

# Astro-Physics

839 Brae Burn Lane  
Rockford, Illinois 61107

ASTRO-PHYSICS now offers an expanded line of Precision APOCHROMAT Refractors, mountings, and accessories to the amateur community. Our telescope optics are based on the award winning Christen Triplet design, featuring very low residual aberrations and superb color correction in a short focal length design. The result is a highly portable refractor system with superior imaging qualities, ideal for a wide variety of astronomical work from high power lunar/planetary to deep sky astrophotography.

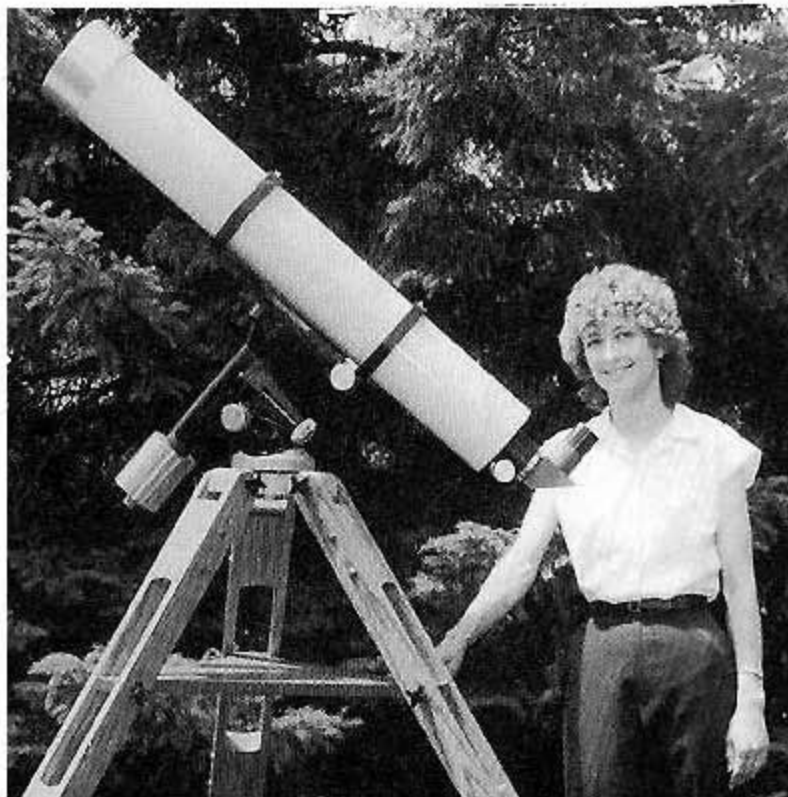
ASTRO-PHYSICS manufactures its telescopes in-house. Our optics are 100% AMERICAN MADE, and we use only precision "A" grade optical materials. All lenses are polished on pitch laps and hand corrected on a double pass interferometer. All of our objectives are APOCHROMATIC which means that the images are essentially free of false color, both visually and photographically.

Our telescopes were developed with the active observer in mind. We have concentrated on those things that make observing a joy: sharp high-resolution optics, rugged vibration free mountings and easy to use effective accessories. Our telescopes are not loaded with frills and doo-dads. The tube assemblies are finished in a durable weather resistant epoxy coating. We offer a unique, unobstructed, highly corrected optical system designed to give a lifetime of observing pleasure. When choosing a telescope, we encourage you to compare, side by side, our optical and mechanical qualities with scopes of similar size.

Our lenses use three matched optical glasses to combine the colors of the visual spectrum into intense, sharp, concentrated images. High transmission glass, free of striae and imperfection is used to make the objective lens. This results in a clean optical system with superior resolution, contrast and light gathering power. When seeing permits, powers up to 100X per inch of aperture are practical for lunar/planetary or double star work. The wide-field performance of this design is outstanding. Images on color film are crisp and sharp with no annoying blue halos around bright stars. Wide-field 2 inch oculars can be used for low power visual exploration of the sky. Deep sky objects stand out in stark contrast against velvet black skies.

## LOW POWER WIDEFIELD REFRACTORS

Our F6 Triplets are perfect for wide field astrophotography and deep sky visual work. They also work surprisingly well for high power lunar, planetary and double star observing. The short tube and light weight make them a delight to use in the field. Color correction extends from C to g wavelengths and the design is free of spherical aberration and coma. The lenses are designed to cover the 35mm format to the extreme corners. Filters are not required with color films. Our Flat Field Telecompressor extends the performance of these instruments to f4 with sharp microscopic images over the entire 35mm format. The matched Barlow Amplifier converts these scopes to F12 for high power observing. The tube assemblies listed below come with the same professional quality custom focuser as supplied with our larger scopes.



#### SPECIFICATIONS FOR 4 INCH F6 TUBE ASSEMBLY:

Objective ----- magnesium fluoride coated 3 element apochromat 24"+-1 efl.  
Light transmission ----- 96.5% over the visible spectrum  
35mm Photographic field ----- 2.3x3.2 deg. @ F6, 3.4x4.8 deg. @ F4  
Secondary spectrum ----- Less than +-0.008% from C to F  
Light gathering power ----- 210 times unaided eye  
Focuser type ----- Helical rack & pinion; 2.5" I.D.; 5" travel; 2", 1.25" adapter  
Tube assembly ----- Aluminum, 5" dia x 21" long, 7 lb, white epoxy, baffled, 5" dewcap

#### SPECIFICATIONS FOR 5 INCH F6 TUBE ASSEMBLY:

Objective ----- magnesium fluoride coated 3 element, apochromat 30"+-1 efl.  
Light transmission ----- 96.5% over the visible spectrum  
35mm Photographic field ----- 1.8x2.6 deg. @ F6, 2.7x3.8 deg. @ F4  
Secondary spectrum ----- Less than +-0.008% from C to F  
Light gathering power ----- 330 times unaided eye  
Focuser type ----- Helical rack & pinion; 2.5" I.D.; 5" travel; 2", 1.25" adapter  
Tube assembly ----- Aluminum, 6" dia x 26" long, 12 lb, white epoxy, baffled, 7" dewcap

#### HIGH RESOLUTION PORTABLE REFRACTORS

These intermediate focal length telescopes are very portable, yet they perform like traditional long focus doublets. Color correction is better than found in achromat doublets, resulting in more light concentrated into the image and a subsequent fainter magnitude limit. These scopes will reach the extremes of low and high power with ease. Wide field color astrophotography is easy with our Triplet Flat Field Telecompressor. The giant custom focuser insures full frame coverage resulting in lovely color or black & white photographs. Contrast and resolution are outstanding in these hand crafted scopes, with performance equalling or exceeding much larger commercial production telescopes.

#### SPECIFICATIONS FOR 4 INCH F10 TUBE ASSEMBLY:

Objective ----- magnesium fluoride coated 3 element apochromat, 40"+-1 efl.  
Light transmission ----- 96.5% over the visible spectrum  
35mm Photographic field ----- 1.4x1.9 deg. @ F10, 2x2.9 deg. @ F6.7  
Secondary spectrum ----- Less than +-0.008% from C to F  
Light gathering power ----- 210 times unaided eye  
Focuser type ----- Helical rack & pinion; 2.5" I.D.; 5" travel; 2", 1.25" adapter  
Tube assembly ----- Aluminum, 5" dia x 37" long, 8 lb, white epoxy, baffled, 5" dewcap

#### SPECIFICATIONS FOR 5 INCH F8 TUBE ASSEMBLY:

Objective ----- magnesium fluoride coated 3 element apochromat, 40"+-1 efl.  
Light transmission ----- 96.5% over the visible spectrum  
35mm Photographic field ----- 1.4x1.9 deg. @ F8, 2x2.9 deg. @ F5.3  
Secondary spectrum ----- Less than +-0.008% from C to F  
Light gathering power ----- 330 times unaided eye  
Focuser type ----- Helical rack & pinion; 2.5" I.D.; 5" travel; 2", 1.25" adapter  
Tube assembly ----- Aluminum, 6" dia x 37" long, 13 lb, white epoxy, baffled, 7" dewcap

#### SPECIFICATIONS FOR 6 INCH F8 TUBE ASSEMBLY:

Objective ----- magnesium fluoride coated 3 element apochromat, 48"+-1 efl.  
Light transmission ----- 96.5% over the visible spectrum  
35mm Photographic field ----- 1.1x1.6 deg @ F8, 1.7x2.4 deg @ F5.3  
Secondary spectrum ----- Less than +-0.008% from C to F  
Light gathering power ----- 460 times unaided eye  
Focuser type ----- Helical rack & pinion; 2.5" I.D.; 5" travel; 2", 1.25" adapter  
Tube assembly ----- Aluminum, 7" dia x 45" long, 19 lb, white epoxy, baffled, 9" dewcap

## SUPER PLANETARY REFRACTORS

The f12 objectives are designed to deliver the highest possible contrast for the most discriminating lunar/planetary observer. Color correction is essentially perfect, far exceeding that obtained in even the finest achromatic doublets. Planetary contrast is crisp and sharp and the bright limb of the moon butts against black sky showing the sharp profiles of mountains and craters. As one veteran observer wrote us about his 5" f12 : " Contrast and brilliance of the image is quite astonishing. The lunar surface reveals a spectacular wealth of detail. But most important is the lack of fuzzing at high power. Even at 650x (130 power per inch!) the image holds up amazingly well." Low power performance of these long focal length lenses is equally impressive. Giant wide field oculars will show star fields and deep sky objects with high contrast just like our faster lenses do. Astrophotography is possible at f8 with the Triplet Telecompressor. The Barlow may be used for photo-visual work at f24, and even longer focal ratios are possible with the eyepiece projection adapter.

### SPECIFICATIONS FOR 5 INCH F12 TUBE ASSEMBLY:

Objective ----- magnesium fluoride coated 3 element apochromat, 60"+-1 efl.  
Light transmission ----- 96.5% over the visible spectrum  
35mm Photographic field ----- 0.9x1.3 deg. @ F12, 1.3x2 deg. @ F8  
Secondary spectrum ----- Less than +-0.008% from C to F  
Light gathering power ----- 330 times unaided eye  
Focuser type ----- Helical rack & pinion; 2.5" I.D.; 5" travel; 2", 1.25" adapter  
Tube assembly ----- Aluminum, 6" dia x 57" long, 14 lb, white epoxy, baffled, 7" dewcap

### SPECIFICATIONS FOR 6 INCH F12 TUBE ASSEMBLY:

Objective ----- magnesium fluoride coated 3 element apochromat, 72"+-1 efl.  
Light transmission ----- 96.5% over the visible spectrum  
35mm Photographic field ----- .75x1.1 deg @ F12, 1.1x1.6 deg @ F8  
Secondary spectrum ----- Less than +-0.008% from C to F  
Light gathering power ----- 460 times unaided eye  
Focuser type ----- Helical rack & pinion; 2.5" I.D.; 5" travel; 2", 1.25" adapter  
Tube assembly ----- Aluminum, 7" dia x 69" long, 21 lb, white epoxy, baffled, 9" dewcap

## PHOTO-VISUAL BARLOW AMPLIFIER

This custom made accessory doubles the focal length of the objective for high power photo visual observation. The 2 element design uses special glasses to preserve the fine color correction of the main objective. The optical elements are hand corrected and precisely centered to insure that no aberrations are introduced into the system. The large optics will accept both 1.25 and 2 inch oculars and will cover a 2 inch photographic field with pinpoint images to the edge.

## FLAT FIELD TRIPLET TELECOMPRESSOR

Three elements of special optical glass are used to match the characteristics of our triplet objectives in this flat field design. The result is a telecompressor with diffraction limited performance and no vignetting over the 35mm format. The field is absolutely flat with no coma, astigmatism or distortion. Deep sky objects are recorded in a fraction of the time needed at prime focus. This well corrected accessory lens preserves the high contrast and superb color correction of the main objective. A must for the serious astrophotographer

## ASTROGRAPHIC GERMAN EQUATORIAL MOUNTINGS

A good mounting is equally as important as the optics in a telescope system. Our mountings feature large thrust surfaces to transfer the telescope's mass to the tripod, thereby achieving maximum rigidity at minimum weight. Designed for astrophotography and high power visual work, this mount is steady even in gusting winds. Stainless ball bearings are used throughout, and solid stainless shafts guide the R.A. and Dec. axes. The declination axis features a precision tangent arm slow motion adjustment. The R.A. axis is driven by a synchronous motor and BRONZE worm for error free tracking. Both axes respond to fingertip pressure with no hint of backlash. Built in clutches can be disengaged for ultra smooth sweeping, or locked for astrophotography. The entire mount disassembles quickly for easy transport and storage. An optional electric declination drive is available for hands-off guiding in Dec. The D.C. motor can be driven from most dual axis drive correctors providing 9 to 12 volts output. Setting circles are not available at this time.

### SPECIFICATIONS FOR MODEL 504 AND 706 MOUNTS:

Polar axis ..... model 504 - 4" dia. thrust bearing, model 706 - 6" dia. thrust bearing  
Dec. axis ..... 4" dia. thrust bearing - both models  
Drive gear .... Precision BRONZE ,+-.0002" backlash, model 504 - 4" dia., model 706 - 6" dia.  
Motor type ..... 120 Vac. 60 Hz. 3 Watts, 230 Vac. 50 Hz. also available  
Approximate weight (less counterweight) ..... 22 lb.- model 504, 29 lb.- model 706

### SOLID OAK TRIPOD

This handsome tripod is built for ASTRO-PHYSICS by American craftsmen from solid oak. The hand made legs feature laminated bracing for high stiffness and strength. The tripod is finished with a beautiful protective lacquer. A sturdy shelf provides more stiffness, and will hold all your observing accessories. The shelf removes easily with large hand knobs and the entire tripod collapses for transport and storage. Tripod height is 56 inches at the base of the equatorial. Dimension when folded is 11"x 61". Weight is 37 lb. for the tripod, 5 lb. for the shelf.

### PORTABLE PIER

This pier mounting features a unique tension design that combines rugged construction with light weight while eliminating flexure and annoying vibrations. Legs attach without hardware, allowing field assembly in seconds. Tension rods are designed not to interfere when the telescope is pointed at the zenith. Two sizes are available: the 46" pier with a resulting cradle height of 58", and a 60" model with a cradle height of 72" for long refractors. Both our models 504 and 706 will fit these piers. The 46" pier weighs 38 lb., and the 60" weighs 42 lb.

### ACCESSORIES

ASTRO-PHYSICS can provide a wide range of domestic and imported accessories such as guiding equipment, finderscopes, oculars and diagonals at competitive prices.

ORDERING INFORMATION - When ordering by mail, be sure to include your complete street address. We cannot ship to P.O. box numbers. Illinois residents must include current state sales tax. Domestic orders are sent UPS, shipping charges collect. Foreign orders are shipped via air or ocean freight, transportation collect.

METHOD OF PAYMENT - A check or money order included with your order is required for prompt handling. FOREIGN ORDERS must be paid with an international bank draft in U.S. dollars drawn on a U.S. bank. In case of long delivery times, we require 1/3 down with the balance due prior to shipment. Personal checks require an extra 4 weeks to clear.

# Astro-Physics

The Christen STARFIRE is a fantastic new Refractor that delivers the uncompromising performance of the classic long focus instrument in a very compact and portable package. This telescope was designed on a challenge to deliver the absolute highest possible image quality for lunar/planetary observing while still remaining a truly portable instrument. The result is not only a fine planetary telescope, but also a superb deep sky instrument with unlimited photographic possibilities. The heart of this system is a new Triplet lens design that virtually eliminates secondary color and higher order aberrations over the immense spectral range of 400nm to 700nm (from the edge of the U.V to the infrared region). The lens design incorporates two special dispersion glasses that are matched to the hard crown front element. The result is Fluoride - like performance without the thermal limitations and high cost of Fluoride. The image quality, contrast and color correction is so good that it is hard to believe one is looking through a short focus refractor. Two models of the STARFIRE are now available:

142mm. (5.6inch) F7 Widefield Refractor

178mm. (7.0inch) f9 Planetary Refractor

The smaller instrument's size is comparable to that of a modern 4 inch refractor, but with it's 142mm (5.6 inch) aperture the light grasp is more than twice that of the 4 inch scope. In sheer resolution and image quality even the popular 8"-10" catadioptrics will have a hard time equalling this refractor. The 178mm telescope is a truly magnificent instrument. Its resolving power and light grasp put it in a class all its own. The 1600mm. (63 inch) focal length allows a wide range of powers (29x, 2deg. field with 55mm P1. to 700x with 4mm and 1.8x barlow). Both telescopes can be used photographically without filters.

## FEATURES:

- High resolution APOCHROMAT Optics
- Fully baffled tube with custom finish
- Custom helical rack & pinion focuser
- Dust cover and Dewcap

STARFIRE 142mm F7 APOCHROMAT Tube Assembly, 38"length, 6"dia, 19 lb ..... 1850.00  
STARFIRE 178mm F9 APOCHROMAT Tube Assembly, 61"length, 7"dia, 34 lb ..... 3600.00

## OPTIONAL ACCESSORIES:

- 8x50 crosshair Finderscope
- High quality 2 inch mirror diagonal
- Rugged foam lined carrying case
- Flat Field Telecompressor for 35mm photography
- Camera adapter for prime focus, 35mm format
- Photo-visual 2x Barlow Amplifier
- Eyepiece Projection System
- 3 Inch Photo-Guidescope with rings
- Matching Astrographic German Equatorial Mountings



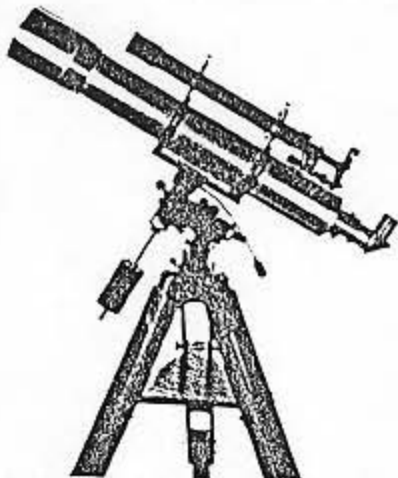
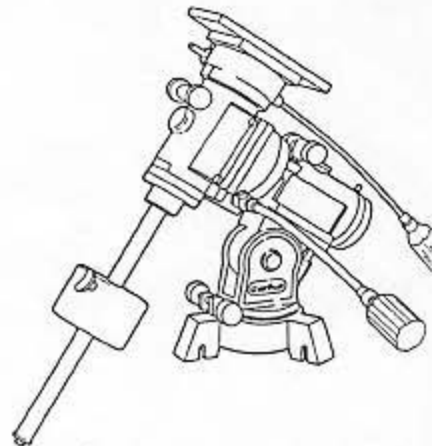
7" F9 on  
Model 706  
Equatorial

For more information on these  
and other products, write or call:

ASTRO-PHYSICS  
839 BraeBurn Ln  
Rockford, IL. 61107  
Tel: 815-226-1471

**"SUPER NOVA" MOUNT**

We are importing this light weight portable mount as an alternate for our small and medium sized scopes. The equatorial head is equipped with setting circles, fine slow motion controls on flexible shafts, worm gears in both declination and polar axes, 6.4 lb. counterweight. The mount is easily disassembled. The polar axis is hollow for an optional polar scope. An optional pulse motor drive is available for tracking the stars. Azimuth and latitude adjustments are standard. This solid and stable mount will easily hold all our 4 and 5 inch scopes, as well as the 5.6" StarFire and the 6" F8 tube assemblies. With our solid oak tripod, the stability of this mounting exceeds that of any of the popular imported versions. Equatorial weight is 24 lb.



5.6"F7, mount, oak tripod, with 60mm guidescope

Super Nova Equatorial Head, as pictured above with one 6.4 lb. weight..... 495.00

Extra Balance Weight, 6.4 lb..... 35.00  
3.3 lb. .... 25.00

Multi-plate..... 85.00

This plate is necessary to support the hex rings for the 5" and 5.6" and 6" scopes. It is also used to expand the versatility of the 4" scopes by providing a plate to mount guidescopes and cameras for astrophotography.

Hexagonal Mounting Rings, choose the appropriate size:  
5.0" (127mm) for Astro-Physics 4" scopes, per pair ..... 38.00  
6.0" (153mm) for Astro-Physics 5" and 5.6" scopes, per pair..... 46.00  
7.0" (178mm) for Astro-Physics 6" scopes, per pair ..... 48.00

Polar Axis Scope ..... 95.00  
This accessory fits into the polar axis and makes polar alignment a snap. The illuminated reticle features a unique star field overlay for quick alignment.

Pulse Motor with Push Buttons and Battery Pack ..... 220.00  
Following the motions of the stars is easy with the Pulse Motor drive. This portable accessory operates off its own battery pack with buttons for reversing, stopping and 4x speed increase.

Solid Oak Tripod Legs for "Super Nova" Mount..... 425.00  
This custom tripod is a smaller version of the oak tripod available for our own equatorial mounts. Its beauty and stability are unparalleled. The height of the legs is not adjustable which assures a more solid base of support. The sturdy shelf provides more stiffness and keeps your accessories close at hand.

Adjustable Aluminum Tripod. .... 220.00  
This light duty tripod is fully adjustable and collapses for easy portability. While not recommended for serious astrophotography for extended high power viewing, this tripod is an excellent choice for wide field low power sweeping.

Recommended Combinations. For your convenience, we have recommended some basic combinations of the above items for each scope:

4" f6, Super Nova mount, aluminum tripod, 5" hex rings ..... 1648.00  
4"f10, Super Nova mount, aluminum tripod, 5" hex rings, extra 3.3 lb weight ..... 1673.00  
5" f6, Super Nova mount, multi-plate, aluminum tripod, 6" hex rings, extra 3.3 lb weight ..... 2066.00  
5" f8, Super Nova mount, multi-plate, oak tripod, 6" hex rings, extra 6.4 lb weight ..... 2281.00  
5" f12, Super Nova mount, multi-plate, oak tripod, 6" hex rings, extra 6.4 lb and 3.3 lb. weights .... 2336.00  
5.6"f7, Super Nova mount, multi-plate, oak tripod, 6" hex rings, two extra 6.4 lb weights ..... 2971.00  
6" f8, Super Nova mount, multi-plate, oak tripod, 7" hex rings, two extra 6.4 lb weights ..... 2563.00

Camera Piggyback Mount with 2 axis micro-adjustment for easy framing of star fields ..... 49.00

60 mm Guide Scope, 700mm fl. with .965 rack&pinion ..... 150.00  
Diagonal Prism, .965 ..... 35.00  
9mm Guiding Eyepiece, .965, with illuminator, circular reticle ..... 120.00  
Guide Scope Micro Adjust Mount, adjusts 12 deg in RA and Dec for locating guide star..... 120.00  
Guidescope Rings, 3.9" inside diameter with thumb screws, per pair..... 51.00

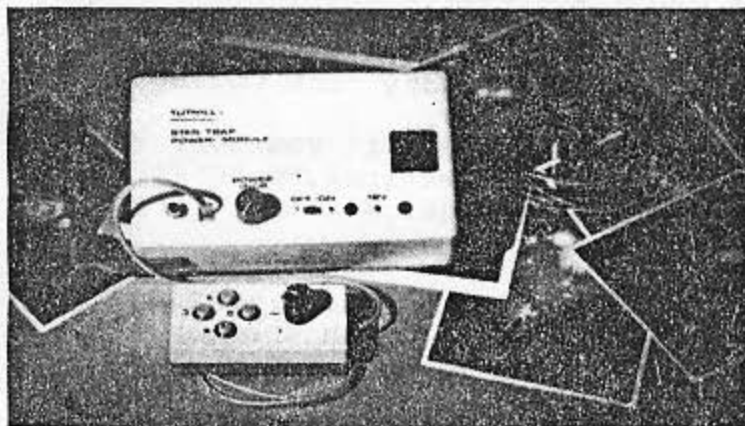
9x63 Deep Sky Binoculars ..... 195.00  
Roof prism type with fully illuminated exit pupil and sharp 6 deg. field, these superb binoculars are brighter than ordinary porro prism types. Perfect for finding dim objects or just zooming around the night sky.

**ROGER W. TUTHILL, INC.***Quality Products for Astronomers & Photographers*

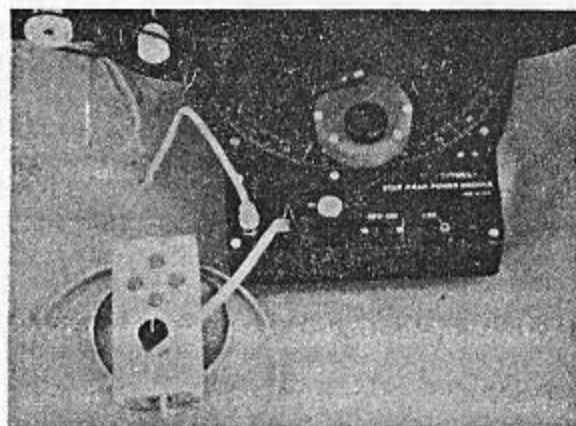
BOX 1086 / MOUNTAINSIDE, NEW JERSEY 07092-0086

**STAR TRAP POWER MODULE**

Jan. 15, 1986



MODEL # 1



MODEL # 2

Thank you for inquiring about the newest technological achievement of our laboratories, our STAR TRAP POWER MODULE (STPM).

It is a combination space-age battery source of power which we convert very efficiently to run the synchronous AC motors in your scope. That means that you no longer have to be concerned with staying near your car in the field or staying near a power line at home. Operate your scope at the top of Mount Everest if you wish.

The STPM will run the single motor in your scope for an evenings observing session for up to 8 hours depending on your type of scope and the conditions. Or you may also operate directly from a 12 volt car battery or a 12 v source for as long as you wish. After you have come home you can recharge the STPM in a few hours by simply using our small Power Pak for connecting to a power line or you can also recharge by plugging into your car 12v cigarette lighter. It takes about 5 hours to fully charge the batteries.

Because we use special batteries you may leave the charger connected indefinitely without harm. Furthermore the batteries need no water or attention of any kind except to charge them. Once charged they will hold their charge for many months without the need for recharging.

The STPM is superior to other systems as you need no separate source of power. The power to run the scope is included in the STPM whether it is the Model #1 or Model #2. Meade has recently announced a built in Drive Corrector but this device always needs a separate source of power to run the scope either a separate battery or else a power line nearby.

(OVER)

### MODEL #1:

This model is for all scopes except the C-14. There may be others not suitable but as yet we do not know what they may be. It is a light weight (29oz small 6"x4"x3") console which holds the batteries and all the associated electronic parts for driving the scope. Not only do you have an independent source of power for driving your scope but later you can convert it to a full-fledged single or dual axis drive corrector. Just connect the proper hand paddle with the control buttons and a potentiometer and you are ready for astrophotography.

### MODEL #2

This model is for mounting inside the Super C-8 base. A special nameplate is supplied with the electronics mounted on it. The necessary controls, sockets for the recharger, the hand paddle (when used) and the Dec motor (when used) are all supplied. There are no wires of any kind coming out of the scope base. So you can throw away your scope cord.

This model is special designed so that you can install it yourself with a few simple tools with the help of the illustrated directions. NO SOLDERING is required. The same hand paddles are used as in the Model #1.

### CONTROLS

Either Model STPM has a switch with a charging position and a running position. There is also a green LED which lights up to tell you when the batteries are full charged and a red LED which lights to show you when power is supplied to the motor. This red LED has a dual function as it will blink slowly to warn you that you only have about 1 hour of running time left before you MUST recharge the batteries. There is also a socket for you to insert a plug for charging.

The Model #1 STPM has a socket to operate the standard 3 watt 110V 60 hz motors such as is found in the Meade #2080, Celestron C-90, C-5, C-8, the Dynamax 6, the B&L 4000, and 8000, the Super C-8 and the C-11. When used with other scopes the running time may be shortened.

### ASTROPHOTOGRAPHIC OPTION:

Either model of the STPM can be converted to operate as a full fledged single or dual axis drive corrector for astrophotography. You merely have to connect the single or dual axis hand paddle with the proper controls for your application. You do not have to discard anything nor does anything become redundant.

### PRICES:

MODEL #1 (For all scopes):.....	\$295.
MODEL #2 (For mounting inside the base of the Super C-8):.....	\$295.
Hand Paddle suitable for Dual or Single axis operation .....	\$ 75
DEC motor for Super C8Plus .....	\$ 75.
DEC motor for C5, C11 or other scopes (tell us the model) .....	\$ 75.
Power Pak for charging anywhere with 110V/220/ V & 50/60 hz power .....	FREE

*A jack for charging from 12V DC or from a car socket is included FREE.*