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# ★ STAR DUST



## JUNIOR DIVISION REORGANIZING ALERTING NETWORK

Because some members of the NCJA have gone off to college and others have lost interest, the Junior Division Special Phenomenon Alerting Network must reorganize this fall. All Juniors desiring to be in the new network must notify Leith Holloway, Apt. 640, 2800 Quebec St., N.W., Washington 8, D.C. by a post card postmarked on Thursday or Friday, October fourth or fifth.

### MD -DC JUNIORS

On behalf of all the members of the NCJA I would like to thank my predecessor, Chris Walker, who is attending Yale for the excellent work which he has done, and only hope I can do as well at this job.

At our organizational meeting on September 15th there were ten members present, about half of which were new to our club. We discussed our plans for the coming year and an idea was brought up that a specific project be undertaken. Another idea brought to light was that each person be assigned a planet on which to do research and at the next meeting a report would be given on this planet. Many of the club members were interested in having two meetings a month, the first being a lecture and the second being an observing session at one of the member's houses, although this has not been made definite. Although some of the high school football games may interfere, we are still planning on meeting at the Chevy Chase Community Center on the second Saturday of each month at 2 PM, until other arrangements are made.

Ernest Goodwin, Junior Editor

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### NEW MEMBERS

- JOINT: Col. & Mrs. W. P. Pala; 513 Dead Run Drive; McLean, Va. EL 6-6007
- JUNIOR: William Pala, 513 Dead Run Drive, McLean, Va. EL 6-6007
- Steven J. Blake, 3522 Quebec St., N. W., Wash. 16, D.C. WO 6-5961
- Herbert Hecker, 6521 8th Place, West Hyattsville, Md. HA 2-2179
- Paul Greenberg, 404 Cedar Hill Road, Falls Church, Va., JE 4-6358
- Norman Sperling, Apt. 206, 735 Sligo Ave., Silver Spring, Md. 589-8610

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**DON'T FORGET TO PAY YOUR DUES!** Send your dues to the treasurer, Roger Harvey, 517 Valley Lane, Ravenwood, Falls Church, Virginia, JE 2-1782.

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OCTOBER 1962

Vol. XX No. 2

## CONCERNING THE ORIGIN AND MODELING OF LUNAR FEATURES



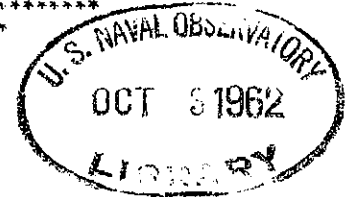
Our speaker for October is Mr. R. Benton, geophysicist, astronomer, selenographer, engineer, ... and presently Coordinator for Space Research at Melpar, Incorporated in Falls Church, Virginia. Mr. Benton comes to us with an extensive and impressive background in astronomy and a multitude of related sciences to present a two-part slide talk the first half of which is entitled, "Comparisons of Possible Crater-Forming Processes on the Moon." Here, he brings into sharp focus and contrast the three classic hypotheses put forth to account for the origin of the surface features of Earth's natural satellite:

the meteoric, volcanic, and bubble theories. In the second half of this well illustrated and informative address, entitled, "The Making of a Scale Model of the Moon," he will discuss the methods employed and the problems encountered in four and one-half years of development of an accurate scale model of Moon's visible face. One such model will be put on display at the close of the address and a number of illustrated copies of Mr. Benton's "comparisons" will be available for the asking.

Mr. Benton received his B.S. degree in Geophysics and Astronomy from the Johns Hopkins University in 1949. In the 13 years since, he has worked as an engineer, lunar consultant, and author on the motions, physiography and physical environment of the moon, and has developed and fabricated lunar models internationally recognized as being the most definitive yet produced. His current activities are concerned with meteoroid and cometary studies, and with research into the influence of solar-flare activity upon metabolic rates in biological specimens. He is a Senior Fellow of the International Lunar Society, and a member of the American Rocket Society, the American Astronautical Society, the Maryland Academy of Sciences, and the Baltimore Astronomical Society.

The knowledge and understanding of this broad and controversial subject area which Mr. Benton brings to us, coupled with the excellence and clarity of his handling of this material, make his talk informative, thought-provoking, and...interesting.

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- 5 TRUSTEE MEETING at the Chevy Chase Community Center at 8 PM  
 6 CONCERNING THE ORIGIN AND MODELING OF LUNAR FEATURES by Mr.  
 William R. Benton. Dept. of Commerce Auditorium, 8:15 PM.  
 Business meeting follows.
- 13 MD -DC JUNIORS meeting at 2 PM at the Chevy Chase Community  
 Center, 5601 Connecticut Ave., N.W. Leith Holloway will  
 lead a discussion on the Solar System.
- 20 DISCUSSION GROUP 8:15 at the Dept. of Commerce in Room 1851.  
 Topic will be THE MOON.
- 26 OBSERVING AT THE FIVE INCH at the Naval Observatory will  
 Larry White 8:00 to 10:30 PM.  
 TELESCOPE MAKING CLASS every Tuesday evening at the Chevy  
 Chase Community Center, 7:30 to 10:00PM with Hoy Walls.  
 MAKUTOV CLUB every Friday evening at the Chevy Chase Com-  
 munity Center. For information call Hoy Walls, CL 2-5395.

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#### OUR GALAXY

At the September NCA meeting Dr. Uco Van Wijk, of the University of Maryland, described the present-day astronomer's picture of the Milky Way galaxy. From a central bulge 5000 light years in diameter the spiral arms of our galaxy extend outward to a plane to form a disk 100,000 light years across but only 1000 light years thick. These arms contain young stars (those of Population I) with much gas and dust interspersed whereas only old stars populate the central core of the galaxy. Rather than having a simple spiral structure the arms of galaxies often split, bend sharply, and assume very complicated patterns. Dr. Van Wijk showed photographs of three galaxies thought to resemble our own in appearance namely NGC 4565 in Coma Berenices, M 31 in Andromeda, and M 101 in Ursa Major which from the earth are seen nearly edge-on, obliquely tilted, and in plan view respectively. Based on estimates of the brightness of our galaxy in the neighborhood of the sun, astronomers conclude that we, at a distance of about 27,000 light years from the center of the Milky Way, are in a region that corresponds to the outer edge of the photographed parts of these three galaxies.

By studying radial velocities of neutral hydrogen obtained from 21-centimeter radio observations astronomers have derived maps of hydrogen gas distribution in the spiral arms of our galaxy from which the locations of star concentrations can be inferred. Unfortunately northern and southern hemisphere radio observations overlap only in the direction of the galactic center where radial velocities are smallest and thus where the results are least accurate and suitable for comparison and mutual calibration. For this and other reasons spiral bands cannot easily be traced on these neutral hydrogen maps and so the original of these radio studies has been frustrated.

Radio observations of ionized hydrogen at a frequency of 8000 megacycles indicate that a small nucleus having a diameter of only 100 light years and a mass of a hundred million suns lies at the very center of our galaxy. This nucleus is apparently surrounded by a ring of stars 500 light years in diameter.

Finally the old question of whether spiral galaxies are winding up or unwinding still remains unanswered. Current opinion favors trailing arms but spiral galaxies are not winding up as a watch spring does since they are not getting smaller as they turn.

Leith Holloway

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#### NOTES FROM THE PRESIDENT

On September 17th the executive board and trustees met and discussed plans for the coming year. We drew up a tentative list of speakers, and if they accept our invitation we will certainly have an interesting year. I wish to remind you that it is our custom to take the speaker out to dinner before the meeting. All members are welcome to attend any of these dinners. It affords you a wonderful opportunity to talk with and get to know the speaker. We will meet at 6 PM at the Occidental Restaurant, if you want to attend please call RE 6-4321 and make a reservation. I hope to see you at the next dinner.

We discussed ways of getting more real astronomy into our meetings. At each meeting we will have a time for you to report any observation that you have made in the past month and mention anything of interest coming up. Many of our members are doing things of interest, but we never hear about them. If you have taken some interesting pictures in the last month bring them along and we'll have a bulletin board for you to display them on.

Our discussion group this month is to be on the topic of the Moon. Come and bring your photographs, moon maps, etc. and we should have an interesting discussion group. The September discussion group was very successful due to the fact that a number of members brought their plotting boards, charts, satellite ephemerides, and lots of ideas. In order for our discussion group meetings to be a valuable part of our program they must be just what the name implies, discussions. I am sure most of us joined NCA in order to meet others with the same hobby and to exchange ideas with them. This can be most effectively accomplished through your active participation in discussion group activities.

Ellen Stolarik

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DON'T FORGET TO PAY YOUR DUES !!!