QUESTAR®
The Optical Innovators

Astro Barrel 7"

(#20111)

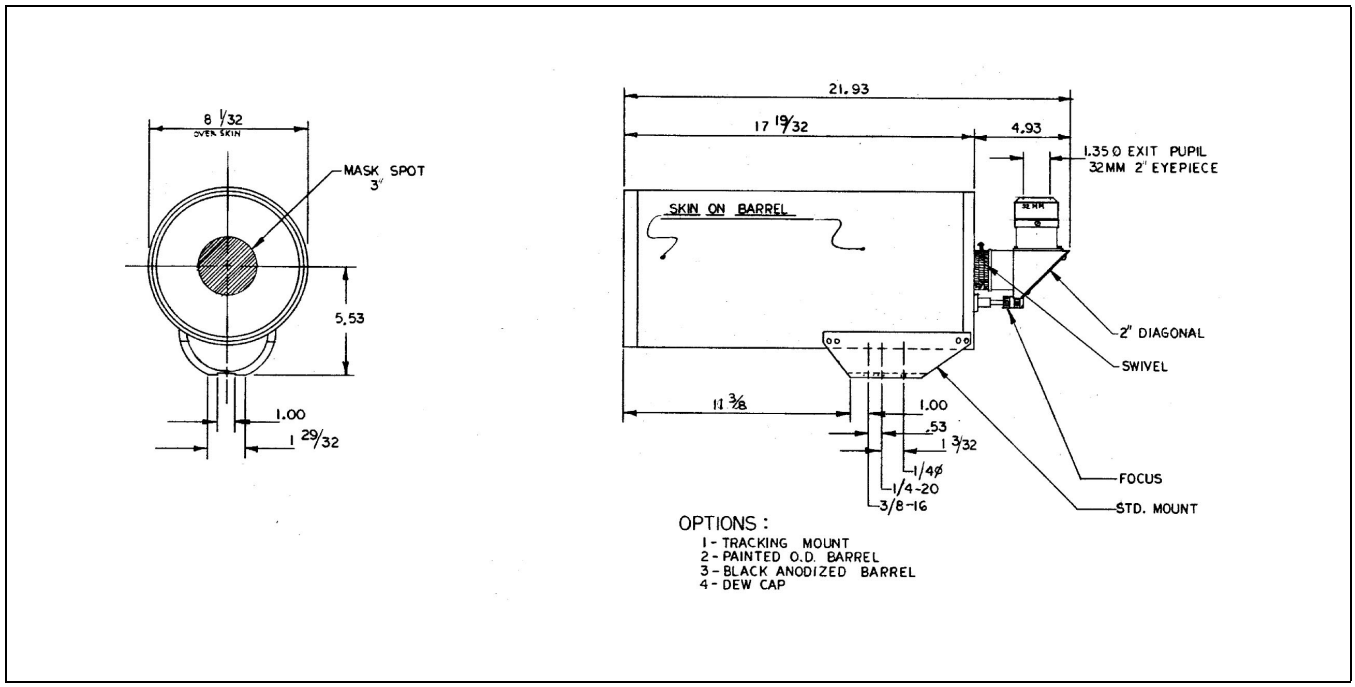
The Astro 7" is based on the acclaimed Questar 7" Maksutov design. The combination of unsurpassed optics with a simple rugged design contribute to making it the idea medium to high magnification lens by changing eyepieces or adding optional auxiliary lenses to change EFL. The system is set up to use 2" slip type eyepieces via the 2" mirror diagonal. The 7" diagonal can be adapted via eyepiece adapter to accept 1 ¼" or the Questar Brandon. The Astro is light, compact, and well-balanced; its configuration makes it perfect for use with eyepieces, video and night vision, and photographic equipment.

WORKING RANGE	18m (60ft.) to infinity
OPTICAL RESOLUTION	.6 arc second
CLEAR APERTURE	178mm (7 inches)
EFFECTIVE FOCAL LENGTH	2400mm
F-NUMBER	13.4 @ 2400mm EFL
SPECTRAL RESPONSE	0.35 – 1.5 micron
DESIGN TYPE	Maksutov Cassegrain Catadioptric
CORRECTOR	BK7/MgF2, 178mm (7 inches) diameter
PRIMARY MIRROR	Pyrex substrate, aluminum coated, SiO overcoat, 193mm (7.6 inches)
SECONDARY MIRROR	Aluminum coating on corrector, SiO overcoat, 47mm (1.87 inches) diameter
BAFFLING	Wire helix in central tube
BARREL	Aluminum heat-treated tube and precision machined with corrector cell
REAR CLOSURE PLATE	Aluminum; machined
CENTRAL TUBE	Centerless ground stainless steel and 6" Ø stainless steel mounting plate
MIRROR MOUNT/ FOCUSING TUBE	Precision linear rotor bearing matched to central tube, integrated with mirror mounting thimble
FOCUS MECHANISM	32-pitch stainless steel focus rod; direct acting on mirror thimble, spring loaded
FOCUS CONTROL	25mm (1-inch) diameter straight knurled anodized aluminum knob
FINISH	Aluminum parts anodized, optional exterior surfaces Polane T polyurethane, white color hardware and fasteners stainless steel.
MOUNTING	Tripod mount with ¼" – 20 & 3/8" – female threads
EYEPIECE MAGNIFICATIONS	(1 ¼ type or thread)

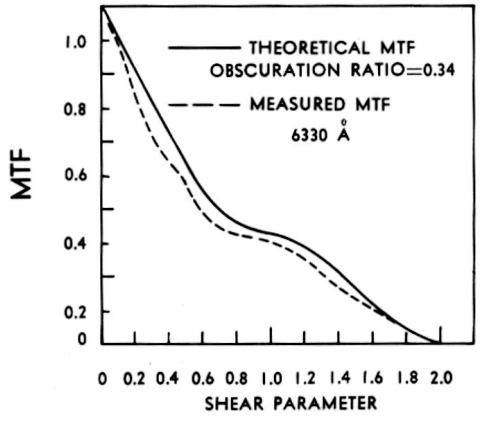
9mm…….266X	18mm ……..133X
12mm ……..200X	24mm ……..100X
16mm ……..150X	32mm ……75X

DIMENSIONS

Length with Diagonal	21.93"
Maximum Height	24.2cm (9.53 inches)
Maximum Diameter	20.4cm (8.03 inches)
Case (outside)	Length ……71cm (28 inches)
	Depth ……..45cm (18 inches)
	Height …….30cm (12 inches)
Weight	Bare Lens with diagonal & eyepiece ……..… 19lbs (8.8kg)
	Lens with diagonal, eyepiece, & dew cap ….. 21obs (9.5kg)
	Standard package complete in case ……47lbs (21.3kg)



TYPICAL MTF FOR QUESTAR SEVEN



Typical Questar Seven Modulation Transfer Function (MTF) as obtained with a shearing interferometer and expressed as a function of the shear parameter, S. To express the MTF as a function of the spatial frequency, R, in lines per millimeter, the following relationship can be used:

$$R = \frac{SD}{2\lambda f}$$

where S = shear parameter, λ wavelength, f = focal length, and D = clear aperture.

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