On Saturday, September 17, the 
MD-DC JUNIORS met in the Chevy Chase
Library, our new meeting place, to hear Mr. Robert McCracken speak on the
Grazing Lunar Occultation experiments. He explained how the 'expeditions'
worked and played a tape of the unreduced data from the May occultation at
Virginia Beach.

= Mark S. Goldberg

THE NASA LUNAR ORBITER PROGRAM

With the Lunar Orbiter Program so
much in the news lately NCA is very
pleased to have Dr. Martin J. Swetnick,
the Lunar Orbiter Program Scientist,
as the October Speaker.
The NASA Lunar Orbiter Program has
as its broad objective the acquisition
of information of various terrain types
on the lunar surface through photog­
raphy for use in the selection of suit­
able sites for the named Apollo land­
ings. The first in a series of five
lunar Orbiter missions has been recent­
ly completed. A progress report on the
mission will be presented. Mission ob­
jectives and the means of achieving
these objectives will be discussed. A
number of Lunar Orbiter photographs
obtained during the mission will be
shown.

Martin J. Swetnick is presently the
Lunar Orbiter Program Scientist at NASA Headquarters. He is -(Cont'd. p.2)

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CALENDAR

OCTOBER
1 THE NASA LUNAR ORBITER PROGRAM by Dr. Martin J. Swetnick in
the Interior Department Auditorium at 8:15 P.M. (The Interior
Department is located on D. St. between 13th and 19th Sts.)
Business meeting after the lecture.

DINNER WITH THE SPEAKER at 6:15 P.M. For further information
and reservations, please call: Mr. Anderson Cl 6-624

1 General Meeting of the Junior Division at 7 P.M. in the Dept.
of Interior Auditorium. All juniors are urged to attend.

6 MD-DC JUNIORS meeting at 2 P.M. in the Chevy Chase Lib­
ary. 8005 Conn. Ave. in Chevy Chase, Md. Leith Holloway
will speak on "Computers in Science and Astronomy."

7,11,21,28 TELESCOPE MAKING CLASS at the Chevy Chase Community Center
from 7:30 to 10:00 P.M. with Hoy Walls.

14 OBSERVING NIGHT at the NCA Five Inch Telescope on the
grounds of U.S. Naval Observatory, with Larry White, from
6:30 to 10:30 P.M.

14,28 TELESCOPE MAKING CLASS at McLean High School, McLean Va.
with Grady Whitney.

25 DISCUSSION GROUP ON COMETS to be led by Mr. Henry Wilson
in room 2062 of the Commerce Department at 8:15 P.M.
Dr. Martin J. Steenick-Cont'd. from p. 1.

responsible for the planning, coordination, and management of scientific investigations of the moon from unmanned spacecraft in orbit about the moon. Before joining NASA in 1960 he spent two years with the Defense Atomic Support Agency planning high altitude nuclear weapon effects tests. From 1956 to 1958, he actively participated in the ION program while he was an assistant research professor of physics at the University of Maryland. He developed and operated cosmic ray experiments at the north and south poles and at mountain altitude laboratories in Canada and the United States. He spent four years in industry developing a variety of radiation detectors. He earned a B.A. in physics at Brooklyn College and a M.S. and Ph.D. in physics at New York University. His major fields of interest are cosmic rays, radiation physics, and the application of geophysical and geological techniques to the investigation of the moon and the planets.

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SEPTEMBER LECTURE - SATELLITE METEOROLOGY

According to our September speaker, Mr. McGuire Johnson, of the National Environmental Satellite Center of E.S.A., large storms are better organized than previously thought before the TIROS satellites started taking pictures of the atmosphere from space. Giant storms (or cyclones) display spiral cloud bands extending hundreds and even thousands of miles away from their centers. Warm and cold fronts, vorticity centers, anticyclones above tropical cyclones, fog, the interaction of wave trains, mountain waves, thunderstorm tops, and many other meteorological phenomena are clearly shown in TIROS photographs. Since cyclones and bad weather are here to stay, so are weather satellites.

Leith Holloway

NEW MEMBERS

The following applied for membership at the meeting of 10 September:

Joint .... North and Jessica O. Crowley
          4228 Albemarle St.N.W.
          Washington, D.C. 20016

Regular... John R. Comnalis, Jr.
           710 Decatur St.
           Eastville, Maryland

Regular... Fred J. Repp
           610 Greenleaf Dr.
           Silver Spring, Md. 20910

Regular... Chuck Squire
           130 Seminole St.
           McLean Virginia

HELP

Our STARDUST editor of almost six years standing, Ellen Stolarik, is actively seeking a successor. Interested members may contact her at 336-L321.

Sam Polid, who has for many years done the photographic preparation of STARDUST is finding it increasingly more difficult to continue this work. He would appreciate speaking with any member interested in this aspect of the publication of STARDUST. Sam may be reached at 526-6138.

FINANCIAL STATEMENT - 1965-66 ... 30 June 1966

<table>
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<th>INCOME</th>
<th>EXPENSES</th>
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<tr>
<td>Dues</td>
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<td>Observers Handbook</td>
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<td>Graphic Timetable</td>
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<tr>
<td><strong>Total 1965-66 expenses</strong></td>
<td><strong>$2,194.13</strong></td>
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গ্রাহকদের হাফন্ডবুক — 316.35
Directory — 50.00
Astro-League dues — 26.50
Total miscellaneous — 209.26

Balance 30 June 1965-66 — $ 397.81
Total 1965-66 — $ 2,194.13

THE STORY OF SIRIUS B

Sirius has contributed to astronomical research ever since 1718 when it was involved in the discovery of proper motion of stars by Sir Edmund Halley. Our June speaker Mr. Irving Linscheid of the U. S. Naval Observatory recounted the enthralling history of Sirius A, the brightest star in the sky excepting the sun, and its small dense companion, Sirius B. As early as 1850 Bennett had predicted that Sirius and Procyon were binaries on the basis of their wandering paths through the sky, and in 1852 Alvan Clark, Jr. observed Sirius B optically.

Sirius B has a density roughly 50,000 times that of the sun. Before its discovery Eddington had forecast the existence of such super-dense white dwarf stars. In 1925 Walter Adams at Mt. Wilson Observatory confirmed the Einsteinian gravitational red shift in the spectrum of dense stars by observing Sirius B. Modern observations indicate that Sirius B has a mass of three quarters that of the sun and exhibits a red shift corresponding to 60 km/sec. or three times Adams' value which is now thought to be in error because of haste prompted by the desire to confirm Einstein's theory as early as possible.

Many astronomers have speculated that Sirius B itself is double in order to explain the discrepancies in the mass estimates, but no companion to this star has yet been observed by any means. It is difficult to observe Sirius B, photograph its spectrum, measure its brightness, and determine its position because of the great brilliancy of Sirius A. The best method for observing Sirius B is to place a hexagonal mask over the telescope's objective. This mask converts the large circular diffraction pattern of Sirius A into a 6-pointed figure. Then Sirius B can be seen in one of the concave indentations between two of the six cusps. Mr. Lindenblad uses 15 evenly spaced parallel wires across his hexagonal mask on the 20-inch refractor at the Naval Observatory. These wires create a string of tiny diffraction images on either side of Sirius A which enable him to locate the exact center of the extended primary image of A. In addition, he can predict the brightness of these secondary images of Sirius A by theory, and these points of light provide artificial comparison stars for determining the brightness of B which he estimates to be about 8.5 by this method.

The separation of Sirius A and B is increasing and is now close to the maximum value of about eleven seconds of arc. Many amateurs with large telescopes can observe Sirius B using a hexagonal mask. — Leith Holloway