

JUNIOR DIVISION NEWS

Just a reminder, since this is the last issue of STAR-DUST before the middle of summer, the dates for World Nights are again: July 1,2,3; July 29,30,31; and August 19,20,21. For further information contact your local project head.

----- Jim Harrison

SCIENCE FAIR AWARDS

The annual Science Fairs have once more been keeping some members of the NCA busy delving into many intricate projects the young people of our area have been working on for many months. Nine of these young people have been selected to receive the NCA award of membership for their outstanding work in the field of astronomy. They and their projects are as follows:

David Aymond	1214 Dogwood Drive, Alex., Va.	TE 6-0773
Hammond Jr. H.S.	- OBSERVATIONS WITH AN ALTAZIMUTH TELESCOPE	
Bob Bergseth	1013 No. Larrimore St., Arl., Va.	JE 2-5526
Swanson Jr. H.S.	- CHART ILLUSTRATING MOVEMENTS OF MARS, JUPITER, AND MERCURY IN RELATION TO THE SUN	
Gary Conover	3920 Livingston Rd., Hyatts., Md.	UN 4-0789
Hyattsville Jr. H.S.	- MICROMETEORITES	
Sam Friedman	3722 Appleton St., N.W.	EM 3-6738
Woodrow Wilson H.S.	- DRAWINGS OF SATURN	
Edward Lusby	Route 1, Box 371, Oakton, Va.	DU 5-7301
James Madison H.S.	- MAKING AND USING A SIX - INCH REFLECTING TELESCOPE WITH PHOTOGRAPHS OF THE MOON AND DRAWINGS OF THE MOON AND SUN	
Bruce C. McGuinness	12415 Connecticut Av., S. S., Md.	WH 2-5951
Wheaton High School	- ASTRO-PHOTOGRAPHY	
Gary Allen Reese	4108 No. 35th St., Arl., Va.	JA 2-2944
Swanson Jr. H.S.	- TELESCOPE WITH A NOVEL PORTABLE MOUNTING - DRAWINGS OF THE MOON	
Miss Jean Schooley	3940 First St., S.W.	JO 3-5988
Hart Jr. H.S.	- SATELLITE ORBIT SIMULATOR	
John Tomlin	9810 Wildwood Rd., Bethesda, Md.	WH 2-4747
Kensington Jr. H.S.	- SELENOGRAPHY - CHARTING THE MOON	

NEW MEMBERS

Kenneth Callahan	Box 650, American Univ., Wash., DC	WO 6-9887
Kenley Mays	5714 N. 11th St., Arl., Va. Apt.8	KE 8-5553
Charles A. Weeks	1121 Marlan Drive, Alex., Va.	SO 5-7071

JUNIOR MEMBER

William R. Dailey	2339 Hemlock Dr., Falls Church, Va.	JE 4-3807
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\* S T A R D U S T



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# ★ S T A R D U S T



June 1960

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## OPTICAL PHENOMENA IN THE EARTH'S ATMOSPHERE TOPIC FOR JUNE



DR. G. F. W. MULDER'S

Many beautiful phenomena occurring in the sky are not astronomical in nature, but nevertheless arouse the interest and admiration of amateur astronomers for technical and aesthetic reasons. Among these are rainbows, halos, and sunset effects, such as the famous "greenflash", which result from optical refraction, diffraction, and scattering of light by air molecules, water droplets, or ice crystals in the earth's atmosphere. Dr. Mulders has a large collection of slides showing many beautiful examples of these phenomena. He will also discuss northern lights and show photographs of them.

Dr. Mulders was born in Holland and obtained his Ph.D. degree from the University of Utrecht in 1934. He came to this country in 1935, did research at Mt. Wilson Observatory, and taught at several universities. Before coming to the astronomy program of the National Science Foundation in June, 1959, he was a science research administrator with the office of Naval Research for twelve years. His specialty is solar spectroscopy.

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EVENTS FOR JUNE

- 1 - TELESCOPE MAKING CLASS, Bladensburg Material Center, 4600 Var-num St., 7:30 - 9:30, Bill Isherwood, In.
- 3, 10, 17, 24 - TELESCOPE MAKING CLASS, Fairfax High School, 7:30 Grady Whitney, Instructor
- 4 - OPTICAL PHENOMENA IN THE EARTH'S ATMOSPHERE - Dr. G. F. W. Mulders. Meeting follows Dept. of Comm. Audit. 8:15
- 5 (Sunday), 25 (Saturday) - EXPLORING THE SKY, Fort Reno Park, 40th & Chesapeake Sts., NW, 9:00 P.M. All members and guests urged to come equipped.
- 6, 13 - TELESCOPE MAKING CLASS, Chevy Chase Community Bldg., 5601 Conn. Ave., 7:30-10, Hoy Walls, Instr.

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THE SEEING WAS GREAT!

At the May meeting, we were privileged to hear Dr. John Strong of the Johns Hopkins University speak on "High Altitude Astrophysical Observations". Dr. Strong told about the Johns Hopkins balloon - spectroscopy project of last November. During this flight, two scientists using a spectroscopy mounted on a sixteen inch telescope, aboard a balloon gondola floating at 80,000 feet above the ground, verified the presence of water vapor in the atmosphere of Venus.

By being at 80,000 feet, the telescope was above atmospheric turbulence and also above most of the atmosphere that absorbs infra-red, since, at this altitude there remains only about two inches of water vapor above. The reflecting surface of the sixteen inch fused quartz mirror was covered with gold. Gold, rather than aluminum was used because it has higher reflectivity and this becomes very important because there are eleven successive reflections in the system. The telescope used had an altazimuthal mount.

Water vapor in the amount of five per cent was found in Venus above the reflecting cloud layer. This is equivalent to about nineteen microns of precipitable water if it is at the same pressure as the stratolab. The pressure on Venus is not known, however. This detection of water vapor on Venus is of primary importance and will greatly effect the ideas of astronomers concerning the surface conditions of Venus. ----- Ellen Stolarik

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ELECTIONS

Unlike the present political scene, the NCA elections came off smoothly at our May meeting. Although we were all stunned and saddened to hear of David Rotbart's sudden illness which caused him and his running mate, Bob Wright, to withdraw from the race, we were happy to find a new team in Henry I. Metz and Thomas Wells. Ellen Stolarik, our able STARDUST reporter, mother of three infants, and Maryland University physicist, will serve as secretary and ever faithful past-treasurer, Bill Lipscomb will again serve in that capacity. Sam Feild was elected as trustee.

Our new president, Mr. Metz, is, at present, the Vice-President in charge of Radio Engineering at Capital Radio Engineering Institute and has been a member of the NCA for approximately ten years. A comparative new-comer to the NCA, our new vice-president, Tom Wells, received his masters at Ohio State where he was employed by the McMillan Planetarium. He is, at present, a physicist in the electrical measurements standards division of the Bureau of Standards. We know we can look forward to another wonderful year under their direction and, at the same time, regretfully hate to see our present officers go, although, happily, we trust that they won't go too far.

CONVENTION TIME AGAIN

On May 7th, the NCA was happy to welcome twelve members of the Rittenhouse Astronomical Society and the Amateur Astronomers of the Franklin Institute. During their visit, they were shown through the Naval Observatory, were entertained by Perky and Bob Wright and attended the NCA meeting.

One of the purposes of their trip was to invite the members of the NCA to attend the annual Astronomical League Convention which will be held in Philadelphia this year on September 3, 4, and 5. The spokesman for the group was Mr. Ed Bailey, head of the Astronomy Department of Franklin Institute. He urged members their families and friends to send in their reservations and deposits now!

The weekend promises to be an exciting one and we hope it will be well-attended by members of the NCA. Besides interesting sessions, an exciting bus tour has been planned for the fourth which will visit the Edmund and Spitz Laboratories and Sproul Observatory. Other observatories in the area are included in the trip, so you can see it shapes up to be a truly "astronomical" weekend. Estimated cost for the three days for room, food, and various convention costs is approximately \$32.00. Many reservation blanks are available with detailed information, so, if you are interested, please call Lillian Gregor at LU 2-4956.

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EXPLORING THE SKY

Once more, summer is here, and it is time to meet in Fort Reno Park for our annual outdoor program, Exploring the Sky. For the benefit of newcomers to our group or to anyone interested in the stars, introductory remarks, telescopes, and guided tours of the heavens are provided by members of the NCA, in cooperation with the National Capital Parks summer program. The moon, star clusters, double stars, spring and summer constellations, and other celestial objects are shown to the public through the telescopes of NCA members. Astronomical slides are shown on cloudy evenings at the park although, if it is raining at scheduled time, the program is cancelled. This is one of the major activities of the NCA and we hope that there will be a good turnout at all of the meetings. Come along and bring any equipment you can find for photographing and for viewing.

In order to take satisfactory telescopic pictures of the moon when photographing the sky is scheduled, a camera with adjustable lens and shutter speeds is necessary; single-lens reflex cameras are particularly well suited for this purpose. Film with ASA speed 80 or more should be used. These meetings take place in Fort Reno Park, north of the intersection of Fourtieth and Chesapeake Streets, NW, and are held several different dates each month during the summer and early fall, so check your STARDUST calendar or the National Capital Parks Outdoor Program for times and dates.