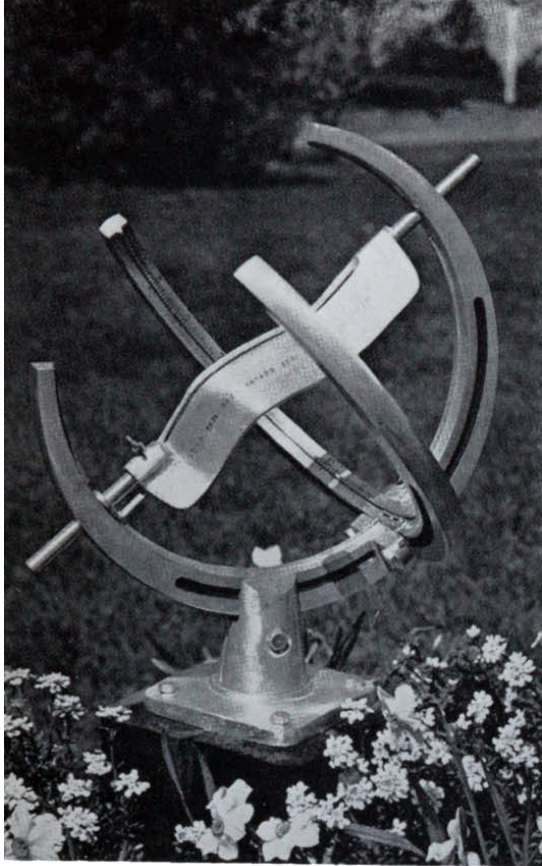


Results of Sundial Competition

HERMANN EGGER, *Zurich, Switzerland*



Richard L. Schmoyer's sundial combines beauty of finish with practical design, as every adjustment needed to read standard time is included.

ON PAGE 220 of the October, 1965, issue, this magazine announced my informal design competition entitled "The Sundial of the Year 2000." This contest closed July 1st this year, and the following three entries have been selected.

From Richard L. Schmoyer comes the "Sunquest" dial, first described in *Scientific American* for October, 1959. It has a wavy gnomon to correct for the equation of time. This has two wings which meet at an angle of 90 degrees along the polar axis, forming a narrow curved slot through which sunlight falls on the time scale. One wing corrects for

the half of the year in which the sun is moving south, the other for the half when the sun is moving north.

The meridian crescent, 13 inches in diameter, can be set to any latitude, while the 13-inch time crescent is adjustable according to the difference in longitude between the sundial site and the standard time meridian. To read the time, the gnomon is rotated on its pivots until a thin band of sunlight passes through the slot and falls on the time scale, which has five-minute graduations. Since the gnomon has to be turned to coincide with the direction of the sun, Sunquest is appropriately named. It is built of architectural aluminum with a sanded finish. Mr. Schmoyer's address is 335 Stony Battery Rd., Landisville, Pa. 17538.

Martin Bernhardt's sundial has a gnomon which casts a broad shadow, and time is read from the shadow's leading edge. The gnomon shown here is for the half of the year from the summer solstice to the winter solstice; for the other half, a different one is inserted. The gnomon points at the north celestial pole, and the plane of the bowl-shaped time scale coincides with the celestial equator. Thus, in spring and summer, sunlight comes from above the plane of the bowl, and in the fall and winter it shines through the wing openings. The wing edges are so thin that they produce little shadow.

The diameter of the bowl is 18 inches and the 16-hour scale is divided into one-minute intervals. If the day is crisply clear, the dial can be read almost to a quarter minute. The device is less efficient from December 15th to January 3rd, when errors of as much as two minutes occur. The gnomon is carrot-shaped in order to incorporate correction for equation

of time in its carefully executed design.

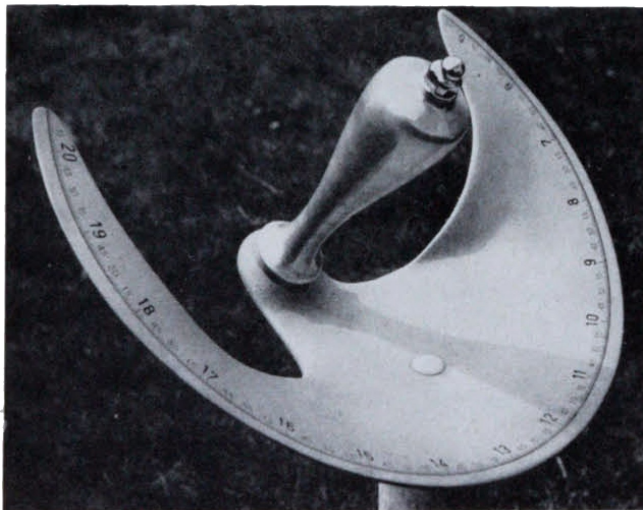
This sundial is made of an aluminum and magnesium alloy, sanded and anodized. Numbers and graduations are filled with black enamel. Mr. Bernhardt's address is Brandholzstrasse 10, 712 Bietigheim, Württemberg, Germany.

The third design comes from Gilroy Roberts, and provides a solar calendar as well as a timekeeper. Hours and minutes are inscribed on a line extending across part of a half-cylinder, reading from 6 a.m. to 6 p.m. The gnomon is in the form of a three-dimensional analemma. Rods projecting laterally from the analemma cast shadows which, where they coincide with the hour line, indicate the month and approximate day. Time is read from the shadow edge on the side corresponding to the month.

Surrounding the gnomon and supported by the date projections are silhouettes of the zodiacal signs as well as the names of the months, and these also cast their shadows on the hour circle. The sundial does not require any adjustments once it has been correctly oriented. Constructed of brass and plastic, this working model is 18 inches across. Mr. Roberts' address is 144 Summit Rd., Upper Darby, Pa. 19082.

JILA VISITING FELLOWSHIPS

The Joint Institute for Laboratory Astrophysics is accepting applications until January 15, 1967, for some 10 visiting fellowships. These allow qualified scientists to work at the Institute in such fields as stellar atmospheres, spectroscopy, high-temperature aerodynamics, and so forth. Normal tenure is one year. Information is available from the Secretary, Visiting Fellowship Program, JILA, University of Colorado, Boulder, Colo. 80304.



At left, the dial of Martin Bernhardt has a carrot-shaped gnomon, while that of Gilroy Roberts at right has the appearance of a spindle. All three of the dials pictured have the correction for the sun's equation of time built into the gnomon, and all three are of the equatorial type, with the time scale in the plane of the celestial equator.