

NEW MEMBERS

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STAR DUST

National Capital Astronomers  
Washington, D. C.

OCCULTATION PREDICTIONS

Morgan Gilley

Date	Star	Mag.	Edge	Immer.	Emer.	H.A.	Limit
Feb. 28	53 Tau	5.4	D	0:06 A	0:45 A	6 1/2 W	3 1/2
Mar. 2	A Gem	5.1	D	10:15 P	11:28 P	2 W	
29	40 Gem	6.3	D	6:28 P	7:26 P	1 W	

Time: E.S.T. Fourth column indicates dark or bright edge. "Immer." and "Emer." show hours A.M. and P.M. of disappearance and reappearance. H.A. is the approximate hour angle of the moon at immersion. Last column gives the hour angle limit of vision beyond which the moon will be hidden from the NCA 5-inch. In that case, take the portable out to a better position.

PROPOSAL TO BUILD NCA OBSERVATORY. The Board of Trustees met February 9 to hear Mr. Benjamin King's proposal to build an observatory on the grounds of American University. He had discussed it with the president of the University, and selected the most likely site for an observatory. A committee was appointed to consider the matter: Mr. King, chairman, Dr. Woolard, Messrs. Lyons, Scott, Windham, and Rotbart. The idea is still in the "talk" stage. We expect many pros and cons before reaching a decision. Those present drove out to inspect the site.

MR. WRIGHT AND HIS COMMITTEE set up four telescopes Jan. 28 for the use of Mrs. Davis' general science class at Langley Junior High School. They were well repaid by favorable weather and an enthusiastic group of students and parents.

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Mabel Sterns, President and Editor, 2517 K Street N.W.

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DATES TO REMEMBER

- Feb. 25 Naval Observatory, 7 p.m. Constellation study.
- March 1 "Space Travel in Our Time?" Willy Ley, Washington Institute of Technology. 8 p.m. Commerce Auditorium.
- March 6 Telescope class, 7:30 p.m. room 211, McKinley High School, 2nd and T Sts. N.E.
- March 15 Discussion group, 8 p.m. foyer of Commerce Auditorium. Irene Warthen, "Constellations."
- March 20 Telescope class, as on the 6th.

"SPACE TRAVEL IN OUR TIME?" is the subject of Willy Ley's illustrated lecture March 1st. The author of many articles and books on rockets, also lecturer, Dr. Ley is engaged in research at the Washington Institute of Technology. He was born in Germany and studied physics, astronomy, and biology at the Universities of Berlin and Konigsberg before specializing in the history of science.

Dr. Ley was among the first members of the German Rocket Society and was vice president when the organization was dissolved in 1933 following Hitler's rise to power. He arrived in the United States in 1935 and since then has devoted most of his time to writing on scientific subjects. For several years he was science editor of a New York newspaper.

His book, "Rockets, The future of Travel Beyond the Stratosphere," is now in its fourth printing. It traces the history of man's flights in fancy to the moon, to rockets and spaceships.

DISCUSSION GROUP CONTINUES TO BE POPULAR. On March 15, Miss Warthen will review constellations in preparation for public star-gazing nights sponsored by the National Capital Parks. Prior to that, there will be a constellation group Tuesday, February 25, from 7 p.m. at the Naval Observatory, for all members.

TELESCOPE CLASS. It is not too late to start grinding a mirror with the others under Mr. McLellan's direction at McKinley High. See "Dates," page 1.

MORE THAN 100 VARIABLE STAR and 3 occultation observations have been reported by junior members and others since the middle of January. Who will count sun spots?

"LOOKING THROUGH THE MILKY WAY" was the topic of an unusually interesting lecture by Father Francis J. Heyden in February.

The astronomer has come to realize that starlight does not come to us through perfectly transparent space. Calculations to determine the dimensions and true nature of the universe based upon the formula that the intensity of light varies inversely with the square of the distance, do not yield valid measures unless corrected to account for the dimming effect of cosmic dust. Dust particles may average five miles apart, but interstellar distances are so great that miles become microscopic and the screening effect eventually adds up. Sixty per cent of the light emanating from a moonless night sky is reflected by this dust.

The solar system, at least as far out as Jupiter, is littered with stray material: meteors, wreckage from comets, gases, lonely molecules. These tiny meteors reflect the sun's light and produce the zodiacal light and the counter glow. Vast dust regions hundreds of parsecs across, occur throughout the Milky

Way. Sometimes these dust fields are near superhot stars of temperatures up to 70,000 degrees centigrade. The atomic radiation is so intense that the material in the cloud luminesces. Such is the bright trapezoid nebula of Orion.

Some portions of the Milky Way are so extremely rich in stars that the sky looks almost like a solid wall of light, yet in the very centers of these brilliant regions starless voids often appear. Sometimes the edges of these dark blots are glowing, suggestive of the appearance of a cumulus cloud between us and the sun, indicating perhaps that hot stars behind them are making the side away from us luminesce.

The external galaxies, too, show evidences of dust and opaque matter mingled with their stars. Utilizing the formula of inverse squares, the astronomer has worked toward establishing the absolute magnitudes of stars and calculating their distances, after determining how much they have been dimmed by interstellar dust. The cycles exhibited by the Cepheids are clock-like in their regularity, permitting easy identification. By means of the period luminosity curve, the absolute magnitudes have been calculated for Cepheids. This work of measuring color indices of Cepheids is being continued by Harvard astronomers.

Father Heyden has been developing a technique for determining the correction which should be allowed for the effect on the star's apparent magnitude of light absorption by dust. To accomplish this he determines the star's magnitude in red and yellow and blue to fix the amount of blue absorption by establishing the color excess in red. This method works because the long waves of the red get through the dust more easily than the blue. In some instances he has found the absorption of starlight to be as much as four magnitudes.

---Jewell Boling