

UNITRON 131-C 75 mm F/16 FOLDED REFRACTOR

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Unitron offered two models: 131-C (75 mm F/16) and 132-C (100 mm F/15). About 100 131-C and 25 132-C were produced by Unitron making these very rare instruments (late 1970's)¹.

I was able to buy one of these very rare refractors in 2014. It came with a wooden case, four eyepieces, erecting prism, and star diagonal (Figure 1 and 2).



Figure 1 – Unitron 131-C 75 mm F/16 folded refractor.

¹ The first Unitron advertisement for the Model 132-C was in the April 1978. R.V.R. Optical listed a Model 132-C for \$1419 in the November 1978 issue of Sky and Telescope magazine.



Figure 2 – Unitron 0.965" eyepieces and solar filter.

The 131-C 75 mm F/16 folded refractor was sold by Unitron complete with an 128 Equatorial Mount², slow motion controls for right ascension and declination, extension flexible cable for R.A. control, supplementary R.A. slow motion and provision for attaching a clock drive, setting circles and verniers, tripod and brace, 8x30 mm viewfinder with mounting brackets, rack and pinion focusing mechanism with focusing locks (rotating focuser), star diagonal with 2x Barlow, erecting prism, 6 coated 0.965" eyepieces: 6 mm (200 x), 7 mm (171 x), 9 mm (133 x), 12.5 mm (96 x), 18 mm (67 x), 25 mm (48 x), sun projecting screen set, solar aperture diaphragm, sun glass filter, notched dewcap, dustcap, wooden cabinets and instructions (Figures 3, 4, 5 and 6).

Prices for these two folded refractors were high in the late 1970's³.

Folded refractors such as the ones produced by Unitron fold the light path in three equal segments. Although these refractors are difficult to collimate, they have many desirable features⁴:

- There is no secondary obstruction to reduce contrast in a folded refractor;
- The Chromatic Aberration is nearly zero, far better than an F/10 achromat;
- The focal length is generous, making the observation of planets and the moon at high power easy with comfortable with long focal length eyepieces;
- The F/15-F/16 design is easier to focus. No need for a two-speed focuser;
- No need for expensive eyepieces;
- The eyepieces can be relative long focal length for the same power making the eye relief much more comfortable;
- Some people say an F/15-F/16 refractor "beats the seeing". Of course, it cannot defeat all the effects of seeing but it seems to achieve that because the defocus range is more generous. You are not tempted to tweak the focus all the time as you are with a shorter focal ratio scope. The forgiving optical behaviour of such a scope reduces focusing problems when the seeing is less than ideal.

² The same equatorial mount of the 60 mm Unitron models

³ \$695US for the 131-C and \$1100US for the 132-C retail

⁴ <https://davetrott.com/>

Unitron 3-inch Compact refractor

A unique design for the discerning observer

- One-of-a-kind folded optical path design
- 4-foot light path in a 19-inch tube
- As handy to carry as a portable typewriter
- Only \$695 suggested retail

UNITRON The value line

Unitron Instruments, Inc.
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 101 Crossways Park West
 Woodbury, NY 11797 U.S.A.
 Telephone (516) 364-8046



Figure 3- Unitron 131-C catalogue (late 1970's).

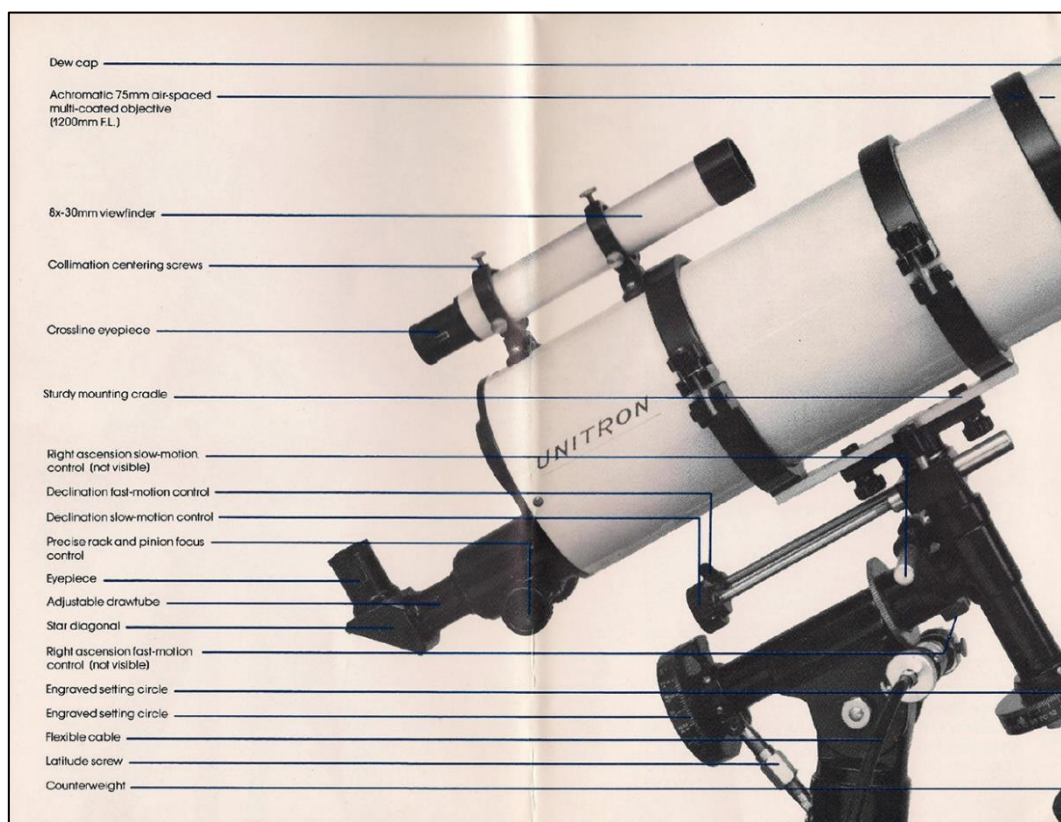


Figure 4 - Unitron 131-C catalogue (late 1970's).



New Unitron 3-inch Compact refractor

The telescope for the discerning observer

Unitron 3" Compact refractor telescope, Model 131-C, with multi-coated achromatic 75mm-aperture all-spaced objective (1200mm focal length), 8x-30mm viewfinder with crossline eyepiece, and mounting brackets. Drawtube plus rack and pinion focusing mechanism. Six coated eyepieces: orthoscopic 5mm (22x), achromatized symmetrical 7mm (27x) and 9mm (33x), Kellner 12.5mm (36x) and 18mm (47x), and Ramsden 25mm (48x). Star diagonal eyepiece holder with achromatic amplifier. Erecting prism. Sun projection screen set with solar aperture diaphragm. Supplied with fitted wooden cabinet, total weight: 15 lb.

Equatorial mount with slow-motion controls on both axes. Flexible cable for right ascension slow motion control. Engraved setting circles. Counterweight. Fitted wooden cabinet. Sturdy wooden tripod with folding legs.

Specifications: Telescope only 8 lb.
Telescope with wooden cabinet: 16 lb.
Tripod with equatorial mount: 24 lb.
Total shipping weight approx.: 45 lb.

Complete as described.
\$695 suggested retail.









Filtergram by Edwin Hirsch.
Taken with Unitron 3-inch Compact refractor.
Date: March 9, 1977
Time: 17:20 U.T.
Camera: Laborec 35mm
Film: SO-410
Exposure: 1/15 sec.
Developer: D-19 diluted 1:1 — 68° — 3½ minutes
Filter: Daystar Model ATM
Conditions: Breezy with unsteady air.



Equatorial mounting with sturdy wooden tripod complete with folding legs, leg brace and eyepiece shelf.

Figure 5- Unitron 131-C catalogue (late 1970's).

Additional accessories for expandable versatility

	<p>Sun Diagonal (Herschel wedge) Right-angle viewing attachment for solar observation. Reduces sun intensity for safe large-aperture viewing. Product #16053 \$29.00 Dangerous to the eye. If not used with filter #16651 \$5.00</p>		<p>Model 220A Astrocamera A light-weight camera for 3½ x 4¼ photography using the objective lens of the scope as the principal optical element. Product #16661 \$190.00.</p>
	<p>Uniclamp camera bracket A convenient device to piggy-back a camera to your telescope. Product #16706 \$31.50.</p>		<p>Laborec 35mm camera back Couples directly to telescope drawtube for prime focus 35mm astro-photography. Complete with focusing magnifier, tube couplers and cable release. Product #16734 \$254.00.</p>
	<p>Model 128 motor drive Synchronous motor drive for 110-120 volts, 60 cycles, with coupling and hardware to attach to worm gear. Product #16683 \$99.00</p>		<p>35mm camera adaptors for prime focus or eyepiece projection astro-photography. Write for separate catalog.</p>
	<p>Duetron eyepiece holder Double your enjoyment. Two persons view simultaneously. Holds two eyepieces (not included). Product #16622 \$43.00.</p>		<p>Soft leatherette carrying case for tripod. Product #16748 \$18.50.</p>
	<p>Unihex eyepiece holder No fumbling to change magnification. Unihex rotary selector holds up to six different eyepieces (not included). Product #16624 \$35.25.</p>		

All prices are suggested retail. FOB Woodbury, N.Y. Prices and specifications are subject to change without notice.

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Figure 6- Unitron 131-C catalogue (accessories).



Figure 7- Unitron 131-C 75 mm F/16 folded refractor.



Figure 8- Unitron 131-C 75 mm F/16 folded refractor.



Figure 9- Unitron 131-C 75 mm F/16 folded refractor complete.



Figure 10- Unitron 131-C 75 mm F/16 folded refractor (solar observation, Baader AstroSolar filter).



Figure 11- Unitron 131-C 75 mm F/16 folded refractor (solar projection).

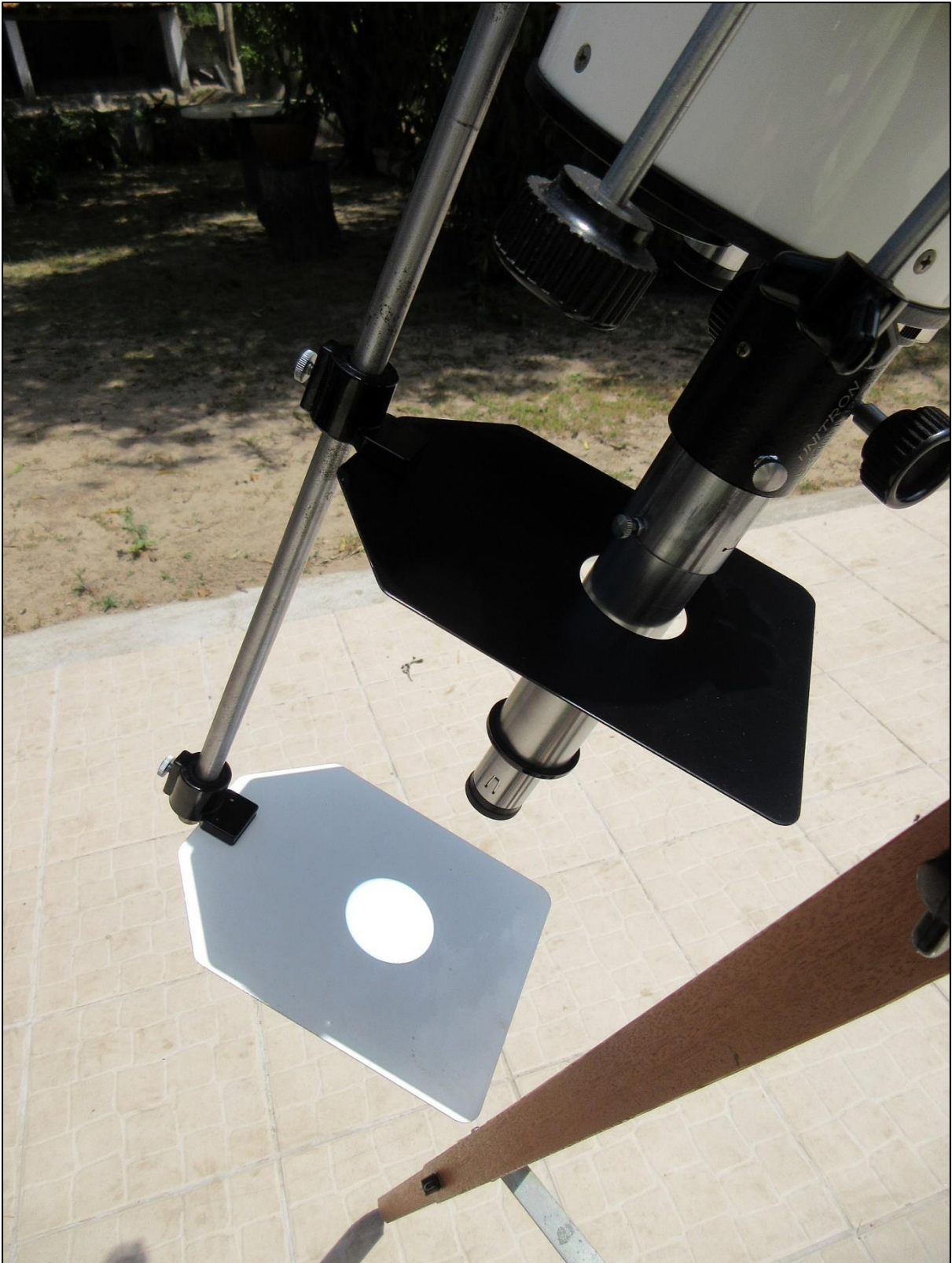


Figure 12- Unitron 131-C 75 mm F/16 folded refractor (solar projection).