

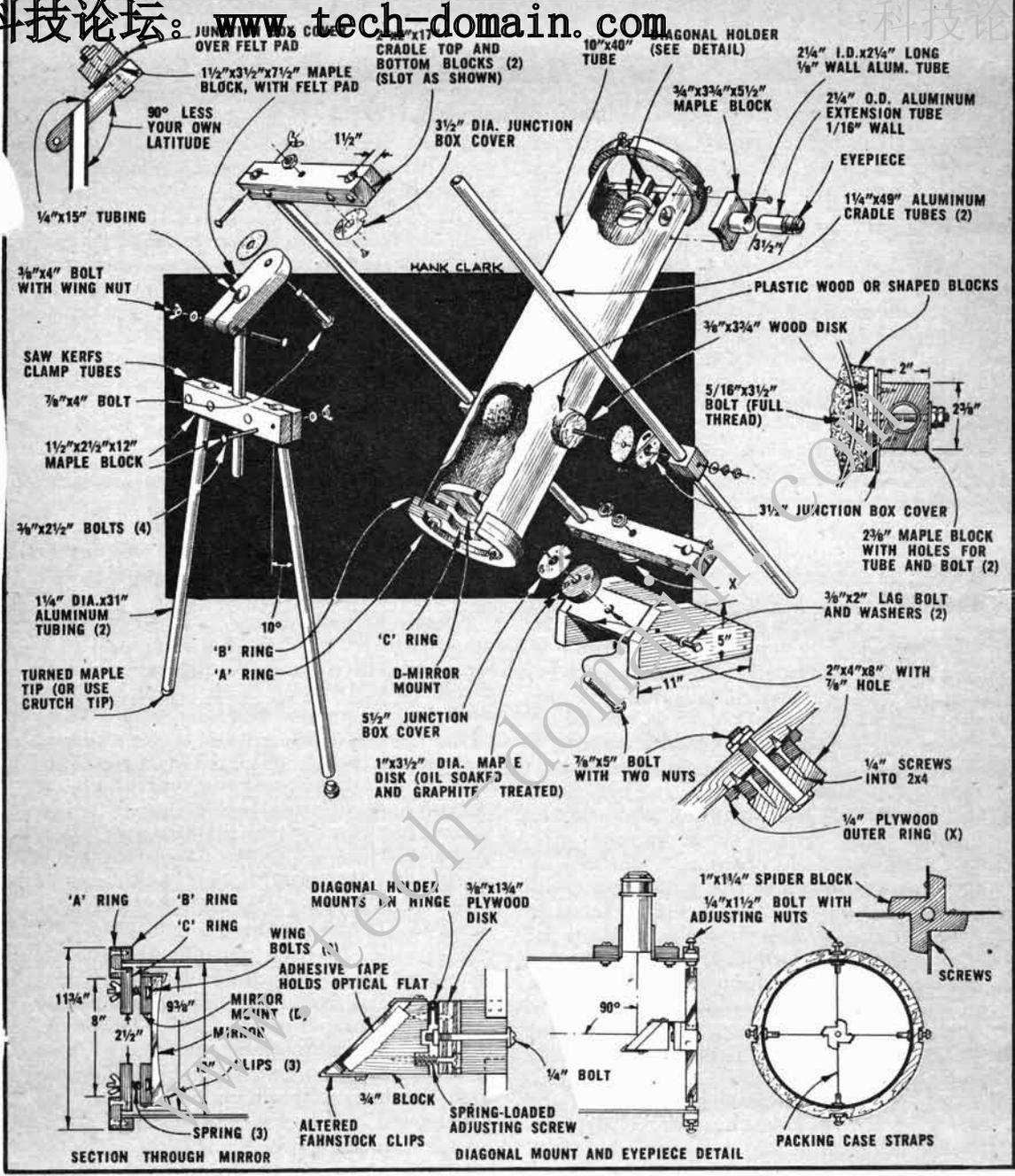


**The Amateur  
Telescope  
Maker's Page**

# A Richest-Field Telescope



**WILLIAM G. WELT**, an optometrist of Modesto, Calif., and his eight-inch richest-field reflector 'scope.



A RICH-FIELD telescope is an instrument that covers a fairly large segment of the sky and has good light-gathering ability. For viewing nebulae, the Milky Way and the moon, it can't be surpassed. The best RFT (richest-field telescope) of the reflecting type is one having a 7-inch diameter mirror of f-4

value or about 29-inch focal length. A fairly long eyepiece of at least one inch or more in focal length should be used. Inasmuch as Pyrex telescope blanks do not come in seven-inch diameters, the eight-inch diameter was selected. To reduce diffraction effects a bit, f-5 was selected [Continued on page 190]

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## Richest-Field Telescope

[Continued from page 153]

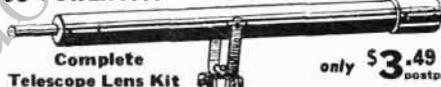
as the focal ratio. This permits use of a 1 3/4-inch diagonal in conjunction with Edmund's 3/4-inch Erfle eyepiece. The resultant field of view is about 2° (four moon-diameters) and coma is not objectionable. No vignetting of the field was observed.

The North Polar regions are easily viewed by placing the telescope so that the north pier is at the south. This may seem like blasphemy for an equatorial mount such as this, but in this case it is practical because of the relatively low magnification (32x).

There are four bearings in this mounting and each presents approximately 8 1/2 sq. in. of movable surface to approximately the same area of non-moving surface. These bearings are very sturdy, easy-moving, easily adjusted, inexpensive and easy to build. The bearings keep the telescope "put" and there is absolutely no vibration or loose play.

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tube is found by balancing the tube (complete with mirror and eyepiece) on the edge of a 2x4. Mark the point of balance and exactly on the opposite side of the telescope tube mark a second point. These points locate the declination axes. Set up the different parts for each declination bearing as shown in the declination bearing detail and balance the telescope tube in the cradle. (The cradle and piers should be built first.) Balancing the telescope tube at this time will prevent it from leaning to one side or the other while it is loosely mounted on the two piers. Press wood dough or plastic wood all around in the space on one side of the telescope tube between the plywood disk and the telescope tube. Repeat the operation in the space on the other side. Allow two or three days for the wood dough to harden.

The cradle can be adjusted so the parts are on the same plane by pressing the cradle against a flat surface before the nuts get a final tightening. The diagonal holder is the four-vane type. Half-inch metal strap, as used in shipping cartons, is used for the vanes. This strap is discarded by hardware stores and may be had for the asking.

Place plastic bowl covers over the top of the telescope tube, eyepiece extension holder and the maple disk when the telescope is not in use.

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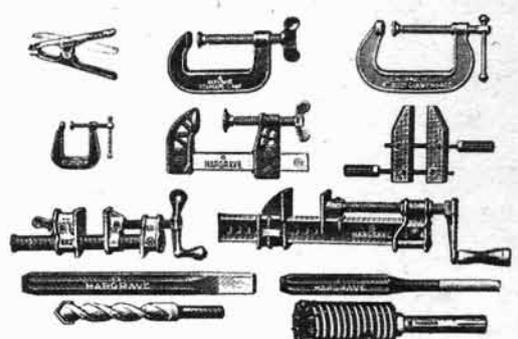
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