

SOME AIDS TO THE TEACHING OF ASTRONOMY

The Department of Mathematics and Astronomy at the University of Western Ontario wishes to call attention to a series of original, simplified, efficient instruments for teachers of astronomy. These instruments, designed by W. G. Colgrove and H. R. Kingston and built by the former at the Hume Cronyn Memorial Observatory of The University of Western Ontario won for him The Chant Medal of the Royal Astronomical Society of Canada in 1942. Those who are interested in this fascinating subject are invited to visit the Observatory and see this unique equipment.

These instruments have been tested in Astronomy classes at the University and in demonstrations to a large number of public audiences and have proven so highly satisfactory that it has been decided to make them available to schools, colleges and individuals. A partial list follows:

1. Manual Planetarium—This model is 3 feet high, is wired for hydro and has a 60-watt lamp for the sun. The nine planets are on wire arms that may be revolved to their proper positions at any time (see No. 7 or 8 or Note 5 below). The planets are in colors as seen in a telescope. The moon is attached to the earth so it may be placed in any desired position around the earth. There are two graduated setting circles, one for placing the planets in right ascension, the other for aligning them with the sky at any time on any date. A card disk attached to the earth acts as our horizon plane.

Price, \$25.00

2. Sotellunium.—This mechanized instrument is 40 inches long and 26 inches high with a circular open iron base and can be easily carried in one's car. The earth is a globe 4 inches in diameter on which the land and water areas are shown. It is carried on an iron arm 30 inches long and is illuminated by a 60-watt lamp representing the sun. The moon is made to revolve on an inclined orbit and eclipses of the sun and of the moon are strikingly demonstrated. In the case of solar eclipses both the umbra and penumbra are very clearly shown as are also their paths across the earth. The phases of the moon are also effectively produced. The earth rotates on an inclined axis with a constant direction, and in its revolution around the sun shows clearly its position at the equinoxes and the solstices, and the causes of the seasons, the midnight sun, etc., etc.

Price, \$60.00

3. Planeto-Zodiac.—This is a much simplified apparatus, including the 9 planets surrounded by the Zodiac, on a two-foot disk of masonite, marked with the names of the constellations for setting the planets from the planet-tables in "An Easy Pocket Star Guide for Beginners" (see No. 7 or 8). The margin carries also hour numbers for setting the planets by their right ascensions as given for the 15th of each month in "The Observer's Handbook" (see Note 5 below). Further, around the margin are fortnightly dates by which the disk may be oriented to agree with the sky at any time of day or night on any date of the year. This orientation shows in a striking manner the seasonal changes in the sun's altitude, in its places of rising and setting, etc.

Price, \$15.00

4. Models of Planets.—These are wooden spheres all turned to the same scale. The earth is 1/2 inch in diameter and Jupiter is 5 1/2 inches through. They are painted their colors as seen in a telescope and all stand

in a row on a heavy wooden base. They impress upon the mind very effectively the relative sizes of the members of the planetary family.....**Price, \$5.00**

5. New-Way Star Map.—This map, 8 inches in diameter, is new and unique, and meets a real need. It is extremely easy to use. It carries an horizon with respect to which it may be rotated, causing the stars to rise, culminate and set, just as they do in the sky. Around the margin are dates which enable the map to be set to show the sky as it appears at any hour on any date in the year. Planets or any new object in the sky may be quickly plotted among the stars either by the constellations in which they are located (see No. 7 or 8) or by their right ascensions and declinations (Note 5 below). The southern sky is on the front of the map and the northern sky is on the back. Directions are given on the horizon. Some interesting up-to-date information about the brighter stars, etc., is printed on the envelope.

Price, 25c; in lots of 20 or more, 20c each.

6.—Simplex Planet Placer.—On this instrument, 8 inches in diameter, the sun and planets are made of cardboard and the latter in their cardboard arms may be easily and quickly set in their proper positions among the stars just as in the Planeto-Zodiac (No. 3). It is a much reduced form of the Planeto-Zodiac and is a mate to the New-Way Star Map. Directions are printed on the back.

Price, 25c; in lots of 20 or more, 20c each.

7. Solar System Data.—This booklet contains over 400 interesting facts about the Solar System including a table of planet positions for several years. This pocket edition is a mine of up-to-date information which gives 30 items and various deductions about each important member of the Solar System. **Price, 35c.**

8. An Easy Pocket Star Guide for Beginners.—This booklet contains brief information on the motions of the stars, and maps of the sky (white stars on black background) accompanied by name-charts, for every night in the year. It has also a table of planet positions month by month for several years, by means of which the planets may be easily placed in their proper places on the foregoing instruments. At the back of the booklet is a list of the constellations with their English names.....**Price, 35c.**

NOTE:—

1. Each instrument is accompanied by directions for its operation.

2. The first four of the above instruments are for demonstrating by the instructor. They are strongly built so that students also may use them and thus fix firmly in mind the facts demonstrated.

3. A PACKET (special offer) containing Nos. 5, 6, 7 and 8 above is available for \$1.00. With this material in his hands a person is equipped to acquire readily a happy acquaintance with the stars and planets and a clear understanding of their motions.

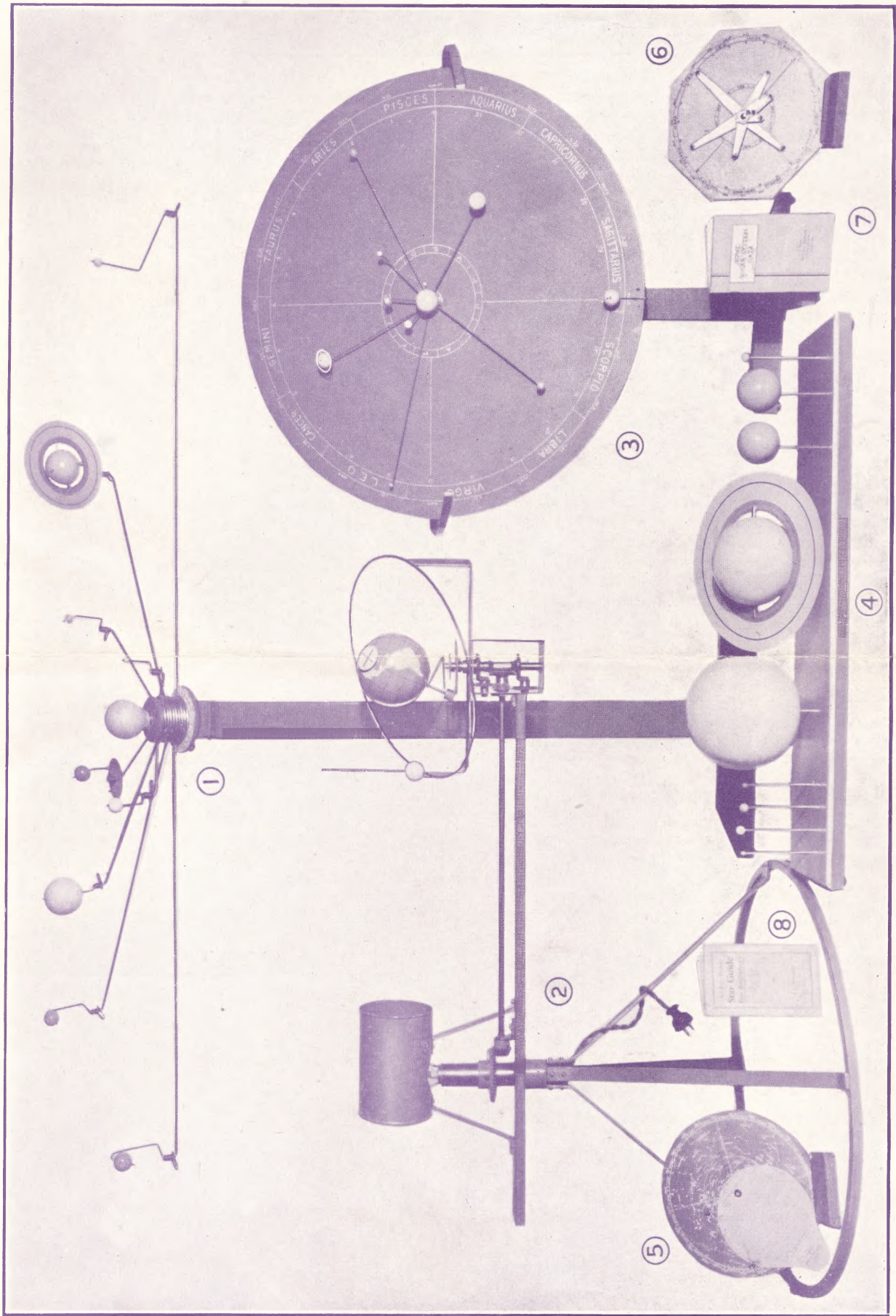
4. All prices are F.O.B., London, Ontario.

5. "The Observer's Handbook," an annual publication of the Royal Astronomical Society of Canada, containing facts about the stars and day-by-day information regarding the sun, moon, planets, meteors, etc., may be obtained from the R.A.S.C. Library, 198 College Street, Toronto, Ontario.....**Price, 25c.**

6. Besides the aids mentioned above, we have designed and built the following:—Galaxy, Comet Tracer, Stellar Radiant, Planetary Helices, Ecliptic Circle, Constellarium and Motor Planetarium.

7. For further information address Dr. H. R. Kingston, Department of Mathematics and Astronomy, University of Western Ontario, London, Canada. (OVER)

THE UNIVERSITY OF WESTERN ONTARIO



(1) Manual Planetarium.
 (2) Sottellunium.

(3) Planeto-Zodiac.
 (4) Models of Planets.

(5) New-Way Star Map.
 (6) Simplex Planet Placer.

(7) Solar System Data.
 (8) An Easy Pocket Star Guide.