



AO-X Adaptive Optics

SBIG designed the AO-X to cover the larger CCD used in the STX-16803 but it works just as well for the rest of the STXL line. It is a new design several years in the making and represents our fourth generation of adaptive optics for amateur astronomers. This design not only increases the aperture available for larger format CCDs, but does so in a thinner design that takes up only about an inch of backfocus. Figure One illustrates the new AO-X.

AO-X Design Yields a Thin Package

The main advantage of this new technique is that it is thin, with a body only 1.05 inches

The light passes through a 10 mm thick plane parallel BK-7 glass plate that is supported on a two axis gimbal mount. The gimbal can be tilted ± 2.4 degrees by the action of four sets of magnets and coils around the periphery of the gimbal. The tilt in each direction produces a deflection of about ± 144 microns in each direction, which is ± 16 pixels using an STX-16803 or STXL-11K. This tilt has no significant focal shift, distortion, rotation, or change in magnification associated with it. The smallest move increment is $1/7^{\text{th}}$ pixel. The window has an anti-reflection coated specified to be less than 1% reflection per surface from 400 to 900 nm wavelength.

Specifications

Dimensions:	6.8 x 6.1 x 1.2in (175x154x30mm)
Weight:	1 pound 15 ounces (880 grams)
Optical Backfocus:	1.051 in (26.7 mm)
Interface:	I ² C in/out

