

Appendix: Tilt Adjustment Introduction

Introduction of Tilt Adjustment

Tilt adjustment is to make the camera sensor square to the whole optical system (optical axis). We hope what follows may help you.

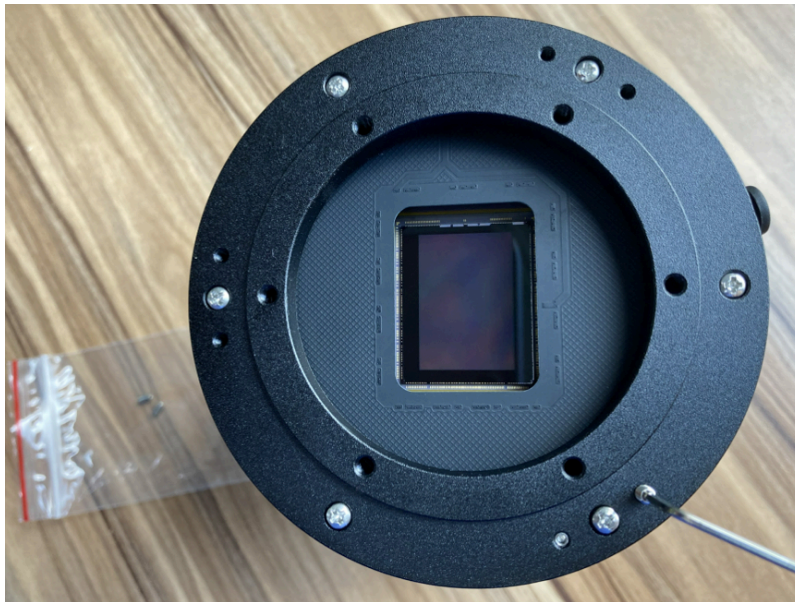
For most amateur-level astrophotographers, Tilt adjustment is very difficult, so it is not recommended for beginners to adjust on their own, including QHY's newly released tilt adjustment adapter, which is only recommended for astronomers with experience in tuning equipment. Fortunately, all QHYCCD cameras have been calibrated by professional high-precision instruments before leaving the factory.

So why the tilt adjustment structure is still retained? This is because not only the focal plane need calibration, the optical axis of the telescope also needs to be accurate. For example, a poorly calibrated optical axis, minor deformations caused by the unstable structure of the scope or by overloaded equipment, the use of adapters of poor quality, can all lead to problems with the entire optical system. We cannot ensure the stability of the whole optical system, so we offer some tilt adjustment methods for our users.

Before tilt adjustment, please make sure that the telescope's optical axis is adequately calibrated. Besides, we recommend that you choose equipment with a higher optical tolerance. we do not recommend telescopes with very small focal ratio. Though they can achieve "fast" capture, whether reflector or refractor, the optical axis calibration for focal ratio below f/4 is difficult.

Several Methods of Tilt Adjustment

1. Adjustment with copper foil (applicable to most equipment): After obtaining the distance and direction of the tilt position of the focal plane, copper foil is placed on the relatively lower part. Usually, the thickness of the copper foil is between 65um and 100um, and it can be adjusted with a maximum precision of 20-30um.
2. Adjustment with screws (Applicable to QHY268/QHY533/QHY600PH-SBFL and other products with the new front end): Loosen the 6 cross screws on the top end of the camera, and install a hexagonal socket bolt at the recessed corner of the focal plane measured by the software to elevate this corner. Then tighten the 6 cross screws and verify again with the focal plane analysis software.



3. Adjustment with QHY tilt adjustment adapter (**additional purchase required**): This adapter can replace the original front end of your camera, while the replacement does not affect the focal length. With a rear adjustment design, even after installing the filter wheel, it can be easily adjusted and is suitable for most astronomers.