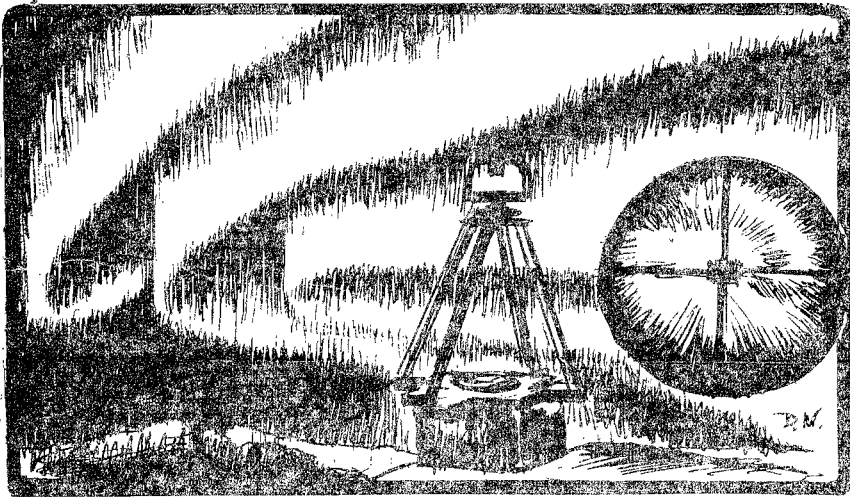


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STAR DUST



JUNE 1, 1970 VOL. XLVII NO. 10



BRIGHT-RAYED BAND AURORA : ALL-SKY CAMERA & IMAGE PRINT

W.R. Blake to Give Aurora Speech

In 1968, the National Science Foundation, in conjunction with the University of Alaska at College, undertook an extensive visual photographic and radio observation study of aurora morphology. Mr. Blake participated extensively in the program and will share with us his personal experiences in night-after-night aurora observing, illustrated with some brilliant photos. He will also bring us up to date on the latest developments in aurora theory. [See calendar.]

W. Russell Blake became director of the Fitchburg Massachusetts planetarium named for Alice G. Wallace, in 1970, after seven years as director of the Chesapeake, Virginia, Planetarium. He is known to many N.C.A. members as the person in charge of local arrangements at Chesapeake, Va, for the N.C.A. eclipse expedition there in March. Mr. Blake currently has a busy schedule of five public astronomy lectures a week, in addition to a full school planetarium program at the University of Maryland. He is currently executive secretary of the Middle Atlantic Planetarium Society.

W. Winkler



Short Notes- - **FROM THE PRESIDENT**, N.C.A.

This is my last Hurrah. There are some pluses and some minuses in the past two years of this administration.

I didn't get the new membership list out, I didn't get minutes of all the meetings. I didn't allow business discussions after the adoption of the new constitution, but then there is no allowance for such programing except at the yearly membership meeting in May and at such other times as authorized by the club constitution and By-laws.

I did get the name changed legally after its being used for 31 years. The Constitution was submitted twice and approved by a mail vote of 104 to 9 by the membership. Our application for membership in the Washington Academy of Sciences was accepted, approved by its Board of Managers unanimously, submitted to the 1300 members of the Academy and we were voted in by a fantastic response of 772 to 6.

Purchases were approved for completely outfitting our observatory at the 5" located on the Naval Observatory grounds. For the first time we now have sky maps, ephemeris, short wave radio for WWV, sidereal clock, outlets and extension cords for auxiliary telescopes, and other needed improvements for the convenience of our members in using our 5" refractor for visual observation.

We have successfully staged expeditions of our members and friends, to observe the recent eclipse of the Sun, and again with the transit of Mercury across the Sun. Bill Winkler has given us a wonderful program of speakers and interesting discussion groups that have done much to make our lecture series outstanding.

In addition, our club has been fortunate in having such members as Col. Sidney Opie, Larry White, Col. Freund and his son Daryl, Sheila Duck, Bill Pala, Ray Finkleman, Dr. Krebs, Worth Crowley, Bob McCracken, Bob Wright, Norm Sperling, John Alexiou, Charles Shepard, John Korintus, Dave Nordin, and a host of other active members, for whom I apologize because space is not available to list all those who have been most faithful in participating in club activities.

John Legowik and Bonnie Legowik assisted by Dave Nordin have really done a beautiful job in getting out our monthly newsletter and fact sheet. I would be remiss if I didn't thank all the wonderful wives, husbands, parents, and grandparents who have faithfully attended our meetings and have tried to appear happy listening to speakers, discussions, and the business sessions. Without their aid and forbearance, our attendance would have been a sad, sad "happennance."

Now for some really good news; June 21st, 1970, is the date of our reception and official welcome into the membership of the Washington Academy of Sciences.

Father Heyden of Georgetown has agreed to be the General Chairman of the meeting. The program has tentatively been set up as follows:

Academy Reception (from p. 2) 3

Exhibits of astronomy projects, observations and equipment by NCA members in the lobby of new Science Building at Georgetown University, from 1:30 to 3:30 PM.

Call to order about 3:30 PM by the President of the Academy. Introduction of representatives of the member societies and other distinguished guests; introduction of General Chairman Father Heyden as principal speaker, who will deliver an interesting talk on astronomy; A discussion by our Juniors on their interests and projects, (pay attention, Daryl Freund, Ray Finkleman, Sheila Duck, Bill Pala and others); some exciting movies and slides by Father Heyden, and the formal welcome into the Academy by the President or his representative, response by President Gould. Exhibits to be removed by 7PM. Tentatively, refreshments will include soft drinks and ice cream bars to encourage the theme of youthful exuberance in the hobby of astronomy.


Roland Cumberland has offered to help out by having tours through his plant, earlier between noon and 2PM to show our members and guests how the Questar Optics are made. If you missed it the first time two years ago, don't let this slip through your fingers. But we must have your reservation in advance. We hope to encourage many of the attendees of the regional meeting in Baltimore to come to our reception and this tour through Questar production facilities is an extra for their benefit.

We will need plenty of help from our members. Col. Opie has agreed to be our club chairman. Bill Winkler will be in charge of our exhibits. We need hospitality and reception ushers. The Academy and the Junior Science Board will mail out invitations to over 1300 science teachers, science clubs, and members of the Junior Academy. The press will be invited and we hope to receive good coverage.

Please send your donations and contributions to help us defray the expenses of making this program a success. Part of the receipts will be used to cover the cost of the Academy mailing to vote on our membership. Your continuous support has been most encouraging. We need to raise about \$200.00. This would average out to about \$2.00 per member, but we will accept larger checks without a word of protest.

Bring money to June 6th meeting, or send it in today to George E. Gould, Pres. NCA, 1710 Mark La., Rockville, Md. 20852, or to Treasurer Jerry Schnall, 2801 Quebec St. NW, Washington, D.C.

Let's all turn out to make this a real "wing-ding" affair. I wish to take this opportunity to wish Bill Winkler and his new team of officers lots of luck for their new term of office starting July 1, 1970-


George E. Gould, President, NCA

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CALENDAR

Saturday, June 6th, 6:15 PM - Dinner with the speaker at Bassin's 14th and Pa. Ave., N.W., Call Legowik - 946-8996 or Winkler-762-5135, before 1:00 PM Saturday for reservations. Let's see a good turnout.

Saturday, June 6th, 8:15 PM - N.C.A. meeting at the Department of Commerce Auditorium, 14th and E. Streets, N.W., Russell Blake will speak on the Aurora and his observing experiences. The Science Fair Awards will be presented.

Friday and Saturday, June 19th and 20th - Middle East Convention of the Astronomical League at Baltimore. For registration send to Mr. Richard Schimmel, Maryland Academy of Sciences, 7 West Mulberry Street, Baltimore, Md. 21201. Any papers should be sent to Mr. Harold Slanker, Jr., General Convention Chairman, at the above address. It will be held at the Quality Motel West at route #40 West and the Baltimore Beltway. For reservations write or call 744-5000.

Sunday, June 21st - The reception held by the NCA for the Washington Academy of Science. Further details will be announced at the meeting or call George Gould - 881-4579.

Saturday, June 13, 9 PM - Exploring the Sky - a joint program of the National Park Service and the NCA, conducted by Bob McCracken at picnic grove 16 in Rock Creek Park (South of Military Road on Glover Road near the Nature Center) for further information call Bob McCracken - OL 4-3321.

Freiday, June 5th, 9 through 11 PM - Observing through the 5-inch at the Naval Observatory with Larry White. Observations at other times can be arranged through any member carrying a key card

Friday - Each Friday night of June, mirror-making classes will be held at the Palisades Community Center by Jerry Schnall. If you need information or directions contact Jerry at EM 2-8872.

Saturday, June 13th, 2 PM, Maryland - D.C. Juniors meeting held at the Chevy Chase Public Library, 8004 Connecticut Ave., Chevy Chase, Md. For additional information contact Ray Finkleman at 933-0945.

PARTIES PLANNED

Several STAR PARTIES are scheduled during the summer months. Tentatively, they will be held at Travilah Elementary School.* For additional information call Legowik or Finkleman.** Tentative dates are: June 26th, rain date, June 28th; July 31st, rain date, August 2nd, and August 16th (Lunar eclipse and occultation of the Pleiades), rain date, August 21st. *(Gaithersburg) **946 8996 or 933 0945

5. An Eclipse Project

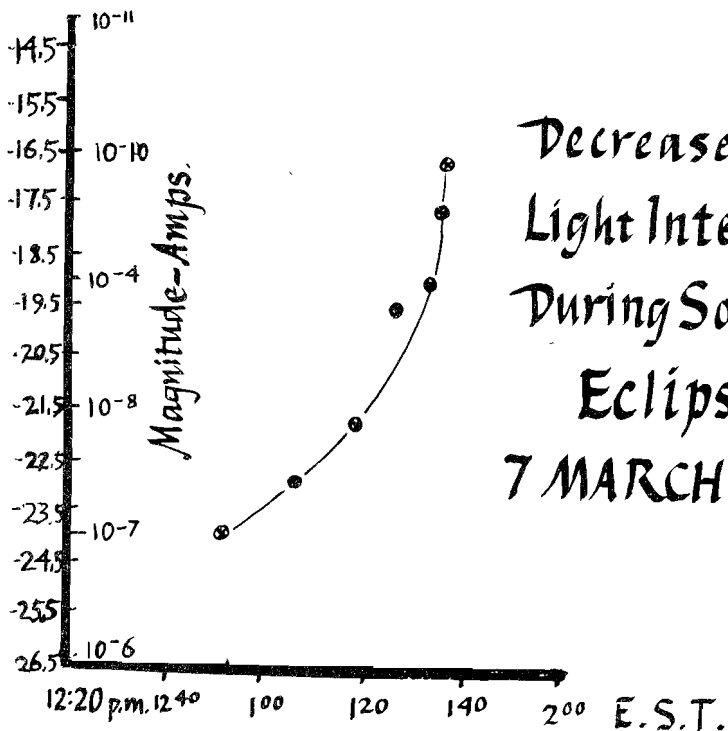


MEASUREMENT OF LIGHT DECREASE DURING THE MARCH 7, 1970,
SOLAR ECLIPSE.... BY JAY H. MILLER

The purpose of the experiment was to record and measure the decrease in light intensity during the total solar eclipse of March 7, 1970.

The equipment was set up on the grounds of the Holiday Inn Motel in Williamston, N.C. The set-up included a solar cell, a log amplifier and a Heathkit chart recorder. The solar cell was covered with opaque black paper and a number 5 Kodak neutral density filter to cut down the light intensity to keep it within the range of the chart recorder.

I began the experiment at 12:20 PM, EST. The pen went off scale at 1:36 PM, EST. This last time is approximate, since the chart feed was erratic. Although the chart was started several minutes after the first contact, I still used -26.5 as my beginning point. As is shown on the graph, the magnitude at totality was less than -14. Since the full moon has a magnitude of about -12.5, totality was close to or brighter than this. The magnitudes were arrived at by using the calibrations: 1 micro-amp, 10 nanno-amps and 100 pico-amps given on the log amplifier along with the fact that the difference between two magnitudes is 10^{-4} .



Decrease in
Light Intensity
During Solar
Eclipse,
7 MARCH, 1970

New Members



Dave Dombrowski, 1215 Russell Road, Alexandria, Va., 22301,
548-2508, Junior Membership.
Frank S. Kadi, 3617 Old Post Road, Fairfax, Va., 22030,
273-1738, Regular Membership.
Ronald Dean Novotny, 2100 Brooks Drive, #612, Suitland, Md. 20028,
735-3752, Regular Membership.

Address Changes:

George Gould, 1710 Mark Lane, Rockville, Md. 20852,
881-4579.

Mercury Transit Observed

The transit of Mercury observation was well-attended. Over thirty-five persons gathered in the early morning of May 9th in a roadside pasture adjacent to the Comus Inn. The morning was quite hazy at first, causing many to worry that our luck had finally run out - however, by 7:30 the clouds and haze parted, affording an excellent view of the solar disc. Mercury appeared much sharper than most of we tyros had been led to believe. Numerous instruments were set up, ranging from refractors up to 4" and several binoculars, to John Korintus' 10" reflector. Many used similar set-ups to those used for the solar eclipse while others viewed by projection and photographed the projected image. Those in attendance from NCA were Ray and Charles Finkleman, Andrew Schneider, Charles Wilkes, Aaron Filler, Matthew Filler, Mr. and Mrs. Worth Crowley, Bruce Muirhead, Ken Crowley, Alan Fischer, John Alexiou, Fred Cornelius, Charles Cook, Ross and Harold Croulet, Col. and Mrs. Sidney Opie, John Korintus, George Gould, Jean Radoane, William Pala, Jay Miller, Larry and Robert White, Jerry Schnall, Rene LaMadrid, Leo Menesrina, Richard Snoemaker, Morton Schiff and John Legowik. A good time was had by all. The breakfast afterward in the Comus Inn was excellent. Our thanks goes to Col. Opie who went to so much trouble to set up the expedition and arrange for the breakfast.

J.L.



May Program

Dr. Kunimoto Sakuri, visiting scientist at the Goddard Space Flight Center, spoke to the N.C.A. on the relationship between sunspot magnetic field configurations and the very-high-energy solar flares called proton flares. Stressing the importance of combined radio and optical solar astronomy, Sakurai has found that the source of particle accelerations appears to be the sunspot umbral regions where field gradients are most intense. More equipment capable of covering a wide spectrum of astronomy radio bands with great sensitivity is needed for this work.



NOTICE! Sky and Telescope

During the summer we will all receive a renewal card from Sky and Telescope. In the past we have discarded these. Because Sky and Telescope has changed to a computer mailing it will now be necessary to send these in with our renewal this fall. DO NOT THROW AWAY SKY and TELESCOPE RENEWAL NOTICE. Please hand these in to or send them to the Secretary, Sheila Duck, at 5617 Seminole Street, Berwyn Heights, Md. 20740.

Treasurer's Report

INCOME

Dues	\$39.75
Handbooks (4),	6.00
Book Sales	1.75
Total Income April . . .	\$47.50
Balance April	\$563.83
Total	611.33
Less Outgo, April - . . .	59.28
Balance April 30th..	\$552.05

OUTGO

Star Dust	\$22.02
Sky and Telescope	13.35
Speakers' Dinners	21.63
Directory	.66
Books to be Sold	1.60
Total Outgo April	\$59.28



UFOs Discussed "Astronomically"

The UFO talk and discussion meeting, postponed to May 20 due to the May 9 demonstrations, was attended by about 40 persons. To bring it into an astronomical context, Mr. A.F. Lopez, who has been associated with six intelligence agencies, mentioned the speculation by astronomers Sagan and Shklovskii that the satellites of Mars might be artificial, because of the peculiarity of their orbits and their low albedos (indicating an openwork space station?) and the revelation that Phobos is larger and darker than its estimated albedo, lower than that of any other object, as indicated by the recent fly-by at 8,000 miles (Science, May 13.) He mentioned a NASA technical report, LUNAR EVENTS (NASA TR-R-277) describing moving lights, etc., seen on the moon's surface. He showed a copy of an astronomy journal, The Texas Sky, devoted to a UFO discussion. He conceded that there is an official policy of ridicule and playing down of UFO information; mainly, it appears, in order to prevent paralysis of communication media during a prolonged or mass sighting.

PHOBOS: ANOTHER VIEW

On a BBC shortwave broadcast of May 29, the British Planetary Society presented a view, growing from the recent reconnaissance, that since the Satellite Phobos is potato-shaped, about 18x22 km. in size and has the very low albedo of .065, it could be a captive asteroid. D.N

Science Fair Results

NEWS 8

N.C.A. judges Bill Winkler and Bob Wright awarded two N.C.A. memberships in the recent special judging at the Prince Georges area Science Fair at the University of Maryland. In the Junior Division, N.C.A. member Bruce Muirhead won for his project "Measuring the Speed of Light", using Roemer's method based on the motion of Jupiter's moons. In the Senior Division, Peter Trexler of Oxon Hill High School won with his study of the light curve of the eclipsing binary, Algol. The awards are to be presented at the June 6th meeting.

Officers Elected

The following persons were elected into office at the last meeting of the National Capital Astronomers: President, Bill Winkler; Vice-President, John Eisele; Secretary, Sheila Duck; Treasurer, John Legowik; Sargeant at Arms, John Korintus; Trustee, Alexander (Larry) White.

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NATIONAL CAPITAL ASTRONOMERS, Inc. of
WASHINGTON, D.C., George E. Gould, Pres.
1710 Mark Lane, Rockville, Md., 20852
STAR DUST * Editors: John Legowik, 3513 Randolph Road, Wheaton, Md. 20902; David Nordin, 1225 Quincy Street, N.E., Washington, D.C. 20102



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