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WHITE DWARFS = WHAT? - While most of the stars are placed in general classifications, there are a few notable exceptions. The study of the exceptions is an exciting part of the professional's work. Some physicists spend a good part of their professional career studying some of these celestial mavericks. The modern astronomer must of necessity be accomplished in physics and he is glad to work with physicists whenever he can. These scientific brethren together find the answers to many problems. Professor W. J. Layten of the University of Minnesota tells us there are over 300 known white dwarfs. He advances the theory that their spectra can be divided into four classes:

1. Lines of hydrogen and nothing else
2. Lines of ionized calcium and little else
3. No lines at all, temperatures from Planck's Law
4. Two of the dwarfs show helium lines and little else

He feels they are probably 95 percent helium. What little hydrogen they possess is acquired from space. In size they range from the size of the earth to Uranus with no great exception. What makes them what they are? Do they possess an intrinsic force that accelerates their evolution? Did an accident at the time of their creation cause them to be born with greater maturity? Are they the remnants of an earlier universe? If the latter is true, does it mean that the past is more nearly infinite than we have thought?

From THE MOHAWK ASTRONOMER, September 1954 Issue

SEPTEMBER SKY AND TELESCOPE

Have you ever seen Venus by daylight? Read the short article headed "Venus-Moon Conjunction" at the left top of page 398 of September Sky and Telescope and try your luck. If you can find the planet that afternoon it should be quite easy to do so for some time to come. If you are curious about how variable stars behave in front of the naked eye you might compare the two stars in Quila that are mentioned on page 403. The star chart on the same page will show you where they are.

 Jewell Boling, Editor, 1717 P Street, N.W. (6) NO 7-9621

STAR DUST
 National Capital Astronomers

October 1954

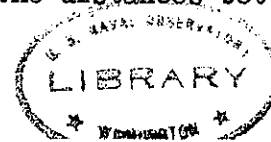
Vol. 12, No. 2

OCTOBER CALENDAR

- Oct. 2 (Sat.) "STAR OCCULTATIONS AND EARTH MAPPING," Dr. John A. O'Keefe, Army Map Service, Commerce Department Auditorium, 8:15 P. M.
- Oct. 10 (Sun.) EXPLORING THE SKY, joint program of the NCA and National Capital Parks, Fort Reno Park, 40th and Chesapeake Streets, N. W., 6-8 P. M. Please bring telescopes. This will be the last outing with the Park Service for the season.
- Oct. 10 (Sun.) PICNIC at Fort Reno Park, 40th and Chesapeake Streets, N. W. from 4:30 to 6:00 P. M., preceding the Exploring the Sky program. Bring your own picnic lunch.
- Oct. 16 (Sat.) DISCUSSION GROUP. CELESTIAL PHOTOGRAPHY session moderated by Philip Lichtman. With slides.
- Oct. 23 (Sat.) JUNIOR MEETING. Flyer will give details.

Every Saturday, beginning Oct. 2, 9 a. m. till 12 noon, telescope making class, Chevy Chase Community Center, 5600 block of Connecticut Avenue, bus stop at door. Miss Irene Warthen, Instructor. Telephone LO-5-1237. See details inside.

SURVEYING BY OCCULTATION - Every night as the moon sweeps across the sky, it hides or occults the stars in its path. Dr. John A. O'Keefe, a scientist on the staff of the Army Map Service, plans to make use of these occultations in measuring the distances between places on the



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earth that are thousands of miles apart. Two observers will set up their telescopes at the ends of the line to be measured. They will point their instruments at exactly the same point of the moon's edge where the occultation of the star will occur. However, they will record the occultation at different times since it takes time for the earth to swing the second observer around to the place where the first observer saw the occultation. The time it takes gives the distance between the two observers to an accuracy of one part in ten thousand. This method will be very useful in determining the distances across the oceans. If you don't understand all this, come down to the meeting and listen to Dr. O'Keefe make it crystal clear with the aid of slides! Dr. O'Keefe is a graduate of the University of Chicago with a doctorate degree in astronomy. His specialty is the application of astronomy to cartography.

---Benjamin Adelman

CELESTIAL PHOTOGRAPHY is the subject for the Saturday, October 16 Discussion Group in the Commerce Foyer. Philip Lichtman will moderate the discussion and promises to make this fascinating hobby easy for everyone with a telescope. Come with or without your photographs and slides but come.

--- Dana Law

ON SATURDAY, OCTOBER 23, and thereafter on every fourth Saturday, there will be a meeting of the NCA Juniors. We have made application to use a meeting room in the basement of the Mt. Pleasant Branch of the Library for this purpose. To date, we have received no word from them. The meeting will be to discuss plans for the ensuing year, as well as the topic of November's lecture. Cards will be sent to all juniors in advance of this meeting.

--- Betty Fazekas

AS A GESTURE OF APPRECIATION for long and excellent service the members of the National Capital Astronomers have presented Miss Irene Warthen with three fifty dollar bonds. Her most outstanding contribution has been the conduct of a course in telescope making for the past several years.

MISS WARTHEN was successful in securing new quarters for the telescope making class which promise to be much more convenient. These new quarters are located in the Chevy Chase Community Center, in the 5600 block of Chevy Chase. There is a bus stop right at the door. This is the L-4 bus. Classes will be held each Saturday, from 9 till 12. The first class will be October 2. It is contemplated that the classes will be held there indefinitely instead of at the Girls' Industrial School, as was once considered. All of the equipment and materials will be moved to the new quarters by Miss Warthen.

MRS. LILLIAN R. GREGOR, NCA MEMBER sends in the following report on a fireball she recently observed: "On September 9th at 9:45 P. M., between first quarter and full moon, the moon was shining brightly enough that with my naked eye I could see all the dark blotches on its surface. However, there seemed to be a haze, as looking around, I could not find a star visible in the sky. That evening the humidity was high and the hurricane was moving up along the eastern seacoast. An easterly wind was blowing over Washington. The Weather Bureau predicted fog for the night. As I was admiring the moon, the corner of my eye was attracted by a white light to the right of the moon and lower. My first impression was just a white ball of light approximately the size of a tennis ball but as it sped from west to east in what seemed a fraction of a second I saw a beautiful coloring of brilliant blue, azure blue, and emerald green, encircling three-fourths of it. As quickly as it appeared and brightened, it faded out with a little flash of red in it as it disappeared. I was quite astounded by being able to see a meteor and not one star. The fog must not have been dense enough to obscure it. I am curious as to whether anyone else observed this fireball."

TELESCOPE MIRROR CLASS

Report from July 1948 to July 1954 (6 years)

Mirrors and Tools	\$514.28)	
Express Charges	37.58)	Amount
Abrasives	114.86)	Purchased
Shop Equipment	114.35)	
Rent	180.00)	
Total	<u>\$961.07</u>)	
1948-49	\$301.29)	
1949-50	126.45)	Amount
1950-51	134.95)	Received from
1951-52	194.01)	Class
1952-53	265.59)	
1953-54	206.95)	
Total	<u>\$1,229.22</u>)	
Disbursed	<u>961.07</u>)	
Balance to NCA	\$268.15)	

---Irene Warthen

REPORT OF MIRRORS

Size of Mirror	Started	Finished	Working	Moved	Stopped	On Hand
4 1/4	17	7	3	3	4	3
6	67	23	15	5	24	
8	29	8	7	2	12	
10	4	1	2	1		
12	2	1		1		
	<u>119</u>	<u>40</u>	<u>27</u>	<u>12</u>	<u>40</u>	

---Irene Warthen

PICNIC - The National Capital Parks Service and the NCA are holding a joint sky observing session on Sunday, October 10 from 6 to 8 P. M. in Fort Reno Park. The place is not a public picnic ground. However, the CPS has given us permission to hold a picnic there. The plan is to pack a picnic lunch and bring the family out in the car at 4:30. This will give the "telescopers" time to talk, to look over the other fellow's telescope before the crowd arrives, and to observe Venus and Saturn which set at seven o'clock. The area is easily reached from Wisconsin Avenue street car line, being north of the intersection of 40th and Chesapeake Streets, N. W. Let's all be there for the last joint sky observing event of the season. Come with or without telescope.

---Thelma Cressy

MY RADIO PROGRAM, "SCIENCE REPORT," will be broadcast on Tuesdays, instead of Fridays, from now on. "Science Report" is a weekly news program specializing in the latest news on science. It is, so to speak, a radio science news column. I give a good deal of attention to astronomy (naturally!) including the NCA meetings. "Science Report" is broadcast every week by Station WCFM, 99.0 M., Tuesday evenings from 7:45 to 8:00 P. M. Comments on "Science Report" would be appreciated since it is a public service program and therefore requires evidence of public interest to insure its continuation on the air. The address is: WCFM, 1120-A Connecticut Avenue, N. W., Washington, D. C. Thanks very much.

---Benjamin Adelman

OBSERVATIONAL DATA

Mercury is in greatest eastern elongation on the 5th, but this is an unfavorable elongation, Mercury being top low in the west after sunset for easy observation. Inferior conjunction occurs on the 29th. Venus is seen low in the south-west for a short time after sunset. It attains greatest brilliancy on the 11th. Mars may be seen low in the south and south-west. The planet sets an hour before midnight on the 15th. Jupiter is in Gemini. It rises about midnight and is prominent in the eastern sky until dawn. Saturn is too close to the sun in October

for easy observation. The date of maximum intensity for the ORIONID meteor shower is October 22. This shower averages 20 meteors per hour. On the 15th at 11:00 P. M. (EST) the Milky Way spans the heavens from east to west crossing just north of the Zenith and passing through Auriga, Perseus, Cassiopeia, Cygnus, and Aquila.

---A. L. White

LUNAR OCCULTATIONS FOR OCTOBER

Date	Star	Mag.	Age	Phase	E. S. T.
2	CD-25° 11743	6.9	5.9	D	6:22.3 P. M.
4	26 SGTR	6.1	8.0	D	8:00.2 P. M.
6	RHO CAPR	5.0	10.0	D	8:27.3 P. M.
6	35 B. CAPR	6.8	10.0	D	8:41.1 P. M.
7	BD-13° 5904	6.7	11.0	D	7:17.1 P. M.
7	BD-12° 5994	6.6	11.1	D	11:56.1 P. M.
15	103 Taur	5.5	19.1	R	10:07.9 P. M.
16-17	9 Gemi	6.3	20.2	R	12:27.1 A. M.
18-19	Zeta Canc M	5.1	22.2	R	12:55.2 A. M.
18-19	BD-18° 1882	6.4	22.3	R	1:49.3 A. M.
20-21	89 B. Leon	6.3	24.4	R	3:47.2 A. M.
20-21	Pi Leon	4.9	24.4	R	5:13.4 A. M.

NEW MEMBERS

- Bradley F. Bennett, Bureau of Ships, Navy Dept., Main Navy, Room 3702, Washington, D. C.
- Arthur B. Caldwell, 3413 Thornapple St., Chevy Chase 15, Md.
* and son
- Mr. and Mrs. Albert L. Cochran, 4930 Deal Drive, S. E., Washington 21, D. C.
- Ben Feather, 2207 Guilford Road, Hyattsville, Md.
- James H. Harper, Jr., 2322 Green St., S. E., Washington 20, D. C.
- Robert Jones, Jr., 3531 Martha Custis Drive, Alexandria, Va.
- Elmer North, 6810 Red Top Road, Washington 12, D. C.
- Edward Portka, 4505 South 36th St., Apt. B-2, Arlington, Va.
- Mr. Salle Rapisardi, 2013 3rd St., N.W., Washington 2, D.C.
- J. Frank Remley, 525 Register Avenue, Towson 12, Md.

Wylie Robinson, 1235 Longfellow Street, Washington 11, D.C.
William Vaughan, 207 Adclare Road, Rockville, Md.

CHANGES OF ADDRESS

George F. Rowe, 5002 42nd Ave., Hyattsville, Md.
C. C. Battershell, P. O. Box 195, White Stone, Va.
David Minton, Navy #103 F.P.O., N. Y., N.Y.
Robert A. Jones, P. O. Box 416, Curundu, Canal Zone

NEW TELEPHONE NUMBERS OF OFFICERS

Dana Law - OTis 4-6835
John Lund - UNION 4-8909
Elizabeth Goerner - EMerson 3-2492

TREASURER'S ANNUAL REPORT

August 10, 1954

Receipts:

Balance on Hand, Sept. 1, 1953	\$390.19
Dues Received	355.89
Received of Telescope Class	220.00
Sale of Handbooks and Timetables	20.65
Contribution to Star Dust	25.00
Subscription to Star Dust	1.00
Total Credit	<u>\$1,012.73</u>

Disbursements:

Stationery and Postage	71.76
Printing (Star Dust, Publicity, etc.)	152.47
Royal Canadian Handbooks and Maryland Timetables	31.06
Subscriptions to Junior Astronomer	9.00
Subscriptions to Astronomical League Bulletin	28.75
Office Expense - President	7.75
Astronomical League Dues	18.70
Lecture Expense	147.68
Phone Calls	2.44
Special Expenses	143.62
Glass Purchased for Telescope Class	92.25
	<u>706.48</u>
Balance to John Lund	306.25
Total Debit	<u>\$1,012.73</u>

--Elizabeth M. Fazekas, Retiring Treasurer