob, and a 22" Starsplitter Dob, as well as a new 24" R-C reflector. I had put in for the Sky Designs for Tuesday and Thursday and the Starsplitter for Wednesday night. I am not a fan of "ladder astronomy" and thought I would prefer the 17.5" as Phil has cleverly placed it on a concrete pedestal that is 8" lower than the wooden deck. Thus, even pointing at zenith, I did not have to use a step stool. However, I couldn't resist the thought of using a 22" telescope in really dark skies, which prompted me to reserve it for one night. Although I brought my own eyepieces, Phil had a nice selection (45 mm Celestron Ultima, 30 mm Orion wide-field, and 9 mm Nagler) which he offered me, to accompany the telescopes. It also turns out that he will give you a sky tour, if you don't know what to look at, or don't know how to use a telescope.

Tuesday night was incredible, with the Milky Way a very bright, jagged, slash bisecting the sky. Several Messier objects were visible by naked eye and it was difficult to think about where to begin. Starting with low objects near the Big Dipper, I found that galaxies were big and bright and the Whirlpool Galaxy (M51), in particular, showed lots of detail in the spiral arms. Not being able to resist the southern Milky Way, I hit about 20 globular and open clusters in Sagittarius, Ophiuchus, and Scorpius, followed by M13 and M92 in Hercules. At 220x the amount of resolution and detail that could be seen was remarkable. Nebulae

such as the Lagoon, Triffid, Swan, Ring, and Dumbell were also exceptionally bright, and at low powers stood out beautifully against the black background, and at high powers yielded great detail in the dark lanes and mottling. I spent some time tracking down a couple of dark nebulae (B86 and B143) which gave the appearance of dark holes in the star-rich Milky Way. B86, in particular, was very impressive with the open cluster NGC6520 bordering the east edge and a bright orange star bordering the west. My only complaint in this region of the sky was the trees cutting off access to anything much further south than the bottom of the teapot in Sagittarius. Thus, M7, which was fabulous in binoculars, just barely skimmed above the treetops. I then moved on to Scutum (M11 was to die for!), Cygnus (the Veil was super bright), and finally Pegasus (the dark lane in NGC 7331 was clear) before packing it in about 3:00 a.m.

Waking up Wednesday late morning, I was greeted with blue skies. Sitting on the porch after breakfast, I heard the buzzing of what sounded like some very large insects. This turned out to be a flock of hummingbirds coming to feed at the sugar water hanging from my porch. One with a bright red head and neck seemed to be dominant and claimed the whole thing for himself. The others kept trying to get a sip but he successfully drove them all away. While I watched this battle go on, a four-pronged deer sidled slowly by munching on the grass. I spent the day with a little reading and a lot of naps. By late afternoon, a thunderstorm moved in, and unfortunately, continued until midnight, at which time I went down to the deserted observing deck to consider my options. As the sky appeared to be clearing, I decided to uncover an 8" and see how it performed under dark skies. As I finished taking off the two garbage bags and the towels, righting the scope and inserting an eyepiece, I noticed the sky was closing down again and there was serious lightning in the north and west. This I took to be a sign from above and carefully re-covered the scope and went back to bed for a night's rest.

Thursday morning also had bright blue skies. Following breakfast, a nice mile hike to the top of a ridge gave beautiful vistas of the Sangre de Christo peaks. Because of the last night's wash-out, I switched my reservation to the 22" for this night. The evening began beautifully, and I revisited many of the sights from Tuesday. It seemed to me that the 22" not only gathered more light, but also gave clearer views than the 17.5". As I was mind-boggled by the 17.5", I don't have a word for what the views in the 22" were like. About midnight, clouds rolled in, and everyone but myself and one other die-hard, went to bed. Their loss! By 1:00 a.m. the sky began clearing, and many more wonderful sights passed through the eyepiece. At 2:30 a.m., I decided to give up my night vision, and pulled up Jupiter at 380x. There was an astonishing amount of detail in the clouds and the Galilean moons were resolved into disks. By 3:00, Saturn was high enough to see the crepe

Enchanted Circle of Stars

Bill Jensen

It started with an article by Patti Kurtz in *Astronomy Magazine*, citing the blend of ancient history and stark beauty of New Mexico. No doubt it was part of the buildup for the star party celebrating the 25th anniversary of that magazine, in conjunction with Universe 98. But the spark lit a fire that burned a path to New Mexico's southern Rockies. So on June 24, I packed two scopes and my family (who felt at times that they were an excuse to haul all kinds of optics 2000 miles) into the plane for the long trip. And then a scenic three-hour drive from the airport to the quiet, remote wonderland surrounding the 13,000 foot elevation of Wheeler Peak in northern New Mexico.

Taos Ski Valley is in the center of some of New Mexico's most beautiful country, called the Enchanted Circle. Surrounding New Mexico's highest peak, the valley is over 9,200 feet high. I had hoped to travel to the astronomer's destination called Star Hill Inn, about 90 minutes away. But Star Hill was booked over four months in advance. As it turned out, Taos Ski Valley was a great alternative.

If you are like me, some or all members of your family may tolerate your interest in pursuing dark sky, but don't embrace it. Yet this journey allowed something for everyone. By day, the family can hike some mountain trails, tour small art and history filled towns like Taos and Santa Fe, or soak up the scenery of the mountains and cascading falls while driving around the "Enchanted Circle". And staying in a small ski chalet during the quiet summer days is a great way to travel far from the typical motel or hotel experience.

Enough of the "keep the family happy" stuff. I went there for high altitude, dark skies, and for the most part I was not disappointed. Spending four nights with all of them being clear was the most important ingredient of success. As it turned out, having two scopes and a pair of binoculars was also fortunate. The first night, my Oracle telescope opened up a small window to the sky allowed by the obstructed view from the Chalet Montesano's upper deck. My obstructed view at home has taught me patience to allow the sky to come to me. Having a southern view with Scorpius and Sagittarius

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ring, a crisp Cassini division, and nice cloud bands. At 3:30 I had to pack up my eyepieces and hit the road, to catch a 7:00 a.m. flight out of Albuquerque.

All-in-all, this was a vacation I could recommend to any amateur astronomer. Beautiful mountains, clear (mostly), dark skies, as well as beautiful and varied birds and other wildlife. As the Star Hill Inn is open year-round, next time I might consider trying out the winter Milky Way.

Enchanted Circle of Stars

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rising was a big plus. After a long trip, though, only three hours of observing were possible before my eyes started shutting down. That and perhaps the effects of altitude.

The next night was a three-hour trip back to Rio Rancho for the astronomy star party in conjunction with the Universe 98 conference. Unfortunately, Rio Rancho is a suburb of Albuquerque. Within five minutes of the observing site I saw stores like Target and shopping centers. Homes were sprouting up all around the Rio Rancho "Balloon Park". I was concerned as I drove into the field for another reason. It was hot and windy. Very windy. Like over 30 miles per hour. Mix that with a huge, flat, dusty field, and you have an optical nightmare. I arrived well before dark, visiting the vendor tent which seemed like it was having problems keeping grounded. As I stepped from the car, I knew I would not be setting up either of my scopes. Dust was everywhere, including in my mouth. The vendor tent had such luminaries as Al Nagler, John Dobson, and David Levy, plus of course the entire *Astronomy* magazine staff, celebrating their 25th anniversary. I thanked Mr. Nagler personally for repairing my Oracle in time for the trip (see my article on "buyer beware" in the last issue) and I didn't disturb Mr. Dobson, as he looked tired. Maybe he was just dealing with the heat and dirt blowing into the tent. After 45 minutes, I decided to leave before it got dark, as the wind was not supposed to die down overnight. I didn't think I would be able to do naked-eye observing with those conditions.

A three-hour trip back to my mountain hideaway (nice that they have a speed limit of 75 mph on many of the roads!) was highlighted by a thin crescent of a nearly new moon setting behind a mountain just after sunset. I decided to try a dark spot near a mountain stream a mile or so from the chalet. Elevation at that point was about 9600 feet high. Binoculars were the only thing I could use that night, since the winds were still roaring (no dust up in the ski valley, thank goodness!) Wonderful dark skies: the Milky Way and many Messier objects filled the eyepieces. Compared to our light polluted nation's capital, the contrast of scenery during the day was just as stark at night - nothing like elevation and darkness to renew a passion for the hobby!

The final night in the ski valley proved most worthwhile. Same remote location near the mountain stream seemed like a mother lode to a gold miner. The 8-inch truss tube Dob that I hauled broke out of its container and tracked the sky. Globulars seemed as bright in the 8-inch as they do in a 12-inch here in northern Virginia. It was hard to point at any one object for very long, since there were so many wonders to fill the eyepiece. A couple of sheriff deputies checking out the area stopped to see what I was doing. An impromptu mini sky show followed, with the friendly deputies amazed at the views of a variety

No Computer? No Problem.

Jack MacDowall

Very often, while observing at Crockett, others ask how I find stuff so quickly without aid of a computer. I use a Meade 4.5" Newtonian, which looks pretty amateurish, set up next to some of the scopes at the observing sessions. If you read ahead, I will share some of my secrets. I don't have a fancy SCT, such as an LX200, so I had to learn to do it the hard way. The best aid I've found so far, is a good knowledge of the constellations. I very often don't even use my telescope or binoculars when observing. I just arm myself with a star chart and a red flashlight. I also spend a good deal of time studying, memorizing, and staring at star charts. This made for a good indoor pastime during our recent cloudy nights.

"Star Hopping" refers to the practice of using a predetermined path of hops between known landmarks in the sky, to get from an easily observed star to a more difficult or dimmer celestial object. Each successive hop is framed by stars on the edges of the field of view. Imagine using your field of view like a ruler, to measure from point to point in the sky, using it to connect the dots to your target. I find it easiest to star hop with my 6x30 finderscope, and then, once I have found my target, center it and view it at higher power through the scope. Using the finderscope successfully requires that the scope be aligned. This is a good excuse to play with your telescope during the day. It helps to align your finderscope during the daylight hours for the first time, to get a feel for how to do it in the dark. It's also easier to do the alignment on a terrestrial object that isn't moving. However, you will have to fine-tune your finderscope alignment before every observing session. Look through your main scope and find a distant point. Now find it in the finderscope, and try to center the crosshairs on the point. This procedure varies from scope to scope; on mine there are some locking screws to adjust. Loosen the locking rings and the screws. Holding the finderscope steady, tighten the screws checking the alignment in the telescope and in the finderscope from time to time. Once you're content, re-tighten the locking screws.

of deep-sky objects such as M4 and M57, and stars like Vega. One of them wanted to return with his daughter, but unfortunately I had to be closer to the airport the next night, due to an early morning flight. Again, the only limit was my body, which gave out around 2:30 A.M., perhaps due to the altitude. Maybe it was just as well, since both the owner of the chalet and the deputies warned me that I might get a visit from some bears; they would have been the vegetarian type but they could still wreak havoc with me or the scopes.

We left the ski valley to go to a "bed and breakfast" twenty minutes from the airport, but on the east side of the mountains. The last night I spent on a very large deck with some friendly dogs, and joined by my youngest son,

The other trick to successful star hopping is knowing exactly how big your hops are. There's an easy way and a tricky way to find out. The easy way is to find two stars that you can line up with the edges of your field of view and then check a star atlas to determine their angular separation. This works well for checking very low power eyepieces and especially finderscopes. The tricky way to figure it out uses sidereal motion. Sidereal motion is the apparent motion of the heavens caused by the actual rotation of the earth. This apparent motion is greatest along the celestial equator. The celestial equator is the line in the sky that would be produced if the Earth's equator were projected straight out into the sky. It is here, that we will get our information.

If you're not lucky enough to own a clock drive for your scope, you know first hand how frustrating sidereal motion can be. For once, here's a chance to put it to good use. While looking through the eyepiece in question, find a fairly bright star near the celestial equator, maybe something in Orion's Belt or Rasalhague, the bright star that forms Ophiuchus' right shoulder. Nudge your scope until the star is centered. Now, turn off the telescope's clock drive (if any) and time how long the star takes to drift from the center to the field's edge. This time, in seconds, divided by 120, equals the diameter of the field in degrees.

For example, if I get Deneb (alpha Cygni) centered in view in my finderscope, I find it takes 14 minutes before the star moves to the edge of the field of view. I multiply 14 minutes by 60 to get 840 seconds and then divide by 120 to get a 7° field of view. I can double check my math by sighting in on Phecda and Merak (the bottom two stars in the Big Dipper) and I can easily get them both in the field of view. Checking my star atlas confirms that these two stars have an angular separation of a little more than 6°. Judging by the distance they appear in my finderscope, I'm fairly confident that I'm on the right track. Now that you're a pro, repeat the process through the telescope with a

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scanning the dark skies once more with the binoculars. With a low horizon in the east and south, we had plenty of targets. My son noticed how bright our galaxy shone, and was able to view some wonderful parts of the Scutum star cloud and nearby clusters like M6 and M7. Far from the Enchanted Circle, the skies were still dark, and the air thin at 7000 feet high.

As we flew back to DC, I wondered about returning. New Mexico has so many astro-related places to visit, such as the VLA, or a solar observatory in Cloudcroft. But knowing that the mountains held a slope up to the stars, has me hoping that I will again visit the Enchanted Circle of stars.

Southwest to Stellafane

William C. Burton

One of the benefits of working in New England in the summer, as I have for the past three years, is that when late July or early August rolls around, it's a relatively short drive to Stellafane, the venerable star party held annually on Breezy Hill, near Springfield, Vermont. New this year, I was bringing my family, including my wife Laurel and our two children Emmy and Theo, as well as her parents, who were visiting us from Tennessee. What would the Stellafane experience be like with a family in tow?

On Friday morning, I left early in a separate car, in order to claim a decent spot on Breezy Hill to pitch our tent. There are no campsites at Stellafane, just patches of hillside in designated areas that you claim for your own. Upon arrival shortly after noon, I could see that I was already too late: the deluxe shaded spots had long since been taken by the veteran attendees, who undoubtedly had lined up at the registration booth before the 9:00 A.M. opening time. I had to settle for a fairly level patch of grass about 100 yards from the site for the Saturday morning swap meet. As I later learned, this would turn out to be a serious mistake.

My family eventually arrived, and we toured the grounds. Stellafane consists of two parcels of land

on either side of Breezy Hill, separated by a short stretch of dirt road. The south-facing parcel contains the camping area, the food concession, the bunkhouse where T-shirts and trinkets are sold and where the telephone is located, the large tent where the mirror-grinding demonstrations and Friday-night and Saturday-afternoon talks are held, and the natural amphitheater where the Saturday night events occur. The most recent addition to Stellafane South is the McGregor Observatory, a building with a roll-off roof that houses a remarkable 13-inch f/10 telescope.

The north side of the hill contains the famous pink clubhouse, home of the club that hosts Stellafane, the Springfield Telescope Makers, plus the Porter Turret Telescope. This is a 16-inch f/13 modified Cassegrain with a fixed eyepiece position that embodies the design genius of Russell Porter, the man who went on to design the 200-inch at Palomar. These two edifices together represent ground zero for the 20th Century revolution in amateur astronomy, and have appropriately been designated a National Historic Landmark. The surrounding rocky hillside is where homemade telescopes from around the continent are set up on Saturday for judging, the true raison d'être for Stellafane. The rock outcrops were, as we discovered that day, perfect climbing material for two young children.

The first scheduled events at Stellafane are the

informal tent talks held under the big striped tent at Stellafane South. This is like open-mike night at a folk-music club, you just need to notify emcee Bob Morse in advance by e-mail if you want to give a presentation. The 10-minute time limit is strictly adhered to. Just before show time, I went up to remind Bob that I had two talks, one with overheads and one by video. He was glad to hear from me, for he had left the list of speakers at home. I went second with a talk on last year's Perseid meteor shower, which was well received and drew several good questions, and then last with the infamous Totality Video, which drew laughs.

There were talks on plans for next year's eclipse, a video of sunspots, slides of a rare double occultation of planets by the Moon, and a talk by an ophthalmologist (not Myron Wasita) on how to optimize your eyesight for astronomical observing. My favorite was an absolutely stunning set of night-sky slides, each one with an interesting building in the foreground.

"By 2:00 A.M., we had found the galaxy clusters Stephan's Quintet and Seyfert's Quintet, and were chasing down fainter galaxies in Hercules."

telescopes, in search of the best views of deep-sky objects and planets. (I never bring my own telescope — I can look through that any time.) In the past, the nighttime action was always around the pink clubhouse on the north side of Breezy Hill, but with the growing popularity of camping at Stellafane, most people, including me, have chosen to stay on the south side, since it's easier there to stumble back to the tent at whatever ungodly hour one goes to bed.

For the past decade at Stellafane, the weather pattern was invariably the same: rain on Friday night, clear on Saturday night. Then last year the pattern was broken: it was cloudy both nights. This year was shaping up to be the opposite: two clear nights in which to enjoy the dark skies of Vermont. The skies at Stellafane are not the darkest, being in the highly populated Northeast, but there is none of the annoying horizon glow that we get here in Northern Virginia. The Milky Way, with its dark lanes, swept across the panoramic vista from Breezy Hill, embellished on either side by the spring and summer constellations that shone undiminished all the way to the horizon.

With so many telescopes at Stellafane now, the line at any one scope is usually only a few minutes long, even at the 18-inch and larger Dobsonians. My strategy is to sample a variety of scopes first, and then befriend the person or group of people with the scope whose views I particularly like. This year it was Jake from

My family decided to have mercy on me that first night, and retreated after the tent talks to Laurel's parents' RV at a campground in Springfield. This left me free to wander around Breezy Hill by myself, among the vast profusion of

No Computer? No Problem.

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low power eyepiece. Find an eyepiece that gives you about one degree of field of view. Now, for the fun. Once you have decided on a target, pick your path. You'll need two more tools. The first is a good atlas or planetarium program. I would judge this by one that shows stars to at least magnitude 6 or 7. The software is nice because you can print any amount of sky you want, and to the magnitude that you need. The second tool is some rings. You need to find or make some rings that are customized to your star chart and field of view. I have some circles that I printed on a sheet of overhead transparency with a laser printer that works well with my chart. I suppose you could fashion some from a wire coat hanger. I can plot out a course through the stars with the appropriate size field-of-view circle on my chart. I start at a bright star near my target. This is the pivot. Moving the circle around with the edge of the circle on the star, I try to find another star in the direction of the target that will fall near the edge of the circle. That accomplished, I reproduce the view in the finderscope (first hop complete). Now slide the ring over toward the target, and make the second star the pivot to set up a new view to create in the telescope. I repeat the process until I am within range of the target. (You might need to use the smaller hops provided by the small field of view of the low power eyepieces to really center in on the target. Keep in mind, when star hopping through the telescope, that the field might be upside-down and backward, but the stars should all appear just like in your circle.) Having centered the finderscope on the target, the view through the telescope at this point should be very rewarding.

Massachusetts and his friends and their 14-inch f/6. What usually happens is that after going through Messier's greatest hits, the scope owner, inspired by the dark skies, decides to go after more elusive quarry. As is also usually the case, that person is for some reason, not a very good star-hopper. So I make some suggestions, and before long, I am at the helm of a telescope, the likes of which I may never own myself. Jake's fortunately had a decent finderscope; Telrads are useless for finding 13th-magnitude objects. By 2:00 A.M., we had found the galaxy clusters Stephan's Quintet and Seyfert's Quintet, and were chasing down fainter galaxies in Hercules. As the stars slowly wheeled overhead, first Jupiter and then Saturn came into prominence, and I broke away to take in some high-contrast planetary views through the McGregor telescope. Craig Tupper and Pete Johnson were apparently set up only yards away from where I was most of the night, but the thicket of telescopes was so dense, I never found them. 3:30 A.M. finally found me crawling into my tent, content with the best viewing I'd had that year.

(To be continued)

The 1998 NOVAC Membership Directory

Pedro Martinez and Pete Johnson

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The 1998 NOVAC Membership Directory

NOTE: This directory is not to be reproduced or be used for any commercial purpose.

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Northern Virginia Astronomy Club
 Statement of Cash Received and Disbursed
 For the period January 1, 1998 through August 10, 1998

CASH RECEIVED:

Membership Dues:			
Regular and Additional:			
Renewals	\$2,412.00		
New Members	<u>1,272.00</u>	\$3,684.00	
Interest Income		150.20	
Hat Sales		30.00	
Astronomical League Book Sales		46.00	
Donation		88.00	
Kalmbach Book Discount		<u>1.26</u>	
 Total Cash Received			\$3,999.46

CASH DISBURSED:

Newsletter:			
Printing & Assembly	591.09		
Postage	<u>460.57</u>	1,051.66	
Astronomical League			
Astronomical League Dues		868.00	
Library:			
Binoculars		90.00	
Observing Site Expenses:			
NOVAC Picnic:			
Picnic Permit	70.00		
BBQ Food & Supplies	151.57		
Invitation-Printing & Postage	<u>72.37</u>	293.94	
Slide Show Project:			
Slides Set	208.75		
White Tripod Screen	<u>141.08</u>	349.83	
Arlington Planetarium:			
Reception Food	152.82		
Printing	<u>93.21</u>	246.03	
International Dark-Sky Association (IDA)		100.00	
Science Fair		40.70	
ETX Drawing Tickets		20.00	
Publicity (Printing)		19.86	
Administrative:			
Printing -			
Membership Applications	22.99		
Printing - Administrative	2.15		
Postage	127.78		
Supplies	75.68		
Personal Property Tax	<u>13.53</u>	<u>242.13</u>	
 Total Cash Disbursed			<u>3,322.15</u>

EXCESS OF CASH RECEIVED OVER CASH DISBURSED 677.31

Cash at beginning of period: 8,861.76

CASH AT END OF PERIOD 9,539.07

Cash At End Of Period			
Cash Owed to Club Member		(.77)	
Checks Received, Undeposited		150.00	
Checking Account		1,029.71	
Savings Account		2,797.42	
Certificate of Deposit Due 1/8/99		2,562.71	
Certificate of Deposit Due 11/2/98		1,500.00	
Certificate of Deposit Due 5/2/99		<u>1,500.00</u>	<u>9,539.07</u>

Respectfully submitted,

/s/

Pedro Martinez,
 Treasurer

Minutes OF NOVAC General Meetings and Board Meetings

Ronald W. Cook

June 10 NOVAC Board Meeting

The meeting was held at the Arlington Planetarium.

Nicole presented plans for the NOVAC Picnic on June 20.

Pete Johnson reported the status of special programs for the public. Boy Scouts at Crockett did not fare well with the weather. The Camp May Flather Girl Scouts had similar troubles, and Cub Scouts at Crockett the same night suffered the same fate.

There is a web page for educational outreach programs. Info on upcoming programs should be e-mailed to **Ron Cook** with appropriate information (he'll take care of the moon phase).

Tilly presented a request by Steve Smith, of the planetarium, for assistance with two of their telescopes: cleaning and aligning, checkup/setup.

June 19 The Washington Country Club had requested NOVAC assistance. There may be 100 people there.

The June 20 NOVAC Picnic plans were further reviewed. All agreed **Nicole** has an outstanding program prepared. Emphasis was for new members to feel at home and appreciated. **Tilly** volunteered to handle the food acquisition and preparation. A slide show and sky tour were planned. Name tags were ready.

Tilly and **Pedro** discussed the need for programming support for the NOVAC membership program.

Pete Johnson gave an update on the General Meeting's Program Schedule.

Ron Cook suggested we do more to teach the coordinates of celestial objects by projecting the RA, Declination grids on the planetarium.

The subject of nematodes was brought up for some purpose.

Tilly suggested getting together with those who attended the "Five Year Plan" for an encore meeting to keep the ball rolling.

Two observing sites are desired - a dark sky site and a close-in site. To that end, **Tilly** produced a map package presented by member **Paul Sheppard** of regional parks and other materials and recommended **Pete** give him a call.

Pete talked about logistics for getting to Mickey Gordon Regional Park, Middleburg, Loudon Co., VA.

The meeting adjourned around 21:30

Submitted by: Ron Cook, Secretary

June 17 NOVAC General Meeting

17:30 About seven gathered for the pre-meeting dinner and social at the Santa Fe Restaurant.

19:00 Hors d'oeuvres and social activities were held in the back room of the planetarium preceding the general meeting.

19:30 **Tilly Smith** called the meeting to order, drew attention to the materials distributed about the planetarium projector, and asked the non-members to introduce themselves. The main discussion for the evening was the upcoming NOVAC picnic on the 20th, with rain date for the 27th. Hamburgers and hot dogs will be provided. Anyone is welcome to bring a salad, etc.

Brad left a phone and email address for participants to give advance notice so some estimate could be made for attendance at the NOVAC picnic.

Tilly made announcements about:

- o Steve Smith, planetarium director, requesting some help with scope maintenance.
- o The Washington Country Club. Volunteers are requested.
- o The Nova Star Party, November 26, is being managed by Jeff Cook. Anyone wishing to help, please do.

Brent Archinal and **Joe Macrie** announced the invitation to observe at a particularly dark-sky site August 14-15 near the town of Moorefield, West Virginia. The site is Joe's and details are available in the next NOVAC newsletter.

John Avellone inquired about attendance at French Lick for the Astronomical League Convention. He talked about voting and dues issues. AL awards were earned by: Bill Bryson - Herschell 400, Steve Blake - Honorary Messenger, Ron Cook - Lunar. **Tilly** added some discussion about club voting for AL membership.

Pete Johnson talked about the new site off Rt. 50 near Middleburg. He gave directions, talked about the darkness there and possible problems with the athletic activities there. It is a regional park for Loudon County.

Jonathan Bein noted his program for the Town of Herndon on July 17, Friday and requested volunteer help. Bruin Park will be the site.

Craig Tupper talked about the new availability of club binoculars.

Marc DeFrancis inquired about and **Tilly** advised about the NOVAC Education Outreach page, a bulletin board for outreach activities by the club.

For Richard Cohoon, who researched the Banshee Reeks Park as a possible observing area but could not stay for the meeting, **Ron Cook** introduced this Loudon Co. park. By its sheer size ~700 acres, it should have fairly good, close in observing as good as or better than the fast brightening Parsell's.

Tilly gave a white-light sky tour using Abrams materials and the overhead projector.

Jeff Stetekluh gave the Observing Report - things to see in the near future.

Ron Cook did the sky tour albeit with difficulty after flashing himself with the overhead projector - shades of Bill Burton two months ago.

The Amateur Telescope Making talk was presented by **Ralph Marple**, **Craig Tupper** and coffee-can telescope **John Avellone** (he also had a nice refractor and Dobsonian.)

59 attended (55 members, 4 non-members)

Submitted by Ron Cook, Secretary.

July 8 Board Meeting

19:30 **Tilly Smith** brought pictures of the picnic and has started a club photo album. He invited contributions to the album.

Tilly pronounced the picnic a tremendous success, and he had a consensus. The Sky Show, Slide Show and Constellation Tour were great as well as the cookout. Given the size of the crowd, and the Hollyview shelter lacking trees, we should get the Panorama shelter for larger crowds. June 12 and 19, 1999 are therefore already reserved for the Panorama shelter.

There were adequate everything except for perhaps, drinks, water in particular. People brought a lot of food. Estimates were 70 scopes and 75 people were present. More slides and organized canoe trips, recommended by **Craig Tupper**, were possible enhancements.

Mickey Gordon Regional Loudon County Park was touted as a good close-in site by **Pete Johnson**. Ball games can be a problem.

Ron Cook recommended the same for Banshee Reeks Regional Loudon County Park, particularly as a replacement for Parsell's. The light and horizons there may be problems.

Nichlason needs to be removed from the web site and there should be two sets of directions to Crockett Park. 1) the back way down Rt. 29, and 2) via the new Rt. 234 bypass off I-66 just south of Manassas.

Pete routinely conducts programs for the scouts at Ft. Belvoir.

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(Continued from page 20)

Pedro Martinez brought the budget and the financials of the club. Numerous aspects and methods of the recording were discussed.

Sky Meadows was brought up; however, it appears to have too many negatives associated with it as well as a lack of interest. Our routine sites fill the bill.

Pete's program schedule:

July - Experiments during an eclipse

August - Mirror making

September - Internet astronomy

October - open

A membership administrator position for the club was thought to be useful.

Six NOVACers attended the Washington Country Club outing; however, their organizer did not have time to get notice in their newsletter, and as a result, only about 15 were there. All were well fed and watered. Unappealing skies prevented much astronomy.

Submitted by Ron Cook, Secretary

July 15 NOVAC General Meeting

17:30 about 10 gathered at the Santa Fe restaurant for the pre-meeting dinner.

19:00 A pre-meeting social hour was held in the planetarium back room. Refreshments were available.

19:30 President **Tilly Smith** called the meeting to order.

New members introduced themselves. One new member is Bob Gent, who transferring into the clear skies of our area from the murky ones of Arizona, will be the regional International Dark Sky Association representative of Washington, DC. He will also be going to French Lick, IN for the Astronomical League Convention.

Sandy Sanders, a previous club AL representative attended, and mentioned running for AL regional office and that the regional election will be held in VA.

The recent NOVAC picnic was a great success and Tilly thanked all for their help in making it so.

About six members indicated their intention to go to Stellafane. **Gerry Wolczanski** described its function. One NOVAC member mentioned his discovery of NOVAC while at Stellafane when he met a member there.

Tilly presented the NOVAC photo album and asked for contributions.

Ron Farrell offered a West Virginia cabin for observing purposes and **Brent A. Archinal** recommended a trip to the dark skies

Dinner Before the Meetings

Brent A. Archinal

When last I wrote here, Summer was about to arrive - and now it's about to end. Which means, summer observing (what little there was) and the summer astronomy "convention circuit" is coming to a close. Why not join in for a discussion on your summer activities at the NOVAC "dinner before the meeting"? These dinners continue to be a place where NOVAC members can get together and meet their fellow members, in a nice, relaxed, unhurried atmosphere. I've recently again heard complaints that there is no time to do this at your regular meetings - well, now's your chance to meet other members at a different event than an observing session - and to be able to recognize them later! Mark your calendars (or edit your "calendar" file!) with the dates Wednesdays, September 16, and October 14. ((((((????21 ?????)))

The place to meet continues to be the *Santa Fe Cafe* in Rosslyn. You should plan to arrive at about 5:45 P.M., in order to have time to make it to the regular meeting at the Arlington Planetarium at 7:30 P.M. This is particularly true with the larger groups of members we've had attending lately. The *Santa Fe Cafe* is a nice Mexican restaurant with good food, usually some worthwhile specials (like the afore-mentioned crab cake quesadillas!), and reasonable prices, although credit cards are not accepted. Smoking is allowed in one part of this (large) one room restaurant, but so far NOVAC members have not been smoking and the few others dining at that time have rarely smoked. If you do arrive first, we would appreciate it if you'd try to sit in the front in the non-smoking section.

Directions: The *Santa Fe Cafe* is located at 1500 Wilson Blvd., in Rosslyn, with entrances off of both Wilson Blvd. and Clarendon Blvd. This restaurant is easily found, just west of "downtown Rosslyn", on the south-

west corner of Wilson Blvd. and N. Oak Street, where Wilson splits becoming Wilson one-way west and Clarendon one-way east. From I-66 eastbound, take the Rosslyn exit to Lee Highway, and turn right at the second light onto Fort Myer Drive. Go two blocks and turn right onto Wilson, and the restaurant will be one block ahead on your left (on the corner across Oak/Clarendon from a big outdoor sculpture). On street parking is often available in front of the restaurant, on the other side of the street up the hill, around the long block (make two left turns) on Clarendon just before it ends by the restaurant, or one block north. However be sure to feed any parking meter if you arrive before 6:00 P.M. This location is also quite close to the Rosslyn metroraill station.

Reservations are not necessary, although it HELPS A GREAT DEAL to know who's coming so we'll know how big a table to get or how many tables to get. We've recently been filling two or more large tables so this information does prove useful. Also should it be necessary to cancel, I can let you know. That's never been the case yet, but who knows what the weather will bring. So if you think there's even a chance you may be coming or if you need a ride to the meeting and back to the metro, or just for more information or directions PLEASE E-MAIL ME at baa@casa.usno.navy.mil, or give me a call (evenings) at 703-237-0201. Due to the upcoming "Hidden Hollow '98" meeting (see elsewhere in this issue), there is a chance I will not be able to make the September meeting and dinner - but I will pass on any information received to others I know will be attending. If you are unable to reach me, you may wish to contact Ron Cook, who usually attends the dinner.

Brent A. Archinal

there at Joe McCrea's place the particulars in the July/August newsletter.

Iridium Satellite flares and their predictions were described as available on a web page.

New observing sites were discussed: Mickey Gordon, Banshee Reeks, a Boy Scout camp and Franklin Park. More input is needed for the evaluation of these sites.

Officer's Reports:

Pete Johnson gave a rundown on upcoming August and September programs.

Ron Cook had nothing new.

Pedro Martinez circulated a membership list requesting corrections. It is nearing time for

the September/October membership directory newsletter.

Pete Johnson gave the "Observing Report."

Craig Tupper did the "Sky Tour."

Jim Huddle, the speaker, did "Experiments During a Total Solar Eclipse."

There were 49 in attendance, two of whom indicated non-member.

The meeting adjourned about 21:40.

Submitted by Ron Cook, Secretary.

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 \$24.00 (one year). 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.

The treasurer will send the checks to Sky Publishing and Kalmbach once a month, on the first of each month. To have your renewal included, be sure to have it in his hands by the last day of the preceding month.

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.

There are no special 10% discounts offered on publications from Kalmbach Publishing, but read what follows.

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. Nicole Mastey is coordinating the sales. If you are interested, please see her at a meeting, or call her at home (703) 435-8724 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. It will readily fit disassembled in any car, is easily transported, and can be set up quickly at remote observing sites. The telescope comes

with Orion Ultrascopic 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". Checks used as security deposits on telescopes are not deposited, and will be returned to the originator when the telescope is returned in the same condition it was checked out. The scopes may be checked out for two to four weeks at a time, depending on demand.

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.

NOVAC Observing Schedule for 1997

Observing at Savage Farm and C.M. Crockett Park: see the back cover of this newsletter. Observing at Parsells Field: any evening.

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 [Chewning Toulmin, pct@his.com](mailto:Chewning.Toulmin.pct@his.com).

NOVAC Observing Site Rules

C. M. Crockett Park:

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 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

(Continued on page 23)

(Continued from page 22)

revoke our observing privileges at any time due to carelessness of one person.

Parsells Field: NOVAC members may observe at Parsells field ANY evening, with no prior notice. See directions to Parsells Field, next page, for parking instructions. The usual NOVAC observing site rules apply: no loud noise, alcohol, or loose dogs, and pick up after yourself. We are guests of the Dulles Little League, and could have our access to this site revoked at any time if it is abused.

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, at least 24 hours in advance, and leave a message with your phone number. You may use the site for that session unless you receive a call from Mr. McCray stating otherwise.

Alternatively, you may contact Mr. McCray via e-mail at <wodtrail@erols.com>, at least 24 hours in advance. Include your e-mail address in your message. (This e-mail is checked morning and afternoon.) You may use the site for that session unless you receive a reply 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.

Directions to NOVAC Observing Sites

C. M. Crockett Park: From the Washington, D.C./Northern Virginia area, go west on I-66 21.7 miles from I-495 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. At top of ramp, turn left to go 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. Once on the park entrance road, go one-half mile to the park gate.

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 (Mayhugh's store on corner). Go 1 mile to Crockett Park entrance road on left. Park is 1/2 mile up the road

Parsells Field: (Steve Blake/Ron Cook) From the Northern Virginia area go West on the Dulles Toll Road until you reach Route 28. Go North on Rt. 28 for 2.8 miles to Route 625, Waxpool Road. (You may also take Route 7 West to 28, then go South to Waxpool.) Turn left (West) onto Waxpool Road (Route 28), and go 1.8 miles to the Waxpool/Farmwell intersection. (The intersection has a small sign on the right pointing the way to the Broadlands development on the left.) Turn left onto Route 625, Waxpool Road (!), heading towards the Broadlands and go 1.6 miles to the Waxpool/Ryan/Shelhorne intersection. Continue straight on Waxpool, through the more developed part of the Broadlands on the right, for about 1.4 miles watching for a left turn onto Waxpool Road (!!) which is a gravel road. Once on gravel go only about 200 yards straight ahead. You will pass a sign showing kids on a seesaw. Parsells field is right where the road turns right. As you round the turn, go into the gravel parking area instead of completing the turn. Note: there are no signs marking the field at this time.

Savage Site: Use some combination of Routes 7, 267 (Dulles toll road), and 28 to get to the Route 7 Leesburg bypass. Go around Leesburg on the bypass until you reach "regular" Route 7 again. From the intersection of the bypass and "regular" Route 7, continue on Route 7 west 18.5 miles to Route 601, at the top of Snicker's Gap.

Turn left onto Route 601 south and go 2.4 miles to the park entrance. The park entrance is past the driveway on the left whose gatepost reads *Ben Lomand*. The park entrance is the next driveway on your left. There will be a sign on a tree saying *Wildlife Sanctuary*. If you come to gateposts on the left that say *Belle Allee* and *Ball Alley 1875*, you have gone too far.

You may also take 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.

Site Locations

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

- Savage: 39° 04.7' N; 77° 51.7' W
- Parsells: 39° 01' N, 77° 32' 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

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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 Treasurer Pedro Martinez, Jr., 6319 Anneliese Dr., Falls Church VA 22044, 703 534-2604.

All notices of change of address should be sent to Pedro Martinez, Jr. Please include both old and new addresses.

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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., October 10 for the November/December newsletter

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1998 NOVAC Observing Schedule

C. M. Crockett Park

September: All weekend nights (Fri/Sat.), 26: NOVA Star Party

October: All weekend nights (Fri/Sat.), 21: Orionid meteor shower

November: All weekend nights (Fri/Sat.), 17: Leonid meteor shower

December: All weekend nights (Fri/Sat.), 13: Geminid meteor shower, 22: Ursid meteor shower

Savage Farm & Nichlason Site

September 11, 12, 13, 18, 19, 20, 25, 26, 27

October 16, 17, 18, 21 (Orionid meteor shower), 23, 24, 25

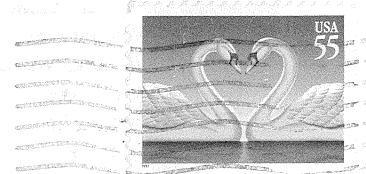
November 13, 14, 15, 17 (Leonid meteor shower), 20, 21, 22

December 11, 12, 13 (Geminid meteor shower), 18, 19, 20, 22 (Ursid meteor shower)



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