



sphere, the primary mirror on one side partly balances the eyepiece-supporting cylinder. With the help of other internal weights, the center of gravity is brought to the center of the sphere. This 90-pound telescope *almost* floats in a water bath contained in the hemispherical base, where firm but slippery pads take up the slight excess weight. The telescope is pointed at an object and turned so the eyepiece is in a convenient position; then water is pumped out through a tube, causing a large clock-driven suction cup near the periphery of the bowl-shaped

base to grip the sphere and become the polar axis for tracking!

As is traditional at Stellafane, awards were tailored to the telescopes on hand. For best refractor, the first (and only) prize went to Jonathan Kern of New Orleans, Louisiana. No refractor is completely free of chromatic aberration, but Mr. Kern's 4-inch has special quartz and fluorite elements in place of the usual crown and flint, making the secondary spectrum entirely negligible. Fluorite is attacked by water, so he mixed his abrasives and rouge with glycerine. The instrument's mahogany tripod was designed for 30° latitude, so in Vermont the south leg was placed in the gully next to the Porter turret.

Mr. Kern also entered the 6-inch hor-

izontal refractor and coelostat seen on page 174 last month. For this solar-eclipse instrument and the techniques he devised to make the radially density-graded filter seen below, Mr. Kern received a special first prize.

The 12-inch  $f/5.3$  reflector of Albert H. Nagler received first prize for Newtonians. An engineer from Spring Valley, New York, he refigured another amateur's mirror and made the unique perforated diagonal seen in the photograph at top right on this page. It permits guiding on an object while it is being photographed with the same objective. Most of the light (equivalent to that gathered by a 10-inch aperture) is reflected toward the camera underneath the tube, but some (from a six-inch



Above: Albert Nagler with the perforated diagonal of his 12-inch reflector, which is described in the text.

Left: During the day, the 12-inch  $f/17$  Porter turret telescope was stopped down to five inches and trained on the sun. The projected image was so large that it spilled off the projection screen at left onto the wall, as Michael Columbus focused the huge sunspot. This view inside the turret was made with a 7.5-mm.  $f/5.6$  Nikkor fisheye lens of 180-degree field. Photographs in this article not otherwise credited are by Roger W. Sinnott.



Left: Jonathan Kern adjusts his 4-inch refractor for solar observing.

Right: Mr. Kern shows Stellafane judge Edward Lindberg the focal-plane filter he took to Prince Edward Island for the eclipse. To make this filter from an optical window, the mask in the foreground was rotated above the glass as the metallic coating was being deposited in a vacuum chamber. Notice how the filter is more reflective (hence less transparent) at the center than around the edge, to compensate for the great brightness range between inner and outer corona. Photograph by Salvatore LaRiccia.





The large audience for tent talks on Saturday, listening to such reports as Kenneth Hewitt-White's on the intensive meteor observing program of Ottawa amateurs in Canada. The annual Maksutov meeting was also held here. On Friday night, July 10th eclipse slides were shown, and a movie was synchronized with one group's taped exclamations during totality.



While Sal LaRiccia looks on at left, Allan Mackintosh, head of the Maksutov Club, judges the merits of a 240-pound 10-inch Cassegrain telescope. It was built by Charles Fessenden, Jr., of Stamford, Connecticut, who started the project in 1962. It won second prize for compound reflectors.

annulus at the center of the primary) enters the perforation and goes through a 2x Barlow and diagonal to the guiding eyepiece above.

In the catadioptric category, John Bucini of Bedford, Massachusetts, won first prize with his 4-inch f/15 Maksutov on a single-arm "fork." His corrector lens can be unscrewed enough so the telescope focuses to 10 feet. The pier is 4-inch-diameter aluminum pipe, supported on birch legs tied with a dog chain. Second prize in this category went

to Robert Vangor of Yonkers, New York. The polar shaft of his 8-inch f/15 Gregory-Maksutov is from the automatic transmission of an automobile.

At sunset Saturday, 500-odd amateurs found seats on the rocky knoll as screen and microphone were set up at the turret building. Introducing the twilight talks, once again, was longtime amateur and former Vermont governor Joseph B. Johnson. Then Walter Scott Houston inaugurated what may become a yearly feature, entitled "Shadowgram," reminiscences of past conventions and Stellafane personalities.

As a sobering reminder of the times, Alan Rohwer recounted the Springfield club's efforts to preserve Breezy Hill from encroachment by the modern world. The current hope is to purchase some addi-

tional acres around the summit that have been recently put on the market (see SKY AND TELESCOPE, March, 1972, page 157).

As darkness fell, stargazing commenced again, with less auroral interference than on Friday night. The judges tested telescopes for optical excellence, usually turning them on Vega to check for scattered light, then swinging over to the quadruple star Epsilon Lyrae to examine how cleanly (for the aperture) its two close pairs were resolved. At the stroke of midnight, the results were announced over the public address system. Mr. Kern's 4-inch refractor won first place, followed by the James 12½-inch reflector. Third prize went to Roland W. Lovejoy of Bethlehem, Pennsylvania, for his 6-inch Dall-Kirkham reflecting telescope.

R. W. S.



A high school senior from Rutland, Vermont, Mark Chaffee (at left), and machinist M. Heleba won second prize for Newtonians with this 10-inch f/5.