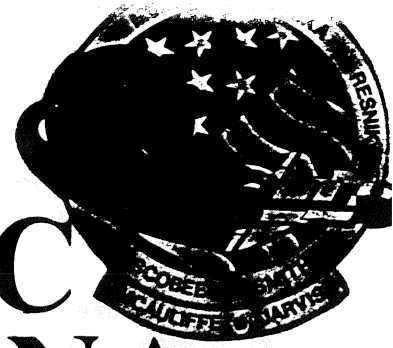


THE NOVAC CORONA



to observe and to
help others observe

THE NOVAC QUARTERLY NEWSLETTER

Issue No. 8

Volume 6

April 1986

President, Nils Thomas 323-7476

Treasurer, John Huggins 644-4331

Secretary, Blaine Korcel 256-4430 *EDITOR*

CALENDAR

call 644-4331 for further details

March 27...**NOVAC MEETING** Kings Park Library 7:00pm
April 5.....Manassas observation 7:00pm
19.....Astronomy Day
24...**NOVAC MEETING** Kings Park Library 7:00pm
23.Free lecture NASM The Space Between the Planets 7:30pm
May 9.....Manassas observation 7:00pm
28.....Free lecture NASM Satellites and Small Bodies 7:30pm
June 6.....BLTM at Burke Lake Park (call 644-4331 for time)
June 7.....BLTM at Burke Lake Park (call 644-4331 for time)
25.Free lecture NASM The Advent of the H. Sp. Tele. 7:30pm
July 11.....Manassas observation 7:00pm
August 9.....Manassas observation 7:00pm

IN MEMORY OF THE CHALLENGER SEVEN
Gregory Jarvis, Christa McAuliffe, Ronald McNair, Ellison Onizuka,
Judith Resnik, Francis Scobee, and Michael Smith

"The future...belongs to the brave. The Challenger crew was pulling us into the future, and we will continue to follow them...."

"The crew of the Space Shuttle Challenger honored us by the manner in which they lived their lives. We will never forget them nor the last time we saw them this morning as they prepared for their journey and waved goodbye and 'slipped the surly bonds of Earth to touch the face of God.'"

-President Ronald Reagan
January 28, 1986



THE PRESIDENT'S COLUMN

Thomas

Well, due to a few foul-ups, you will soon be receiving your constitution ballots if you were a member of NOVAC as of January 1, 1986. The return dates have been changed to April 30th. I must apologize for the delay. Our mailing labels were not delivered on time nor were the ballots. Anyway, please give or send us your ballot, as soon as possible after you receive it.

In other news, I happened to be in Dallas on business and went to Lake Ray Hubbard to see Halley's comet on the 20th. It was definitely visible to the naked eye and had quite a tail in binoculars. The tail extended approximately 5 degrees in length in the binoculars. I must admit that I need to eat crow on this one folks. In many an argument with Blaine and others I took the extremely pessimistic view and predicted that Halley's would not break naked eye visibility. I estimated a naked eye magnitude of about 4 and an integrated magnitude of about 3. Dallas' latitude is about 33 to 34 degrees north, which is not too much different from ours.

Finally, I would like to propose a club picnic sometime in May or June. We can discuss this at the April meeting so think about it.

Good luck and good observing,

Nils Thomas, El Presidenté

EDITORIAL

Korcel

Well, it's time again for another newsletter. There is a lot of news in this issue and I hope that it gets in the mail on time!! In the past several months many astonishing and many tragic events took place. It is hoped that I will have covered all these topics briefly and still published all the articles that were sent in. As for the newsletter format, we are trying a new word processor in the hopes of speeding up the assembly process. If anyone has any insight on these and other ideas please call me. I am always eager to hear about them.

One last item. It has been brought to my attention that we might be better informed about our events if we published the *NOVAC CORONA* every other month instead of every four months. It would require a little more work on my part. I think with some help I could handle it. There would be no obvious reason to raise dues to cover the extra issues. Please think about it and bring your suggestions to the the next meeting or give me a call. It could bring the club a little closer together.

IN THE WAKE OF HALLEY'S COMET

(Letters to the club)

January 21, 1986

On behalf of the Fairfax County Park Authority, I would like to thank the members of NOVAC who participated in the recent Comet Halley Watch at Braddock Park on January 10, 11, and 12th. The Park Authority was very happy with the outcome of the event - both numbers of people drawn and the knowledgeable and efficient help

NOVAC was able to give them. From the comments I have received from the park staff and NOVAC members at the event, I feel that overall it ran very smoothly. We were able to satisfy the curiosity and comet-watching desires of many people from metropolitan D.C.

Our final estimate of visitor numbers was 5250; 250 for a mostly cloudy Friday evening, 3500 for a clear Saturday (Bob Ryan's choice night) and 1500 for a clear Sunday evening. I know it is difficult to come up with an accurate count for this many people. These figures were based on the parking lot capacity of 375 cars, with three to four people per car. On Saturday, the lot turned over three times between 5 and 8:30pm. Anyone there will testify that the place was packed!

Undoubtedly the event was a success on all sides. It certainly would not have been possible to carry it off without the commitment and support of the officers and members of NOVAC. Thanks again!

Laurel Wanrow
Fairfax County Park Authority
Fairfax, Virginia

January 26, 1986

Dear NOVAC,

Many thanks to the members of NOVAC for being patient and helpful to four of my fifth grade students and my six year old son during the Comet Watch on Saturday, January 11 at Braddock Park. Sorry, I cannot recall the names of the members who helped the students; however, one member was female at the entrance to the viewing area with the large telescope on the picnic table, and the other member was a male at the far end of the viewing area near the large RV camper.

This was a rewarding experience for both my students, son, and me.

Joshua Taylor, Jr.
Teacher - Ashlawn Elementary Sch.
Arlington, Virginia

January, 1986

Dear John,

The staff at Hidden Pond Nature Center would like to thank you and the members of the Northern Virginia Astronomy Club for helping with the star and comet programs this fall. We appreciate the time and effort everyone puts into sharing their interest and knowledge.

Thanks again,
Elianne Lieberman
Naturalist
Hidden Pond Nature Center

BURKE LAKE TELESCOPE MEET

Huggins

BLTM86 is in the works. The Park Authority has given us permission and the advertisements have been sent to Sky & Telescope and Astronomy. Look for them in the upcoming issues. The dates are Friday, June 6 and Saturday, June 7. [Call the information number for times and special events for BLTM.]

As usual, Friday will be dedicated to Amateur Astronomers. There will be a public viewing on Saturday. Many of you know what this event is all about. I need your ideas if you think something needs improvement. I haven't made an actual schedule for it yet so any opinions that you think will improve the outcome of this thing will be eagerly listened to.

By the way, if you would like to have an information packet sent to you or your friends send me a SASE to:

BLTM86
c/o John S. Huggins
5608 Flag Run Drive
Springfield, VA 22151

Telescope Meet

The Northern Va. Club will sponsor the Burke Lake Telescope Meet at Burke Lake Park in Burke VA, on June 6 and 7, 1986. Friday will be dedicated to Amateur Astronomers and Saturday a public view for more in

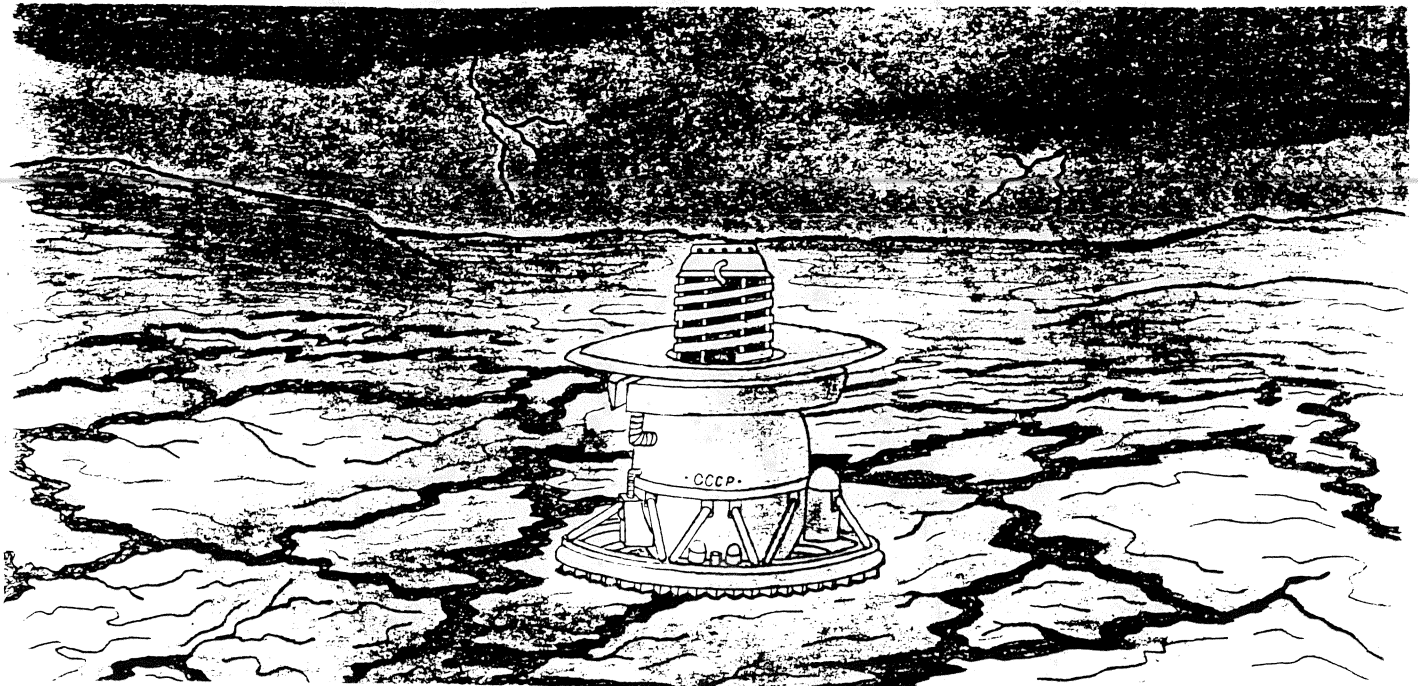
Am A can meet, show telescopes & exchange ideas on Friday, with Sat being a public program & observation

Please post this address at your place of work if you can. The packet will contain a welcome letter, a map of the park, a list of camping regulations, and other things.

Camping spaces are available at Burke Lake, but you will have to make reservations. Their number is 323-6601.

We will probably be having a slide show on Saturday night. If you have any pictures [prints or slides] at all that could be useful please send them to me at the above address. I will take good care of them and will return them after the show.

Next to the Halley's Comet Watches there has never been better advertising for NOVAC. We have always gained many members out of this event and have pleased many people with our abilities. Since Stellafane is too far to go for most people in the South, BLTM will have to do. Yes, BLTM is the "Stellafane of the South."

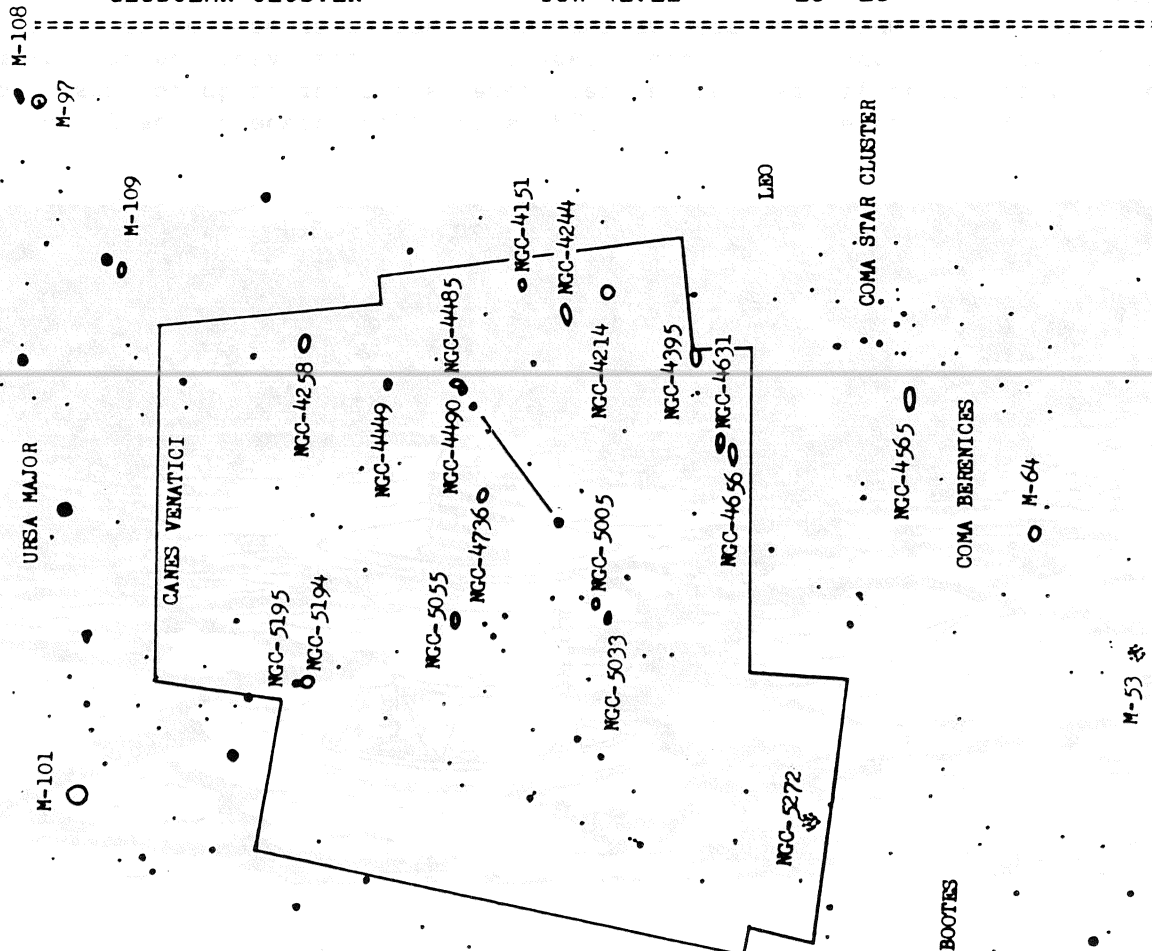


CANES VENATICI

Prydybasz

Canes Venatici, the hunting dogs, consists of three faint naked-eye stars. It is inconspicuously situated between the familiar constellation Ursa Major and the great cloud of galaxies spread across Virgo and Coma Berenices. Canes Venatici is the richest in galaxies, most of which belong to the Virgo super-cluster. Besides these galaxies, Canes Venatici also contains a spectacular cluster, M-3 (NGC-5272.)

NGC	MESS. #	TYPE	RA	DEC	MAG
NGC-4151		BARRED SPIRAL GALAXY	12h 10.5m	39° 24'	11.2
NGC-4214		PECULIAR/IRREGULAR GALAXY	12h 15.6m	36° 19'	10.5
NGC-4244		SPIRAL GALAXY	12h 17.5m	37° 48'	10.7
NGC-4258	M-106	SPIRAL GALAXY	12h 18.9m	47° 18'	9
NGC-4395		SPIRAL GALAXY	12h 25.8m	33° 32'	11
NGC-4449		PECULIAR/IRREGULAR GALAXY	12h 28.2m	44° 05'	10.5
NGC-4485		PECULIAR/IRREGULAR GALAXY	12h 30.7m	41° 41'	12.5
NGC-4490		SPIRAL GALAXY	12h 30.7m	41° 38'	10.1
NGC-4631		SPIRAL GALAXY	12h 42.2m	32° 33'	9.7
NGC-4656		PECULIAR/IRREGULAR GALAXY	12h 44.0m	32° 10'	11
NGC-4736	M-94	SPIRAL GALAXY	12h 50.9m	41° 07'	8.9
NGC-5005		SPIRAL GALAXY	13h 10.8m	37° 03'	10.8
NGC-5033		SPIRAL GALAXY	13h 13.5m	36° 35'	11
NGC-5055	M-63	SPIRAL GALAXY	13h 15.8m	42° 01'	9.8
NGC-5194	M-51	SPIRAL GALAXY	13h 29.9m	47° 12'	8.7
NGC-5195		PECULIAR/IRREGULAR GALAXY	13h 30.0m	47° 16'	11
NGC-5272	M-3	GLOBULAR CLUSTER	13h 42.2m	28° 23'	6



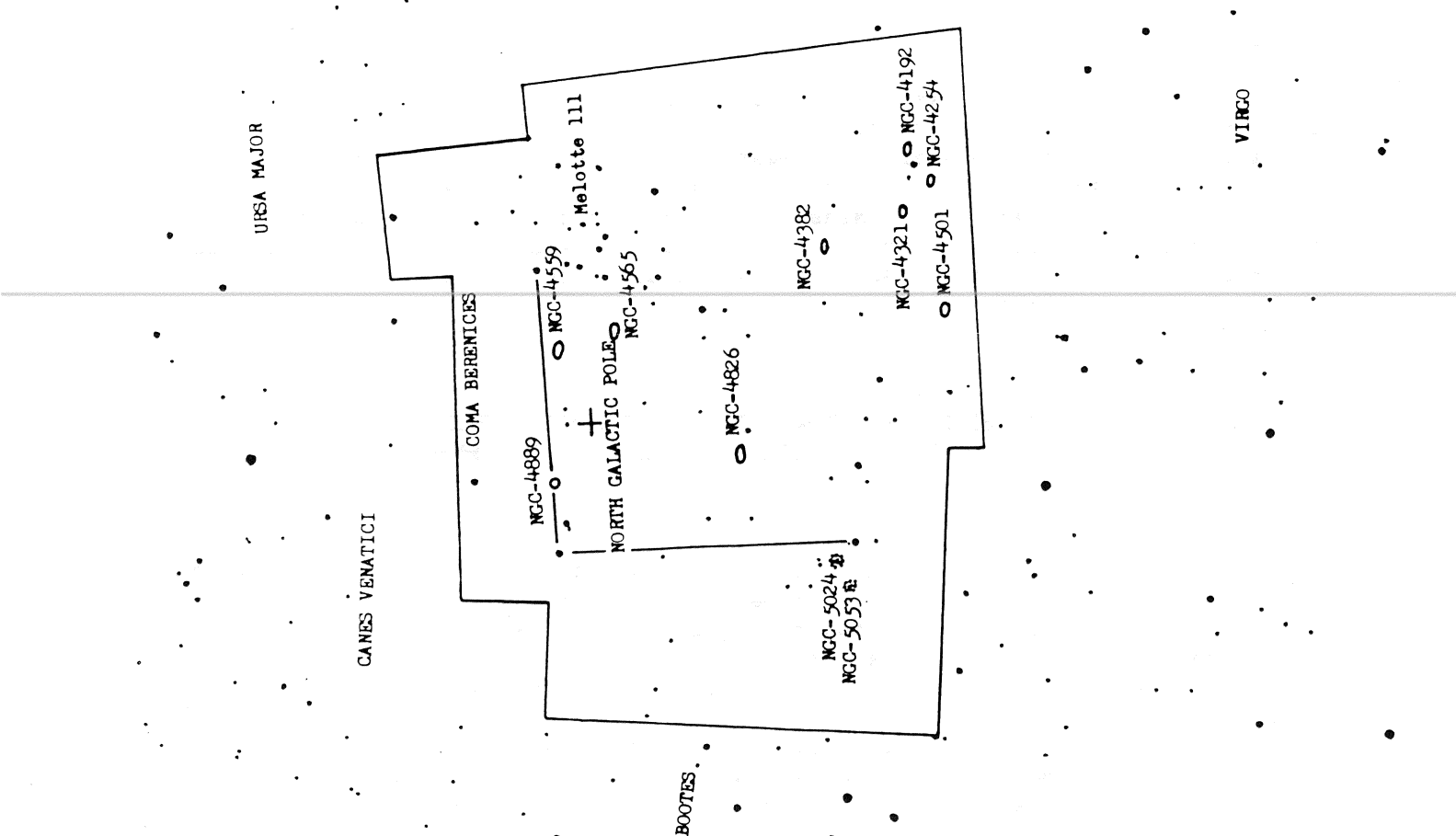
COMA BERENICES

Prydybasz

Coma Berenices, Berenices hair, contains one of the most dense concentrations of external galaxies visible to us. Looking in this direction permits us to see toward the Virgo cluster of galaxies. The heart of which lies across the border in Virgo. Several dozen bright examples of spiral, elliptical, lenticular, and peculiar galaxies are visible in medium sized telescopes. Many are within the same low power fields of view. Coma Berenices also contains the north galactic pole, the imaginary point in the sky positioned 90 degrees above all points on the galactic equator.

The following charts will help you in finding many of the intriguing objects found in this constellation.

NGC	MESS.#	TYPE	RA	DEC	MAG
NGC-4192	M-98	SPIRAL GALAXY	12h 15m	14° 54'	11
NGC-4254	M-99	SPIRAL GALAXY	12h 19m	14° 25'	10.4
NGC-4321	M-100	SPIRAL GALAXY	12h 23m	15° 49'	10.4
MELLOTTE 111		OPEN CLUSTER	12h 25m	25° 43'	2.9
NGC-4382	M-85	LENTICULAR GALAXY	12h 25m	18° 11'	10.5
NGC-4501	M-88	SPIRAL GALAXY	12h 32m	14° 26'	10.5
NGC-4559		SPIRAL GALAXY	12h 35m	27° 57'	10.5
NGC-4565		SPIRAL GALAXY	12h 36m	26° 00'	10.5
NGC-4826	M-64	SPIRAL GALAXY	12h 57m	21° 41'	8.6
NGC-4889		ELLIPTICAL GALAXY	13h 00m	27° 59'	13.2
NGC-5024	M-53	GLOBULAR CLUSTER	13h 13m	18° 10'	8.0
NGC-5053		GLOBULAR CLUSTER	13h 16m	17° 41'	10.5



OBSERVING DOUBLE STARS WITH A SMALL REFRACTOR

Thomas

A fair percentage of amateur astronomers start the hobby with small refractors, i.e. an aperture of about 2.4 inches. While these are the poorest telescopes to buy for a budding amateur, because of their inherently narrow field of view, parents and friends purchase them as gifts anyway. I know! I was given one for my first telescope. These refractors are generally good for observing the planets. The f ratio is usually too large to be of any good on nebula or galaxies. One other class of objects these telescopes are good for is double stars. I have put together a list of double stars taken from my log book that I have observed in the past. Here they are:

- ∇ Draco
- ♄ Delphinus
- ε Lyra (Double Double)
- β Lyra
- δ Lyra
- ε Ursa Major
- α Ursa Minor (Polaris)
- δ Leo
- α Canes Venatici (Cor Caroli)
- β Cygni (Alberio)
- α Capricornus
- η Draco
- ε Cepheus
- ∇ Corona Borealis
- ♄ Virgo
- ♄ Leo
- ↑ Bootes

All of these stars are visible to the naked-eye and are part of a constellation. When looking at that constellation on a star chart, find the Greek letter and that will be the star. At least one of these stars, ♄ Virgo, is a known orbiting double star; a 'true' double star system. If one goes "whole hog" into this type of observing and starts measuring a true double star separation and position angle the orbit can be plotted after several years. The orbital period of ♄ Virgo is about 140 years. About ten years of "light" observing would be necessary to set a change.

PRECISION FOCUSING FOR PRIME FOCUS PHOTOGRAPHY

Korcel

It is a warm summer's night and you are out shooting the Lagoon Nebula with your brand new camera. You set your scope up as you normally would for astrophotography making sure your polar alignment is *perfect*. You then slap your roll of hypersensitized Fujichrome 400 into the camera and begin focusing. The star images look fine until you get close to focus and then you cannot quite tell whether they are pinpoints or not. You continue to try and before you know it, fifteen to thirty minutes have gone by and the Lagoon is reaching ever farther towards the west. You are still not sure if the camera is in focus, but you decide to go with what you have and proceed with several exposures ranging up to thirty minutes.

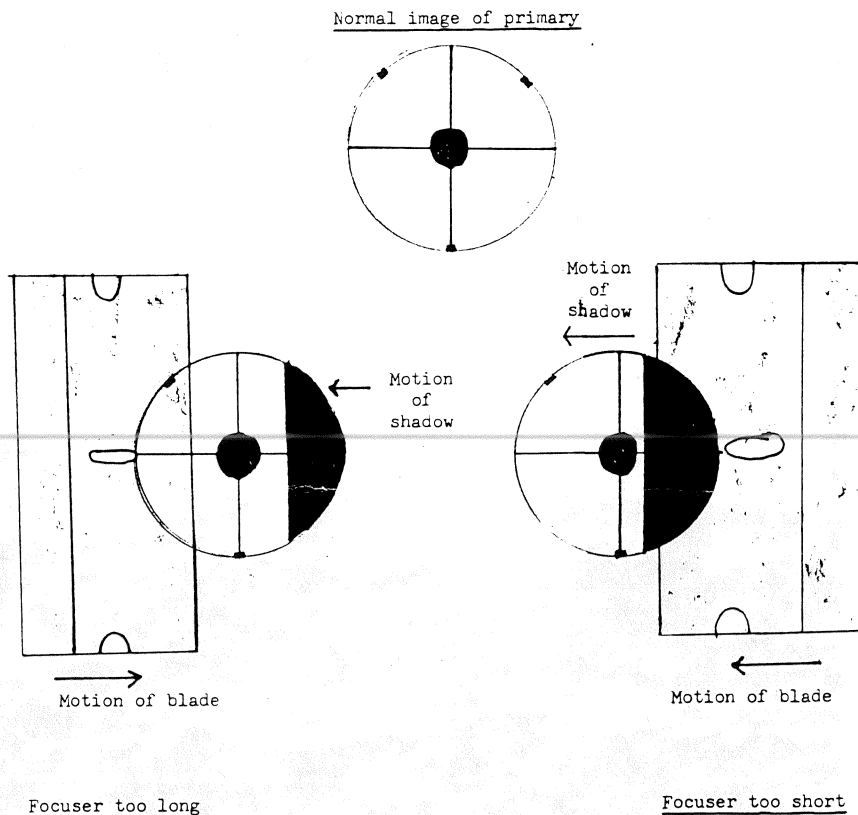
When you get the film back from the processor, you anxiously open the box containing your prized photos and look to see how well they came out and you realize that they are out of focus. The images are round and fuzzy and are only of the brighter stars.

Many of my otherwise excellent astrophotos have been ruined due to the image being out of focus. Most of today's SLRs are designed for shooting pictures of Uncle Ed and Aunt Vicky. Not for focusing on pinpoint star images and hence require patience and time to achieve a pinpoint stellar focus and even then you may not be quite sure of it. I have adopted a method of focusing a camera using the same techniques employed by the *Focault Focus Test*. Those who have ground telescope mirrors should be familiar with the method.

The first thing is to center your field on the brightest star in the sky. Now, mount your camera to your telescope for shooting prime focus photography. Pop the back of the camera open and lock the mirror and shutter open. Notice the image of the star. Stand back about two feet and you will see a stellar reflection. As your eye approaches several inches from the film plane, the star turns into an orb of light that fills the primary mirror. This is where you will need to look when focusing. Next, you will need to place the edge of a razor blade precisely on the film plane. Carefully, disassemble a Trak II razor cartridge and glue, sparingly, one of the blades to a piece of glass that fits nicely in the film plane of your 35mm camera. The glass from a slide mount works great. For a 120 format camera you will have to scrounge for a piece slightly larger than 2 1/4 inches square at a picture frame shop.

Now, purposely defocus the star and let it drift slightly so that the blade cuts across the stellar orb. Note the edge will occult the image or orb of light and will appear as a shadow in the primary when it is part way across the image. Again, repeat and observe whether or not the shadow of the blade appears to occult the orb from the opposite direction. If it does, you need to shorten your focuser. If it occults from the same direction, you need to lengthen the focuser. Your camera will be in focus when the image of the star disappears entirely at once.

As the film plane of your camera approaches closer to the focus point, the blade will occult the star faster and faster. Make sure it is right by checking it again.



Then, lock your focuser. If all your optics are secure, you should not have to refocus at all for the rest of the photo session.

I use an eight inch f/6 Newtonian for my astrophotos and this method has not failed yet. I have had perfectly focused pictures ever since I adopted this method. It works equally well for SCTs (Schmidt Cassigrain Telescopes) but keep in mind that most have floating primaries for the focus adjustments and are not very secure. Either you have to refocus before each picture, or carefully install three set screws on the back side of the tube assembly so that you can tighten down on the mirror cell. After everything is snugged down rigidly, you will not have to refocus for the rest of the night.

This method leaves no doubt that your images will be at the best possible focus your system can deliver. However, as with any precision method, practice will speed the procedure. Shoot several test exposures of close double stars and you will immediately see what you have been missing. Then, when the time comes for those important photos to send in to the editor you will be rest assured that they will at least be in focus.

Now, about precision guiding...

* * *

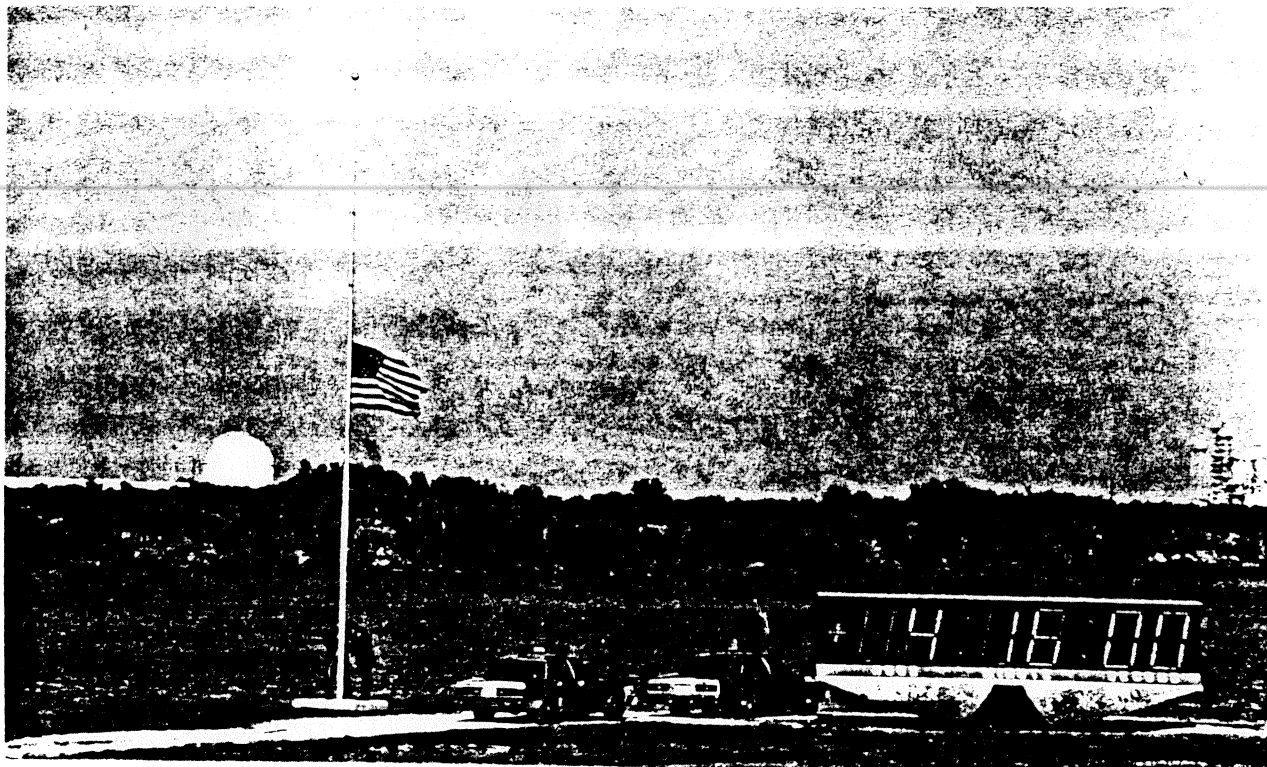
I would like to thank Todd Prydybasz for supplying this month's star charts along with the accurate Halley chart and to thank Laurel Wanrow for her technical assistance prior to publication.

Photos courtesy of NASA.

THE NOVAC CORONA may be reproduced with credit given to the Northern Virginia Astronomy Club.

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The Corona deadline is the 15th of the preceding month. For more information regarding club activities call 703-644-4331. Send all material regarding the club, including that for publication, to the Secretary/Editor; Blaine Korcel (703-256-4430), 5401 Danville St., Springfield, VA 22151



NOVAC SPRING 1986 ROSTER

As of March 27

NOVAC Information

A recording of pertinent info for the benefit of the members and the public.....703 644-4331

President

Nils Thomas.....8470 Thames Street, Springfield, VA 22151.....(work 664-6666).. 323-7476

Treasurer

John Huggins.....5608 Flag Run Drive, Springfield, VA 22151.....644-4331 or 569-4990

Secretary

Blaine Korcel.....5401 Danville Street, Springfield, VA 22151..... 256-4430

Chris Adler.....	7131 Gordons Road, Falls Church, VA 22043.....	533-0773
Chuck Beighlea.....	4555 Kendall Drive, Woodbridge, VA 22193.....	703 670-6291
Larry Bohlayer.....	10 W. Washington Street, Middleburg, VA 22117.....(work 703 687-6881)..	703 687-6759
Al Boldt.....	Apt. 730, 4500 South Four Mile Dr., Arlington, VA 22204..(work 756-1264/65)..	379-5721
James Boucher.....	6802 Brisbane Street, Springfield, VA 22152.....(work 676-1250)..	451-3381
Dennis Boyce.....	4304 Javines Drive, Alexandria, VA 22310.....	960-8688
Bill Burton.....	3061 Sugar Lane, Vienna, VA 22180.....	281-7238
Dale Chisholm.....	4379 Farmhouse Lane, Fairfax, VA 22032.....	n/a
James Cannon.....	15510 Barrington Place, Dumfries, VA 22026.....(work 697-0445)..	703 670-0703*
Mark Cowles.....	6801 Yellow Sheave Court, Frederick, MD 21701.....	694-7459*
Janet Dechary.....	1330 Northgate Square, Reston, VA 22090.....(work 885-4097)..	478-0159
Bruce Drury.....	9309 West Park Hill Drive, Bethesda, MD 20814.....	530-2120
Wade Emory.....	6512 Brookleigh Way, Alexandria, VA 22310.....	922-7916
Jerry Ewing.....	11018 Del Mar Court, Fairfax, VA 22030.....	352-0140*
John Fisher.....	3039 Silent Valley Drive, Fairfax, VA 22031.....	280-2348
Dave Francis.....	8518 Ordinary Way, Annandale, VA 22003.....	978-4370
Ned Fredrickson.....	308 John Marshall Drive, N.E. Vienna, VA 22180.....	938-6451
Matthew Gelven.....	2020 Wellfleet Court, Falls Church, VA 22043.....	532-8337
Paul Gibson.....	1803 T. Street, N.W., Apt. D, Washington DC 20009.....(work 523-1938)..	328-2196*
John Godbey.....	7611 Range Road, Alexandria, VA 22306.....	768-6068
Stan & Jonni Gority.....	7934 Orange Plank Road, Springfield, VA 22153.....(work 550-8220)..	455-8297
John Hale.....	3648 Tallwood Terrace, Falls Church, VA 22041.....	941-8624*
Debra Hall.....	5340 Holmes Run Pkwy., # 604, Alexandria, VA 22304.....	n/a
Barry Harlan.....	10201 Bald Hill Road, Mitchellville, MD 20716.....	n/a
Scott Hayes.....	9335 Lee Highway Apt. 1014, Fairfax, VA 22031.....	352-2854
Ed Hodge.....	5902 Prince George Drive, Springfield, VA 22152.....	569-9590
Thomas A. Imbema.....	P.O. Box 34525, Bethesda, MD 20817.....	530-4908*
Milton E. Jones.....	4812 Kingston Drive, Annandale, VA 22003.....	256-3284
Nick Jones.....	P.O. Box 3354, San Rafael, CA 94912.....(work 337-3900)..	n/a
Richard Lawson.....	5603 Flag Run Drive, Springfield, VA 22151.....	569-4458
school.....	P.O. Box 3831, College Station, Fredricksburg, VA 22401.....	703 899-4476
Daniel Lazich.....	6008 Hibbling Avenue, Springfield, VA 22150.....(work 692-2988)..	451-6532
Jim Liles.....	5314 42nd Street, N.W. Washington D.C. 20015.....(work 357-8069)..	966-3576
Ed Linville.....	2645 Jackson Drive, Falls Church, VA 22043.....(work 691-7758)..	573-2431
Thomas Love.....	1941 Rhode Island Ave., McClean, VA 22101.....	536-6936
Ray Lupo.....	7900 Carrleigh Pkwy., Springfield, VA 22152.....	451-0659
Tarrin Lupo.....	7900 Carrleigh Pkwy., Springfield, VA 22152.....	451-0659
Joe Macrie.....	6641 Wakefield Drive Apt. 320, Alexandria, VA 22307.....(work 377-6040)..	660-6042
Fred Maxwell.....	622 Center Street, Herndon, VA 22070.....(work 301 248-8436)..	471-6101
Patrick McNulty.....	4935 Andrea Avenue, Annandale, VA 22003.....	978-6813
Tracey Megenity.....	7403 Recard Lane, Alexandria, VA 22307.....	768-7234
Ed Montes.....	12204 Braxfield Court, #9, Rockville, MD 20852.....	301 984-8697
David Mosher.....	7526 Little John Court, Falls Church, VA 22042.....	573-8830
Dave Norris.....	9418 Goshen Lane, Burke, VA 22015.....(work 695-7620)..	323-7976
Mike Partain.....	6071 Heatherwood Drive, Alexandria, VA 22310.....	922-5762
Gerald Perman.....	2233 Casemont Drive, Falls Church, VA 22046.....	536-8321
Vytas Petrusas.....	5805 Bushhill Drive, Alexandria, VA 22310.....	971-3079

Todd Prydybasz.....	12004 Ashley Court, Manassas, VA 22111.....	703 791-5825
Richard Rathael.....	4102 Portrae Lane, Fairfax, VA 22030.....	378-5445
Ken Roberts.....	3328 Highland Lane, Fairfax, VA 22031.....	573-1885*
Al & Lynn Schumann.....	6121 Rivanna Drive, Springfield, VA 22150.....	971-3257
John Schwab.....	10359 Granite Creek Lane, Oakton, VA 22124.....	273-3234
Michael Sloane.....	705 S. Florida Street, Arlington, VA 22204.....	379-7953
David Springer.....	7200 Trappers Place, Springfield, VA 22153.....	455-3424*
John Sullivan.....	10801 Pearson Street, Kensington, MD 20895.....	942-3992
Gary Sutherland.....	844 Outer Bridge Quay, Virginia Beach, VA 23464.....	703 479-0646
Gilbert Swift.....	5911 Dinwiddie Street, Springfield, VA 22150.....	451-4610
Dane Toler.....	10214 Bushman Drive #10101, Oakton, VA 22124.....	281-2118
Laurel Wanrow.....	3804 Carolyn Avenue, Fairfax, VA 22031.....(work 631-0013)..	273-7165
Robert Welsh.....	3003 N. Charles Street, Apt 2N, Baltimore, MD 21218.....	301 889-5772

New members are denoted by an (*)

TREASURER'S REPORT

Huggins

The treasury has \$540.80 in it as of March 26. We earned a little over \$5.00 interest since we opened the account in January. Be thinking about what to do with it. I would like to welcome the new members to the club.

Thomas Imbema
James Cannon
John Hale
Ken Roberts
Bill Burton
Debra Hall

Mark Cowles
Paul Gibson
David Springer
Dale Chisholm
Ed Montes
Barry Harler

John Godbey

I'm glad you decided to join our organization. As you may already know we have two goals. One is to teach each other about astronomy and the use of the instruments that make it more enjoyable. The second is to give the public a chance to see what we have seen. Our motto sums it up best, "To Observe and to Help Others Observe." Our Halley watches were a total success as was evident by the number of people that turned up and by the number of thank you letters we received. Now that Halley is leaving us it is time to resume planning for our annual public events, namely Burke Lake Telescope Meet (in June) and The Public Observation (in October).

As treasurer I want to tell you what your dues do. First, they support the publication, printing, and mailing of the quarterly (soon to be bimonthly) NOVAC CORONA. Second, they support the building and maintenance of the club's telescope that each of you can check out for a month. There will be more telescopes added to our inventory in the future. Third, they support the material cost of all our correspondence with the people that write us. Finally, we have a library that continues to grow by one book a month. That's the summary of our expenses. You can see that the dues do work for you. Check into using the library and the club's scope by calling Nils or Blaine.

GOING TO PRESS FLASH

DOES ANYONE HAVE ACCESS TO A HIGH QUALITY COPIER? WE ARE DESPERATELY LOOKING FOR ONE WHICH WILL PRODUCE COPIES INEXPENSIVELY AND WHICH CAN PRODUCE A FAIRLY HIGH VOLUME. APPROXIMATELY 85 OF OUR NEWSLETTERS, IF POSSIBLE, STAPLING ALSO. IF ANYONE HAS ANY SUGGESTIONS PLEASE GIVE THE EDITOR A CALL AT 256-4430.