EXPLORE®
SCIENTIFIC

Scott W. Roberts
Founder of Explore Scientific

INTRODUCTION

In 2008 the market for astronomical amateur telescopes was basically divided into two sections: Cheap telescopes that were mostly manufactured in the Far East and expensive high end telescopes from Russia and the USA. To change this, Scott W. Roberts founded a new company: Explore Scientific. The idea behind this new brand was to make high performance telescopes and accessories at a price point that could be afforded by the majority of amateur astronomers.

Soon the company began to grow and the unique combination of quality and affordability spread around the world. Explore Scientific gathered a team of seasoned telescope experts that expanded the portfolio of the brand every year – from the first high end eyepieces to apochromatic refractors to dobsonian telescopes and coma correctors, Explore Scientific broadened its product range. The young company set a few new records: the first serial production eyepiece with 120° apparent field, the first serial production eyepiece with 3" barrel and many more.

Today, teams in the USA, Europe and China are working together to present even more products with unique value. This is the spirit that has made Explore Scientific the synonymic for affordable high end telescope gear.

EYEPIECES

- All Explore Scientific eyepieces are fully multicoated with EMD coating
- All lens edges are blackened for maximum contrast
- All Explore Scientific eyepieces are sealed and gas-purged to facilitate cleaning
- All Explore Scientific eyepieces have stainless steel barrels
- All Explore Scientific eyepieces have foldable rubber eyecups
- All Explore Scientific eyepieces are delivered in a colored box with magnetic seal
- All Explore Scientific eyepieces have laser engraved serial numbers

120° Series

Reference Class Eyepieces with unsurpassed apparent field of view and excellent sharpness even for fast optical telescopes. You see deep sky objects as if you were in space! It makes you forget that you are looking through a telescope. This makes up for an unforgettable observing experience, that even exceeds the expectations of demanding amateur astronomers. Of course it has the same specifications as the already well established 100° eyepieces: insert gas purged and waterproof, the high end EMD coatings are protected from the outdoors. Dust, fungus, humidity and cleaning solutions cannot harm the precious eyepiece for years of observing to come!

100° Series

The Explore Scientific 100° eyepieces provide excellent sharpness and contrast in combination with a huge apparend field of view. Pinpoint star images even with fast optical systems are no longer a dream with those eyepieces. With their huge apparent field of view they not only give the observer a panoramic visual experience, but they relax the eye so the observer can pay attention to subtle details for extended periods. Each 100° Series Argon-Purged Waterproof eyepiece is internally sealed and purged with inert, dry argon gas to prevent internal fogging, to halt the intrusion of fine particulates and fungus. This also maximizes the life of the internal coatings.

120° Series TECHNICAL DATA

Focal length	Barrel Diameter	Eye Distance	Elements	Dimensions	Weight	Item Number
9 mm	50,8 mm / 2"	12,5 mm	12	186x79 mm	1350g	0218909

Coating: All surfaces coated with multilayer EMD coating, lens edges blackened.

100° Series TECHNICAL DATA

Focal length	Barrel Diameter	Eye Distance	Elements	Dimensions	Weight	Item Number
5,5 mm	50,8 mm / 2"	11,6 mm	9	149 mm x 59 mm	606g	0218405
9 mm	50,8 mm / 2"	12,5 mm	9	151 mm x 59 mm	680g	0218409
14 mm	50,8 mm / 2"	14,5 mm	9	163 mm x 69 mm	890g	0218414
20 mm	50,8 mm / 2"	14,4 mm	9	161 mm x 69 mm	990g	0218420
25 mm	50,8 mm / 2"	14,5 mm	10	146 mm x 73 mm	1120g	0218425
30 mm	76,2 mm / 3"	19,1 mm	8	190 mm x 106,5 mm	2250g	0218430

Coating: All surfaces coated with multilayer EMD coating, lens edges blackened

EYEPIECES

82° Series

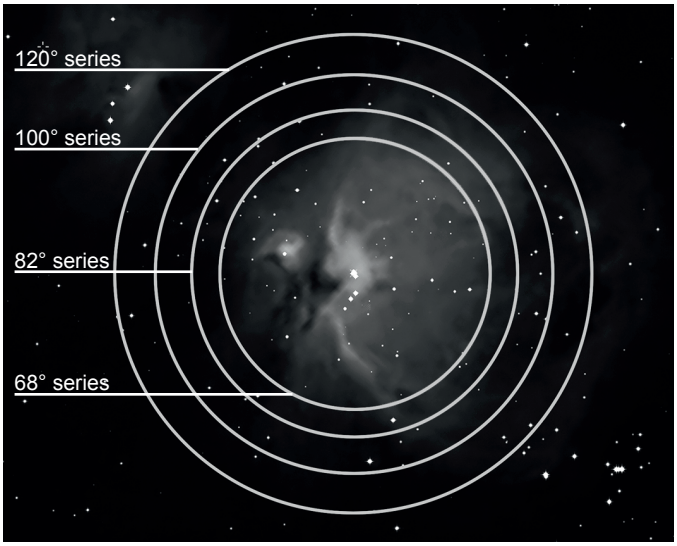
Explore Scientific 82° Series™ ultra wide field eyepieces are optimized to produce high contrast, high resolution, and superior flat field characteristics. The combination of long eye-relief and 82° apparent field enables the observer to easily use the "averted vision" technique to study faint details across a huge field-of-view.

Product Features

Unlike other key features like image sharpness in the middle and at the edge of the field of view and contrast, the apparent field of view can be described with a number.

The apparent field of view is the angle under which the human eye sees the field of view with a certain eyepiece. If used on the same telescope, eyepieces with the same focal length but with different apparent fields will show you different views of the object.

We demonstrate this with the image on the right. The rings show you the part of the object that different apparent fields will show you. The inner ring represents a 68° eyepiece, then 82°, 100° and 120°. You see that the area covered by the eyepiece increases dramatically when the apparent field increases.



82° Series TECHNICAL DATA

Focal length	Barrel Diameter	Eye Distance	Elements	Dimensions	Weight	Item Number
4,7 mm	31,7 mm / 1,25"	13,6 mm	7	84,5 mm x 42 mm	220g	0218804
6,7 mm	31,7 mm / 1,25"	15,7 mm	7	88,5 mm x 42 mm	290g	0218806
8,8 mm	31,7 mm / 1,25"	15,6 mm	7	82,5 mm x 47 mm	280g	0218808
11 mm	31,7 mm / 1,25"	15,6 mm	7	87,3 mm x 48 mm	300g	0218811
14 mm	31,7 mm / 1,25"	15,6 mm	7	83 mm x 47 mm	305g	0218814
18 mm	50,8 mm / 2"	13,0 mm	6	82 mm x 55 mm	405g	0218818
24 mm	50,8 mm / 2"	17,5 mm	6	103 mm x 69 mm	870g	0218824
30 mm	50,8 mm / 2"	22,0 mm	6	125 mm x 82 mm	1410g	0218830

68° Series

Through computer-optimized design, a careful selection of optical glasses, and enhanced multi-layer deposition coatings, the Explore Scientific 68° Series eyepieces produce long eye-relief and ensure high image-correction, a flat field, and high contrast across the entire image field.

Gas purging

Explore Scientific eyepieces are gas purged and sealed. This greatly facilitates the cleaning of the eyepieces and also prevents the coated inner surfaces of the eyepiece from fogging and fungus. Unlike telescopes, eyepieces have to be cleaned relatively often. Moisture and grease from the eyelashes will set on the eye lense of the eyepiece and degrade image sharpness and contrast.

Cleaning the eyepiece was a tedious task in the past: dry cleaning often produces scratches, and rinsing with water or cleansing fluid causes fluid to get between the lenses. Sealing the eyepiece and purging it with inert gas prevents all those problems and ensures a long and undeteriored use of the eyepiece.

68° Series TECHNICAL DATA

Focal length	Barrel Diameter	Eye Distance	Elements	Dimensions	Weight	Item Number
16 mm	31,7 mm / 1,25"	11,9 mm	6	63 mm x 44 mm	151g	0218616
20 mm	31,7 mm / 1,25"	15,3 mm	6	71,8 mm x 51 mm	256g	0218620
24 mm	31,7 mm / 1,25"	18,4 mm	6	78,5 mm x 57 mm	370g	0218624
28 mm	50,8 mm / 2"	21,6 mm	6	93,5 mm x 62 mm	515g	0218628
34 mm	50,8 mm / 2"	26,4 mm	6	104,5 mm x 70 mm	1050g	0218634
40 mm	50,8 mm / 2"	31,0 mm	6	117,5 mm x 81 mm	1236g	0218640

OPTICAL TUBE ASSEMBLIES

ED TRIPLET CARBON FIBER SERIES

The three-lens design of the Explores Scientific Carbon Fiber ED-Apochromats provides everything an amateur astronomer desires - at a reasonable price. The construction with Hoya FCD001 ED glass has two air spaces and provides a level of correction so superior to the constructions that are common in this price class, that you will see the difference immediately. The excellent optical performance teams up with a high precision mechanics. Astrophotographers will love this telescope - a optional field flattner is available and makes the telescope perfect even for cameras with a large chip format. Due to the Carbon fiber construction these telescopes are much lighter than their aluminium brothers. Also they reduce the drift of the focus poitn during nights with large thermal changes to practically zero.

ED-152CF Item Number: 0112152

A classic public observatory sized apochromat is now within the reach of amateur budgets. Contrast and sharpness of an apo combined with such a large aperture create breathtaking views.

EDT-127CF Item Number: 0112131

High quality optics team up with relatively large aperture and lightweigt carbon fiber tubing to create a superb mobile planetary telescope.

■ The giant 3" focuser of the 152mm ED-apo accepts the 3" diagonal and the unique 3" 30mm 100° Explore Scientific eyepiece for unmatched wide field views.

EDT-102CF Item Number: 0112105

Breathtaking wide field images with pinpoint stars from edge to edge. This apo is ideal for sweeping the milky way for hidden treasures.

ED-80CF Item Number: 0112083

High performance optics, low weight and high quality come in a very small package with this telescope.
Ideal for traveling.

TECHNICAL DATA

	80 mm ED-Apo	102 mm ED-Apo	127 mm ED-Apo	152 mm ED-Apo
Optical system	3-lens airspaced with Hoya FCD-01 ED glass	3-lens airspaced with Hoya FCD-01 ED glass	3-lens airspaced with Hoya FCD-01 ED glass	3-lens airspaced with Hoya FCD-01 ED glass
Coating	EMD mulitlayer coating	EMD mulitlayer coating	EMD mulitlayer coating	EMD mulitlayer coating
Aperture	80 mm	102 mm	127 mm	152 mm
Focal Length	480 mm	714 mm	952 mm	1216 mm
Focal ratio	F/6	F/7	F/7,5	F/8
Resolution (arcseconds)	1,45	1,14	0,9	0,75
Focuser size	2" with 10:1 reduction	2" with 10:1 reduction	2" with 10:1 reduction	3" with 10:1 reduction
Tube diameter	95 mm	120 mm	140 mm	165 mm
Tube length with dewshield	432 mm	660 mm	990 mm	1320 mm
Weight	2,3kg	3,2kg	6,4kg	9,3kg

Standard accessories: 2" 99% dielectric diagonal, reducer 2"/1,25", 8x50 finderscope (not ED-80), heavy duty flight case

ED TRIPLET ESSENTIAL SERIES

Equipped with the same three-lens design of the Explores Scientific Carbon Fiber ED-Apochromats the Essential Series offers superior optical performance at a very low price. We created those apos as a combination of "non-compromise" optical performance with bare-bone accessories and a aluminium tube to create an inexpensive, yet high performance telescope.

EDT-80Essential Item Number: 0112084

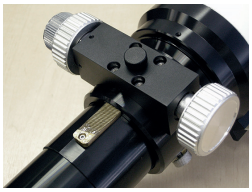
The small size makes this telescope a excellent choice for travelling or imaging wide fields.

EDT-127Essential Item Number: 0112132

High contrast images in combination with a large aperture - a winning combination for a low price.

EDT-102Essential Item Number: 0112106

From the Cassini division to the polar regions on Mars - a lot of planetary details will create breath-taking views in this telescope.



1.	2.
3.	4.

1. Precision rack and pinion focuser with 10:1 reduction facilitates focussing
2. Helical brass gear racks provide smooth and non-slip focussing
3. 2" Diameter is capable for using advanced eyepieces
4. Attachment of optional 8x50 finderscope is already installed - the focus range is capable of focussing most binoviewers

TECHNICAL DATA

	80 mm ED-Apo	102 mm ED-Apo	127 mm ED-Apo
Optical system	3-lens airspaced with Hoya FCD-01 ED glass	3-lens airspaced with Hoya FCD-01 ED glass	3-lens airspaced with Hoya FCD-01 ED glass
Coating	EMD mulitlayer coating	EMD mulitlayer coating	EMD mulitlayer coating
Aperture	80 mm	102 mm	127 mm
Focal Length	480 mm	714 mm	952 mm
Focal ratio	F/6	F/7	F/7,5
Resolution (arcseconds)	1,45	1,14	0,9
Focuser size	2" with 10:1 reduction	2" with 10:1 reduction	2" with 10:1 reduction
Tube diameter	95 mm	120 mm	130 mm
Tube length with dewshield	475 mm	774 mm	1000 mm
Weight	3,4kg	4,4kg	9,9kg

Standard accessories: tube rings with handle and dovetail (not ED-80)

OTHER OPTICAL TUBE ASSEMBLIES

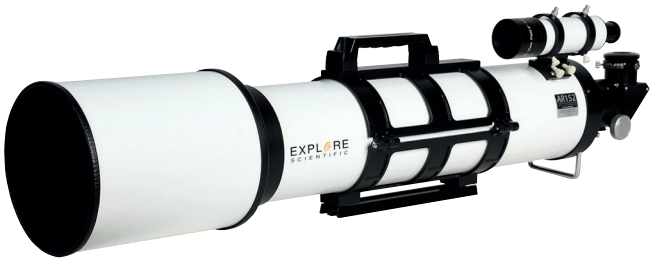
AR DOUBLET SERIES

This series of classical achromatic refractors with short focal lengths is ideal for scanning the sky at low magnification. What sets this series apart from other telescope of similar construction is the quality of the mechanical construction and the accessories: the standard hardware includes a precision two-speed focuser, a 2-inch 99% reflective, dielectric-coated mirror diagonal, and an 8x50 finder scope and the telescope has fully multi-coated optics in a collimatable lens cell. Tube rings with dovetail and handle are also standard with those telescopes.

AR127 Item Number: 0114127

AR102 Item Number: 0114102

AR152 Item Number: 0114152



TECHNICAL DATA

	102 mm Achromat	127 mm Achromat	152 mm Achromat
Optical system	2-lens airspaced classical achromat	2-lens airspaced classical achromat	2-lens airspaced classical achromat
Coating	EMD mulitlayer coatings	EMD mulitlayer coatings	EMD mulitlayer coatings
Aperture	102 mm	127 mm	152 mm
Focal Length	663 mm	825 mm	988 mm
Focal ratio	F/6,5	F/6,5	F/6,5
Resolution (arcseconds)	1,14	0,9	0,77
Focuser size	2" with 10:1 reduction	2" with 10:1 reduction	2" with 10:1 reduction
Tube diameter	110 mm	130 mm	158 mm
Tube length with dewshield	648 mm	863 mm	1041 mm
Weight	4,7kg	6,8kg	10,7kg

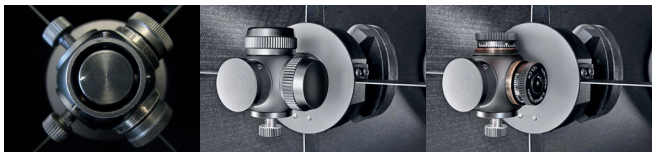
Standard accessories: 8x50 finder scope with bracket, tube rings with handle and dovetail

NEWTONIAN
PN208CF Item Number: 4803860

The new Explore Scientific Carbon Photo Newton enables you to get deeper images in the same exposure time than the usual 8“ f/4 due to its larger mirror and thereby faster f/ratio. The completely new designed „ Click-Fix“ Secondary collimation unit provides optimal collimation even during transportation. The carbon fibre tube material does not only reduce the total weight of the instrument by 1,4kg- it also reduces the drift of the focus point during nights with large thermal changes to practically zero - the system is by all means a temperature compensated astrograph.

NEWTONIAN
PN208AL Item Number: 4803800

The new Explore Scientific Alu Photo Newton enables you to get deeper images in the same exposure time than the usual 8“ f/4 due to its larger mirror and thereby faster f/ratio. The completely new designed „ Click-Fix“ Secondary collimation unit provides optimal collimation even during transportation. A classical aluminium tube construction allows for a very attractive price.



MAKSUTOV-NEWTONIAN
COMET HUNTER Item Number: 4852740

Highly corrected optic for wide-field observation and astrophotography. Developed in collaboration with the famous "comet hunter" David H. Levy. The main advantage of the Maksutov-Newton compared to the classical newton is the sharpness of the field of view. The Maksutov-Newton shows a much sharper star image - for most applications the coma is not visible. This makes the Maksutov-Newton an ideal all-purpose telescope, that is able to show a sharp field without the need for additional correctors.

TECHNICAL DATA

	PN208CF	PN208Alu	Comet Hunter
Optical system	Classical Newton	Classical Newton	Maksutov Newton
Coating	EMD mulitlayer coating	EMD mulitlayer coating	EMD mulitlayer coating
Aperture	208 mm	208 mm	152 mm
Focal Length	812 mm	812 mm	760 mm
Focal ratio	F/3,9	F/3,9	F/5
Resolution (arcseconds)	0,55	0,55	0,77
Focuser size	2" with 10:1 reduction	2" with 10:1 reduction	2" with 10:1 reduction
Tube diameter	240 mm	240 mm	180 mm
Tube length with dewshield	920 mm	920 mm	969 mm
Weight	9,5kg	11kg	7kg

Standard accessories: 8x50 finder scope with bracket, tube rings with handle and dovetail

DOBSONIAN

Despite its large aperture the Explore Scientific Dobsonian can be transported easily even in small cars and are assembled within minutes without tools. The construction was optimized for maximum rigidity with a minimum of mass. The combination of big altitude bearings and an optimized aluminium-sandwich construction allows for small movements even at high magnifications. The focus position is already positioned to accept our coma-corrector. The ideal workhorse for the deep-sky enthusiast.

ULTRA LIGHT DOBSONIAN 406 mm

- Modern tool-free secondary mechanics
- Modern primary mirror cell with front collimation
- Large altitude bearings
- Easy storage: the whole telescope breaks down into only two aluminium cases and the trusses
- Extremely high rigidity construction
- Dew-resistant aluminium construction
- Lightweight: about half of the mass of most press board designs of this price range
- Two large radial fans for fast thermal equilibrium

1.
Rigid mirror box with handle above the center of gravity

2.
Secondary cage fits into the rocker box for transportation

3.
Two large radial fans for cooling

4.
Modern revolutionary secondary unit with rigid tool free collimation

5. and 6.
Trusses and altitude bearings

1.	2.
3.	4.
5.	6.

TECHNICAL DATA

	UL Dob 10"	UL Dob 12"	UL Dob 16"
Aperture	254 mm	304 mm	406 mm
Focal Length	1270 mm	1525 mm	1827 mm
Focal ratio	F/5	F/5	F/4,5
Mirror material	BK7	BK7	BK7
Resolution (arcseconds)	0,5	0,42	0,32
Focuser size	2" with 10:1 reduction	2" with 10:1 reduction	2" with 10:1 reduction
Secondary diameter	68 mm	75 mm	88 mm
Mirror Box	14kg (395x395x300 mm)	18,9kg (450x450x320 mm)	23,8kg (550x550x330 mm)
Rocker Box and secondary cage	9,7kg (330x330x295 mm)	10,0kg (380x380x300 mm)	10,5kg (480x480x300 mm)
Item Number	0116925	0116930	0116940

Standard accessories: Red dot finder, 2" to 1,25" reducer

99% REFLECTIVE DIAGONAL

The Explore Scientific Diagonal Mirrors are precision machined from aluminium and contains carbon fibre parts. The dielectrical coating delivers a 99% reflectance and is very durable against environmental influences.

Explore Scientific Diagonal Mirror 2" 99% The diameter of 2" (50,8mm) is ideal for most modern wide angle eyepieces. A reducer to 1,25" (31,8mm) is included. (Item Number: 0340170)

Explore Scientific Diagonal Mirror 3" 99%
Step into a whole new dimension! This 3" Diagonal accepts the barrier-breaking 30mm 100° eyepiece. Reducers to 2" (50,8mm) and 1,25" (31,8mm) are included.
(Item Number: 0340180)

FLATTENER/REDUCER/COMA CORRECTOR LENS

Explore Scientific MPCC Field Flattener ED APO
The Explore Scientific Multi Purpose Curvature Corrector eliminates field curvature in a variety of telescopes - Explore Scientific Apos and many other refractors and Cassegrain telescopes. This increases the edge sharpness in the image drastically. Available with T2-Canon or Nikon.
(Item Number: 0510320/ 0510321)

Explore Scientific 3" 0,7x Reducer/corrector
Explore Scientific 3“ 0,7x Reducer/ corrector Reduces the focal length by the factor 0,7x. The reducer/corrector not only reduces the focal length but also flattens the field. Although originally developed for the Explore Scientific ED-APOs 127mm and 152mm, the reducer can be used with many systems. Comes with 3" barrel and adaptors for Nikon and Canon DSLRs.
Free aperture 65mm.
(Item Number: 0510360)

Explore Scientific HR Coma Corrector
This corrector is in a class of its own - it is fully functional for visual use and expands the focal length by only 6%! The Explore Scientific Coma Corrector is delivered as a complete set together with a rotating helical focuser with laser-etched scale, so you get a the full package: corrector, adaptor to T2 (M42x0,75mm), M48 (M48x1) and the helical focuser for visual fun. This coma corrector really is „high resolution“ - it delivers a visual poly-strehl performance of 0,98 at f/4 and 0,96 at f/3! So it can stay in the telescope - and you will not only enjoy a tack-sharp Jupiter, but also sharp and defined moons in the future! (Item Number: 0510330)

FINDER

Explore Scientific 8x50 illuminated finder scopes (available in straight-through and right angle versions) produce images that are right-side-up and left-to-right corrected views, which makes it easier to find objects in the sky.

❶ The Explore 8x50 Straight-Through Erect Image Illuminated Finder Scope, with its scale markings and open center, not only helps you center objects precisely, but gives a reference of the exact field of view in degrees. The deep red illumination can be adjusted to just the right brightness. The eyepiece has comfortable eye relief and produces a 6° field of view. (Item Number: 0620150)

❷ Correct-image viewfinder, polar-finder scope reticle with adjustable LED illumination(battery-powered). Separate focuser for eyepiece and reticle. Includes engravings for northern and southern hemisphere. All necessary stars are included, so that polar alignment can be achieved without tedious scale adjustment or calculations. Especially suitable when a TDM is used, or the mount has no polar finder scope included, or one that is very uncomfortable to use.
(Item Number: 0620160)

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