

ASTRO-PHYSICS

254 mm f/14.5 Mak-Cass - 10" aperture



254 mm f/14.5 Mak-Cas on Mach1GTO Mount

Our new 254 mm f/14.5 Maksutov-Cassegrain generated a lot of excitement when we introduced the prototype at the Northeast Astronomy Forum (NEAF) in April 2017.

Like its predecessor, this telescope was developed for those desiring a no-compromise high-power instrument for a wide variety of visual and imaging needs. It is ideal for lunar/planetary, double star and high-resolution deep-sky observing. As a bonus, it offers so much aperture in a small compact size that fits comfortably on a Mach1GTO. You can't do this with a large refractor.

Long-time followers will recall that we offered a limited number of 10 inch f/14.6 Mak-Cass scopes some 16 years ago. They have become prized instruments to those who own them. Planetary photos are absolutely stunning as this scope provides refractor-like images.

The salient features of the original and current version are small central obstruction for the highest possible contrast in a Cassegrain of this size plus quartz mirror optics for quick cool down during times of falling temperatures.

The optical design follows the original concept of aspheric primary with secondary spot on the inside of the corrector. The simplicity of this 2-element optical system assures no collimation issues - the scope will always retain collimation and cannot be knocked out of alignment because there is no secondary mirror to fuss or adjust. The small 23% central obstruction assures the highest possible planetary contrast at high powers.

This obstruction also acts as a baffle to keep stray light from the sky from falling directly on the eyepiece. For high-power eyepieces, a 23% obstruction is enough to fully shield the field of view from this stray light. When the field of view exceeds about 1 inch diameter, light from the sky can leak past the front baffle and reduce the contrast at the edge of the field. Therefore, for low-power, wide-field viewing with 2" eyepieces we provide a larger secondary baffle that will increase the front baffle size to 32% to block

this stray light in the outer portions of the field. This is needed primarily when sky light-pollution is high and you are using low-power wide-field eyepieces to observe faint deep-sky objects. Under dark skies, there will be no difference in contrast. Note: this secondary baffle threads onto the front of the corrector. The photo does not show the method of attachment on the corrector.

We have redesigned the mechanical and optical parts of this telescope to make it lighter weight and to enhance the performance even in falling temperatures. Weight was reduced two ways: the tube is now carbon fiber and the optics are substantially thinner and lighter weight than the original. The thinner optical components retain much less heat, which allows faster cool down. We are still using fused silica quartz for the mirror and high quality crown glass for the corrector.

Features

- New lightweight carbon fiber tube assembly with machined aluminum covers to close and protect each end of the tube. The rear covers can be removed to allow internal heat to escape out the back for fast cool down.
- Precision focuser system that has no image shift. The internal moving mirror focuser rides on a jeweled mechanism that provides very smooth accurate positioning of the mirror.
- Removable felt-lined dew shield slides onto the front of the corrector and provides stray light baffling as well as trapping warm air from the corrector to prevent dew from forming.
- High-contrast multi-coating technology on the corrector, the same as we have used for our StarFire refractors in recent years, will provide optimum light transmission.
- Our optional CCD Telecompressor (CCDT67) can be used for faster focal ratio imaging with popular CCD cameras.
- The 2 inch field is flat and coma-free for stunning views with any wide-field eyepiece. No flattener is needed for imaging at prime focus for high-resolution images of distant deep-sky objects such as galaxies and globular clusters.

Specifications

Color Correction	Essentially perfect from 706 nm to 430 nm (r to g wavelengths).
Clear aperture	254 mm (10")
Focal length	3683 mm (145.0")
Photographic speed	f/14.5
Theoretical resolution	0.45 arc seconds
Coatings	Multi-layer, broadband, overall transmission greater than 99% in peak visual wavelengths
Magnification range	62x to 927x
Field size	0.78 degrees over 50 mm diameter circle
Tube assembly	White, 11.6" diameter, carbon-fiber tube, flat-black interior, engraved retaining ring. Includes covers and dew shield. Dew shield 11.5" x 12.6" length.
Telescope length	749 mm (29.5")
Focuser type	Internal moving mirror focuser; zero shift; 2.7" visual back with 2" and 1.25" adapters.
Corrector cell	301.6 mm (11.875") OD (solar filter size)
Weight with dust cap	31.1 lb. (14.1 kg); dew shield: 3.6 lb. (1.6 kg)
Mounting Rings	11.5" mounting rings included.
Carrying-case type	Wood case with grey vinyl covering and foam-lined interior.

Photographic Field

35 mm Photographic field at prime-focus 34 x 23 minutes @ f/14.5

astro-physics.com

815-282-1513