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NOVAC

The Newsletter of the Northern Virginia Astronomy Club

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The star is not extinguished when it sets
Upon the dull horizon; it but goes
To shine in other skies, then reappear
In ours, as fresh as when it first arose.
- *Horatius Bonar, Life After Death*

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The Presidents Column

by Blaine Korcel

Greetings to you all. I am happy to say that the club is doing exceptionally well these days. We are taking on a new look with emphasis on professionalism and just a touch of commercialism! What? PROFESSIONALISM? Don't get too scared. I don't plan to make the club meetings too sticky. Here is a synopsis of our May activities:

Board of Director's/Executive Meeting: So what's up, you might be asking. The long debated issue of non-profit status is about to become a reality. It appears that all we need now are the forms from the IRS, a sharp pencil, and a bit of initiative.

One item which has been agreed upon by the Board is that our organization needs some kind of liability insurance. This protects us and all we own from any mishap that may occur during our observing sessions, both public and private. We believe that a minimum coverage with a one day rider during larger events should be sufficient. Premiums have yet to be determined but will probably total to about \$300 a year. We should know more by the June meeting.

While the Board was on the topic of spending money, the idea of a club funded phone line and answering machine was brought to the table. Presently, John Huggins is manning the station at his own expense. We would like to see someone else add a new flavor to our hotline recording

ing topic to a boil. The above mentioned expenditures along with the rising printing rates for our newsletters are going to force a raise in our dues. We expect that initially we will need a substantial income in order to get our feet off the ground. Once the checks are in the mail, so to speak, and we have established our non-profit status, we can confront local businesses for tax deductible donations in exchange for newsletter advertising. This should not be too difficult to achieve considering our current newsletter expenditures. Increases in dues to \$12 or \$18 a year have been proposed. The increase is certainly not going to put anyone in the poor house.

What's Inside

Have you been lucky enough to have one of those "Perfect Nights" for observations? Geoff Chester tells us about his: page 2

How to avoid being an unwanted guest at a star party: page 3

The Northern Virginia Telescope Meet is just around the corner: page 3

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with a strong emphasis on locally or remotely updating the recording regularly or whenever necessary. Since the line would be almost entirely incoming calls only, we could get an economy rate which works out to about \$9 or \$10 a month, including the ridiculous taxes imposed on having the line.

One subject which has been put on the back burner for quite some time is that of dues. It's time to bring this simmer-

Seeing that Bob will be pinching pennies for a while, we would like to say that those who wish to help the club may do so by sending NOVAC, in care of Bob Ridgley, some kind of financial contribution. Also, don't forget to keep up on your dues. Please contribute what you can. Any amount will help out considerably.

What about fund raisers? We would like to order a new batch of "T" shirts in varying sizes and styles for sale at (See President, Page 5, Col 2)

One of "Those" Nights

by Geoff Chester

It's almost enough to make you believe in magic, that hope does spring eternal, and that good things come to those who wait.

I'm sure that many of you know the routine: you work during the week, come home, play with the kids, put them to bed, then sack out because tomorrow is another work day. You keep your ears tuned to the long-range weather forecast the whole week before that first dark-of-the-Moon Saturday. You begin to drive the family batty as you rant at The Elements when the prospects for the next two weeks disintegrate under skies full of Mare's Tails that won't go away after sunset. The telescope beckons from the closet. You begin to lose the grip on that little portion of your sanity that can only be satisfied by photons from a distant galaxy. And the months roll by along with the Virgo Cluster.

To those of us who live in urban centers the problem is compounded because we have to pack up our gear and drive to some remote location to find dark skies. It may be clear at home, but after driving an hour things can be completely different at the site.

Such is the lot of many of us. We have duties at our jobs and at home that must take precedence over our urge to observe. Our friends and families begin to wonder about us, and spouses, though infinite on patience, begin to get testy after a few months of dashed prospects. This was my predicament...until that June night in 1987.

I live near Washington, DC, which is not the biggest urban area on the East Coast, but it is growing at breakneck speed. My occasional escapes to the Blue Ridge Mountains were usually hampered by vagaries in the local climate. In 1981 my friend Jim Crowley and I spent a memorable night at 3500

feet in Big Meadows with Jim's 14-inch reflector. We saw, among other things, Stephan's Quintet, a tiny galaxy group near NGC-7331. Since that time I've been waiting for "that" night to happen again and another glimpse of light from the depths of time.

Driving to the Blue Ridge is about a two-hour foray from my home--if the traffic isn't backed up to Manassas on I-66. It's a long poke for a round-trip in one night. Fortunately, my other observing partner Porter Kier knew of a fine site on some land owned by a friend in the little hamlet of Rixeyville, Virginia. While not quite as dark as Big Meadows, it was an hour closer to my house, quiet, and off the main road. The first night Porter took me there was almost one of "those" nights. My homemade 8-inch reflector performed beyond my wildest expectations: I saw the entire Veil Nebula, the Helix, structure in M-33, and the view of the Andromeda Galaxy was simply amazing. I now know the road to Rixeyville well; I know where the deer hide and where all the potholes are. I have driven it in my sleep (well, almost). Porter has retired and moved away, and the landowner has built his dream house on the little hilltop...but he has designed it so it won't interfere with observing, and I am still welcome. I get maybe ten nights a year if I'm lucky to make the trip, and that seems to be enough to satisfy me.

The spring of 1987 was abysmal. The only time it cleared out at night was right around Full Moon. I had made the trip in March, but high clouds spilled out of the mountains and I left after an hour. I was beginning to get that itch, and the family sensed it. We made no plans for several Saturdays so I could go observing, only to have the weather go completely downhill. The "three H's" had descended on Washington with a vengeance, and as June wore on I packed the telescope away, not expecting to drag it out until September.

One Wednesday dawned with some-

thing very unusual: clear skies and dry, 60-degree air. I said "the Hell with work, I'm going!" and packed off to Rixeyville. You've got to take it when you can, and I figured this would be my only night of the summer. I had a pleasant evening and camped at the site, arriving a bit groggy three hours late for work. Not a good way to start the day, but I think my boss understands my needs. The three H's came back on Friday, and a crunching thunderstorm pushed through in the evening. That storm was different, though, because it was the leading edge of what I'd been praying for: clear Canadian air!

Saturday dawned clear and cool: everything looked perfect! Fair weather cumulus clouds billowed overhead with patches of azure between. I called Jim Crowley and we arranged to meet at Rixeyville. As the day wore on the clouds thickened and showers popped all around us. Once again it looked like Mother Nature would skunk us. But it was a Saturday, the car was packed, the telescope trued, and I was ready; I decided to go.

Heading west on I-66 I ran into a tremendous rainstorm. Fat drops spattered the windshield and I had to slow down to keep an eye on the road, but there was a tantalizing sight ahead...a red band of light on the horizon! I pressed on through Manassas, Gainesville, Warrenton. The rain had stopped, but the vapor coming off the road was heavy with moisture. As I neared the mountains thick clouds billowed off the peaks. I almost turned around, but as I crossed the Rappahannock River the pavement became dry and there was no ground fog. A dry breeze played through the window and I turned down the Rixeyville Road for the last five miles to the site. As I drove up the hill I could see the sun set over the Blue Ridge and the clouds began to break up. A fresh wind blew from the Northwest and the ground was dry. Jim was there, looking for the day-old crescent moon in his binoculars. I set

up the trusty 8-inch; darkness descended, sweeping the last remnant clouds away. Jim said "remember that night up at Big Meadows?..." I stayed up all night, sweeping up the galaxies in Canes Venatici, Ursa Major, and Bootes. As the Milky Way swung overhead we scanned the old summer favorites, still awesome sights even though we've seen them dozens of times. As dawn and the wee hours approached, I swung the scope over to NGC 7331. There, to the southwest of the bright galaxy, was a definite splash of the dimmest light...Stephan's Quintet! This was, indeed, one of "those" nights.

Dawn on Sunday played over Old Rag mountain and woke me after a two-hour nap. There was no dew on the ground, the air was dry and clean with just a hint of the farms nearby. I drove home, elated at the evening before, and spent the rest of the day a happy zombie, remembering the sights of those little wispy glimmers in the eye-piece. I tallied up my "score" and found that I had reached 501 objects on my Herschel list and had seen light that was born before dinosaurs roamed the earth. My wife greeted me with a look of immense relief. I was happy with the whole world.

I was fit to live with again. My wife would not have to worry about the weather, we could plan our Saturdays a little more loosely, and work became a bit easier to cope with.

I looked in my logbook at my previous experience with Stephan's Quintet and was treated to a pleasant, if eerie, surprise: it was six years ago to the hour that I had first seen it with that 14-inch "light bucket" at Big Meadows. I can only hope that I won't have to wait another six years for another one of "those" nights.

Star Party Etiquette

by Bob Ridgley

As the nights become warmer many of you will be attending star parties, some for the first time. Please take a few minutes to read over these guidelines for star party etiquette.

NO WHITE LIGHTS...PLEASE! It takes the human eye over thirty minutes to fully dark adapt. ANY white light makes it necessary to start the cycle all over again. One surefire way to be asked to leave a star party is to carelessly use a bright white flashlight. If you absolutely have to turn a light on, yell out a warning: "WHITE LIGHT" and wait a few seconds before turning it on.

A DIM RED LIGHT will not affect night vision. Use these instead of white lights, but keep them dim. Bright red lights could ruin someone's astrophotography efforts.

NO OPEN FLAMES, campfires or camping stoves. If you smoke be careful while lighting up, keep smoke and ashes away from telescopes and accessories.

WHEN YOU LEAVE yell out a warning five minutes before you leave so that astrophotographers have time to save their photos, and others can shield their eyes. Use only your parking lights until you are away from the observing site. Remember your car's interior, trunk and automatic headlights; pull the fuse or remove a bulb if necessary.

WATCH YOUR STEP. Tables, ladders, observers chairs, power cords, and the darkness all contribute to a risky environment. Be careful where you walk. Be sure to bring a dim red flashlight with you. Small children, pets, and many adults are bored by starlight. If they do not enjoy hours of looking through telescopes at faint, fuzzy objects. They might prefer to stay at home.

DO NOT LITTER. If you brought it, take it with you when you leave. Please leave the site the way you found it!

NO-NOS: Please, no loud radios, no consumption of alcoholic beverages, and no discharging of firearms. Use common sense, and courtesy.

DON'T TOUCH! Do not handle instruments or equipment that does not belong to you without the permission or supervision of the owner.

PREPARE FOR THE WEATHER. Bring warmer clothes than you think you will need. Even during the summer nighttime temperatures can get very chilly. Standing still for long periods of time will cause rapid heat loss.

FOOD & DRINK. Bring provisions; a thermos of hot coffee or tea, or a jug of water. In the cold dehydration can be a problem. Do not bring alcoholic beverages - these have no positive effect either physiologically or mentally. Your senses must be at their best to appreciate the sky.

ASK QUESTIONS! If you are new to astronomy, ask questions. Most experienced observers enjoy talking about their hobby!

Courtesy of the Saguaro Astronomy Club, Phoenix, Arizona (5/88), expanded by Company Seven Astro-Optics, Laurel, Maryland (1/89), and revised by Bob Ridgley (3/89).

NVTM'89

Don't forget that the 1989 Northern Virginia Telescope Meet will be held on Friday, Sept. 1, and Saturday, Sept. 2, at the C. W. Crockett Park - no rain date. Other Astronomy clubs are welcome. For additional information or to volunteer your services please contact either Blaine Korcel (703-256-4430) or Jim Schaeffer (703-476-5624).

Do you know how to enjoy the convenience of mail ordering merchandise while preserving your legal rights?

Mail Order Safety

by Bob Ridgley

The vast majority of mail order companies will fill your order on time and without hassles. There are, however, some things you can do which may help you avoid problems.

When ordering by telephone:

Note the time and date of the conversation and the name of the person who you talked with.

Make a record of your order, the price, its promised availability, and any accessories which are to be included.

Save all correspondence associated with your order, include your cancelled check or money order, and any written confirmation sent by the Seller.

Questions to ask:

Does the advertised item come with all necessary parts and accessories?

Are they from the same manufacturer?

Is it available for immediate shipping? If not, when will it be available?

Has there been an increase in the advertised price?

What warranties does the item carry?

Who provides the service?

What is the Seller's return policy?

What is the Seller's refund policy?

Who do you correspond with if there is a problem?

When ordering by mail:

State precisely what merchandise you want, specify details such as model, make, size, component parts, etc.

Confirm the price and expected date of delivery as stated in the ad.

Indicate whether you will accept a substitute product if the item you ordered is unavailable, and, if not, that your payment should be returned.

Don't send cash, you will have no rec-

ord of payment if a problem arises.

Keep a copy of your order and all other correspondence with the Seller. Your records should include the company name, address, and telephone number; a description of the item ordered; your cancelled check or a copy of the money order; record of the date you mailed the order; and any sales slips or shipping receipts.

If you have problems:

1. If you have not received your order as promised or if the item is defective, immediately notify the Seller in writing referring to your order by description, price, date, as well as by account number and order number, if available. Make a copy of the letter after you sign it and send it with a return receipt requested.

2. If you complain by telephone, send a follow-up letter to confirm what was said.

3. If you think the merchandise is defective, reread the product instructions and your warranty carefully to be sure you don't expect features or performance the product isn't designed to give. Then contact the Seller for instructions. Don't return it to the Seller until you have been instructed to do so.

4. When returning merchandise make sure you keep the shipper's receipt or packing slip; your right to be reimbursed for postage is determined by store policy.

5. If you have completely discussed your problem with the Seller and are still not satisfied, write to the consumer complaint agency in the Seller's

FTC Rules Say:

1. The Seller must ship your order within 30 days of receiving it, unless the advertisement clearly states it'll take longer.

2. If it appears that your order will not be shipped when promised, the Seller must notify you in writing in advance of the promised date, giving a definite new date, if known, and offering you the opportunity to cancel the order with a refund or consent to a definite delayed shipment date or an indefinite delay.

3. The Seller's notice must contain a stamped self-addressed card or envelope with which you can indicate your preference. If you don't respond to this notice, the Seller may assume you agree to the delay, but must either ship or cancel your order within 30 days of the original shipping date promised or required. A prompt refund must be made when an order is cancelled.

4. Even if you've consented to an indefinite delay, you retain the right to cancel the order at any time before the item has been shipped.

5. If you choose to cancel an order, that has been paid for by check or money order, the Seller must mail you a refund within seven business days. If you cancel an order for which you paid by credit card, the seller must credit your account within one billing cycle following the receipt of your request. Store credits or vouchers in place of a refund are not acceptable.

6. In the event that the item you ordered is unavailable, the Seller may not send you substitute merchandise without your express consent.

state. If you paid by credit card, you may have the right to withhold payment under the Federal Fair Credit Billing Act.

Observing at McCormick

by Brent Archinal

As an informal "field trip" for NOVAC, I am planning an observing trip to McCormick Observatory at the University of Virginia in Charlottesville, for Friday night June 2-3. Doug Werek, who currently runs the open house programs there, has agreed to let a limited number of people attend the open house and then (if clear) stay all night afterward to observe with the 26" Clark refractor.

If you are interested, please let me know by phone as soon as possible (448-7466 evenings after 7:30). I am assuming that only a few people may be interested in going, but if there is great interest, a limit on the number of people may be imposed. It is also possible, again depending on the interest and weather, that observing may be also be arranged for the following night (Saturday-Sunday, June 3-4) at some very dark sky site in the mountains near Charlottesville. Likewise, if the skies are likely not to be clear, the whole trip may be postponed until a later date.

McCormick Observatory is operated

by the University of Virginia Astronomy Department, and includes as it's primary instrument the 26" Alvan Clark refractor made in the early 1880's, and which when built was for a short time possibly the largest telescope in the world. The Clarks themselves later indicated that it had one of the finest objectives ever produced by them - making it one of the finest objectives ever made. The instrument was used heavily for various visual observing projects until early in this century, and then for most of this century (until a year or two ago - due to NSF funding cuts) was used to carry out the most extensive stellar parallax program ever undertaken. It is also a unique telescope in that over 500 of the objects in the NGC were discovered by this instrument. It is probably the only instrument in the world remaining that was used to discover NGC objects.

The observatory holds regular open houses, the first and third Fridays of each month, starting about sunset. These are completely open to the public, so NOVAC members are of course also welcome to attend these on their own at any time.

PRESIDENT, from Page 1

any time. Most importantly is our Northern Virginia Telescope Meet. We expect to sell quite a few then and should have plenty left over for every-

one to buy as Christmas gifts! There is not much else we can afford right now for fund raising. If anyone has any suggestions, we would like to hear them. Give Jim or I a call.

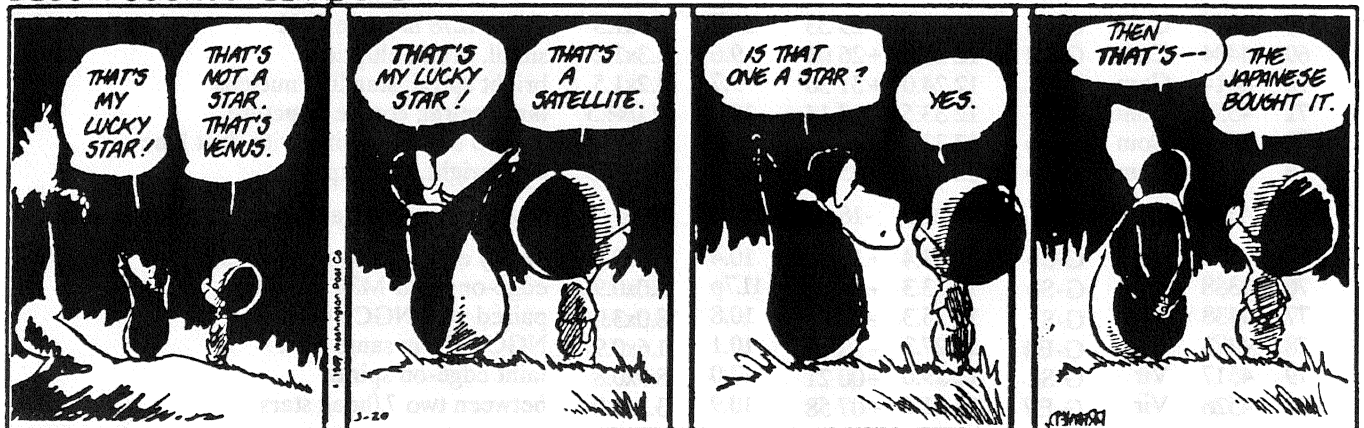
May General Membership Meeting: At the May general membership meeting, all of the above topics were discussed and it was the concensus of everyone present that we establish a budget by the next Board of Directors meeting. It was decided that any new expenditures would be held until the next general membership meeting when it can be discussed in more detail.

The membership has decided that we will have 1000 brochures made which explain our club and its functions. These are to be distributed in places of interest such as observations, libraries, and park centers. The total bill for the first run will be about \$95. However, since we don't have our budget, this will be put off until we do!

The membership has also decided that dues are to include family membership. However, what to raise them to is still an issue and will be discussed further at the next meeting.

Jim has called Sky Meadows about observing and it looks very favorable. If you have an interest in the park, contact Jim Scheaffer and he'll fill you (See **President**, Page 9, Col 1)

BLOOM COUNTY BERKE BREATHED



110 Best NGC Objects Continued

by Bob Ridgley

In the October/November issue a partial listing was presented of what might be considered to be the 110 best NGC objects. That list included those objects in the Autumn and Winter skies as well as 20 "Challenging Objects." With this issue the listing will be completed with the objects in the Spring and Summer skies. Enjoy them!

Spring Objects

No.	NGC	Con.	Type	R.A. (1950)	Dec.	Mag.	Size	Comments
37	2683	Lyn	G-Sb	08 49.6	+33 38	9.6	8.0x1.3	nearly edge-on spiral; very bright
38	2841	UMa	G-Sb	09 18.6	+51 12	9.3	6.4x2.4	classic elongated spiral; very bright
39	2985	UMa	G-Sb	09 46.0	+72 31	10.6	5.5x5.0	near M81 and M82
40	3077	UMa	G-E2p	09 59.4	+68 58	10.9	2.3x1.9	small elliptical; companion to M81/82
41	3079	UMa	G-Sb6	09 58.6	+55 57	11.2	8.0x1.0	edge-on spiral, NGC 2950 nearby
42	3184	UMa	G-Sc	10 15.2	+41 40	9.6	5.6x5.6	large, diffuse face-on spiral
43	3675	UMa	G-Sb	11 23.5	+43 52	10.6	4.0"x1.7	elongated spiral; same field as 56 UMa
44	3877	UMa	G-Sb	11 43.5	+47 46	10.9	4.4x0.8	edge-on; same field as Chi UMa
45	3941	UMa	G-Sa	11 50.3	+37 16	9.8	1.8x1.2	small, bright, elliptical shape
46	4026	UMa	G-E8	11 56.9	+51 12	10.7	3.6x0.7	lens-shaped edge-on
47	4088	UMa	G-Sc	12 03.0	+50 49	10.9	4.5x1.4	nearly edge-on; 4085 in same field
48	4111	UMa	G-SO	12 04.5	+43 21	9.7	3.3x0.6	bright, lens-shaped, edge-on spiral
49	4157	UMa	G-Sb	12 08.6	+50 46	11.9	6.5x0.8	edge-on, a thin sliver; 4026 + 4088 nearby
50	4605	UMa	G-Scp	12 37.8	+61 53	9.6	5.0x1.2	bright, distinct, edge-on spiral
51	3115	Sex	G-E6	10 02.8	-07 28	9.3	4.0x1.2	"Spindle Galaxy"; bright, elongated
52	3242	Hya	PN	10 22.4	-18 23	9.1	40"x35"	"Ghost of Jupiter" planetary
53	3344	LMi	G-Sc	10 40.7	+25 11	10.4	7.6x6.2	diffuse, face-on spiral
54	3432	LMi	G-Sc	10 49.7	+36 54	11.4	5.8x0.8	nearly edge-on; faint flat streak
55	2903	Leo	G-Sb	09 29.3	+21 44	9.1	11.0x4.6	very bright, large elongated spiral
56	3384	Leo	G-E7	10 45.7	+12 54	10.2	4.4x1.4	same field as M105 and NGC 3389
57	3521	Leo	G-Sc	11 03.2	+00 14	9.5	7.0x4.0	very bright, large spiral
58	3607	Leo	G-E1	11 14.3	+18 20	9.6	1.7x1.5	NGC 3605 and 3608 in same field
59	3628	Leo	G-Sb	11 17.7	+13 53	10.9	12.0x1.5	large, edge-on; same field as M65/M66
60	4214	CVn	G-irr	12 13.1	+36 36	10.3	6.6x5.8	large irregular galaxy
61	4244	CVn	G-S	12 15.0	+38 05	11.9	14.5x1.0	large, distinct, edge-on spiral
62	4449	CVn	G-irr	12 25.8	+44 22	9.2	4.1x3.4	bright rectangular shape
63	4490	CVn	G-Sc	12 28.3	+41 55	9.7	5.6x2.1	bright spiral; 4485 in same field
64	4631	CVn	G-Sc	12 39.8	+32 49	9.3	12.6x1.4	very large, bright, edge-on; no dust lane
65	4656	CVn	G-Sc	12 41.6	+32 26	11.2	19.5x2.0	same field as 4631; fainter, smaller
66	5005	CVn	G-Sb	13 08.5	+37 19	9.8	4.4x1.7	bright elongated spiral; near Alpha CVn
67	5033	CVn	G-Sb	13 11.2	+36 51	10.3	9.9x4.8	large, bright spiral near NGC 5005
68	4274	Com	G-Sb	12 17.4	+29 53	10.8	6.7x1.3	NGC 4278 in same field
69	4494	Com	G-E1	12 28.9	+26 03	9.6	1.3x1.2	small, bright elliptical
70	4414	Com	G-Sc	12 24.0	+31 30	9.7	3.2x1.5	bright spiral; star-like nucleus
71	4559	Com	G-Sc	12 33.5	+28 14	10.6	11.0x4.5	large spiral; coarse structure
72	4565	Com	G-Sb	12 33.9	+26 16	10.2	14.4x1.2	superb edge-on spiral with dust lane
73	4725	Com	G-Sb	12 48.1	+25 46	8.9	10.0x5.5	very bright, large spiral
74	4361	Crv	PN	12 21.9	-18 29	11.4	18"	12.8mag central star
75	4216	Vir	G-Sb	12 13.4	+13 25	10.4	7.4x0.9	nearly edge-on; two others in field
76	4388	Vir	G-Sb	12 23.3	+12 56	11.7p	5.0x0.9	edge-on; near M84 and M86
77	4438	Vir	G-S	12 25.3	+13 17	10.8	8.0x3.0	paired with NGC 4435
78	4473	Vir	G-E4	12 27.3	+13 42	10.1	1.6x0.9	NGC 4477 in same field
79	4517	Vir	G-Sc	12 29.0	+00 21	12.0	8.9x0.8	faint edge-on spiral
80	4526	Vir	G-E7	12 31.6	+07 58	10.9	3.3x1.0	between two 7.0mag stars

No.	NGC	Con.	Type	R.A. (1950)	Dec.	Mag.	Size	Comments
81	4535	Vir	G-Sc	12 31.8	+08 28	10.4p	6.0x4.0	near M49
82	4697	Vir	G-E4	12 46.0	-05 32	9.6	2.2x1.4	small, bright elliptical
83	4699	Vir	G-Sa	12 46.5	-08 24	9.3	3.0x2.0	small, bright elliptical shape
84	4762	Vir	G-Sa	12 50.4	+11 31	11.0	3.7x0.4	flattest galaxy; 4754 in same field
85	5746	Vir	G-Sb	14 42.3	+02 10	10.1	6.3x0.8	fine, edge-on spiral near 109 Virginis
86	5907	Dra	G-Sb	15 14.6	+56 31	11.3	11.1x0.7	fine, edge-on spiral with dust lane
87	6503	Dra	G-Sb	17 49.9	+70 10	9.6	4.5x1.0	bright spiral
88	6543	Dra	PN	17 58.8	+66 38	8.7	22"	luminous blue-green disk

Summer Objects

No.	NGC	Con.	Type	R.A. (1950)	Dec.	Mag.	Size	Comments
89	6207	Her	G-Sc	16 41.3	+36 56	11.3	2.0x1.1	same field as M13 cluster
90	6210	Her	PN	16 42.5	+23 53	9.2	20"x13"	very star-like blue planetary
91	6369	Oph	PN	17 26.3	-23 44	9.9	28"	greenish, annular and circular
92	6572	Oph	PN	18 09.7	+06 50	8.9	16"x13"	tiny oval; bright blue
93	6633	Oph	OC	18 25.1	+06 32	4.9	20	wide-field cluster; IC4756 nearby
94	6712	Sct	GC	18 50.3	-08 47	8.9	2.1	small globular near M26
95	6819	Cyg	OC	19 39.6	+40 06	10.1	6	150*; faint but rich cluster
96	6826	Cyg	PN	19 43.4	+50 24	9.4	27"x24"	Blinking Planetary Nebula
97	6960	Cyg	SNR	20 43.6	+30 32	--	70x6	Veil Nebula (west component)
98	6992-5	Cyg	SNR	20 54.3	+31 30	--	78x8	Veil Nebula (east component)
99	7000	Cyg	EN	20 57.0	+44 08	--	120x100	North America Neb.; binocular object
100	7027	Cyg	EN	21 05.1	+42 02	10.4	18x11	very star-like H II region
101	6445	Sgr	PN	17 47.8	-20 00	11.8	38"x29"	small, bright and annular; near M23
102	6818	Sgr	PN	19 41.1	-14 17	9.9	22"x15"	"Little Gem"; annular; 6822 nearby
103	6802	Vul	OC	19 28.4	+20 10	11.0	3.5	160*; small, faint but rich
104	6940	Vul	OC	20 32.5	+28 08	8.2	20	100*; Type-e; rich cluster
105	6939	Cep	OC	20 30.4	+60 28	10.0	5	80*; very rich; 6946 in same field
106	6946	Cep	G-Sc	20 33.9	+59 58	9.7p	9.0x7.5	faint, diffuse, face-on spiral
107	7129	Cep	RN	21 42.0	+65 52	--	7	small faint RN; several stars inv.
108	40	Cep	PN	00 10.2	+72 15	10.5	60"x38"	small circular glow; 11.5mag central star
109	7209	Lac	OC	22 03.2	+46 15	7.6	20	50*; Type-d; within Milky Way
110	7243	Lac	OC	22 13.2	+49 38	7.4	50	40*; Type-d; within Milky Way

June/July Sky Sweep

by Kevin Jones

R.A. DEC. DESCRIPTION

09556+6904 **M81/M82**, Galaxies in Ursa Major. 2 close galaxies, M81 spiral, M82 peculiar/exploding. Dust lanes visible in M82.

10199+1951 **Gamma Leonis**, Double Star. Both deep yellow. Mags 2.3, 3.5. Sepataion 4.4", 407-year binary.

11147+5501 **M97, Owl Nebula** in Ursa Major. Planetary nebula. 12th magnitude. Close to Merak. Faint, large, and very round. Filters (UHC, etc.) help.

12245+2543 **Coma Cluster** (Melotte 111). A rather loose open cluster. Extra-huge (>5 degrees). Use binoculars. Don't bother using a telescope.

12308+1223 **M87**, Galaxy in Virgo Cluster. Mag 9.3, size 3'. Giant elliptical, extremely massive and luminous. Radio source. Possible black hole at nucleus.

12364+2559 **NGC 4565, the Spindle Galaxy** in Coma Berenices. Mag 10.5, size 15'x1.4'. Classic example of an edge-on spiral.

12400-1136 **M104, the Sombrero Galaxy** in Virgo. An outlying member of

the Virgo Cluster. Dark dust lane. Bright: mag 8.2.

12417-0126 **Gamma Virginis**, double star. Central star in the "Y" of Virgo. Mags both 3.65. Binary, closing rapidly (closest in 2007).

12561+3819 **Cor Caroli**, Double Star in Canes Venatici. Only slight color contrast. Mags 2.9, 5.6. Distance 20".

12568+2141 **M64, the Black Eye Galaxy** in Coma. 8th mag. Monster dust cloud near nucleus. Globular M53 nearby.

13239+5455 **Mizar**, double star in handle of the Big Dipper. Mags 2.27,

3.95. Separation 14.5". Also wide double w/Alcor.

13299+4712 **M51, the Whirlpool Galaxy** in Canes Venatici. Located below handle of the Big Dipper. Mag 8.7. Bright interacting galaxy. Spiral structure easily seen.

13422+2823 **M3**, Globular Cluster in Canes Venatici. 6th mag. Bright & round; nearly the equal of M13.

14450+2704 **Epsilon Bootis**, double star. Magnitudes 2.7, 5.1. 2.9" apart. Colors yellowish-bluish. A pretty double.

15170-0922 **Beta Librae**, green star? Decide for yourself. Star colors depend strongly on the observer, so take a look! (Beta is the northern star in Libra's diamond shape)

15185+0205 **M5**, Globular Cluster in Serpens Caput. 8 degrees south of Alpha Serpentis. Mag 6.2. A summer-time showpiece!

16237-2630 **M4**, Globular Cluster in Scorpius. 1.3 degrees due west of Antares. Mag 6.5. Odd central "bar" of 8-10 stars.

16294-2625 **Antares**, double star. Magnitudes 1, 6.5. 3.0" apart. Companion green by contrast with Antares.

16417+3627 **M13, the Hercules Cluster**. Wow! Mag 5.7. Almost 3-D appearance. Look for 11th mag galaxy NGC 6207 .5 degrees to NE.

17147+1424 **Alpha Herculis**, double star. Ras Algethi. Mags. var(3.0-3.8), 5.4. 4.6" apart. Red-green.

17322+5511 **Nu Draconis**, double star. Mags. both 4.9; 62" apart.

17419+7210 **Psi Draconis**, double star. Mags. 4.6, 5.8. 30.3" apart. Fixed pair.

18109-2301 **M20, the Trifid Nebula**. Emission/reflection nebulae in Sagittarius. Emission portion (brighter part) has 3 dark lanes and surrounds the 6-component star HN 40.

18032-2422 **M8, the Lagoon Nebula**. Emission nebula in Sagittarius. Very

bright! Envelopes open cluster NGC 6530.

18208-1610 **M17, the Horseshoe/Omega/Swan Nebula**. Emission nebula in Sagittarius. 6th mag. Looks like a swan to me.

18444+3940 **Epsilon Lyrae**, double-double star. Wide borderline naked-eye pair; each component itself a close double. Wide pair 207.8", close pairs 2.8", 2.3". All stars 5th or 6th magnitude.

18536+3302 **M57, the Ring Nebula**. Planetary nebula in Lyra. Annular shape quite pronounced. Central star very faint.

19307+2758 **Albireo**, Double Star. Beautiful blue-orange contrast. Mags 3.2, 5.4. Separation 34.6". Show object!

19591+2243 **M27, the Dumbbell/Apple Core Nebula**. Planetary nebula in Vulpecula. 8th mag w/13th mag central star. Large for a planetary. "Apple core" shape visible in small scopes.

20181-1232 **Alpha Capricorni**, double-double star. Alpha-1/Alpha-2 pair is easily naked eye, 376" apart, mags 3.5, 4. Alpha-1 has 9th mag companion, Alpha-2 has 11th mag companion, separations 32" and 59" respectively.

20564+3142 **The Veil/Cirrus Nebula**, filamentary nebulae in Cygnus. Large and of medium brightness. Filters help.

20588+4420 **The North America Nebula**, emission nebula in Cygnus. Near Deneb. Extremely large with a low surface brightness. Use an RFT or giant binoculars. Try a UHC/Deep-Sky filter.

I'm interested in finding out what color the members of NOVAC think Beta Librae really is. While out observing, please take a moment to observe Beta Librae with the naked eye, binoculars, or a telescope and make a color estimate ("fire engine red" or "sky blue" for example). Send your

color estimate and the optical aid used (if any) to make the observation to:

Kevin Jones
883 N. Kentucky Street
Arlington, VA 22205-1316

Your observations are greatly appreciated, and the results will be published in this column in an upcoming issue of the NOVAC newsletter.

Dr. Astro

Q. What is Universal Time and how do I convert it to Standard Time?

A. Universal Time is mean solar time at the Greenwich, England meridian. As most astronomical events are calculated to UT you can convert this time to your local time by subtracting the following hours:

EST: 5 hours
CST: 6 hours
MST: 7 hours
PST: 8 hours

For daylight savings time subtract one hour less. If the result is negative then add 24 hours and the time will be for the previous date.

Q. What angle does the solar equatorial plane make with the Earth's orbital plane?

This sounds like a trick question to me! However, here goes: the inclination of the solar equator to the ecliptic is 7 degrees and 25 minutes. Since the earth's orbital plane lies in the ecliptic the answer is about 7 1/2 degrees.

Q. There is a rich cluster of very faint galaxies just off the S.E. end of NGC 4565. Can you identify them (it)?

They are NGC 4565a,b, and c; also called HO (Holmberg) 426b,c, and d. All three are listed as mag. 14 to 15. The group does not, as you might think, have a common name. Common names can be confusing and misleading, they should be avoided. It is always better to reference an object by a popular catalogue number.

PRESIDENT, from Page 5
in.

I guess that's it this time around. Now that the weather is nice, we hope to see everyone out at the observations. Don't forget our public program on May 27th out at Crockett Park. See you there!

Clear skies,



Blaine Korcel
President, NOVAC

What's New in NOVAC

by Bob Ridgley

NOVAC extends a warm welcome to the folks who joined the club during March, April, and May. They are:

Stephen W. Bodner
Kenneth J. Daniels
Harold Geller
Desmond O'Rourke
Steven Tapp
Joanna Yun

We hope to see you at our observations and monthly meetings. Please contact any of the club's officers with questions or suggestions which you might have.

NOVAC membership has reached 113. Of that number 91 are current in their dues, 6 are past due, and 16 are complimentary members (other clubs and organizations, etc).

As of May 23 the NOVAC treasury balance was \$615.14.

NASM Special Events

by Bob Ridgley

The National Air & Space Museum will offer several interesting lectures

during June and July. They are as follows.

"**Other Suns, Other Worlds**" is a lecture series devoted to stellar and planetary evolution. Sponsored by The Perkin Elmer Corporation all lectures are free and are open to the public. The remaining lecture in this five part series is "**The Supernova Story**." In it you will learn something about the colorful history of supernove observations, from the earliest sightings of "new stars" by the Chinese court astronomers to the high-tech observations of the 20th century. Laurence A. Marschall, a professor of physics at Gettysburg College in Gettysburg, Pennsylvania, will discuss the remarkable flurry of new discoveries -- and new puzzles -- which have followed the announcement of Supernova 1987A. Come listen on Wednesday, June 7, 7:30 p.m., in the Albert Einstein Planetarium.

The Monthly Sky Lecture for June will be "**Astronomy For The Fun Of It**." It will be conducted by Geoffrey Chester, National Air & Space Museum (and a NOVAC member). The date is Saturday, June 3, at 9:30 a.m.; the place is the Albert Einstein Planetarium. Safe viewing of the Sun by telescope follows the lecture (weather permitting).

The Monthly Sky Lecture for July will be given by Dr. Robert Smith of the National Air & Space Museum. The topic will be "**The Rings of Neptune**." It's in the Albert Einstein Planetarium on Saturday, July 1, at 9:30 a.m.

Note:

For additional information about Smithsonian public programs, please call (202)-357-2700 or 357-1729 (non-voice TDD). For prerecorded information about events in a specific museum (Dial-A-Museum) call (202)-357-2020. For prerecorded information about the night sky (Dial-A-Phenomenon) call (202)-357-2000.

Advertisements

For Sale, contact Al Schumann at 971-3257: Two University Konig EYEPIECES; a 32mm - \$50.00, and a 12mm - \$40.00. Both are in excellent condition.

For Sale, contact Jim Schaeffer at 476-5624 (home) or 281-6363 (office): CAPS, baseball type, mesh back, adjustable, NOVAC logo, \$5.95 (you pick-up), \$7.75 (UPS ship); JACKETS, nylon/satin, NOVAC logo on front & back, elastic at sleeves, neck, and bottom, very good quality, sizes S, M, L, XL, \$34.95; TELRAD finders, \$38.00.

For Sale, contact David Miller at 703-751-5712 after 6:00 p.m.: CELESTRON COMET CATCHER; 60mm reflector complete with: guidescope; polaris equatorial mount; dual axis drive corrector; illuminated polar alignment scope; counterweights, and T-adapter. Set-up for astrophotography, pictures available on request. Cost \$1,300.00, will sell for \$650.00.

For Sale, contact Al Boldt at 379-5721 (evenings): Two EYEPIECES; an 8.8mm Meade Ultra-wide - \$125.00, and an 11mm Nagler Type1 - \$110.00. Both will fit either 1 1/4-inch or 2-inch holders and have rubber eyecups and are in excellent condition.

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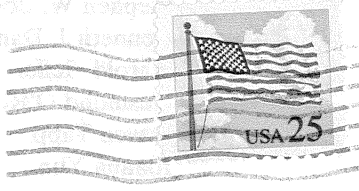
Club Meetings - 3rd Wednesday of each month
 Arlington Planetarium - Washington-Lee H.S.
 1300 N. Quincy Street
 Arlington, VA



The Northern Virginia Astronomy Club
 5401 Danville Street
 Springfield, Virginia 22151

NOVAC is a non-profit organization...
 We are currently seeking...
 For more information...

NOVAC extends a warm welcome...
 to all who attend the club meetings...
 and help support the club.



We hope to see you at our next meeting...
 and please contact us if you have any questions.

Thank you for your support.

NOVAC membership...
 12/89 - \$0.

Lane

Note: For additional information...

NOVAC special events...

The Northern Virginia Astronomy Club...
 will offer several interesting courses...