

be built and while no critical materials are involved in it, suitable lumber even in very small quantities, seems almost unobtainable.

The System consists of a small clock and the sun at the center, around which the eight planets are made to revolve at their correct relative speeds. The orbits of the four inner planets are to the scale of 20,000,000 miles to the inch; Jupiter, 40,000,000; and for the three outer planets, only arrows which point in their respective directions. (Pluto doesn't rate.) There are also a larger earth with the moon, the four larger moons of Jupiter (scale 40,000 miles per inch), a celestial globe, terrestrial globe, and phases of the moon, all mechanically driven. The cumulative error of the gearing ranges for the planets from 5 minutes of arc to about 1 1/2 degrees for Mercury, about 6 degrees for the moon, and 40 degrees for the celestial globe in 100 years, the hardly avoidable small errors building up, of course, much faster for the more rapidly revolving objects.

—E. C. Stanton  
4815 Battery Lane, Bethesda 14, Md.

A HEARTY WELCOME TO OUR NEW MEMBERS:

- Lt. Wm. E. Dulin, U.S.N.R., 1637 Park Road N.W.
- Mr. Lloyd North, 805 Mt. Vernon Place N.W.
- Mr. Howard B. Watkins, 3022 Wisconsin Ave.

We hope to become better acquainted with you, and see all the familiar faces as well at the outdoor gatherings this summer.

THE INDIANS OF NORTH AMERICA, according to H. L. Thompson in his "Legends of Gems," believed that moon-stones were washed upon the shore when the sun and moon reached a certain position in relation to each other, a position which occurred once about every 21 years. Thus arose the saying, "Once in a blue moon." The aborigines treasured this stone in life, and buried it with their dead as an amulet they would need in the after life.

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Mabel Sterns, editor; 2517 K St. N.W. District 9422.

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- Secretary, Miss Dorothy F. Harris, 1621 T Street, N.W.  
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THE FIRST JUNE MEETING was not well attended although the hall was comfortable and not too warm as some feared. Dr. Woolard's address brought a fitting close to the series of fine speakers we have heard this year.

Last year was the 400th anniversary of the death of Copernicus and the publication of his book, "On the Revolutions of the Heavenly Spheres." Copernicus is one of the best known figures in the history of human thought. His work is generally regarded as one of the most epoch-making in the history of mankind.

It is important to know exactly what he did and did not do. The heliocentric hypothesis of the planetary system and the idea of the earth's motion were not original with him; they had been adopted by some of the early Greek philosophers. Copernicus was the first to construct mathematical theories of the planetary motions on this basis, however.

Ptolemy in the second century A.D. wrote a treatise on astronomy known as "The Almagest" which remained the

standard authority in astronomy for fourteen centuries. Nearly everything written subsequently was based on the Almagest; the Ptolemaic system was geocentric. At the time of Copernicus, 1473-1543, astronomy was still where Ptolemy had left it. Copernicus modified Ptolemy's system in just one respect--he transferred the center of the universe from the earth to the sun, otherwise leaving the epicycles, etc., of the Ptolemaic system unchanged. This was but one step in the evolution of astronomy which was not completed until Kepler got rid of the last of the epicycles. He discovered that the earth and other planets moved in ellipses with the sun at one focus. In the Copernican system, the earth had been considered to move in a circle with the sun off center.

The work of Copernicus cannot be judged without taking into consideration the background of his times. Ptolemy was the authority in astronomy among the learned, but astronomy had not exerted much influence on philosophy and theology, and was not widely known among the people. The prevailing popular ideas and philosophical views of the physical structure of the universe were based on the more primitive theories of Aristotle, whose authority was supreme in the Middle Ages in most fields of human thought. The Copernican theory was looked upon, outside of mathematical astronomy, as a radical alteration of physical reality; it was an important factor in contributing to the general upheaval of thought and widening of outlook that brought on the Renaissance. Its importance for this is much greater than its technical scientific importance in the development of the planetary theory; yet its influence on general human thought was due to the mistake (still often made) of attributing metaphysical significance to an abstract scientific theory.

NO BULLETIN WILL BE ISSUED IN AUGUST so keep this number for later reference. "Star Dust" will be resumed in September.

SATURDAY, JULY 22ND is the date of the first observation picnic to be held at the Palisades Field House, Sherrier and Edmunds Place, N.W., stop No. 15 on the Glen Echo carline. Only District fare needed. To reach the Field House by car, drive out from Georgetown on the MacArthur Boulevard, turn left on Dana Place, then right at Sherrier Place to Edmunds. The Field House is on the south side of the car track. Bring your telescope. Two outdoor fireplaces and the kitchen in the House will be at our disposal. Bring food and cooking utensils, if you need them. Firewood, coffee, and sweet corn, if obtainable, with necessary equipment for preparation will be procured by the Entertainment Committee. Meet at the Field House at 7 p.m. rain or shine!

REMEMBER SATURDAY, AUGUST 12TH for a meteor picnic at Montrose Park in Georgetown on R Street between 30th and 31st, three blocks east of the Wisconsin Ave. car line and not far from the Q Street bus. There is no fireplace here. Those wishing to hike a mile through a beautiful section of Rock Creek Park, meet at the southwest corner of Connecticut and Calvert Street at 6:45 p.m. Otherwise meet in the park at 7:30.

If you have any questions, call Mr. Herreshoff, Emerson 0992.

PLEASE NOTE YOUR ZONE NUMBER on the envelope and if it is not correct, notify the editor.

HOBBY NOOK

Some of our members have been inquiring about the progress of the planetarium described fully in The Star about two years ago, and very aptly named by it, "Table Model Solar System." After two years' work, interrupted many times by other pursuits (including building an equatorial mounting with power drive for a 6-inch B. & L. telescope), the "solar system" is in the doldrums because of the lack of a pound or two of brass strips. The project is almost finished. The table has yet to