

25¢

REFLECTORS · REFRACTORS · CELESTIAL · TERRESTRIAL

telescopes

OPTICAL EQUIPMENT AND SUPPLIES SINCE 1939

OPTICA

OPTICA b/c, 4100 MacARTHUR BLVD., OAKLAND, CALIFORNIA 94619, U.S.A.

OPTICA

TELESCOPES

THINGS YOU SHOULD KNOW BEFORE PURCHASING A TELESCOPE

You are aware that almost every line of merchandise sold in the U.S.A. varies in quality, from the poorest to the finest available in the world. This is also true of the optical industry. Unfortunately, the low-quality, poorly engineered are most common. These can not qualify as instruments. To induce the public to buy this low-quality merchandise, deceptive claims of: power, quality, performance and savings are usually made. For these reasons the prospective purchaser should be extremely cautious.

POWER There is a direct relationship between the functional power of a telescope and its diameter. Any avid amateur astronomer, optical technician or reliable publication, such as "Amateur Telescope Making, Book One," published by Scientific American, will enlighten you as to the true facts. According to physics, about 50 times the diameter of the objective or mirror, in inches, yields the maximum functional power of an instrument. Should you consider purchasing a telescope from a supplier who makes wild claims in excess of this limit? You can rely on the power ratings of any OPTICA b/c telescope. They are functional and according to optical law. OPTICA b/c adheres strictly to the ethical standards for advertising as set forth by the Better Business Bureau, (B.B.B.).

CLEAR APERTURE VS DIAMETER Are all 76mm lens the same size? Let's consider three advertisers listing their telescopes with 76mm lenses. The first supplies a 76mm lens that does not incude an aperture reducing stop. This stop is absolutely necessary to eliminate edge distortion. The second lists 76mm and installs the stop. In this case the aperature may only be 73mm. The third and ethical approach is employed by OPTICA b/c. Initially the lens is made larger, 79mm. The proper stop is installed, resulting in a clear aperture of 76mm. All OPTICA b/c objective lenses are rated in the proper, optical way, clear aperture.

REJECTS AND SURPLUS Absolutely no rejects, used, damaged surplus, or second quality materials are used in the production of any OPTICA b/c equipment.

STANDARD It would be unfortunate if you wished to increase the utility of your scope and found that the accessories necessary could not be used because your telescope was of a non-standard size. OPTICA b/c telescopes are standard and a complete selection of accessories are available, even if your OPTICA b/c instrument was purchased way back in 1939.

OPTICAL QUALITY Are you satisfied that the telescope you are about to purchase is corrected for the following aberrations (distortions): chromatic aberration, spherical aberration, coma, astigmatism and curvature of field? You can purchase an OPTICA b/c instrument with the assurance that these distortions are corrected to the ultimate possible in each and every optical formula. All optics produced by OPTICA b/c are manufactured from the finest center-of-pot, optical glass. Often, superior imaging can only be accomplished by utilizing optical glass made from rare earth materials. The inclusion of this special glass, by OPTICA b/c, in many formulae, has contributed to its international reputation for quality.

Single lenses produce inferior images. Therefore, all OPTICA b/c lenses are multiple formulae. To produce increased resolving power and contrast, all air-to-glass surfaces are hard coated. This procedure reduces inter-element reflection. Also, this coating reduces light losses up to 50%. Add these features to precision alignment and you have optical systems balanced to prevent eye fatigue and strain.

LITTLE THINGS Many suppliers fail to include a number of features necessary for top quality performance. All these necessary features are considered indispensible by OPTICA b/c and are therefore standard equipment: Light baffles, aperture stops, facilities for electric drive installation on all equatorial mounts.

TESTING In addition to all the mechanical tests, OPTICA b/c instruments must pass seven precision optical tests. The final test of the assembled optical train is accomplished with the aid of plates supplied by the United States Government, Bureau of Standards.

REFLECTORS VS. REFRACTORS Your choice of these instruments should be governed by their utility and price relationship. A refractor is more convenient to operate and more easily maintained. They are usually preferred by the professional until, in their larger sizes, weight and/or higher prices make them prohibitive. A reflector gathers more light and produces higher powers per dollar invested. Your OPTICA b/c franchised dealer will be most helpful in furnishing you with additional information on the subject.

WHY A LARGER TELESCOPE? With each successively larger instrument more fascinating objects can be seen and finer detail observed. The potential of an instrument will increase quite rapidly as slightly larger lenses and mirrors are used. This is because potential is increased by the square of the diameters. Therefore a four-inch telescope has four times the potential of a two-inch telescope, not two times.

SERVICE AND GUARANTEE All OPTICA b/c equipment is guaranteed. All replacement parts, down to the tiniest screw, are available. Complete repair and service facilities are available in the U.S.A. A Sales-Service Division stands ready to supply information relative to its instruments. We invite you to make use of these services.

CONFIDENCE You can purchase an OPTICA b/c instrument with confidence. You are dealing with a U.S. company that has an established reputation of quality, precision and service since 1939. Our equipment is used by: educational institutions, governments, the military, observatories, planetariums and amateurs as well as research institutions throughout the world.

PLEASE READ CAREFULLY BEFORE ORDERING

GUARANTEE: OPTICA b/c products are guaranteed against defective materials or workmanship as stated in the Catalogue and on Guarantee Cards. No other Warranty or other liability is given or implied.

PRICES are subject to change without notice.

TAXES California residents add 4% sales tax.

MINIMUM ORDER $5.00.

C. O. D. ORDERS no C. O. D. orders accepted under $10.00, 25% down, balance C. O. D. You save on cash orders.

FAST Orders shipped same day as received. Special orders, custom work, heavy equipment and out-of-stock items, you are advised of expected shipping date.

SHIPPING CHARGES AND CRATING Light weight items are packaged at no charge and usually shipped parcel post, we pay the postage, except on C. O. D. Shipments. Heavy equipment is shipped F. O. B. Oakland, California. There is a minimum crating charge on larger telescopes and other heavy equipment.

SAFE DELIVERY Insured by careful packaging and all major items insured.

LOSS OR DAMAGE CLAIMS IN TRANSIT Made by you directly to carrier. Claims for shortages in shipment must be made to OPTICA b/c within five days of receipt.

LATEST MODELS We reserve the right to supply our latest models which may not always be exactly as those currently illustrated in our catalogue.

SALES - SERVICE DIVISION address this division for any additional information

***IMPORTANT NOTICE TO EDUCATORS--NDEA FUNDS** OPTICA b/c equipment and materials have been approved for purchase with National Defense Education funds. Qualification is dependent upon use. We recommend you consult your state department of education for information and approval.

OPTICA

When you see this trade mark, you know it is the finest that Photo-Optical Instrumentation Engineering can produce.

OPTICA b/c, 4100 MacArthur Blvd., Oakland, California 94619 U.S.A.

OPTICA

REFRACTORS

REFRACTOR TELESCOPES

All objective lenses are Fraunhofer type, hard coated, air spaced, and achromatic. All refractors from Stock No. 2001 to 2008 are supplied with hardwood, mahogany, carrying cases. Eyepieces are multiple element. Beginning with Stock No. 2003, all have equatorial mounts for ease in following the stars.



#M2024 This light weight, compact, 10-power telescope is ideal for hunting, boating and general terrestrial observation. It may be hand-held or attached to a tripod **$9.95**



#M2025 The unique optical design of this telescope makes it possible to instantly change magnifying power without changing eyepieces—zoom from 8-power to 25-power—may be hand-held or attached to a tripod **$29.95**



#M2024B Model M2024 with M2026 Table Top Tripod **$16.90**



#M2025B Model M2025 with a M2026 Table Top Tripod **$36.90**

Stock No.	Clear Aperture in millimeters	Focal Length in millimeters	Light Collecting Power as compared to the naked eye	Resolving Power with respect to double stars in seconds of arc	Faintest Discernible Star in magnitudes	Erector	Star Finder	Eyepieces	Magnification	Price
M2024	30	250	18x	3.8	9.3	1		1	10x	9.95
M2024B	30	250	18x	3.8	9.3	1		1	10x	16.90
M2024C	30	250	18x	3.8	9.3	1		1	10x	28.90
M2025	30	300	18x	3.8	9.3	1		1	8x to 25x	29.95
M2025B	30	300	18x	3.8	9.3	1		1	8x to 25x	36.90
M2025C	30	300	18x	3.8	9.3	1		1	8x to 25x	48.90



#M2024C Model M2024 with M2027 Deluxe Tripod **$28.83**



#M2025C Model M2025 with M2027 Deluxe Tripod **$48.83**

TRIPODS All tripods illustrated in this catalog are available separately. Quotations on request.

#M2026 Table Top Tripod. Illustrated with telescopes #M2024B and #M2025B. All metal, fully adjustable with center post elevator. Fits all telescopes, cameras, binoculars and binocular clamps fitted with threaded tripod sockets. **$6.95**

#M2027 Deluxe tripod. Illustrated with telescopes #M2024C, M2025C, 2001B, and 2002B. Made of hi-strength aluminum alloy. Fully adjustable pan head, three-section legs with geared center post elevator, extends from two feet to 5' 10". An added feature of this model is the removable center post which can be inserted upside-down and is adjustable from zero to 24" from the ground, resulting in comfort and steadiness when in a prone, sitting, or kneeling position. Fits all telescopes, cameras, binoculars, and binocular clamps fitted with threaded tripod sockets. **$19.95**



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WHAT CAN YOU SEE WITH A 40mm TELESCOPE? It is amazing how much you can see with one of these compact telescopes. You can see a fabulous amount of detail on the moon's surface. Also Mercury, Venus, Mars, Jupiter and four of its moons, Saturn and one of its moons (Titan), as well as many comets and open star clusters. You can also see sun spots but, be careful, DO NOT OBSERVE THE SUN WITH ANY TELESCOPE UNLESS YOU USE A SUN DIAGONAL AND/OR A SUN FILTER. With the naked eye you can usually see about 6,000 stars, but with just this compact instrument that number is increased to 117,000 stars. In fact, this instrument will produce twice as much power as those used by Galileo when he made his earth-shaking discoveries in 1609.

#2001 An inexpensive astronomical telescope for the beginner—comes with table top tripod **$39.95**

#2001B Model 200T with 2027 Deluxe Tripod **$64.90**

EYEPIECE TUBES All OPTICA b/c eyepieces have standard threads and accept Astro filters, which reduce haze glare and increase contrast. Professionals use and recommend them. (See accessory section.)
For those new to the use of filters we recommend the OPTICA b/c publication, "Astro-filters for Observation and Astro-photography," for the most comprehensive explanations of the "Why?" and "How?" of filter use. Filters are recommended for all of the celestial objects listed. Illustrated **$1.95**



An OPTICA b/c Telescope—Fun for the Whole Family

ACCESSORIES One may change eyepieces on this as well as all following models. Power may be: increased, decreased or eyepieces selected which will produce wide-angle views. In addition, all these models will accept accessories, such as: astrocameras, spectroscopes, barlow lens, erectors, star diagonals, sun diagonals, filar micrometers, astrofilters, etc.





#2002 This model makes it possible to change powers instantly. Zooms from 25-power to 60-power without changing eyepieces. Produces an erect image, making it ideal for viewing the landscape, for target shooting, in addition to astronomy. Including Table Top Tripod **$59.95**

#2002B Model 2002 with 2027 Deluxe Tripod **$84.90**

Stock No.	Clear Aperture in millimeters	Focal Length in millimeters	Light Collecting Power as compared to the naked eye	Resolving Power with respect to double stars in seconds of arc	Faintest Discernible Star in magnitudes	Erector	Star Finder	Eyepieces	Magnification	Price
2001	40	500	33x	3	9.9			1	56x	39.95
2001B	40	500	33x	3	9.9			1	56x	64.90
2002	40	500	33x	3	9.9	1		1	25x to 60x	59.95
2002B	40	500	33x	3	9.9	1		1	25x to 60x	84.90

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STEPPING UP TO A 50mm The light-gathering potential of this telescope is about 1.3 times greater than the 40mm type. Titan, one of Saturn's moons is easily seen. The number of stars visible increases to 324,000 and the double star in Castor can be observed.



USE AS A TERRESTRIAL SCOPE All that is needed to convert this astronomical telescope for ground observation is a refocusable, zoom lens with erecting system. **Stock #544E2** **$18.95**

#2003 Looking for a functional, light-weight, refractor with an equatorial mount? This favorite has many desirable features, including: geared slow motion on both axes, and fully adjustable field tripod. Only **$119.95**



#2004 A compact, dual-purpose, telescope. Designed for both astronomical observation and high-powered terrestrial viewing. The large objective lens makes it possible to use terrestrially at night. Included is a tailored equatorial mount. .. **$149.95**

Stock No.	Clear Aperture in millimeters	Focal Length in millimeters	Light Collecting Power as compared to the naked eye	Resolving Power with respect to double stars in seconds of arc	Faintest Discernible Star in magnitudes	Erector	Star Finder	Eyepieces	Magnification	Price
2003	50	750	51x	2.4	10.3		4x	3	60x, 83x, 125x	119.95
2004	60	700	73x	2	10.7	1	5x	3	35x, 78x, 116x	149.95
2005	60	900	73x	2	10.7	1	6x	3	45x, 72x, 150x	195.95

60mm—HIGHLY EDUCATIONAL With its larger aperture, Mars appears as an orange disk. With the aid of a red filter, the green markings can be seen. Those with patience can look forward to seeing asteroids. Two of the more prominent belts of Jupiter may be observed, as well as the great red spot and, for the keen of sight, shadows cast by her orbiting moons. An interesting look at Saturn's rings is in store for you, as well as two of its moons, Rhea and Titan. Owners of this telescope say they can observe the Cassini-division which separates two of Saturn's rings and they can also locate five of its moons, usually observable only with a larger instrument. Uranus and Neptune may also be observed and the number of stars visible increases to 870,000. Many double stars are split, including the famous double-double (Epsilon) in Lyra. Even the interesting Ring Nebula may be seen faintly.





#2005 Our most popular refractor model— many outstanding features: high power, large objective, geared equatorial mount with slow motion controls. A sun-projection screen, flex arms, setting circles, star diagonal, and erecting system are also included. An important feature of this telescope is that it accepts an electric clock drive. In addition, when the drive is in operation, corrections may be made on both axes. These features are not obtainable on copies or look-alike telescopes. this instrument will delight the student and amateur astronomer alike. **$195.95**
with drive **$270.95**

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OPTICA b/c

FINDERS

FIVE MODELS

These Star Finders are modern in design, with hard coated, color corrected, achromatic lens. Each has cross hairs to more accurately pinpoint your image. Prices include Finder complete with: mounting brackets, nuts and bolts. Select any star finder you wish, but you will find the following recommendations most practical.



4X

4-POWER ECONOMY (4X 10mm 4°)

Recommended for reflectors up to 4" and refractors up to 2"
ORDER No. SFE4 ..... $6.95



5X

5-POWER STANDARD (5X 25mm 5°)

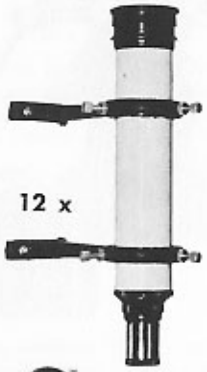
This finder normally used on reflectors up to 4¼" and refractors up to 2"
ORDER No. SFS5 ..... $9.95



6 x

6-POWER STANDARD (6 x 30mm 4°)

The most popular - streamline design and beautifully finished in white and scratch resistant black. Recommended for use with up to 6" reflectors and up to 2½" refractors.
ORDER No. SFS6 ..... $14.95



12 x

12-POWER DELUXE (12 x 40mm 2°)

For use with 8" reflectors and 3" refractors. Normally a second finder of 5X or 6X is also utilized.
ORDER No. SFD12 ..... $22.95



25 x

25-POWER SUPER DELUXE (25 x 50mm 1°)

Eyepieces can be interchanged on this Rack and Pinion focusing finder. Recommended for 10" reflectors and 3" or larger refractors. Also recommended a 12X and /or 6X.
ORDER No. SFSD25 ..... $29.95

**LARGER STAR FINDERS -
QUOTATIONS ON REQUEST**



SERIOUS OBSERVATION WITH A 76mm Now seen easily on the sun are spots, faculae and prominences. Phases of Mercury and Venus may be seen when prominent. Main features of Mars at favorable opposition. With this instrument you can conduct lunar occulation work and observe transits of Jupiter's moons. Five of Saturn's moons can be resolved and the occasional spots on the surface of this planet can be seen. The Cassini division of Saturn is easily seen. Useful variable star work may be undertaken and you can resolve the companion of Polaris. The Ring Nebula can be seen with more detail than with the 60 mm, and clusters become more interesting.

#2006 Many research projects are possible with this telescope. The increased light gathering potential of its larger lens not only improves observation, but makes it possible to more easily produce superior astro-photographs.
with heavy-duty tripod $249.00
with heavy-duty tripod and electric clock drive $324.00
with all-metal pedestal and legs $354.00
with all-metal pedestal, legs and electric clock drive $429.00

#2007 This model differs from #2006 in that it has an increased focal length (1200mm).
with heavy-duty tripod $309.00
with heavy-duty tripod and electric clock drive $384.00
with all-metal pedestal and legs $517.00
with all-metal pedestal, legs and electric clock drive $592.00

#2008 Both this model and the 2007 have the professional helicoid focusing mechanisms. This model also offers the advantage of our longest focal length 3" refractor (1400mm).
with heavy-duty tripod $369.00
with heavy-duty tripod and electric clock drive $444.00
.....with all-metal pedestal and legs $677.00
with all-metal pedestal, legs and electric clock drive $752.00

Stock No.	Clear Aperture in millimeters	Focal Length in millimeters	Light Collecting Power as compared to the naked eye	Resolving Power with respect to double stars in seconds of arc	Faintest Discernible Star in magnitudes	Erector	Star Finder	Eyepieces	Magnification	Price
2006	76	910	118x	1.6	11.2	1	6x	3	35x, 73x, 152x	249.00
2007	76	1200	118x	1.6	11.2	1	6x	3	66x, 96x, 200x	309.00
2008	76	1400	118x	1.6	11.2	1	5x,12x	4	56x, 78x, 112x, 233x	369.00

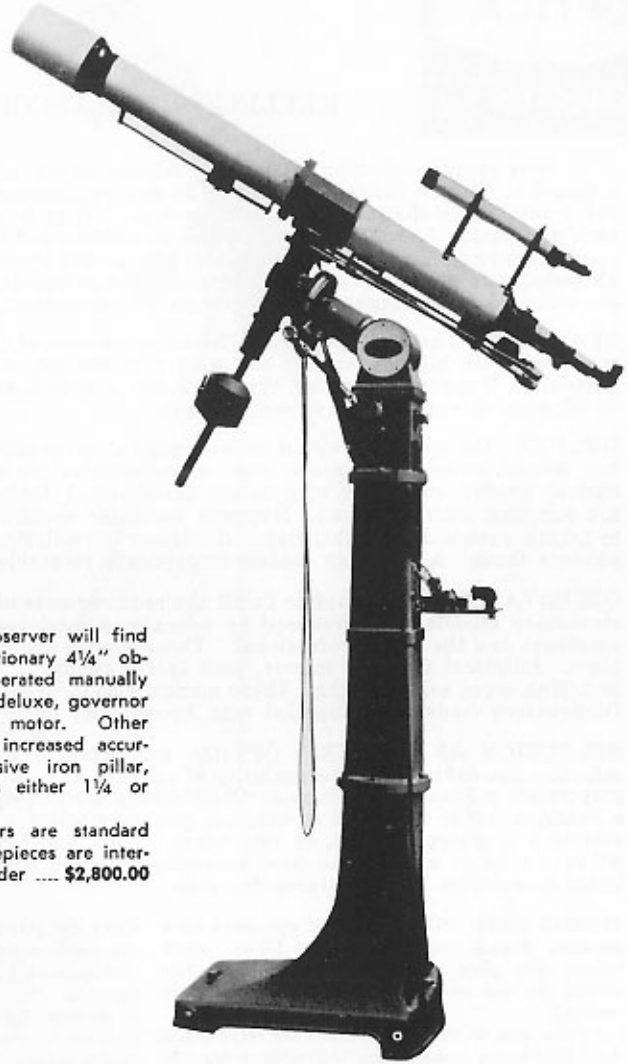
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#2009B New! This model will satisfy the needs of those desiring a portable 4¼" refractor telescope. The optics, accessories and tube assembly are basically the same as on #2009.
Electric motor drive included **$1,200.00**

Manufactured from the Finest Materials Available

Stock No.	Clear Aperture in millimeters	Focal Length in millimeters	Light Collecting Power as compared to the naked eye	Resolving Power with respect to double stars in seconds of arc	Faintest Discernible Star in magnitudes	Erector	Star Finder	Eyepieces	Magnification	Price
2009B	108	1600	248x	.1	11.8	1	6x,25x	5	32x,64x,128x,157x,267x	1200.00
2009	108	1600	248x	.1	11.8	1	6x,25x	5	32x,64x,128x,157x,267x	2800.00
2010	150	2250	460x	.8	12.7	1	12x,40x	5	56x,90x,180x,250x,375x	5000.00



#2009 The most demanding observer will find complete satisfaction with this stationary 4¼" observatory telescope. May be operated manually with geared slow motion, or use deluxe, governor controlled variable-rate, electric motor. Other features include larger gears for increased accuracy, triple-counter balance, massive iron pillar, large setting circles. It accepts either 1¼ or 24.5mm eyepiece tubes.
Low- and high-power star finders are standard equipment on this model and eyepieces are interchangeable on the high-power finder **$2,800.00**

#2010 This six-inch observatory refractor is the same design as the 4¼", only larger. It also includes a special high-power, 60mm star finder. Eyepieces may be used in this finder to produce powers in excess of 150-power. **$5,000.00**

Largest Selection of Telescopes and Accessories Anywhere

OPTICA b/c, 4100 MacArthur Blvd., Oakland, California 94619 U.S.A.

OPTICA

REFLECTORS

REFLECTOR TELESCOPES

Our largest selection of reflector telescopes makes it possible for you to choose a model to fit any budget - utility to fit any requirement. The many models are divided into three distinctly different groups. They have the following in common: rack and pinion focusing, accept American standard, 1¼", eyepieces and accessories, starfinders have hard coated achromatic lenses with cross hairs, equatorial mounts are all metal with pedestal and legs, mirrors are aluminized and overcoated, setting circles are included. The three different groups are: Standard, Deluxe and Observatory.

STANDARD These models fulfill the requirements of those desiring a reflector telescope with its high potential, but with a minimum investment. These models are portable. Huygens formular eyepieces are supplied and the mirrors are corrected to between ¼ and ⅛th wave sodium light.

DELUXE Outstanding, would be a conservative evaluation of this line of OPTICA b/c deluxe models. They are most often selected by those who desire the highest optical quality combined with many professional features. These portable models are supplied with Ortho and Huygens formular eyepieces and mirrors are corrected to 1/10th wave sodium light, diagonal mirrors are elliptical and fully adjustable spiders support them. All Deluxe models incorporate rotatable tube assemblies.

OBSERVATORY Designed to fulfill the requirements of the most demanding. These stationary models are purchased by educational and research institutions as well as amateurs and the semi-professional. These scopes are supported by massive pedestal piers. Elliptical diagonal mirror, with spider support. Mirror corrected from 1/10th to 1/20th wave sodium light. These models also incorporate rotatable tube assemblies. Observatory models are supplied with heavy duty electric drive with rate regulator.

SELECTION AND PRICES OPTICA b/c offers customers a greater freedom of selection due to the interchangeability of the tube and equatorial mount assemblies. You may select a Standard, Deluxe or Observatory telescope complete. Or you may select a combination of tube and mount, i.e., you may select a deluxe tube assembly with a standard equatorial mount, or vice versa. Also, you may select an equatorial mount without tube or a complete tube assembly supplied with eyepiece as well as all the listed accessories and illustrated features.

EYEPIECE TUBES All OPTICA b/c eyepieces have standard threads and accept Astro filters, which reduce haze glare and increase contrast. Professionals use and recommend them. (See accessory section.)
For those new to the use of filters we recommend the OPTICA b/c publication, "Astro-filters for Observation and Astro-photography," for the most comprehensive explanations of the "Why?" and "How?" of filter use. Filters are recommended for all of the celestial objects listed. Illustrated **$1.95**

Terrestrial Observation
OPTICA b/c incorporates a feature on the majority of its astronomical reflectors which makes it possible to use the instruments for terrestrial (ground) observation—most manufacturers do not incorporate this feature. The only additional equipment necessary is a refocusable, zoom eyepiece with an erecting system. This special lens will produce from 37x to 90-power ..... Stock #544E2 **$18.95**

CARE OF TELESCOPE MIRRORS Caution: Do not use harsh or soapy cleansers as they may leave a film or cause a chemical reaction with the aluminum deposits. Avoid using towels, brushes, shammies, or sponges because they usually cause fine scratches on the mirror surface. For the best cleaning results use Optical Detergent, Stock #M1100 **$1.00**

#M1000 A high efficiency, all-metal, compact, budget-priced, 3¼" reflector for the beginner. Includes a four-power star finder, dust cap, off-axis solar stop, two Huygen eyepieces and standard 24.5mm eyepiece tubes. It features micro-adjustment on both primary and secondary mirrors with positive locks, elliptical diagonal mirror, rack and pinion focusing. The focal length is 750mm—resolving power with respect to double stars, 1.4 seconds—faintest discernible star 11.4 magnitude. Power, 126x and 61x.
with table-top equatorial mount $69.95
with deluxe M2027B adjustable tripod, to 5'10" with equatorial mount $88.83



#M1000

An Ideal Gift for the Scientifically-Minded Youngster

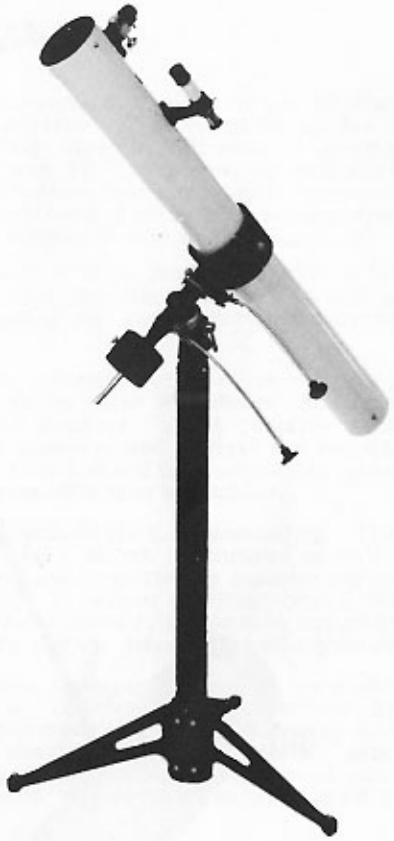
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IMPRESSIVE OBSERVATION WITH A 4" REFLECTOR
With one of these world-famous reflectors you can observe the phases of Mercury and Venus easily the first time you use it. All the details and features larger than two miles may be seen on the moon. Also observable are the main surface details of Mars, and the major belts of Jupiter are more sharply defined and many more belts are discernible. Besides the other moons of Saturn, seen with smaller instruments, Tethys and Dione can be seen. The number of stars visible increases to almost 2,000,000. You can separate the companions of Rigel, Theta Aurigae, Delta Cygni, and many others A great number of variable stars can be seen. Many of the stars in clusters such as M13 are resolved. Owners of OPTICA b/c instruments have reported they have often seen Neptune.
(For additional observational information see four-inch refractors.)

#4STC—STANDARD 4" Complete with all illustrated and listed accessories **$94.00**
with electric drive **$145.00**

4 STC





4 STDM

Telescopes Complete, Tube Assemblies & Mounts	4 Inch	
	Stock No.	Price
Standard Tube Assembly	4 ST	$ 94.00
Deluxe Tube Assembly	4 DT	100.00
Standard Mount	4 SM	37.00
Deluxe Mount	4 DM	105.00
Standard Telescope Complete	4 STC	119.00
Deluxe Tube Assembly with Standard Mount	4 DTSM	124.00
Standard Tube Assembly with Deluxe Mount	4 STDM	181.00
Deluxe Telescope Complete	4 DTC	196.00

Electric Drives	Stock No.	Price
For 4" and 6" Standard Mounts	46 EDS	51.00
For 4" and 6" Deluxe Mounts	46 EDD	75.00

INCREASED UTILITY AT NO EXTRA COST. One cannot expect an equatorial mount to function properly unless the mount is level. To simplify the leveling procedure, mount levelers have been incorporated. Also, ball bearing, casters have been installed to increase mobility. These improvements are now included on all standard and deluxe, reflector, telescope mounts.



4 DTSM

#4DTC—DELUXE 4" This is the only 4" reflector available that offers all these outstanding, exclusive features: Micro-smooth rack and pinion, positive locking system on primary and secondary mirror adjustments, dust caps, off-axis solar stop, rotatable tube assembly, setting circles, manual geared slow motion controls on both axes, flex-arms, slow motion bypass, and mount levelers. Corrections may be made on both axes when electric drive is in operation **$196.00**
with electric drive **$271.00**

Manufactured from the Finest Materials Available



4 DTC

Size & Model	Focal Length in millimeters	Light Collecting Power as compared to the naked eye	Resolving Power with respect to double stars in seconds of arc	Faintest Discernible Star in magnitudes	Star Finder	Eyepieces and Optical formulare	Magnification
4" Standard	1140	204x	1.2	11.8	5x	2 H	91x and 190x
4" Deluxe	1000	204x	1.2	11.8	5x	1 Or 2 H	250x 80x, 166x

OPTICA b/c, 4100 MacArthur Blvd., Oakland, California 94619 U.S.A.

5,000,000 STARS WITH A 6" Lunar detail as small as one-half mile can be seen. Four of Jupiter's moons are visible and accurate transit studies of their motion can be made. The crepe ring of Saturn is visible and its moon Enceladus can be seen. At times the shadow cast by Saturn can be seen on its rings, and its elusive faint color bands can be distinguished. Two moons of Uranus, Titania and Oberon, are often seen and Neptune exhibits a recognizable disk. Triton, one of Neptune's moons, has been observed by the keen observer. Many individual stars are resolved in numerous globular clusters and the Pleiades cluster shows faint clouds of gas. Binary studies, usually made with spectroscope, micrometer or camera, are possible. Perfect by any standard.

#6STC—STANDARD 6" Electric drive available as an accessory **$51.00**



6 STC



6 DTSM

Telescopes Complete, Tube Assemblies & Mounts	6 Inch	
	Stock No.	Price
Standard Tube Assembly	6 ST	$161.00
Deluxe Tube Assembly	6 DT	329.00
Standard Mount	6 SM	69.00
Deluxe Mount	6 DM	208.00
Standard Telescope Complete	6 STC	210.00
Deluxe Tube Assembly with Standard Mount	6 DTSM	353.00
Standard Tube Assembly with Deluxe Mount	6 STDM	336.00
Deluxe Telescope Complete	6 DTC	479.00

Electric Drives	Stock No.	Price
For 4" and 6" Standard Mounts	46 EDS	51.00
For 4" and 6" Deluxe Mounts	46 EDD	75.00

INCREASED UTILITY AT NO EXTRA COST. One cannot expect an equatorial mount to function properly unless the mount is level. To simplify the leveling procedure, mount levelers have been incorporated. Also, ball bearing, casters have been installed to increase mobility. These improvements are now included on all standard and deluxe, reflector, telescope mounts.



DELUXE 6" TUBE ASSEMBLY Many desirable features including micro-smooth rack and pinion, dust caps, off-axis solar stop, access door for mirror inspection and cleaning, elliptical diagonal mirror, micro-adjustment on both primary and secondary with positive lock on primary.

#6DTC—DELUXE 6" MOUNT ASSEMBLY Quick release, rotatable tube assembly, geared slow-motion control for manual operation, flexarms, slow-motion by-pass, and mount levelers. Electric motor drive available as an accessory, **$75.00.**



6 DTC

Size & Model		Focal Length in millimeters	Light Collecting Power as compared to the naked eye	Resolving Power with respect to double stars in seconds of arc	Faintest Discernible Star in magnitudes	Star Finder	Eyepieces and Optical formulare	Magnification
6" Standard		1200	460x	.8	12.7	6x	3 H	68x, 96x, 135x
6" Deluxe		1300	460x	.8	12.7	12x	1 Or 3 H	325x 72x, 104x, 216x

OPTICA b/c, 4100 MacArthur Blvd., Oakland, California 94619 U.S.A.

Recommended by Educators for Purchase Under NDEA Program

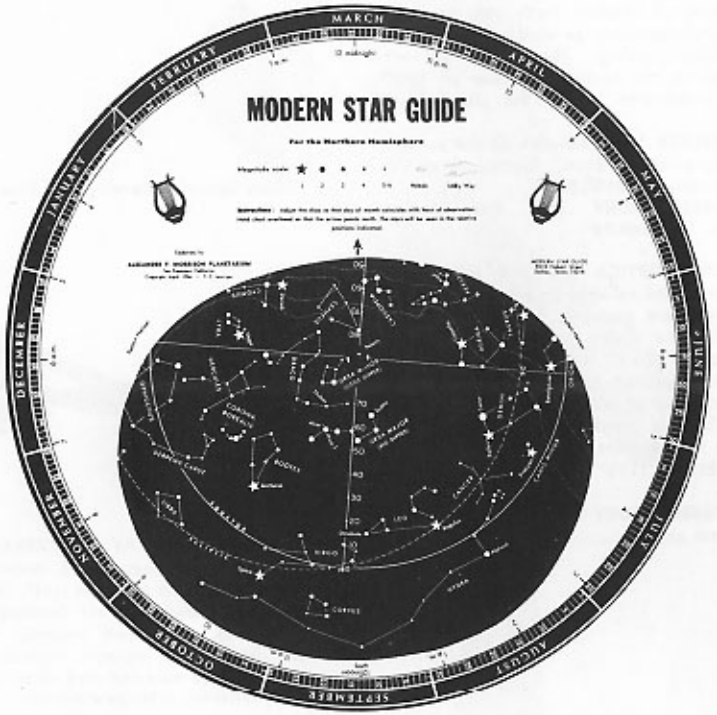
A STAR POPULATION OF 8,000,000 WITH AN 8"
This is the smallest telescope with which serious studies of Mars can be made. Considerable refinement of detail can be seen on Jupiter with much finer detail revealed in the three main belts. Two more of Saturn's moons become visible; namely, Mimas and Hyperion. Uranus can be seen easily and its moons, Titanis and Oberon, come into view. This telescope truly paves the way to new astronomical horizons.

#8DTC—DELUXE 8" All the outstanding features found on deluxe models. Electric drive available as an accessory, **$105.00**

#80TC—OBSERVATORY 8"
starfinder can use interchangeable eyepieces to produce from 10x to 100-power. Electric Drive is included, but may be purchased separately for **$281.00**

Telescopes Complete, Tube Assemblies & Mounts	8 Inch	
	Stock No.	Price
Deluxe Tube Assembly	8 DT	390.00
Observatory Tube Assembly	8 OT	619.00
Deluxe Mount	8 DM	272.00
Observatory Mount	8 OM	1059.00
Deluxe Tel. Complete	8 DTC	596.00
Observatory Tube Assembly with Deluxe Mount	8 OTDM	802.00
Deluxe Tube Assembly with Observatory Mount	8 DTOM	1305.00
Observatory Tel. Complete	8 OTC	1511.00

Electric Drives	Stock No.	Price
For 8" Deluxe Mount	8 EDD	105.00



MODERN STAR GUIDE
With a simple twist of the dial find the stars and planets at any hour on any date of the year. This 10" rigid, durable plastic guide is indispensable. It is endorsed by a number of Planetariums **$3.25**

Size & Model	Focal Length in millimeters	Light Collecting Power as compared to the naked eye	Resolving Power with respect to double stars in seconds of arc	Faintest Discernible Star in magnitudes	Star Finder	Eyepieces and Optical formulare	Magnification
8" Deluxe	1600	817x	.6	13.3	12x	4 Or	88x, 120x, 266x, 400x
8" Observatory	1600	817x	.6	13.3	5x,25x	5 Or	64x, 88x, 120x, 266x, 400x

OPTICA b/c, 4100 MacArthur Blvd., Oakland, California 94619 U.S.A.

IN THE REALM OF THE NEBULAE WITH A 10"
This instrument is excellent for extensive Mars study. Details of Uranus' belts can be faintly seen. The Owl Nebulae, as well as many others, provide exciting viewing. The number of visible stars increases to the fantastic number of 13,000,000. This instrument is for the discriminating star-gazer.

#10DTC—DELUXE 10" Includes all the outstanding features previously listed. Electric drive available as an accessory, **$133.00**

#100TC—OBSERVATORY 10" Price includes electric drive. **$1,849.00**

12½" AS ONLY OPTICA b/c CAN MAKE THEM
With this instrument reliable measurements with a filar micrometer are possible. Two more moons of Jupiter become visible and the sharp-sighted will see Phobos, Mars' larger moon. With the power of this telescope it is even possible to see Pluto. The number of stars now visible increases to the unbelievable number of 32,000,000. This instrument is the ultimate in perfection.

#12DTC—DELUXE 12½" Includes electric drive **$1,343.00**

#12OTC—OBSERVATORY 12½" Includes electric drive with rate control **$2,153.00**

Five Factories Serving the Free World



INCREASED UTILITY AT NO EXTRA COST. One cannot expect an equatorial mount to function properly unless the mount is level. To simplify the leveling procedure, mount levelers have been incorporated. Also, ball bearing, casters have been installed to increase mobility. These improvements are now included on all standard and deluxe, reflector, telescope mounts.

Telescopes Complete, Tube Assemblies & Mounts	10 Inch		12½ Inch	
	Stock No	Price	Stock No	Price
Deluxe Tube Assembly	10 DT	504.00	12 DT	659.00
Observatory Tube Assembly	10 OT	659.00	12 OT	759.00
Deluxe Mount	10 DM	409.00	12 DM	832.00
Observatory Mount	10 OM	1197.00	12 OM	1578.00
Deluxe Tel. Complete	10 DTC	830.00	12 DTC	1343.00
Observatory Tube Assembly with Deluxe Mount	10 0TDM	912.00	12 OTDM	1432.00
Deluxe Tube Assembly with Observatory Mount	10 DTOM	1536.00	12 DTOM	2053.00
Observatory Tel. Complete	10 OTC	1849.00	12 OTC	2153.00

Electric Drives	Stock No.	Price
For 10" Deluxe Mount	10 EDD	133.00

*All Observatory Telescopes complete, Observatory mounts separately as well as the 12½" Deluxe telescope complete or 12½" deluxe mount are supplied with electric drives at the above listed prices.

*Larger sizes and special optical formulai, such as: Cassegrainian, Richest Field, Catadioptric, etc., quotation on request.

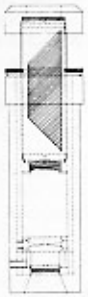


Size & Model	Focal Length in millimeters	Light Collecting Power as compared to the naked eye	Resolving Power with respect to double stars in seconds of arc	Faintest Discernible Star in magnitudes	Star Finder	Eyepieces and Optical formulare	Magnification
10" Deluxe	1800	1380	.45	13.8	25x	4 Or	100x, 144x, 300x, 450x
10" Observatory	1800	1380	.45	13.8	5x,25x	5 Or	72x, 100x, 144x, 300x, 450x
12½" Deluxe	2200	1920	.36	15.7	25x	5 Or	88x, 122x, 176x, 366x, 550x
12½" Observatory	2200	1920	.36	15.7	5x,25x	6 Or	88x, 122x, 176x, 244x, 366x, 550x

OPTICA b/c, 4100 MacArthur Blvd., Oakland, California 94619 U.S.A.

OPTICA

SPECTROSCOPES



OPTICA b/c SYSTEMS FOR ASTRONOMICAL SPECTROSCOPY

The spectroscope has been one of the most useful tools in the advancement of astronomy.

Six years of extensive research finally culminated in the production of these new, bright, precision, astronomical spectroscopes. They are fully laboratory and field tested and are guaranteed to produce spectra of celestial objects with aperatures as small as 1½".

With one of these instruments you can embark on new adventures. The light from celestial objects is spread out into a rainbow of color, sharply cut by dark Fraunhofer lines. Obtain valuable information concerning the: Sun, Planets, Stars, Nebulae, Comets and Meteors. The enthusiastic may investigate rotation, motion, magnetic fields, temperature and composition.

ASTRONOMICAL SPECTROSCOPE MODEL #SPEC-11 Fully assembled, ready for immediate use. Anatomy: Width of slit controlled with micro-jaw adjustment ; 2-element collimating lens; 3-element prism; focusing eyepiece

	For 24.5mm eyepiece tubes		For 1¼" eyepiece tubes	
	Stock No.	Price	Stock No.	Price
Spectroscope	**SPEC-11-2**	**49.95**	**SPEC-11-1**	**54.50**



ASTRONOMICAL SPECTROSCOPE MODEL #SPEC-13 Includes all the outstanding features of the #SPEC-11, with these additions: A second optical system, making it possible to produce a second spectrum for comparative study and a third optical system containing a wave-length scale.

	For 24.5mm eyepiece tubes		For 1¼" eyepiece tubes	
	Stock No.	Price	Stock No.	Price
Spectroscope	**SPEC-13-2**	**149.95**	**SPEC-13-1**	**154.50**

PUBLICATIONS

ASTRONOMICAL SPECTROSCOPY: 256 pp **$4.20**

INCREASE THE POWER OF YOUR TELESCOPE Now with an OPTICA b/c Barlow you can double or triple the power of any eyepiece, including Zoom Lenses.

BEGINNERS BEWARE! Single element and second quality Barlows have excessive spherical distortions, chromatic abberations and curvature of field. Don't make a costly mistake. You can purchase an OPTICA b/c Barlow with confidence. These multiple lens Barlows will produce a distortion-free image with increased clarity and brilliance. In the long run, the best costs less with OPTICA b/c.

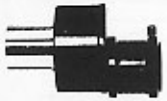
BARLOW



	For 24.5mm eyepiece tubes		For 1¼" eyepiece tubes	
	Stock No.	Price	Stock No.	Price
Barlow 2X	**545B2**	**14.95**	**545B1**	**18.50**
Barlow 3X	**546B2**	**18.95**	**546B1**	**22.50**

ERECTING PRISM Make your telescope more versatile by converting it into a Terrestrial scope (image right side up).

ERECTOR



	For 24.5mm eyepiece tubes		For 1¼" eyepiece tubes	
	Stock No.	Price	Stock No.	Price
Standard	**543E2**	**16.95**	**543E1**	**18.50**
Variable Power	**544E2**	**18.95**	**544E1**	**20.50**

YOUR TELESCOPE IS ONLY AS GOOD AS ITS EYEPIECES

OPTICA b/c eyepieces produce images of greater clarity and brightness, making them a favorite with those desiring the best performance from their equipment.

HUYGENS produce good eye relief and practically no chromatic difference in magnification. These benefits, coupled with economy, have made them the world's most popular eyepieces.

	For 24.5 mm eyepiece holders		For 1¼" eyepiece holders	
	Stock No.	Price	Stock No.	Price
4mm	**4EH2**	**$14.95**	**4EH1**	**$16.50**
6mm	**6EH2**	**12.95**	**6EH1**	**14.50**
9mm	**9EH2**	**10.95**	**9EH1**	**12.50**
12.5mm	**12EH2**	**10.95**	**12EH1**	**12.50**
18mm	**18EH2**	**10.95**	**18EH1**	**12.50**
25mm	**25EH2**	**12.95**	**25EH1**	**14.50**
30mm	**30EH2**	**14.95**	**30EH1**	**16.50**
50mm			**50EH1**	**16.50**

KELLNERS for those desiring larger lens diameter, resulting in increased eye relief.

12.5mm	**12EK2**	**12.95**	**12EK1**	**14.50**
20mm	**20EK2**	**14.95**		
25mm			**25EK1**	**16.50**
40mm			**40EK1**	**18.50**

ORTHOS The four optical elements of Ortho lens produce the most highly corrected images obtainable. For the most demanding workers and the most rewarding Astrophotography, Orthos are a must!

4mm	**4EO2**	**18.95**	**4EO1**	**24.50**
6mm	**6EO2**	**16.95**	**6EO1**	**22.50**
9mm	**9EO2**	**14.95**	**9EO1**	**20.50**
12.5 mm	**12EO2**	**14.95**	**12EO1**	**18.50**
18mm	**18EO2**	**14.95**	**18EO1**	**20.50**
25mm	**25EO2**	**16.95**	**25EO1**	**22.50**

ZOOM LENS For years OPTICA b/c has been the leader in Zooms for telescopes. With these wonderfully easy-to-use, top quality lens, you can take advantage of zooming from a full view to smaller areas for concentrated study.

Refocusable, Zoom 8.3mm - 21mm	**544E2**	**18.95**	**544E1**	**20.50**
Auto Focus, Zoom 8.4mm - 21mm	**545E2**	**26.95**	**545E1**	**28.50**
Auto Focus, Zoom 12.5 - 25mm	**546E2**	**28.95**	**546E1**	**30.50**

EYEPIECE ADAPTER

Adapter, Eyepiece 24.5mm to 1¼"			**533A1**	**$2.95**
Adapter, Eyepiece 1¼" to 24.5mm	**534A2**	**$5.50**		

HERE IS HOW In order to determine the power produced by a given eyepiece, simply divide the focal length of the telescope by the focal length of the eyepiece.

EXAMPLE $\frac{\text{Telescope Focal Length} = 1400\text{mm}}{\text{Eyepiece Focal Length} = 4\text{mm}} = 350$ power

OPTICA

EYEPIECES



ZOOM



OPTICA b/c

FILTERS

OPTICA b/c WORLD'S FINEST AND LARGEST SELECTION OF FILTERS FOR ASTRONOMY PROESSIONALS USE AND RECOMMEND THEM

NEUTRAL DENSITY FILTERS See more detail in bright objects. A set makes it possible to produce the just-right image brightness regardless of the power or instrument used. Used with Sun Diagonals also.

	For 24.5 mm eyepiece holders		For 1¼" eyepiece holders	
	Stock No.	Price	Stock No.	Price
10% - Gelatin	118F2	3.50	118F1	4.50
20% "	119F2	"	119F1	"
40% "	120F2	"	120F1	"
80% "	121F2	"	121F1	"
Complete set of 4	122F2	11.20	122F1	14.40
10% - Opcical Glass	123F2	$7.50	123F1	$8.50
20% " "	124F2	"	124F1	"
40% " "	125F2	"	125F1	"
80% " "	126F2	"	126F1	"
Complete set of 4	127F2	24.00	127F1	27.20

POLAROID FILTERS Reduce glare and sharpen images with polarized light. Use this multiple use filter for observation and Color as well as Black & White Astrophotography.

	For 24.5 mm eyepiece holders		For 1¼" eyepiece holders	
	Stock No.	Price	Stock No.	Price
Optical Glass	128F2	$8.50	128F1	$9.50
Gelatin	129F2	4.50	129F1	5.50

INFRARED FILTER Now you can extend your astrophotographic limits as the professionals do. Photos are entirely different. Open a Pandora's box of detail, invisible to the eye. Maximum haze and galactic penetration. Use on all celestial objects.

ULTRAVIOLET FILTER Astrophotographic studies in ultraviolet offer you a new dimension. Indispensable for the study of atmospheres of Mars and Venus, Nebulae, Stars, etc. Can be used with regular Panchromatic films.

	For 24.5 mm eyepiece holders		For 1¼" eyepiece holders	
	Stock No.	Price	Stock No.	Price
Infrared	130F2	$10.50	130F1	$11.50
Ultraviolet	131F2	10.50	131F1	11.50
Both for	132F2	16.80	132F1	18.40

SPECIAL FILTERS FOR SCIENTIFIC AND TECHNICAL USE Thousands of standard and custom filters - outline specific needs - quotations on request.



ALL FILTERS SUPPLIED IN MACHINED, METAL HOLDERS. SPECIFY FOR 24.5mm OR 1¼" EYEPIECE TUBES.

ASTROFILTERS FOR OBSERVATION & ASTROPHOTOGRAPHY
The most comprehensive coverage of the subject available. The Why and How, Celestial objects listed, recommended filters for each. Easy to understand. Illustrated: Diagrams, Charts and Photographs. HIGHLY RECOMMENDED! $1.95

OPTICA b/c WORLD'S FINEST AND LARGEST SELECTION OF FILTERS FOR ASTRONOMY PROESSIONALS USE AND RECOMMEND THEM

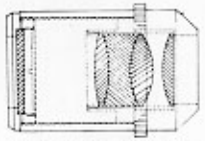
OPTICA b/c

FILTERS

WHAT OPTICA b/c FILTERS DO FOR YOU
OBSERVATION You can eliminate glare, penetrate atmosphere and increase contrast. The delicate and elusive colorations of celestial objects can be intensified for detailed study.
ASTROPHOTOGRAPHY These easy to use filters are an absolute must for rewarding astro-photos. All filters except the IR-130 may be used with readily available Panchromatic film. For improved results use OPTICA b/c Astropan.

	For 24.5 mm eyepiece holders		For 1¼" eyepiece holders	
	Stock No.	Price	Stock No.	Price
Blue - Gelatin	101F2	$3.50	101F1	$4.50
Green "	102F2	"	102F1	"
Yellow "	103F2	"	103F1	"
Orange "	104F2	"	104F1	"
Red "	105F2	"	105F1	"
Dark Red "	106F2	"	106F1	"
Complete set of six	107F2	17.80	107F1	22.40
Blue - Optical Glass	108F2	6.50	108F1	7.50
Green " "	109F2	"	109F1	"
Yellow " "	110F2	"	110F1	"
Orange " "	111F2	"	111F1	"
Red " "	112F2	"	112F1	"
Dark Red " "	113F2	"	113F1	"
Complete set of six	114F2	31.20	114F1	36.00





FILTER HOLDER SCREWS INTO EYEPIECE TUBE

FORMER STOCK NUMBERS
Former Stock numbers corresponding to the above colors: Blue No. 470.1, Green No. 538.2, Yellow No. 581.2, Orange No. 598.8, Red No. 617.2, Dark Red No. 632.7.

GUIDE TO FILTER SELECTION
BLUE - Jupiter, Red Spot, Bands - Mars, Atmosphere, Deserts - Venus, Markings - Psuedo Ultraviolet - Sun.
GREEN - Jupiter, Polar Cap - Mars, seasonal changes - Moon - Venus - Sun.
YELLOW - Jupiter, Polar Cap - Increase contrast - Haze penetration - Sun - Moon.
ORANGE - Mars, Desserts, seasonal changes, Canals - Sun - Moon-Haze penetration.
RED - Mars, Melt Band, Atmosphere, Polar Cap - Jupiter, Bands - Saturn, Rings - Comets - Sun - Moon.
DARK RED - Moon - Sun - Occultations - Maximum dark-sky-effect - Meteors - Stars, Faint Red, Color Temperature - Psuedo Infrared - Nebula - Satelites - Star Trails.
* The preceding guide represents only a few of the popular uses of OPTICA b/c filters.
* For Solar work, use color filters in combination with a Sun Diagonal.

MOON FILTERS Eliminate glare and increase contrast for best observation.
SUN FILTERS Look directly at the sun with a telescope and avoid eye injury.

	For 24.5 mm eyepiece holders		For 1¼" eyepiece holders	
	Stock No.	Price	Stock No.	Price
Sun - Optical Glass	115F2	$2.50	115F1	$3.50
Moon " "	116F2	2.50	116F1	3.50
Both for	117F2	4.00	117F1	5.60

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OPTICA

ASTRO-PHOTO





ASTROPHOTOGRAPHY SYSTEMS BY OPTICA b/c

ASTRO CAMERA MODELS. 1AC1 and 1AC2

Now anyone can take exciting astrophotographs with this easy to use camera. Use either Prime Focus or Negative Projection.

1. Easy to attach: slip right into eyepiece holder.
2. Camera Tube threaded to accept filters.
3. Professional six-bladed shutter.
4. Built-in locking Cable Release for time exposures.
5. Focus: Quick and accurate, with provided focusing screen.
6. Use standard 127 film, either black and white or color, 12 exposures to the roll.
7. Complete instructions.

*Specify for 24.5mm Stock No. **1AC2** or 1¼" Stock No. **1AC1** **$39.95**

ASTRO CAMERA MODEL 3AC

This new 35mm, single-lens reflex camera is specifically designed for astrophotography, and incorporates a special low-vibration shutter, quick-return mirror, fine bright-screen focusing. Shutter 1/125 second and "B" setting for prolonged exposures. Locking cable release for time exposures included.

	For 24.5mm holders Stock No.	Price	For 1¼" holders Stock No.	Price
CAMERA COMPLETE - use prime focus or negative projection	**3AC2**	**149.95**	**3AC1**	**154.50**
ADAPTER - use above systems in addition to eyepiece projection	**536A2**	**29.95**	**536A1**	**33.50**

FILM - SAVE $$$$ ORDER YOUR FILM FROM OPTICA b/c

BLACK & WHITE	35mm	127	120	620	2¼ 25sh	3¼ 25sh	4¼ 25sh	4x5
High Contrast	1.15				2.00	2.70	3.55	
Panatomic X	.71		.54	.54	1.62	2.20	2.85	
Plus X Pan	.71		.54	.54	1.62	2.20	2.85	
Super Panchro Press					1.62	2.20	2.85	
Tri-X	.71	.54	.54	.54	1.62	2.20	2.85	
Royal Pan			.65		1.62	2.20	2.85	
Verichrome Pan		.47	.47	.47				
Astro-Pan		1.00	1.00	1.00				
Infrared	1.25				2.45	3.30	4.35	

Also complete supply of other sizes spectroscopic films and plates. Quotation on request.

CABLE RELEASE For Vibrationless astrophotos, metal clad, 10" long, locking type for time exposures ..... Stock No. **AP502** **$ 1.95**

FOCUSING SCREEN Flexible, for all roll film cameras, state size. **$ 1.00**

IMAGE MAGNIFIER Increases focusing accuracy many times, position over focusing screen or ground glass ..... Stock No. **AP503** **$ 2.00**

OPTICA b/c ASTROPAN FILM Sizes 120, 127, 620, Fast ASA 160, wide latitude, fine grain ..... **$ 1.00**

ASTRO FILM PROCESSING Fine grain, custom quality of the above film sizes. Prints enlarged and one FREE roll of ASTROPAN returned with each roll received for processing. ..... Stock No. **AP504** **$ 3.00**

LIGHT GUARD not necessary for any OPTICA b/c adapter, astro camera or outfit. Use with Bracket and other assemblies to eliminate stray light. ..... Stock No. **AP506** **$ 1.25**

OPTICA

ASTRO-PHOTO

LARGEST SELECTION OF CAMERA ADAPTERS FOR ASTROPHOTOGRAPHY AVAILABLE.

OVER 1,500 TO FIT ALMOST EVERY CAMERA AND LENS MADE.

	For 24.5mm eyepiece tubes Stock No.	Price	For 1¼" eyepiece tubes Stock No.	Price
Prime Focus	**535A2**	**$14.95**	**535A1**	**$ 18.50**
Eyepiece-camera	**536A2**	**29.95**	**536A1**	**33.50**
All systems	**537A2**	**39.95**	**537A1**	**43.50**



ADAPTERS NOS. 535A2 and 535A1:

1. Available for cameras with completely removable lens.
2. This adapter replaces your camera lens.
3. Astrophoto systems that can be used:
   (a) Prime Focus (Objective or mirror projection).
   (b) Negative projection (Barlow projection).



ADAPTERS NOS. 536A2 and 536A1:

1. Available for cameras with or without removable lens.
2. This adapter screws into threads of your camera lens.
3. Astrophoto systems that can be used:
   (a) Eyepiece-camera (afocal).

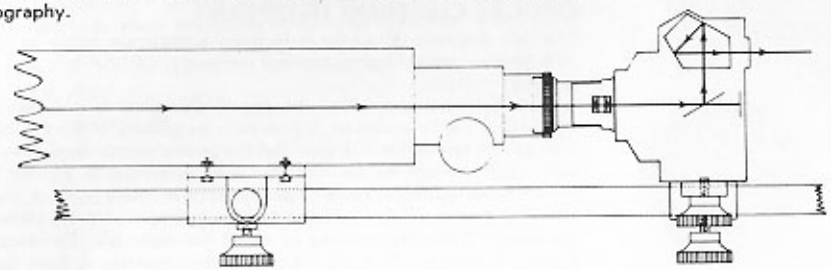


ADAPTERS NOS. 537A2 and 537A1:

1. For cameras with completely removable lens.
2. This adapter is used to replace your camera lens or screw into the threads of your camera lens.
3. Astrophoto systems that can be used:
   (a) Prime Focus (Objective or mirror projection)
   (b) Negative projection (Barlow projection)
   (c) Eyepiece projection (positive projection)
   (d) Eyepiece-Camera (afocal)

When ordering, please supply complete information - camera make, model, lens manufacturer, focal length, maximum f stops, etc.

NOTE: All adapter tubes threaded to accept astro-filters. See accessory catalog for additional information. Order "Astro-Filters for Observation and Astrophotography" - $1.95. This valuable publication will supply you with information that will increase the quality and value of your astrophotography.



BRACKET ASSEMBLY

For Refractors or Reflectors - Includes: Adjustable telescope and camera brackets and extension rod ..... Stock No. **AP501** **$9.95**

PUBLICATIONS:

Plates and Films for Science and Industry, 42 pp	**$ 1.25**
Infrared and Ultraviolet Photography, 47 pp	**$ 1.25**
Star Gazing with Telescope and Camera, 128 pp	**$ 2.20**
Outer Space Photography for the Amateur, 124 pp	**$ 2.75**
Skyshooting, 147 pp	**$ 4.90**
Photography through Monoculars, Binoculars & Telescopes, 128 pp	**$ 2.20**
Filters for Scientific and Technical Use, 81 pp	**$ 1.25**
Astronomical Photography at the Telescope, 232 pp (most complete)	**$ 8.50**
Color Films, 49 pp	**$ 1.25**
Films in Rolls, (Black & White Photography) 28 pp	**$ 1.00**
Astro Filters for Observation & Astrophotography	**$ 1.95**



OPTICA b/c

CLEANING

IF YOU WISH crisp detail and longer life from your optics, use OPTICA b/c supplies specifically selected for safe care of all optical instruments including coated optics.
CARELESS cleaning or improper materials can spoil the quality of your optics.

OPTICAL CLEANING FLUID

A new, improved formula, supplied in handy plastic spray bottle. Will remove stubborn foreign deposits such as smudges, scum, and fingerprints.
USE bottle in upright position and squeeze gently - clean until dry with OPTICAL CLEANING TISSUE.
CAUTION! do not use soapy cleaners, alcohol or other harsh solvents.
Stock No. M1029 ..... **$1.00**

OPTICAL CLEANING BRUSH

This soft, camel-hair brush is mounted in a retractable, lipstick type, metal container.
USE to gently brush away dust and before using LENS TISSUE AND FLUID.
CAUTION! do not use stiff paint type brushes, they may damage the coating.
Stock No. M1027 ..... **$1.49**

OPTICAL CLEANING TISSUE

Meets with federal specifications UUP-313-E. It is unusually soft but at the same time strong and non-linting, also: absorbant, chemically pure and non-abrasive.
USE after dust and grit have been removed with OPTICAL CLEANING BRUSH.
USE with LENS CLEANING FLUID.
CAUTION! Do not use regular cloths, Facial Tissue, or Abrasive eyeglass tissue. Also: silicone treated lens tissue and cloths impair the anti-reflective and corrrective function of the coating. PACKET 4" x 6"
Stock No. M1020 ..... **$ .30**

OPTICAL CLEANING DETERGENT

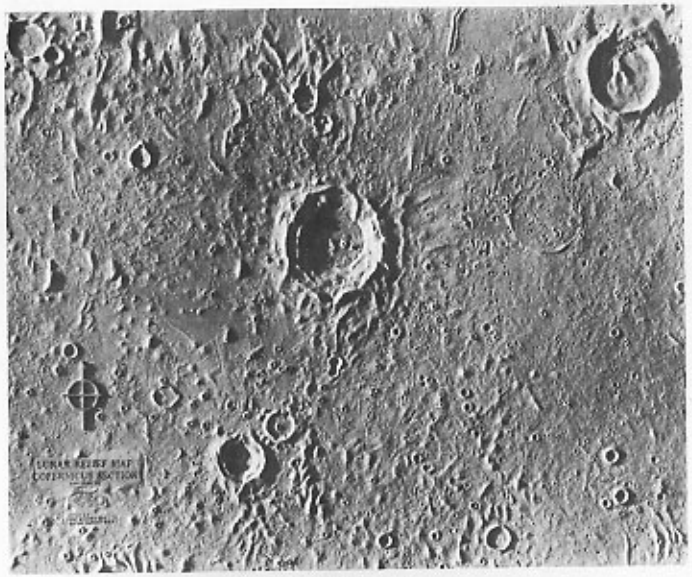
The best professional advise is to clean a telescope mirror as infrequently as possible. When it does become necessary, OPTICA b/c provides a safe and fast method.
USE optical detergent. Mix one cap of detergent to one quart of water. Distilled water is preferred, but is only mandatory when the mineral content of the tap water is high. Submerge the mirror in the working solution. Swirl mirror below surface. This, normally, is all that is needed, but if some deposits remain, gently remove them with a wad of lens cleaning tissue, while the mirror is submerged. When clean, do not attempt to dry with toweling or any other material. Do, stand on edge and let drain dry. If some droplets should remain, without touching the mirror, remove them with a blotter.
CAUTION! do not use harsh or soapy cleaners, they may leave a film or cause a chemical reaction. Avoid: toweling, brushes, shammies, sponges, etc., they usually cause fine scratches in the delicate aluminum deposit.
Stock No. M1100 ..... **$1.00**

SAVE ON KITS

Kit containing one each: Optical cleaning tissue, brush and fluid.
Stock No. M1030 ..... **$2.00**
Kit containing the above plus optical cleaning detergent for telescope mirrors.
Stock No. M1101 ..... **$3.00**

OPTICA b/c

VISUAL AIDS



LUNAR RELIEF MAP - COPERNICUS SECTION
This three dimensional moon section measures 19½" x 24". This large size makes it possible to show thousands of features in relief. It is ideal for display and instruction. Scale 1:1,000,000.
Standard cast ..... **Stock No. VAMM 1** **$60.00**
Deluxe Cast (Fiber glass) ..... **Stock No. VAMM 2** **$90.00**



CELESTIAL GLOBE, STANDARD
An exact working model of the sky. This beautiful 12" spherical map of the heavens has a background of dark blue with the figures of the constellations in light blue and the stars in bright yellow. A special surface makes it possible to mark with wax crayon which is easily removed with a soft cloth. Graduated Scales: Right ascension, declination, ecliptic, and time and date ring.
Demonstrate the heavens at any hour or date. Identify the stars and constellations. locate the planets and follow the sun.
Stock No. VACG1 ..... **$19.95**



CELESTIAL GLOBE, DELUXE MODEL
This deluxe globe is the finest and most complete of its type available; in reality it is a miniature planetarium. The 14" transparent celestial sphere is produced from a durable plastic. Printed on the globe are 89 constellations and all stars to the 5th magnitude. In addition are the Milky Way and the main nebulae and clusters. There is a terrestrial globe positioned at the center. The satellite orbits, as well as the sun and moon being adjustable. Now in use by educational institutions, amateurs and observatories throughout the U.S.A. Graduated Scales: Celestial Equator, Ecliptic, Altitude Indicator, Declination Circle, Horizontal Circle, Timing Plate, Time Indicator, Latitude Indicator. Demonstrate all celestial phenomenon.
Stock No. VACG2 ..... **$69.50**