

QB1
.579

OBSERVATIONAL DATA

Mercury is in inferior conjunction January 10th, but may be seen at the end of the month low in the southeast just before sunrise. Venus is a morning star visible low in the southeast just before sunrise. Mars is in Pices, nearly on the meridian at sunset, and sets about midnight. Jupiter is in Virgo and rises just before midnight. The planet is stationary in right ascension on the 16th and then begins to move westward among the stars. Saturn is in Scorpius and rises in the southeast about two hours before the sun. The date of maximum intensity for the QUADRANRID meteor shower is January 3. This shower averages 20 meteors per hour and the position of the radiant is Alpha 232°; delta, plus 52°. On the 15th at 11:00 P.M. (E.S.T.), the Milky Way spans the heavens from north to south passing through Cassiopeia, Perseus, Auriga, and Monaceros.

-- A. L. White

LUNAR OCCULTATIONS FOR JANUARY

Date	Star	Mag.	Age	Phase	E. S. T.
12	129 ¹ Tau	5.7	12.1	D	11:58.1 P.M.
18-19	237 B Leo	6.3	18.3	R	5:10.8 A.M.
21-22	550 B Vir m	5.8	21.3	R	4:49.0 A.M.
24-25	84 B Sec	6.3	24.3	R	4:27.1 A.M.
24-25	51 G Sec	6.4	24.4	R	5:59.6 A.M.

NEW MEMBERS

Salome Betts, 516 N. Piedmont St., Arlington, Va. JA 2-1321
Charles H. Purcell, 3033 N. Pollard St., Arlington, Va.
JA 8-0920

*Patrick Moretti, 3435 Yuma St., N.W., Wash., D.C. WO 6-1859

Jewell Boling, Editor, 1717 P Street, N. W. NO 7-7693

January 1957

Vol. 14, No. 5

JANUARY CALENDAR

- Jan. 5 "EXPLORING THE MILKY WAY," Dr. Frank K. Edmondson, (Sat.) Program Director for Astronomy, National Science Foundation. Department of Commerce Auditorium, 8:15 P. M.
- Jan. 8 VIRGINIA JUNIORS OVER 12 meet with Mr. Bob Brown at (Tue.) Westover Baptist Church, Washington Boulevard and Patrick Henry Drive at 7:30 P. M., for an organizational meeting.
- Jan. 12 D. C. AND MARYLAND JUNIORS OVER 12 meet with Mr. (Sat.) Leith Holloway at the Chevy Chase Community Center, 5600 block of Connecticut Avenue, N. W., from 2 to 4 P.M. for a discussion on astronomical observing.
- Jan. 19 DISCUSSION GROUP with Bob Rhynsburger on GALACTIC (Sat.) STRUCTURE, Department of Commerce Foyer, 8:00 P.M.

TELESCOPE MAKING CLASS with Hoy Walls each Monday evening at 8:30 P. M., Chevy Chase Community Center, 5600 block of Connecticut Avenue. Mr. Walls' phone number is OL 2-5395.

"EXPLORING THE MILKY WAY" - Present detailed knowledge of the structure of the Milky Way and the motions of the stars. It is based on both optical and radio astronomy. Star counts and other statistical investigations, the study of individual stars of high luminosity, etc., give us information only about our immediate neighborhood. This is because the interstellar dust limits the distance through which we can observe optically in the plane of the Milky Way. In the past, the study of the motions of the stars in the sun's neighborhood has given us clues about the size and total mass of the galaxy and the distribution of mass within it.

THE FINE STRUCTURE OF THE SUN

Miss Sarah L. Lippencott, Sproul Observatory, Swarthmore College

Since the beginning of life on the Earth every living creature has been critically dependent for its very existence upon the behavior of our nearest star. For our Sun is a Star, typical of the main sequence, although of mediocre size. Here, then, is our opportunity to observe closely the details of stellar activity - to witness the continuous display unrivaled in human experience and forever hidden from the naked Tellurian eye only by the spectacular brilliance of its own splendor.

Beyond the visible 6,000°K photosphere, itself 800,000 miles in diameter, the solar atmosphere comprises the highly ionized 15,000 kilometer deep chromosphere, which absorbs discrete wavelengths of the Sun's radiation; and the luminous corona, which extends perhaps 30 solar radii - a fourth of the distance from here to the Sun.

It is apparently granular "surface" (the Sun is wholly gaseous) of the photosphere that is of central interest in this fine-structure study. It is here that the everchanging hydrogen and calcium flocculi, 1,000 to 3,000 kilometers across, impart the characteristic "orange peel" appearance. This is the playground of the sunspots -- relatively cooler vortices sometimes many thousands of kilometers across -- who, like giant fire-eaters, ravenously consume the falling flames of prominences after their spectacular rise of hundreds of kilometers per second to heights of hundreds of thousands of kilometers.

This, too, is the level of the spicules - countless smaller needle-like flames that lend a ragged appearance to the limb of the photosphere. Their pattern of orientation, like that of the corona, is curiously aligned with the magnetic field pattern of the Sun. The eleven-year solar activity cycle will reach a maximum in 1957-58; hence the schedule of the International Geophysical Year for this period. With two excellent films and many slides, Miss Lippencott provided a fascinating and informative program.

---Robert H. McCracken

A complete structural picture was not known and could not be known before the recent developments in radio astronomy that have followed the discovery of the 21 centimeter line of hydrogen. We now have convincing evidence that the Milky Way is a spiral galaxy, probably similar to Messier 101. It has a diameter of 75,000 light years and a mass of two hundred billion solar masses.

The speaker is professor and chairman of the Astronomy Department, and Director of the Goethe Link Observatory at Indiana University. He is on leave of absence for 15 months as Program Director at the National Science Foundation. His scientific work has been mostly in the field of stellar motions and he has recently finished an extensive study of radial velocities of faint stars, using the 82-inch reflector at McDonald Observatory in Texas. He has also suggested the probability of spiral orbits in the galaxy to explain some of the apparent anomaly in the radio astronomical results. He did his undergraduate work at Indiana University and his graduate work under Bok at Harvard. He has also been on the staff of Lowell Observatory.

---Mrs. John Lund

JANUARY 19 DISCUSSION GROUP - The topic for consideration at the January 19 Discussion Group will be Galactic Structure. It is a very interesting subject that has been very much in the forefront of astronomical news during the last few years. Within the general framework of galactic structure, we shall hope to learn more about the distance scale correction, Hubble classification of nebulae, and just what is meant by Populations I and II. The more people participating - the more viewpoints we have for discussion and the more things there are to learn. So -- all come out and join in the discussion.

---Bob Rhynsburger

FOR SALE: 8-inch reflector, metal tube and equatorial tripod mount, 3 eyepieces giving about 75x, 150x, and 300x. Make offer. Must sell.

-- Salle Rupisard, 2013 3rd, N.E. Phone HObart 2-6976

MARTIAN WEATHER - Gerald Kuiper, made a detailed study of the planet Mars during its recent close approach to the earth. He reported a late "spring" snow storm and an enormous dust storm.

The planet's polar caps normally evaporate with the coming of spring. However, in September (here, late spring on Mars) a new snowfall occurred covering an area of 600 miles. Kuiper described it as "clear white, not yellow."

Outer portions of the snow cap evaporated in about 10 days, but the inner cap, 250 miles in diameter, survived the Martian summer temperatures.

"This appears to have been the first time a large polar snow has been watched," he said. He had no explanation for the unseasonal snow.

The dust storm appeared August 30 and began dissolving gradually in mid-September. The dust cloud enveloped most of the planet, and was shaped like a giant "W". It extended over an area 3000 miles long and 250 miles wide.

These dust clouds account for the yellow color seen on the usually reddish-orange Mars.

The astronomer said he believed that lava fields covered by lichens, a low form of plant life, account for variations in color between the dark areas of the planet. More than one-half of Mars is covered with yellow-ocher desert sand.

SEPTEMBER ISSUE OF SCIENTIFIC AMERICAN carried the following articles: The Universe, The Origin of the Elements, The Content of Galaxies, The Evolution of Galaxies, Colliding Galaxies, The Evolutionary Universe, The Steady-State Universe, The Red-Shift, The Distribution of Galaxies, Radio Galaxies, Cosmology and Science. This was an A-1 issue for all those who are interested in astronomy and cosmology.

SATELLITE OBSERVING NEWS. First, a reminder to get your Moonwatch questionnaire in to Bob Dellar as soon as possible. There is going to be an alert early in the spring and we moonwatchers want to get organized and have a little practice beforehand. Then, too, the program may start sooner than expected if one of the other services or another country puts up a satellite ahead of time. So let's be prepared and get on the team now.

Operation Moonwatch is one of the most important scientific activities in which the amateur astronomers have ever participated. It is an opportunity for us to make a real contribution to science. It is going to take teamwork and everyone can help. Even if you can't be out every time or can only be a substitute to be called on when one of the regular observers can't come, you can make yourself count.

If you want to build a Moonwatch telescope for the program, Bob Wright and Hoy Walls will have several sets of optics at the meeting. Hoy also has a few aluminum tubes threaded and ready to use and will make up more for those who want them. We still need several more telescopes for our station so if you want to contribute one, whether you want to be an observer or not, please contact Bob Dellar. Remember your scope will be returned to you at the end of the I.G.Y. and will make a fine wide field finder for a larger instrument.

---Everette Neville

CANADIAN HANDBOOKS are available. Trudy Dellar has a number of copies available for interested members.

JUNIORS - Two meetings for juniors over 12 years of age will be held this month. See calendar on first page. Bob Brown will meet with the Virginia juniors on the 8th to discuss future astronomical activities of this group. For further details call Bob at KEmore 6-8059. At the meeting on the 12th for D. C. and Maryland juniors, I will lead a discussion on astronomical observing of everything from constellations and nebulae to planets and man-made satellites. This topic may take several meetings to cover. Watch future issues of STAR DUST for announcements of later junior meetings.---

Leith Holloway
3026 Porter Street, N. W.
EMerson 3-7708