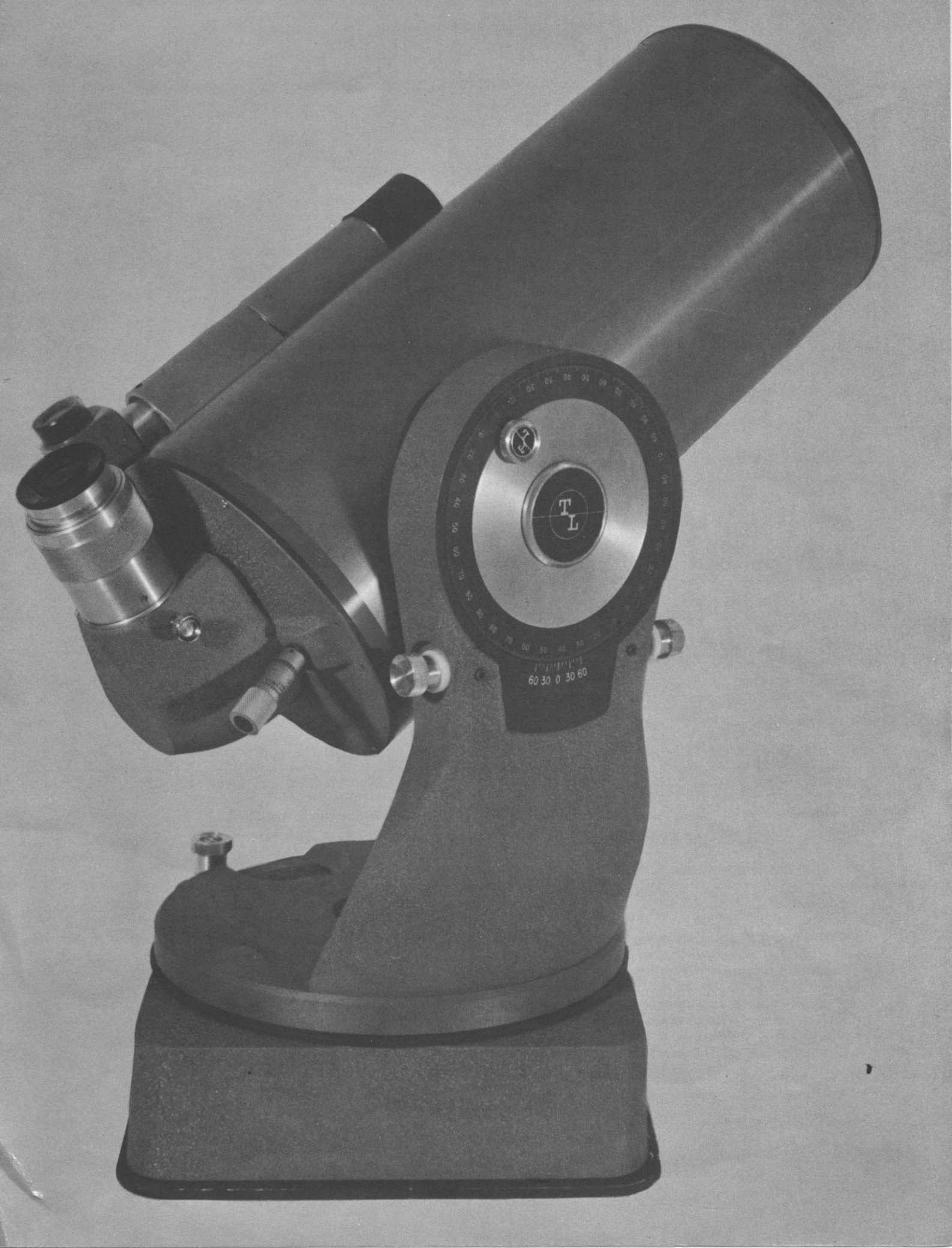

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SPECIFICATIONS:

TUBE ASSEMBLY	
Type	Maksutov-Cassegrain
Primary Mirror Diameter	5.65 Inches
Primary Focal Length	12.5 Inches (F/2.2)
Effective Aperture	5.135 Inches
Secondary Amplification	6 Times
Secondary Spot Diameter	1.50 Inches
Effective Focal Length	75 Inches (F/15)
Optical Surface Tolerance	1/10 Wavelength
Tube Length	12⅝ Inches
Tube Assembly Weight	5½ Lbs.
Focusing Range	22 Feet to Infinity
Finder	1¼ Inches Aperture, 6X
Eyepieces	25mm, 12.7mm

MOUNTING ASSEMBLY	
Type	Altazimuth (Single Arm Fork) and Equatorial
Mounting Weight	12½ Lbs.
Slow Motions:	
Altitude, Declination	Geared (Manual)
Azimuth, Hour Angle	Geared (Manual, Over-riding Sidereal Motor)
Setting Circles:	
Altitude and Declination Diameter	4½ Inches
Azimuth and Hour Circle Diameter	7¼ Inches

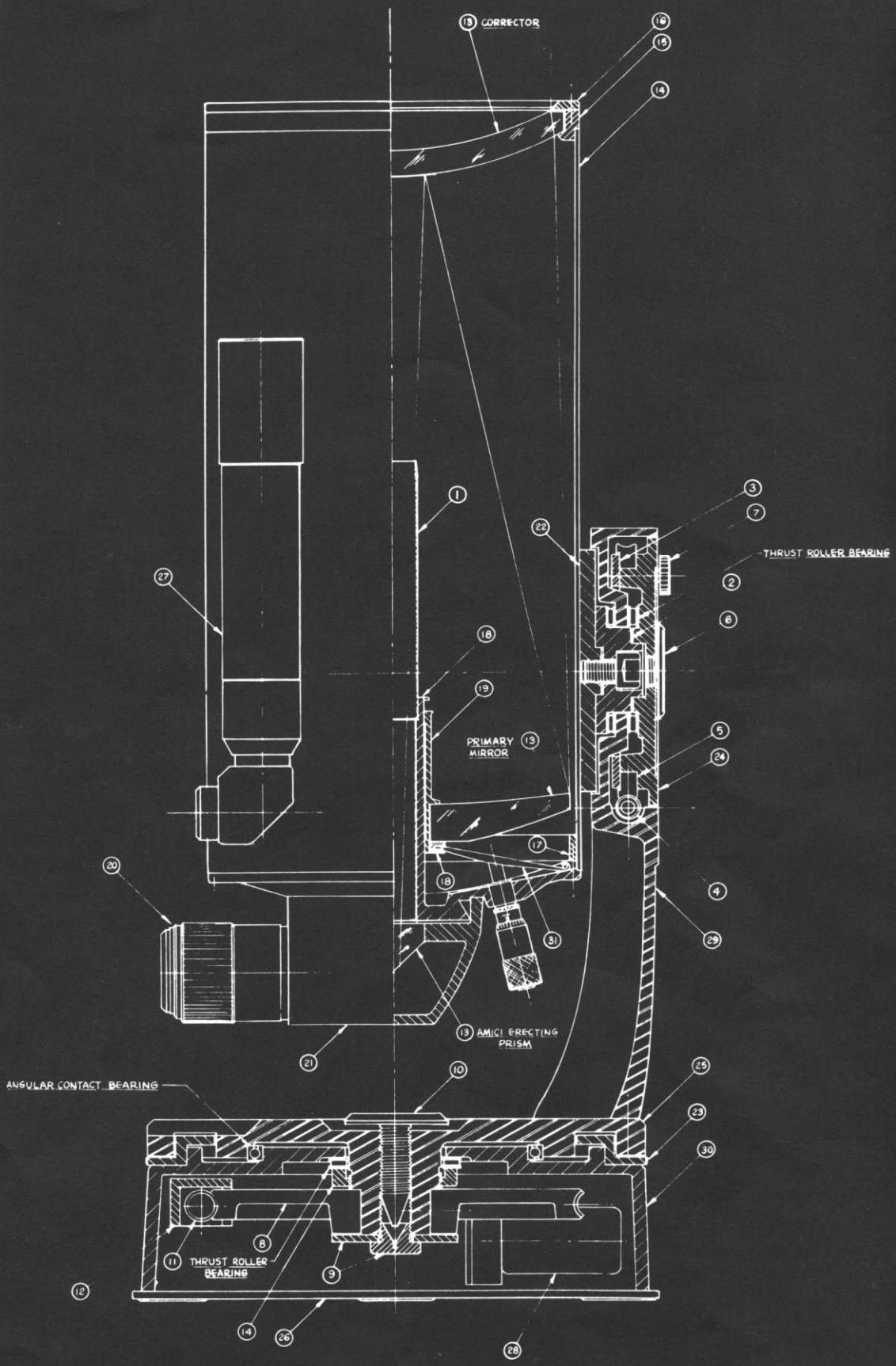
The Tinsley 5-inch was developed to satisfy the need for a precision, rugged and versatile mounting to accommodate optical systems with apertures as large as six inches. For telescopes, cameras, and systems with high magnification, it is of extreme importance that the mount be rugged. Optical magnification is accompanied with attendant magnification of any deflection or lack of rigidity. This instrument was developed from experience derived of thirty years of manufacture of custom optical instruments. Research, scientific and industrial organizations, as well as photographers and advanced amateur astronomers, have indicated a strong need for such a design. We are in no way attempting to compete with the mass market telescopes meant to satisfy a momentary curiosity and then shortly to be discarded for lack of performance. This brochure with its photographs and descriptive information illustrates the quality of construction.

BASIC SYSTEM: $1,450.00 F.O.B. BERKELEY, CALIF.

TINSLEY LABORATORIES INC.

2448 Sixth Street • Berkeley 10 • California • THornwall 3-6836 • TWX 415-819-9316

COMPONENTS		
SYM	DESCRIPTION	DWG. NO. SERIES 30
1	SHIELD	A-1
2	ALT. BEARING JOURNAL	A-2
3	DECL. GEAR RETAINER & CLAMP	A-3
4	DECL. WORM	A-4
5	DECL. WORM GEAR	A-7
6	DECL. ACCESS COVER	A-8
7	DECL. CLAMP KNOB	A-9
8	AZIMUTH GEAR	A-11
9	AZIMUTH GEAR RETAINER	A-13
10	AZIMUTH CLAMP SCREW	A-14
11	AZIMUTH WORM	A-15
12	AZIMUTH WORM SUPPORT	A-16
13	OPTICAL SYSTEM	B-11
14	TUBE ASSEMBLY	B-12
15	CORRECTOR CELL	B-13
16	CORRECTOR RETAINER	B-14
17	TUBE STIFFENER	B-15
18	PRIMARY SUPPORT	B-17
19	PRIMARY FOCUS DETAILS	B-18
20	EYEPIECE FOCUS DETAILS	B-20
21	DIAGONAL HOUSING	B-21
22	TUBE MOUNTING PAD	B-22
23	AZIMUTH CIRCLE	B-23
24	ELEVATION CIRCLE	B-24
25	BASE PLATE	B-25
26	BASE COVER	B-26
27	FINDER SCOPE ASSEMBLY	B-29
28	AZIMUTH DRIVE ASSEMBLY	B-30
29	SUPPORT ARM	D-4
30	DRIVE HOUSING	D-5
31	ACTUATOR ARM	A-21



GENERAL DESCRIPTION

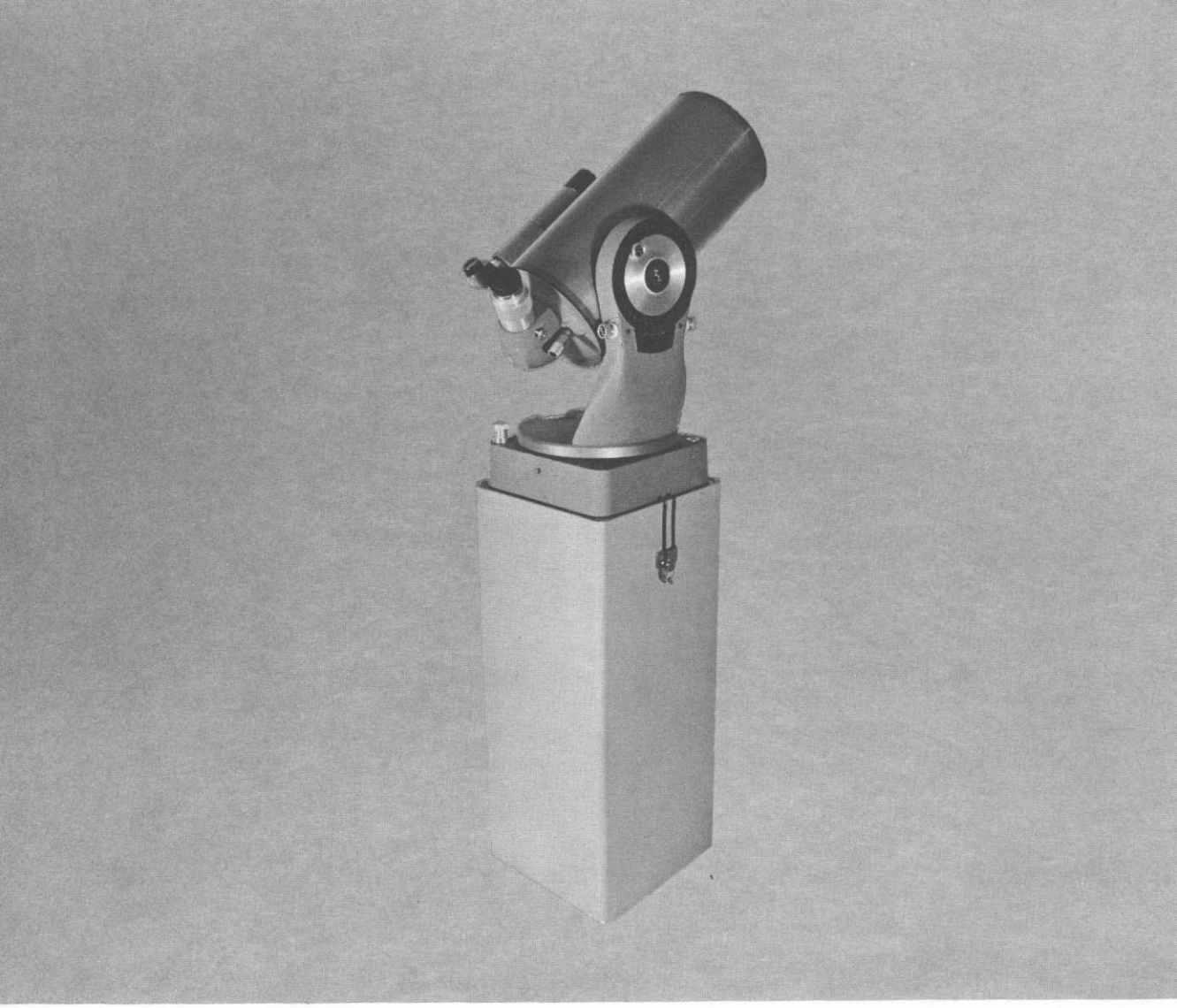
Optical System: The optical system is of the Maksutov-Cassegrain design consisting of a meniscus corrector plate and a slightly larger primary mirror. This corrector plate seals the front end of the tube while the mirror cell seals the back end, thus providing a completely closed system. A closed system prevents tube currents and dewing problems as well as keeping the optical components free of dust. A spot has been aluminized on the convex side of the corrector plate that serves as a secondary mirror with an amplification factor of 6. All reflecting surfaces have been aluminized and overcoated with quartz. A zenith diagonal prism provides an erect image for terrestrial applications and also turns the converging beam 90 degrees to place the eyepiece in a position comfortable for both astronomical and terrestrial viewing. Two eyepieces are included: a 25mm Orthoscopic and a 12.7mm Kellner giving powers of 75 and 150 respectively.

Tube Assembly: The 12½" long aluminum tube has been carefully machined so that the optics and their retaining cells slip into the tube in precise alignment. No collimating is ever necessary. A light shield is located in the perforation of the primary to absorb any scattered light entering the tube. A dew cap is provided to prevent the corrector from fogging, and a dust cover fits neatly over this cap.

Focusing Assembly: Focusing on any object is controlled by a micrometer knob mounted on the back of the primary cell. This moves the primary mirror smoothly along the light shield and allows the instrument to focus from infinity to 18 feet. At this close distance any object is magnified 13½ times its actual size when using a 12.7mm eyepiece. Your telescope is now a long working distance "microscope." Insects or other objects which would be disturbed by close-up instruments are easily observed and photographed with the Tinsley 5-inch.

Finder Telescope: This finder has a 1¼" diameter objective and a magnification of 6X, a crosshair eyepiece and brackets with adjusting screws for aligning purposes.

Altazimuth Mount and Controls: The mount is altazimuth utilizing single-arm fork design. The massive arm is mounted onto a base plate that rotates smoothly in azimuth on precision ball bearings. A clamp is located centrally on the base plate that locks the instrument firmly in azimuth. The tube is mounted on the upper end of the arm. Roller bearings are used to give smooth motion in altitude. A clamp is located on the arm that locks the instrument in altitude. Manual slow-motion controls are provided on both axes. The setting circles are of a flush type allowing for a high order of accuracy by eliminating the parallax common to pointer type designs. Both circles are precision engraved with vernier indices. The azimuth circle is divided into both degrees and hours. When the telescope is supported in the equatorial position, this circle becomes an hour circle for astronomical application. In addition, the azimuth circle is also constructed so that it can be placed in any position before the beginning of readings. The altitude circle is calibrated in degrees and can be used to measure altitudes or declinations. The altitude cover plate on the arm covers a single fastener and other instruments can easily be mounted on the arm. The entire telescope is sealed by a metal cover that fits over the instrument and latches firmly to a flange extending over the base of the mounting.

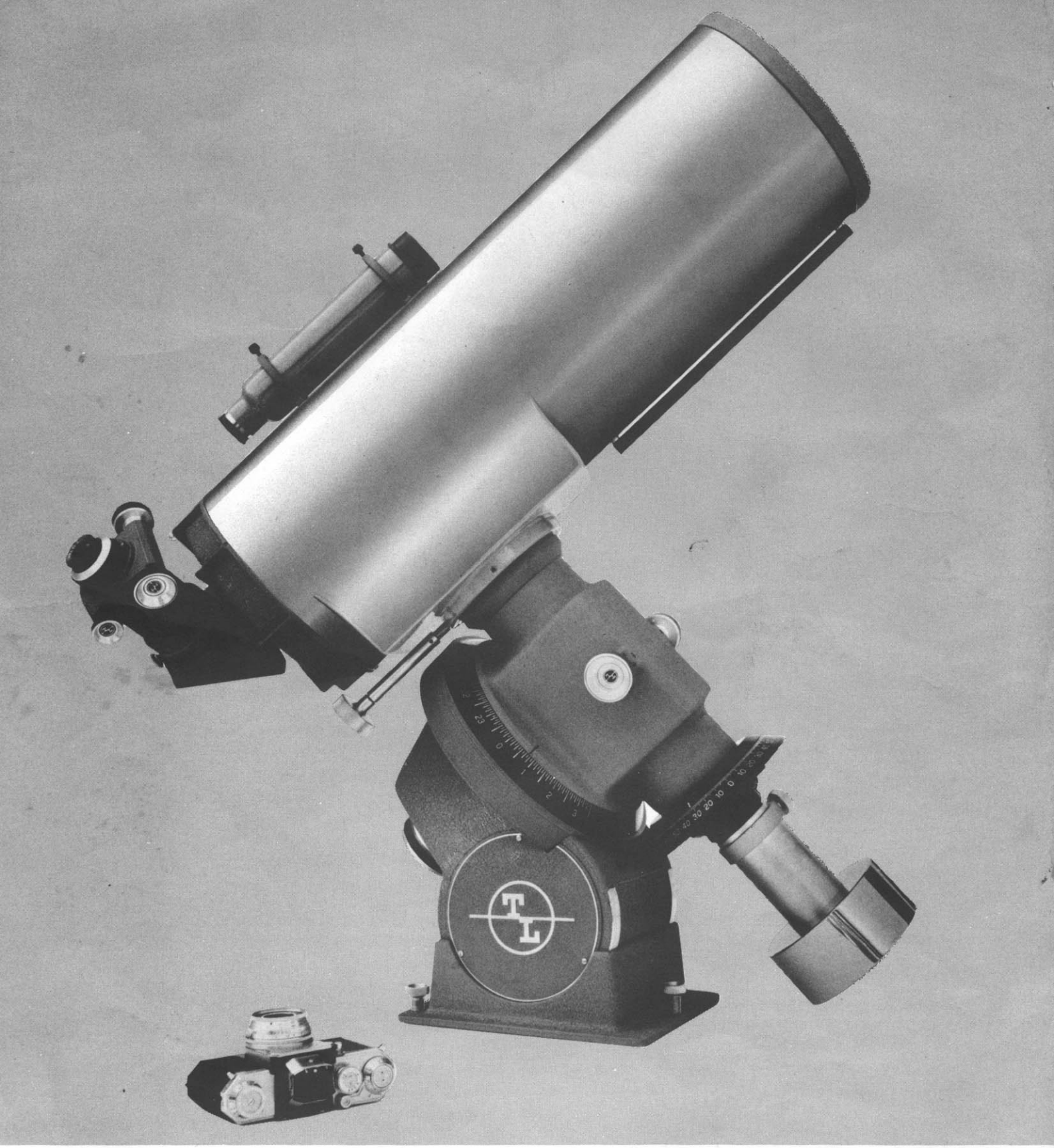


5-inch telescope on carrying case in altazimuth position.

Equatorial Mount and Clock Drive: The clutch-controlled clock drive operates at the sidereal rate by a D.C. motor. The rechargeable battery is contained within the telescope base.

ACCESSORIES AVAILABLE

- Adaptors for 35mm reflex type focal plane shutter cameras.
- Zenith diagonal housing with pivoting mirror for direct viewing while photographing.
- Sturdy equatorial tripod with latitude adjustment.



A STAR IS BORN... THE 8" TINSLEY TELESCOPE

SPECIFICATIONS:

TUBE ASSEMBLY	
Type	Cassegrain (Dall-Kirkham)
Primary Mirror Diameter	8″
Primary Focal Length	32″ (F/4)
Secondary Mirror Diameter	2¼″
Secondary Amplification	4
Total Effective Focal Length	128″ (F/16)
Optical Surface Tolerance	⅛ Wavelength
Tube Length	29″
Focusing Mechanism	Rack and Pinion
Finder	1¾″ Aperture, 10 Power
Tube Assembly Weight	19 Pounds
Eyepieces	28mm, 12.7mm

MOUNTING ASSEMBLY	
Type	German Equatorial
Equatorial Head Weight	30 Pounds
Counterweight	13.5 Pounds
Latitude Adjustment	0 to 90 Degrees
Clock Drive	Variable Speed
Slow Motions:	
Right Ascension	Electric at 2X Sidereal Rate
Declination	Manual
Setting Circles:	
Right Ascension Diameter	9″
Declination Diameter	6½″

BASIC SYSTEM $995.00 F.O.B. BERKELEY, CALIF.

MANUFACTURED PARTS				COMMERCIAL PARTS		
SYM	DESCRIPTION	REQ'D	DWG.	SYM	DESCRIPTION	REQ'D
1	BASE	1	D-29-2	A	¼-20×2 SKT. HD. CAP SCREW	2
2	LEVELING SCREW	3	D-29-24-6	B	⅞ DIA × ⅝ .040 WIRE SPRING	1
3	HOLD-DOWN BAR	1		C	4-40×⅜ SKT. HD. SET SCREW	4
4	POLAR HOUSING	1	D-29-3	D	NORTHWESTERN 38-SW SINER NYAL	1
5	POLAR AXLE	1	D-29-4-1	E	4-40×¼ BINDING HD. SCREW	3
6	DECLINATION HOUSING	1	D-29-7	F	FELT DUST SEAL	1
7	REAR BEARING CONE	1		G	EYEPIECE - K-25 MM	1
8	NUT	1	D-29-8-2	H	10-32 × KNURLED HD. SCREW	8
9	R.A. CLAMP	1	D-29-10	J	JACK & PLUG 6C #89722 & #89668	1 EA
10	BEARING RING	1	D-29-14			
11	R.A. CIRCLE RETAINER	3				
12	R.A. CIRCLE	1	D-29-9			
13	RETAINING NUT - DECL. AXLE	1	D-29-31-5			
14	DECLINATION CIRCLE	1	D-29-22			
15	INDEX CIRCLE	1	D-29-22			
16	SIDE PANEL - POLAR HOUSING	2	B-29-29			
17	RING NO. 2	1	D-29-31-2			
18	INNER SHAFT	1	B-29-11			
19	OUTER SHAFT	1	B-29-12			
20	RING NO. 1	1	D-29-31-1			
21	SEAL	1	D-29-31-3			
22	END RING	1	B-29-5			
23	PLUG	1				
24	MAIN TUBE ASSEMBLY	1	D-29-21			
25	DECLINATION GEAR	1				
26	DECLINATION WORM	1				
27	COUNTERWEIGHT	1	B-29-28			
28	COUNTERWEIGHT CLAMP	1	D-29-24-7			
29	R.A. DRIVE ASSEMBLY	1				
30	DECLINATION CLAMP	1	D-29-24-1			
31	ZENITH DIAGONAL HOUSING	1	D-29-4-1			
32	EYE HOUSING ASSEMBLY	1				
33	FINDER SCOPE TUBE	1				



NOTES: UNLESS OTHERWISE SPECIFIED.

[0] 1. ANGLE ϕ ADJUSTABLE TO CONFORM WITH LATITUDE



Courtesy of the Mt. Wilson and Palomar Observatories.

ACCESSORIES

Composite Carrying Case and Instrument Pier: These cases are custom made of ¾-inch finished mahogany plywood with reinforcing corner plates and chrome latches. The interiors contain padded supports to fit the contours of the telescope and mounting and to hold them firmly in place. The tube assembly case is capable of assuming the role of an instrument pier. The top is flat with mounting holes to accommodate the base of the telescope mounting. The cases are priced at $145.00.

Instrument Pier: This pier is made of fabricated steel and stands 45 inches high. A convenient accessory door is located on the side of the pier for storing eyepieces and other equipment. This pier is finished in grey wrinkle to match the mounting. It is priced at $87.50.

Accessory Eyepieces: The 8-inch telescope comes equipped with a 28mm Orthoscopic eyepiece and a 12.7mm Kellner eyepiece. The following eyepieces are available: a 50mm Ramsden at $10.00, a 25mm Kellner at $10.00, a 16.3mm Erfle at $18.75, a 10.5mm Orthoscopic at $18.75, and a 6mm Orthoscopic at $18.75.

Astrocamera: We have selected two commercially built cameras that we can adapt to the 8-inch telescope. One camera uses 35mm film and the other uses 2¼ x 2¼ inch film. Either camera is capable of taking photographs at the F/16 focal plane or by eyepiece projection. We can supply camera adaptors to adapt most standard 35mm and 2¼" Rollieflex cameras to the telescope. Write for further details and prices.

Photographic Guiding Refractor: This telescope is a 3-inch F/13 refractor and is the main guiding telescope for the 8-inch Cassegrain. It is equipped with illuminated crosshairs that can be varied in brightness. Power for the crosshairs is supplied by a line to the main power supply. Two eyepieces of 12mm and 6mm are provided to give low and high magnification of 75 and 165 respectively. The focusing mechanism is of the same superior quality as that on the main instrument. Brackets are provided that contain adjustments for aligning the refractor parallel to the optical axis of the main telescope. The price for this guiding refractor is $300.00.

GENERAL DESCRIPTION

Optical System: Fine annealed pyrex glass is used with low expansion and strain-free characteristics. The primary is mounted in a sturdy aluminum cell with adjustments for tilting. The secondary mirror is mounted in a precisely centered 4-vane spider support with independent and accessible adjustments for focusing and alignment. Once set, the secondary will remain in collimation. All optical surfaces are of 1/8 accuracy or better and will satisfy Dawe's limit of resolution. All reflecting surfaces are aluminized and quartz overcoated. The location of the focal plane is approximately 10 inches behind the primary, allowing access for the installation of accessories.

Tube Assembly: The tube is made of lightweight aluminum and finished in gloss instrument grey. The saddle is fitted permanently to the tube. A flange at the base of the saddle provides quick and easy attachment to the mounting. An aluminum dust cover seals the tube, thus keeping the optics dust free when not in use. A 10X finder with crosshairs, mounted in brackets on the main tube, is adjustable for alignment to the main tube.

Focusing Assembly: This assembly is of the rack and pinion type. A helical rack eliminates all backlash and provides the smoothest motion possible. A clamp locks the mechanism securely when precise focus is attained. The assembly fits into a zenith diagonal that can be rotated around the optical axis allowing the observer to remain comfortably seated while observing. The focusing assembly can be independently rotated to place the knobs in any desired position.

Mounting and Control Assembly: The mounting is constructed of four sturdy aluminum castings providing exceptionally large bearing surfaces and unusually short axis lengths. These qualities combined with the short tube length result in a very sturdy mounting which does not vibrate under windy conditions. Teflon bearing surfaces insure extremely smooth control. The mounting is equipped with locking clamps in both axes that can be adjusted to produce various degrees of freedom from completely "free" to "lock" position. The sidereal drive is controlled directly by a 6-volt, variable speed D.C. motor. Adjustments of the driving rate are easily executed by a potentiometer that varies the motor speed. A manual slow motion is provided in declination using a complete gear instead of the conventional tangent screw arrangement. The right ascension slow motion is electrically controlled by means of a hand-held control box. This motion moves the telescope east or west at twice the sidereal rate. The power supply consists of a small 6-volt, 12 amp.-hr. battery with a 6 - 12 volt charger. This unit, the control box, and cables are in an attractive wooden case. The setting circles are of anodized aluminum with engraved divisions and numerals. Right ascension is equipped with a rotatable sidereal circle 9" diameter calibrated into 5-minute intervals and can be accurately read to within 1 minute of time. The declination circle is 6½" in diameter and is divided into 1-degree intervals. It can be accurately set to within 15 minutes of arc.

Price: The instrument as described is $995.00, F.O.B., Berkeley, California. The shipping weight is approximately 100 pounds. Terms are available upon request. Prices and specifications are subject to change without notice.



TINSLEY LABORATORIES, 2448 SIXTH STREET, BERKELEY 10, CALIFORNIA



THE TINSLEY REFRACTOR

Here is a totally new telescope — the Tinsley Refractor. Designed and built for dependability, this precision instrument is unmatched in its field. These outstanding features reflect Tinsley's 35-year reputation for quality optical equipment:

Advanced Optical System. The 5-inch, f/15 objective is figured to produce maximum theoretical resolution. All surfaces are coated with magnesium fluoride to reduce internally reflected light. The resulting dark field with high contrast is designed to produce superior images when making solar, lunar and planetary observations.
Full collimating adjustments are provided on the objective cell to allow the smallest possible tilting corrections.
The thermally stable, rigid fiberglass tube resists scratching and corrosion. Both the sturdy rack-and-pinion focusing mechanisms and the zenith diagonal can be independently rotated. A 10-power finder with adjustable brackets is mounted on the main tube.

Stability. The most stable mounting available for this size instrument on the market today! To provide the necessary rigidity Tinsley engineers adapted the mount normally used on the famous Tinsley 8-inch Cassegrain telescope. The polar axis, mounted on precision ball bearings, is 6½ inches in diameter — three times larger than that of other popular makes. Vibration is virtually eliminated by keeping the axle extremely short — only 8 inches long. The declination axis is 3½ inches in diameter, and rides on bronze bearings.

Precision drive. The Tinsley 5-inch Refractor is driven in R.A. by a variable-speed D.C. motor that can be regulated to any desired driving speed. Push-button slow motions in R.A. are provided by varying the motor speed through a rheostat control on a hand-held control box. The declination motion is operated by hand wheels on rigid rods that extend to a conveniently located position below the zenith diagonal. Locking clamps are located on both axes to lock the telescope in any desired position.

Accessories. * A 3-inch guiding refractor with rheostat-operated illuminated cross-hairs. * A solar diagonal using a Herschel wedge and dark green filter for safe viewing with full aperture. * And, at additional cost, extra eyepieces, cameras, filar micrometers, pier, tripod.

The Tinsley 5-Inch Refractor . . . a precision instrument of matchless optical quality — **$2375.00**

Delivery in 30 days. For further details write:

TINSLEY LABORATORIES, INC.
Department STS-R
2448 Sixth Street • Berkeley, California