

UNITRON/POLAREX/WELTBlick TELESCOPES

PEDRO RÉ

<http://pedroastrophotography.com/>

Unitron History¹

The Company Nihon Seiko Kenkyusho, Ltd. based in Tokyo was established in the mid 1930's, marketing achromatic refracting telescopes with a Zeiss type E air-spaced doublet achromatic lens design. Telescopes up to 125 mm aperture were marked under the POLAREX or SEIKO SCOPE trade names.

Nihon Seiko manufactured Unitron refractor tube assemblies for distribution in the US, of three inches aperture and other sizes as well; four-inch Unitron objectives were produced by many sources. The Nihon Seiko telescopes were marketed in most major markets, and under several trade names (MERIDIAN, POLAREX, SEIKO SCOPE, UNITRON, WELTBlick) until the discontinuation of routine telescope production in 1992.

In early 1950's Lawrence Fine went to Japan looking for high quality products to market in the US; the company began dealing with was Nihon Seiko Trading Company. Lawrence Fine began importing telescopes as the United Trading Company (UNITRON)².

The first Unitron advertisement appeared in the October 1951 issue of Sky and Telescope magazine; featuring models: the NS 127, NS 114, and NS 128 (Figure 1).

Fine registered the Unitron trademark in the United States under United Scientific CO, 204 Milk Street, Boston, Massachusetts. The registration file was filed on March 22, 1954, with first commercial use on February 25, 1952³.

In April 1952, the announcement was made for the 3" Equatorial, Model 142; it was finally made available for \$435US in June 1952; United Trading Company.

In the early 1960's United Instrument Company expanded into the microscope line through the KUNOH TRADING COMPANY, and UNION OPTICAL in Tokyo, Japan. This included the importing of the first inverted Japanese microscopes into the US.

In January 1953, Unitron introduced the first full page spread showing all its models. In March 1953, they announced the Model 145 3" Photo-Equatorial with a price of \$550US. In April 1953, the Model 140, 3" Alt-Az and the Model 150, 4" Alt-Az were announced. In May 1953, the Model 152, 4" Equatorial was announced as leading a line of nine Unitron Models⁴ (Figure 2).

In January 1955 the "first of a series of test models of the forthcoming Unitron 6-inch refractor"; the Rotary Eyepiece Selector, and the weight driven clock drive for the 4-inch Equatorial Model 155 were announced (Figure 3 and 4).

¹ Largely based on <https://www.unitronhistory.com/>

² The UNITRON brand name was derived from the company's largest supplier of microscopes, UNION OPTICAL.

³ In February 1952 United Trading Company started using Unitron Model numbers instead of Nihon Seiko (N-S) numbers for the three telescope models it was marketing: Unitron 127, Unitron 114, and Unitron 128.

⁴ November 1953 featured the first Unitron back cover advertisement in Sky and Telescope.

At Last! — A Telescope You Can Afford!



1.6-INCH REFRACTOR
Model No. NS 127

A wonderful instrument for the beginner and young people interested in astronomy.

Objective: 40-mm. (1.6") diameter, 790-mm. (27.5") focal length, f/17.5.
Eyepieces: 9 mm. (.35") for 78x
18 mm. (.71") for 39x
(100x eyepiece available at extra cost. Other sizes of eyepieces available.)

COMPLETE with tripod and slow-motion device, view finder, star diagonal, wooden case.

Only \$75

Precision Refractors at Unbelievably Low Prices

Three models to choose from. Each is made from the finest materials and imported from one of the world's largest manufacturers of optical instruments.

—LENSES are FULLY CORRECTED for spherical and chromatic aberration and are COATED for maximum brilliance and clarity of image.

—Each model is equipped with a sturdy TRIPOD and SLOW-MOTION device, low-power VIEW FINDER, STAR DIAGONAL for convenience in observing at all altitudes, RACK AND PINION FOCUSING, TWO EYEPIECES, and comes complete with WOODEN CARRYING CASE. In addition, an ERECTING PRISM SYSTEM for terrestrial observation and a SUNGLASS for solar observation are included with NS 114 and 128.

—These necessities are included with your telescope . . . There are no costly extras to buy. If these instruments were manufactured in this country, they would cost at least twice our low price.



2.4-INCH EQUATORIAL
Model No. NS 128

The complete instrument for the active amateur.

Objective: 60-mm. (2.4") diameter, 900-mm. (35.6") focal length, f/15.
Eyepieces: 9 mm. (.35") for 100x
18 mm. (.71") for 50x
Higher powers available at extra cost.

COMPLETE with equatorial mounting and slow-motion controls, tripod, view finder, star diagonal, erecting prism system, sun-glass, wooden case.

Only \$225

2.4-INCH ALTAZIMUTH REFRACTOR
Model No. NS 114

Not illustrated. Identical with Model NS 128 but with altazimuth instead of equatorial mounting. Same accessories included.

Only \$125

Write today for further information or send check or money order to

UNITED TRADING CO.
204 Milk St., Dept. T-8, Boston 9, Mass.
Fully Guaranteed
Telescopes Shipped Express Collect. 25% deposit required on C.O.D. shipments

Figure 1- Unitron advertisement appeared in the October 1951 issue of Sky and Telescope magazine.

The Model 166, Pier mounted 4" Photo-Equatorial was previewed on the back cover of the June 1955 issue of Sky and Telescope; October 1955 issue announced it went on sale.

In October 1957, the back cover of Sky and Telescope featured the famous comparison photo of the 6" and 4". The price of the 6" was in the neighbourhood of \$5000.

The 5" Unitron Models 510 and 530 were listed as models available for the first time in the November 1961.

In the 1970's Unitron added compact reflector telescopes, spotting scopes to the line. It expanded its microscope line as well.

The last issue of Sky and Telescope that Unitron had the back cover was published in December 1971; Celestron SCT's took it over in January 1972⁵.

In January 1976 the company listed as Unitron Scientific Inc. 66 Needham Street, Newton Highlands, Mass. In June 1976, the first Unitron Instruments, Inc. advertisement showing Ehrenreich Photo-Optical Industries, Inc.

In March 1977, the new Model 131-C, 3 Inch Compact Refractor was introduced in a two-page spread (Figure 5).

⁵ Lawrence Fine sold off the business in 1975 to Ehrenreich Photo Optical Industries, Inc for the reported sum of \$2.4 million.

Lawrence and Ellen Fine died on 3 August 1978. They were killed in a private plane crash that Lawrence was piloting.

UNITRON Leads in Value and Quality

It's Yours for the Asking - - the New Illustrated Catalog of UNITRON Refractors!

The overwhelming choice of leading universities and active amateurs the world over. The most complete selection of telescopes ever offered.



2.4-INCH ALTAZIMUTH
UNITRON Model 114

Same optical specifications, eyepieces, and accessories as the 2.4-inch Equatorial described in the third column, but with altazimuth mounting and micrometric, spring-loaded, slow-motion controls for both altitude and azimuth.

Only \$125

1.6-INCH ALTAZIMUTH
UNITRON Model 127: Not Illustrated.
Objective: 42-mm. (1.6") diam., 700-mm. (27.5") focal length, f/17.5.
Eyepieces: 7x, 16x, and 29x included.
100x: \$8.95 extra.

COMPLETE with tripod and altazimuth mounting, slow-motion controls for both altitude and azimuth, view finder, star diagonal, sunglass, eyepieces, wooden cabinet. **Only \$75**

3-INCH ALTAZIMUTH
UNITRON Model 140: Not Illustrated.
Same optical specifications and accessories as the 3-inch Equatorial but with altazimuth mounting. 171x, 133x, 96x, 67x, 48x eyepieces supplied. Sunscreen not included, but available as necessary. **Only \$265**

4-INCH ALTAZIMUTH
UNITRON Model 150: Not Illustrated.
Same optical specifications, eyepieces, and accessories as the 4-inch Equatorial, but with altazimuth mounting. Sunscreen not included, but available as necessary. **Only \$465**

EASY PAYMENT PLAN
UNITRON refractors may be purchased on an easy payment plan. Write for details.

NEW CATALOG AVAILABLE!
If you have not already received your copy, we shall be glad to rush one to you. All models are illustrated and fully described. A special section contains valuable information to help you choose a telescope. Learn why the most wanted telescope in America today is a UNITRON. Don't miss the free summer observing. Write for your free catalog at once.
Please address your card or letter to the attention of Dept. T.A-3
Microscope catalog also available.

- LENSES are FULLY CORRECTED for spherical and chromatic aberration and are COATED for maximum brilliance and clarity of image. AIR-SPACED CELL insures freedom from "clouding" with age.
- EYEPIECES of the HIGHEST QUALITY . . . Orthoscopic, Achromatized Ramsden, Huygens.
- FINEST MATERIALS throughout. DURALUMINUM TUBE. Moving parts of BRASS carefully machined to close tolerances, and finished in CHROMIUM.
- MODERN DESIGN based on time-tested engineering principles. HANDSOME APPEARANCE to which no illustrations can do justice.
- STURDY TRIPOD may be folded for convenient storage.
- EQUATORIAL MODELS have slow-motion controls for both declination and right ascension.
- ALTAZIMUTH MODELS have slow-motion controls for both altitude and azimuth.
- VIEW FINDER with crosshair eyepiece gives wide field.
- RACK-AND-PINION FOCUSING.
- STAR DIAGONAL for easy observing at all altitudes.
- SUNGLASS for solar observation.
- ERECTING PRISM SYSTEM for TERRESTRIAL OBSERVATION may be used with any of the eyepieces to give the same complete range of terrestrial magnifications as for celestial observation.
- FITTED WOODEN CABINETS.

*Setting New Standards
for Excellence -*



4-INCH EQUATORIAL REFRACTOR
UNITRON Model 152

Objective: 105-mm. (4.13") diam., 1,520-mm. (60.24") focal length, f/15.
Eyepieces: 25x, 219x, 170x, 132x, 94x, 61x, 392x and 38x eyepieces available at extra cost.

COMPLETE with equatorial mounting and slow-motion controls, tripod with levels, eyepiece shelf with battery-operated illuminator, setting circles and verniers, view finder (42-mm., 10x), sun projection screen, sunglass, star diagonal, erecting prism system, eyepieces, pocket eyepiece case, wooden cabinets. **Only \$785**

3-Inch and 4-Inch Photographic Equatorials also available.

Unbelievably low prices! Outstanding features, performance, and workmanship impossible to duplicate even by paying considerably more.



2.4-INCH EQUATORIAL
UNITRON Model 128

Objective: 62-mm. (2.4") diam., 900-mm. (35.5") focal length, f/15.
Eyepieces: 190x, 60x, 35x included.
150x: \$14.75; 129x: \$8.95
72x: \$4.75 extra.

COMPLETE with equatorial mounting and slow-motion controls, tripod, view finder, star diagonal, erecting prism system, sunglass, eyepieces, wooden cabinets. **Only \$225**

3-INCH EQUATORIAL
UNITRON Model 142
Objective: 78-mm. (3") diam., 1,200-mm. (47.2") focal length, f/16.
Eyepieces: 200x, 133x, 96x, 67x, 48x included. 171x: \$4.95 extra.

COMPLETE with equatorial mounting and slow-motion controls, tripod, setting circles and verniers, view finder (30-mm., 6x), sun projection screen, sunglass, star diagonal, erecting prism system, eyepieces, pocket eyepiece case, wooden cabinets. **Only \$435**

ACCESSORIES

VIEW FINDER: 42-mm. (1.6") coated achromatic objective. Illustrated on Model 152. 10x crosshair eyepiece. Furnished with mounting brackets. A wonderful accessory for your present telescope. . . . **Only \$15.00**

GUIDE TELESCOPE: 62-mm. (2.4") coated achromatic objective, 700-mm. (27.5") focal length. 78x crosshair eyepiece. Furnished with mounting brackets. Convert your present telescope for astrophotography **Only \$75.00**

EQUATORIAL MOUNTINGS

The equatorial mountings of the 3" and 4" refractors are available separately for those who already own the optical components. All parts are "oversized," insuring utmost stability. Exceptional values.
3" Mounting and tripod **Only \$195**
4" Mounting and tripod **Only \$275**

All Instruments Fully Guaranteed
Send check or money order or 25% deposit with balance C.O.D.
Telescopes shipped Express Collect.

UNITED SCIENTIFIC CO. 204-6 MILK ST. BOSTON 9, MASS.

270 SKY AND TELESCOPE, August, 1953

Figure 2 – full page advertisement of Unitron telescopes (Sky & Telescope, August 1953).

UNITRON Leads in Value and Quality

CLOSEUPS of the most wanted telescope in America today . . .



UNITRON Model 155 set up for observing.

The UNITRON 4" Photographic Equatorial

for visual observation and astro-photography

In an unbelievably short time, the UNITRON 4" Equatorial Refractors have firmly established themselves as the overwhelming choice of university observatories, the U. S. Government, and discriminating amateur astronomers everywhere.

This enviable reputation has been built by the outstanding quality and value of the instruments themselves — their superior performance, precision workmanship, and modern design.

MODEL 155 COMPLETE as illustrated with equatorial mounting and tripod, 2.4" photographic guide telescope with star diagonal and crosshair eyepiece, 10x, 42-mm. view finder, 6 eyepieces, sun projecting screen, sunglass, solar aperture diaphragm, star diagonal, erecting prism system, dewcap, dustcap, pocket eyepiece case, wooden cabinets, etc. **Only \$890**

MODEL 152 as above but without guide telescope **Only \$785**

An **ASTRO-CAMERA** and **CLOCK DRIVE** are in the final design stage and will be available shortly as separate accessories. A **FIXED METAL PIER** will be offered for permanent installation.



Large 10x, 42-mm. (1.6") VIEW FINDER.



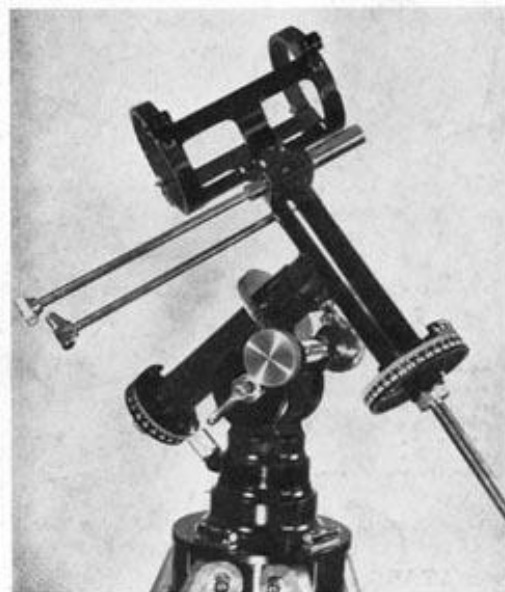
TRIPOD SHELF holds eyepieces and accessories while observing.



Battery-operated LAMP casts a reddish light on the shelf.

Many of the components of UNITRON 4" Refractors are available separately — see our advertisement on page 278.

Use our time payment or buy-a-way plans to obtain a large telescope right from the start! No red tape — application form available on request. And if you haven't already received a copy of our free catalog, we should be happy to rush one to you. A special section tells you how to choose a telescope. All instruments fully guaranteed. Shipment via express collect. Send check or money order or 25% deposit with balance C.O.D. Write to Dept. TC-6.



EQUATORIAL MOUNTING with micrometric slow motion controls for both R. A. and declination, setting circles and verniers, and latitude adjustment.

. . . and there are 8 other UNITRON Models to choose from!

**UNITED SCIENTIFIC CO. 204-6 MILK ST.
BOSTON 9, MASS.**

Figure 3- 1954 advertisement describing the 4" Photo-Equatorial telescope (Model 155).

UNITRON

Prevues for 1955

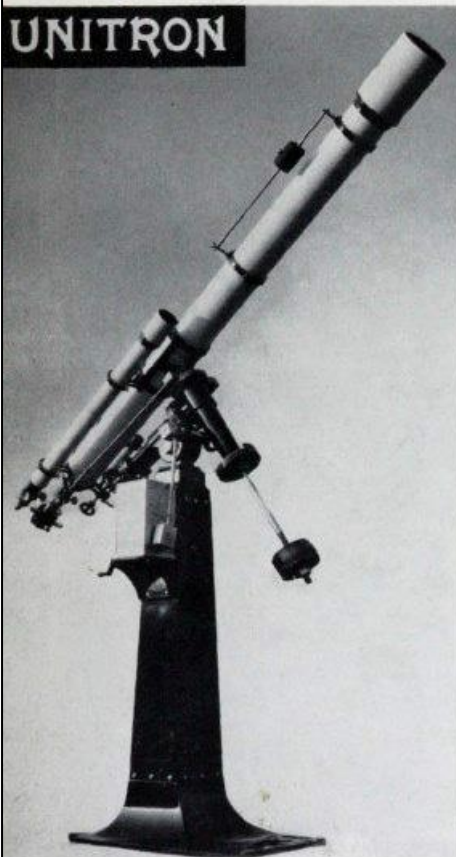
An introduction to some new items that you'll be hearing a good deal more about in '55

It doesn't seem to be any secret that most telescopes of the "durable variety" sold these days are UNITRONS. What has, however, been a secret until now are the UNITRONS that haven't as yet been put on the market. Here we thought we would give you an inside look at some of the items that are currently occupying the attention of our research division.

We'll continue to keep you posted through these pages, and if you have written for our catalog on any previous occasion you will automatically receive by mail all forthcoming information as it becomes available.



UNITRON



Pictured above is the first of a series of test models of a forthcoming UNITRON 6-inch Refractor, with pier and drive. This instrument will be a complete observatory installation and will incorporate every convenience for observing and for astro-photography. Auxiliary equipment will include a 3-inch guide telescope, a large view finder, two astro-cameras (not shown), about 10 eyepieces and a rotary eyepiece selector, and a spectro-scope, as well as the standard UNITRON accessories.

Every UNITRON instrument offered is the culmination of extensive design and redesign, exhaustive testing and retesting, to preserve the distinguished UNITRON reputation.

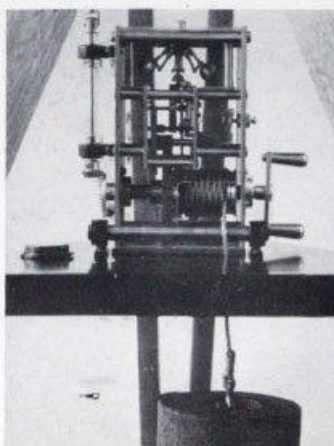


The tripod shelf on the UNITRON 4-inch Equatorial, Model 155 pictured above, has been found invaluable for holding eyepieces and accessories (as well as for storing a midnight snack for observers). It will also hold the neat little clock drive shown in detail below. This drive will also be used with the fixed pier we are offering soon for the 4-inch.

Attached to the Model 155 is the first of a number of astro-cameras that are in the works. This one (shown at the right) uses the objective of the telescope as the camera lens, with or without the eyepiece, for photographing the sun, sunspots, the moon, solar and lunar eclipses, and (with a clock drive) stars, nebulae, clusters, and comets.

Six magnifications at your fingertips! No eyepieces lost in the dark! Change eyepieces instantly while the object stays centered in the field of view! UNITRON owners will bless this accessory, which is very soon to be offered. When you want to change magnifications merely rotate a new eyepiece into position.

At the moment, for temporary lack of a better name, we refer to this handy gadget as a "Rotary Eyepiece Selector." If you can think of a more appropriate name, preferably incorporating the idea of the six eyepieces, let us know. If we use your name, we'll send you as a gift one of these eyepiece selectors just as soon as they are available for sale.



None of the new instruments and accessories shown here is as yet for sale. But as you know, there are already 9 UNITRON Refractors, which are pictured and priced on page 108.

Our catalog on these instruments is essential reading for telescope buyers, and is yours for the asking. Write for your copy to Dept. T-1.

United Scientific Co.

204-206 MILK STREET
BOSTON 9, MASS.

Figure 4- January 1955 advertisement prevuing model 600 series 6" refractor, the Unihex, the Astro camera and the Weight driven Clock Drive.

In 1981, Nippon Kogaku, the maker of Nikon cameras and microscopes, acquired Ehrenreich Photo Optical Industries. Unitron became part of the Nikon Instrument Group and continued as part of the Nikon Instrument Group for five years at which time it was taken private by a management led buyout.

In 1983, The Leisure Products Division was established as a division of Unitron with the goal of bringing the same “excellence by design” to the area of optics in the consumer market in addition to its high-quality telescopes.

Announcing a 3-inch Unitron refractor with a 4-foot light path in a 19-inch tube.

To give you a high-resolution refractor that's as handy to carry as a portable typewriter, we've folded the light path in our totally new 3-inch Unitron Compact telescope. This unique instrument—the first of its kind commercially available—is housed in a tube only 19 inches long, five inches in diameter, travels in a case only 9 x 9 x 20 inches. All this without sacrificing the advantages of a refractor.

Because it's a Unitron you get an achromatic, air-spaced, multi-coated objective with a three-inch (75mm) aperture. The 3-inch Unitron Compact has a 1200mm focal length, f/16 focal ratio, 2.5 sec resolving power, 11.2 magnitude reach. Six coated eyepieces: 48x, 67x, 96x, 136x, 177x and 200x. The viewfinder is 8x, 30mm.

Sturdy tripod with famous Unitron equatorial mount has slow-motion controls on both axes. Flexible cable control for right ascension, engraved setting circles, provision for motor drive. Precision rack-and-pinion focusing, erecting prism, star diagonal with achromatic amplifier, sun projection screen set, carrying case. All this for under \$700!

Now we want to hear from you. Mail us your name and address and we'll send you a complete brochure, with samples of solar photography through the 3-inch Unitron Compact taken by well-known astro photographers.

When you want a portable telescope but prefer a refractor, get the unique Unitron Compact.

Unitron Instruments, Inc.
101 Crossways Park West
Woodbury, N.Y. 11797, U.S.A.
(516) 364-8546

UNITRON The value line.

Unitron Instruments, Inc.
subsidiary of
Ehrenreich Photo-Optical Industries, Inc.
101 Crossways Park West
Woodbury, N.Y. 11797, U.S.A.

ST-3

Clip out this coupon and mail for more information on this exciting new telescope!

Name _____
Address _____
City _____
State _____ Zip _____

Figure 5- Two-page advertisement of Model 131-C, 3-Inch Compact folded Refractor (March 1977).

Optical Quality

Unitron is well known for supplying high quality air-spaced Zeiss type achromats in diameters from 40 to 150 mm (1.6 to 6 inch). The smaller models 1.6- and 2.4-inch model Nihon Seiko telescopes were supplied with one focus knob (right side of the focuser). The large refractors have standard two-knob focusers. In addition to the long (F/15-F/16) refractors Unitron also made compact folded refractors⁶.

Nihon Seiko Kenkyusho, Japan, originally manufactured Unitron refractors that were distributed in the US (3-inch and 4-inch). In Europe the same refractors were sold under the name Polarex. 4-inch Unitron objectives were made by different companies. Some of these refractors were of poor quality. The best original objectives (1952-1954) had only three screws. The first modification occurred in 1954. Unitron added three lock screws close to each retaining screw (these push out the retaining ring

⁶ Ré, P. (2022). Unitron 131-C 75 mm F/16 folded refractor.

http://pedroreastrophotography.com/UNITRON_131C_FOLDED_REFRACTOR_20221116_PRe.pdf

and lock it in place). The best optics were produced by Unitron in the 1950's. Most were hand figured and polished to perfection. Good quality objectives were produced during more than 30 years.

Altazimuth and equatorial Unitrons are one of the most sought-after vintage telescopes by many amateurs and collectors. Each Unitron was supplied with 4 to 6 eyepieces, including several designs (Achromatized symmetrical, Kellner and Orthoscopic). These eyepieces work well with Unitron's long focus refractors.

The Unitron equatorial mounts are considered today "works of art" (beautiful, very solid and functional). Some can be driven with accurate clock drives (mechanical or electric). Slow motion controls were also included.

I have in my private collection several Unitron/Polarex/Weltblick telescopes and accessories:

- 1- Unitron Spotting scope 50mm
- 2- Polarex Spotting scope 60mm
- 3- Unitron Spotting scope 70mm
- 4- Polarex Spotting scope 80mm
- 5- Polarex 102 F/15 refractor (OTA)
- 6- Unitron 102 F/15 refractor Model 132
- 7- Unitron 75mm F/16 folded refractor (model 131-C)
- 8- Weltlick 75mm F/16 refractor
- 9- 2X Polarex 75mm F/16 refractor OTA
- 10- Polarex 60mm F/15 refractor OTA
- 11- Polarex 60mm F/11.6 Alt-azimuth mount
- 12- Unitron 50mm F/14 Alt-azimuth mount
- 13- Unitron 220 Unitron/Polarex eyepieces 2X40mm, 4X25mm, 4X18mm, 4X12.5mm, 4X9mm, 3X7mm, 3X6mm (0.965") 3X Unitron/Polarex eyepiece turret Unitron 35mm, 2X25mm, 10mm, 7.5mm, 8mm, 6.5mm (1 1/4")
- 14- 2X Unitron/Polarex Solarwedge
- 15- 3X Unitron/Polarex Unihex
- 16- Unitron 220B camera



Figure 6 – Unitron 50 mm Spotting Scope. Pedro Ré's private collection.



Figure 7- Polarex 60 mm and 80 mm Spotting Scopes. Pedro Ré's private collection.



Figure 8- Unitron Spotting Scope. Pedro Ré's private collection.



Figure 9 - Unitron 102 F/15 refractor Model 132. Pedro Ré's private collection.



Figure 10- Unitron 75mm F/16 folded refractor (model 131-C). Pedro Ré's private collection.



Figure 11- Weltlick 75mm F/16 refractor. Pedro Ré's private collection.



Figure 12- Unitron 60mm F/15 OTA. Pedro Ré's private collection.



Figure 13- Unitron 60mm F/11.6 Altazimuth mount. Pedro Ré's private collection.



Figure 14- Unitron 50mm F/14 Altazimuth mount. Pedro Ré's private collection.



Figure 15- Unitron 102 F/15 refractor Model 132. Pedro Ré's private collection.



Figure 16- Unitron 102 F/15 refractor Model 132. Pedro Ré's private collection.



Figure 17- Unitron 220B camera. Pedro Ré's private collection.



Figure 18- Unitron/Polarex Unihex. Pedro Ré's private collection.



Figure 19- Unitron/Polarex porro prisms. Pedro Ré's private collection.



Figure 20- Unitron/Polarex 0.965" eyepieces. Pedro Ré's private collection.

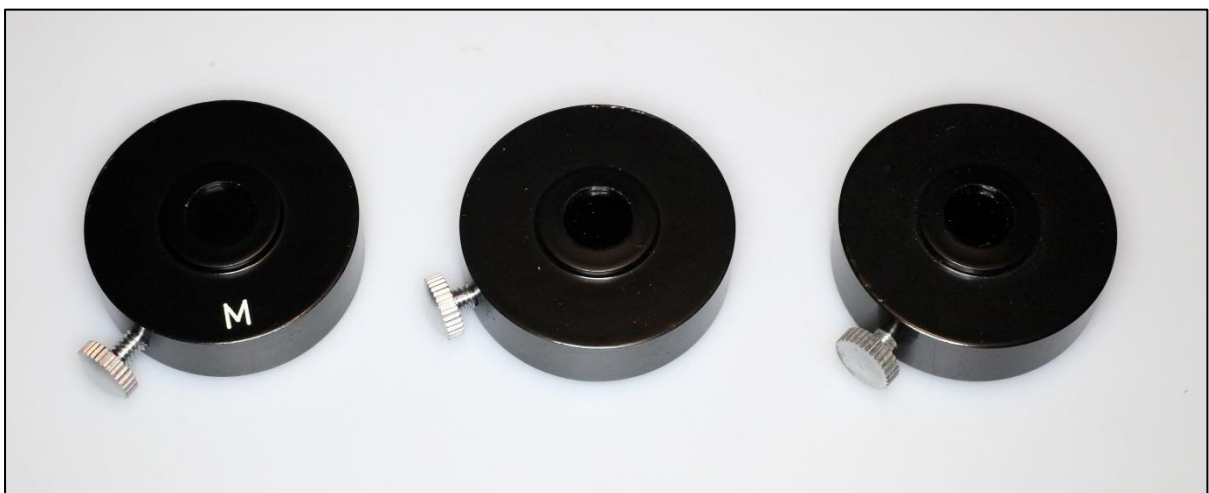


Figure 21- Unitron/Polarex Sun & Moon filters. Pedro Ré's private collection.



Figure 22- Unitron/Polarex 1 ¼" eyepieces. Pedro Ré's private collection.

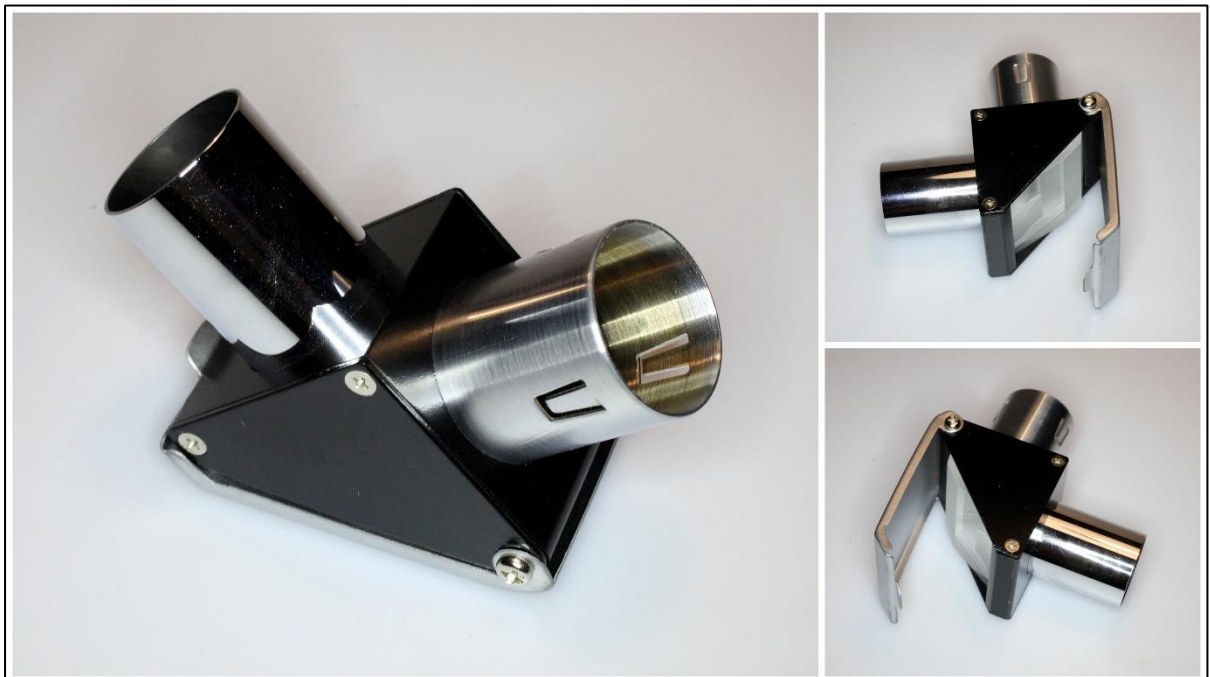


Figure 23- Unitron/Polarex solar wedge. Pedro Ré's private collection.



Figure 24- Polarex 75 mm and 60 mm objectives. Pedro Ré's private collection.



Figure 25- Weltblick 75 mm objective. Pedro Ré's private collection.



Figure 26- Polarex 102 mm objective. Pedro Ré's private collection.

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