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RESIGNATION OF TRUSTEE -- Mr. James Crowell has submitted his resignation as a Trustee. Mr. Crowell was elected last May to serve a 4-year term, starting in September 1951. He has since found that his efforts towards further education and his office work do not leave sufficient time to devote to the assistance which he feels a Trustee should give to this office. Thank you, Jim, for the time you have been able to give during these last few months.

-- Janet Perkins

GRAPHIC TIME TABLE OF THE HEAVENS is enclosed with this issue of STAR DUST. Sufficient copies were purchased by the NCA for distribution to each member. A few additional copies were secured, and may be purchased from Mrs. Alston for twenty cents each. One large wall chart was given to the NCA and this will be hung in the building housing the NCA telescope.

ROYAL CANADIAN HANDBOOK OF THE HEAVENS for 1952 has been ordered, but we hear from Canada that it will not be available for distribution until the middle of January.

THE MIAMI SPRINGS, FLORIDA, astronomy club wrote the NCA a letter acknowledging the use of our constitution and by-laws as a pattern. The club also invited any of our members to visit them when they are in Florida.

TELESCOPE MAKING CLASS IN ACTION. Here is an opportunity to see the equipment owned by the NCA and the methods used to make telescope mirrors. Miss Irene Warthen and the telescope making class have invited the NCA and friends to visit them on Friday, January 11, 7-10 p. m., Room 319, Roosevelt High School, 13th and Upshur, N. W. Whether you are interested in making a telescope or not, come visit the class and see how it is done.

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Jewell Boling, Editor, 1717 P St., N. W. North 9621

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MEMBERSHIP ROSTER ISSUE

JANUARY CALENDAR

Date

- 5 Sat. "RADIO STUDIES OF METEORS," Mr. Thomas N. Gautier of the National Bureau of Standards. Commerce Auditorium 8:15 p. m.
- 11 Fri. Visit to Telescope Making Class. Room 319 Roosevelt High School, 13 & Upshur, N. W. 7-10 p. m. Miss Warthen.
- 15, 16, or 17 Group Observing at the NCA 5", Naval Observatory Grounds. First of these dates on which skies are clear.
- 16 Wed. First of monthly lectures on scientific topics, Pierce Hall, All Souls Church, Harvard and 16th St., N.W. 8:00 p. m.
- 19 Sat. DISCUSSION GROUP, 8:00 p. m. Commerce Foyer. Bob Wright.

Tuesday and Friday, 7-10 p. m. Telescope Making Class, Roosevelt High School, Room 319, 13th and Upshur, N. W. Miss Irene Warthen, Instructor. Telephone L0ckwood 5-1237. Miss Warthen is present on Fridays.

"RADIO STUDIES OF METEORS" is the title of the lecture Mr. Thomas N. Gautier of the National Bureau of Standards gives to NCA on January 5. He will inform us about techniques of radio observation of meteors, the character-

istics of their radar echoes, and interpretation of these records. He will also discuss the part played by visual observations. Effects of meteors are of great interest in research on properties of the upper atmosphere. From measurements of the speeds of the meteoric particles and of the heights, brightnesses, and spectral composition of the luminous trails, deductions about the composition of the upper atmosphere as well as its temperature and pressure have been made. Visual observations of the motions of enduring trains have furnished information about winds and turbulence in this region.

In recent years investigations of meteor trails with radar-type equipment have furnished additional information about the upper atmosphere and knowledge about meteors themselves. For example, rich daylight showers have been discovered, and it has been possible to show that a negligible fraction of meteoric particles producing observable trails have sufficient velocity to have arrived from outside the solar system. Visual observations made simultaneously with radio observations have been invaluable in the interpretation of the radio data. Members of the National Capital Astronomers have helped Bureau of Standards personnel do this work on several occasions during active meteor showers.

Mr. Gautier is assistant chief of the Upper Atmosphere Research Section, Central Radio Propagation Laboratory. He has studied physics at the Universities of North Carolina and Florida, where he received his M. S. He has specialized in infra-red spectroscopy, scattering of fast electrons, and ionospheric radio wave propagation, and has been at the National Bureau of Standards since 1942.

---Mrs. Harriet Malitson

ELECTION OF A NEW TRUSTEE to fill Mr. Crowell's unexpired term will be held at the January meeting, provided a quorum is present. Nominations will be requested from the floor at this time.

TRIP TO HOOD COLLEGE. Saturday, November 24, found the following stargazers headed for Frederick, Maryland in six cars, destination Hood College: Marian Ambleau, Ione Alston, Elizabeth Goerner, Margaret Glock, Dorothy Lamore, Mabel Sterns, George Borresen, Janet Perkins, Bob Wright, Mr. and Mrs. James Cracroft, Mr. and Mrs. Hoy Walls, Donald Hallinger, David Fetter, Leo Scott, Dana Law, David Minton, Morton Schiff, Donald Miller, William Doster, Thelma Cressy, and Betty Fazekas.

The skies were completely overcast, but we knew there would be more than enough, even without clear skies, to keep us interested. Of course, we were right. Miss Leah Allen, our very gracious hostess, showed us her many gadgets, and her beautifully planned observatory. As the evening wore on, she announced that while we had been preoccupied with spectroscopy (demonstrating sodium lines), star-globes, constellation jig-saw, model of the Big Dipper, old astronomy textbooks and magazines, and many other interesting things, the skies had cleared, and we were to look through the telescope. First, the spectrum of Aldebaran, not very clear; after a few minutes the spectrum of Betelgeuse, which was excellent with the dark lines of sodium clearly visible. We finished our observing with a peek at His Royal Highness, Jupiter. Some few remained to see the Orion Nebula, while the rest of us went to one of the adjoining buildings for coffee, sandwiches, and ginger cookies. We had a fine time from start to finish. Why didn't you join us?

-- Betty Fazekas

RAYMOND G. DEFREES, CHARTER NCA MEMBER, died December 8 at his home in Lynnhaven, Virginia. He is survived by his wife, a son, and four daughters. Mr. DeFrees, a native of Troy, Ohio, became interested in astronomy at an early age. Many early NCA members know and remember him. He was very active, teaching a class in constellation study and owning several telescopes. He gave astronomical lectures at George Washington University. In recent years he ground a 10" reflector.

1951-1952 COMMITTEES

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DISTRIBUTION: Nettie Mansker; Elizabeth Goerner  
TELESCOPE MAKING: Irene Warthen; William Isherwood;  
George Borresen  
DISCUSSION GROUP: G. R. Wright

SKY AND TELESCOPE SUBSCRIPTION POLL. During January each member of the NCA, regular and junior, will receive a post card asking him to indicate whether he would like to receive SKY AND TELESCOPE through his NCA membership. Individual subscription to this excellent astronomical publication is \$4.00 per year. When subscriptions are placed for all regular members of a society, the rate is \$2.00 per year. But a club may take advantage of this reduced rate only if all regular members subscribe. This will mean, of course, that dues will be increased by \$2.00 per year. Please watch for this notice, indicate your preference, and return it promptly so that the Trustees may reach a decision at an early date.

HOW ABOUT ANOTHER NCA DINNER? - The answer at the December meeting was yes, and the date was set for some time in February. Leo Scott and Irene Warthen are arranging time and place. Thelma Cressy and Ruth Heisey are busy planning entertainment. Ione Alston will take reservations when details are known.

HAVE YOU USED THE NCA 5" TELESCOPE LATELY? - A check of the record book at the 5" shows there is plenty of opportunity for more use of this telescope. If your name is not on the list to secure the key, and you wish to do individual observing, see Mr. Lyons, Carl Wernz, or any Trustee.

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GROUP OBSERVATION NIGHT for January will try to outwit the cloudy skies. The place will be at the NCA's 5" Alvan Clark refractor, Naval Observatory. Your membership card will admit you. The date will be January 15, 16, or 17, whichever is the first clear night. Naked eye variable stars will be studied, together with other types of observing recently studied in the Discussion Groups. Bring telescopes for other observing too.

ANNOUNCEMENT WAS MADE at the December meeting concerning Mr. Jenkins. He continues to be confined to his bed, but would like to receive notes and cards from his friends.

MRS. U. S. LYONS is recovering from an illness at her home 4624 49th St., N. W. We hope she will be able to be up and out again, soon.

MONTHLY SCIENTIFIC LECTURES are to be given at Pierce Hall, All Souls Church, 16th and Harvard Streets. STAR DUST will carry the announcement each month of the date and topic of the lecture. Ordinarily the lectures will be given at 8:00 p. m. on the third Wednesday of each month. The lectures are open to the public and there is no charge. The purpose of these lectures, of which there will be four during the coming four months, is to present outstanding leaders in specific scientific fields, speaking in terms geared to the layman's understanding. The topic of the first lecture, to be given January 16, is to be MODERN PSYCHOLOGY and the lecturer will be Dr. Winfred Overholser of St. Elizabeth's Hospital. Scheduled for February is a lecture on Color and Luminosity by Dr. Judd and for March a lecture by Dr. Hall of the Naval Observatory on his work with the moon.

THE ELEVENTH ASTRONOMICAL COLLOQUIUM was held at Georgetown University on December 11. The speaker was Dr. John A. O'Keefe of the U. S. Army Map Service, speaking on, "THE MEASUREMENT OF THE RADIUS OF THE EARTH BY OCCULTATIONS OF STARS."

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