



FF90 APO

■ 使用说明书

警告

请勿通过本望远镜直接观测太阳，这样做可能导致瞬间失明，请购买专用太阳观测滤镜或滤膜，来获得最安全的观测指导。

中文版 (简体)

使用产品前请仔细阅读本使用说明书

FF90 APO是一款口径为90mm，焦距为609mm，原生焦比F6.8的天体摄影镜。FF90 APO用途多样，可用作目视观测和天文摄影。

FF90 APO的光学镜头为前三后一的四片式镜片组合，其中包含一片ED玻璃。FF90 APO支持全画幅拍摄。

FF90 APO采用自平面设计，连接成像配件后合焦即可拍摄（合焦最大范围从M54端面算起为93mm）。

FF90 APO本体重量为3.92kg，整体重量为4.52kg（包含抱箍、鸠尾板、提手）。

FF90 APO还标配了一个摄影延长管，内含2英寸滤镜螺纹，后端配有M48*0.75和M54*0.75规格的拍摄接环，方便拍摄连接。

FF90 APO遮光罩为可伸缩设计，进一步缩短整体长度，增加便携性。镜筒整体使用高质量CNC加工工艺，镜筒内部贴有消光绒，消除杂散光能力更强。

FF90 APO提手上设有寻星镜基座槽，同时在调焦器两侧各配有一个寻星镜基座，除了在更换寻星镜位置时无需拆装，还有更多位置来安装其他的天文配件。

FF90 APO配备3英寸齿轮齿条式双速调焦器，有1:10精密调焦，后端配有360度刻度像场旋转器，便于精准的调节角度。

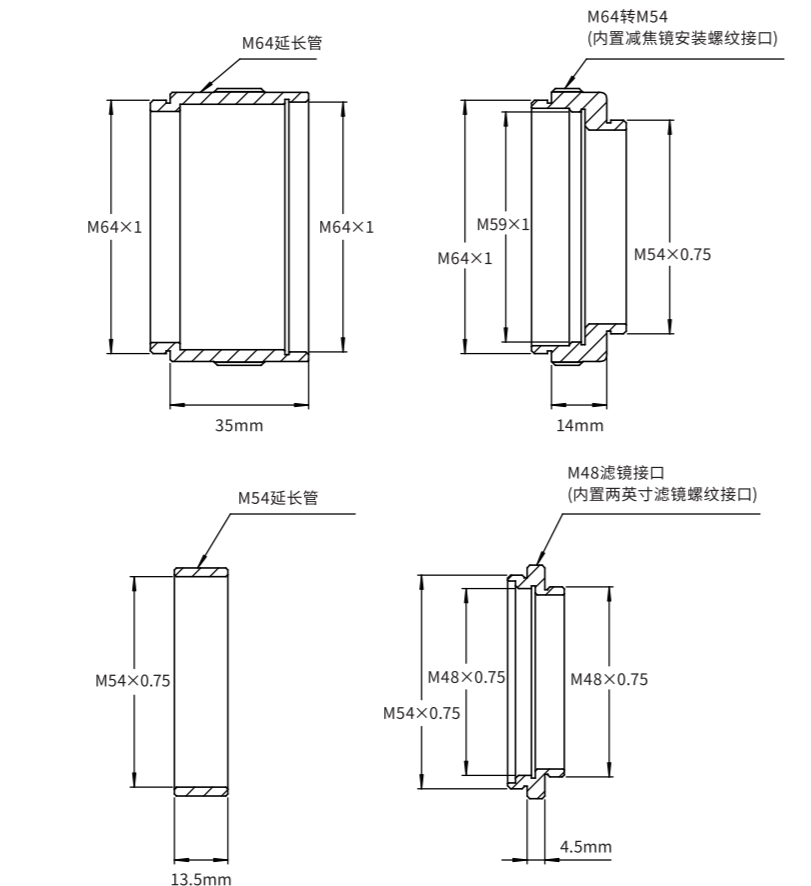
FF90 APO的鸠尾板为230mm标准窄版鸠尾板，鸠尾板上有1/4螺丝孔以及3/8螺丝孔，可以直接连接三脚架使用。

FF90 APO末端接口为2英寸接口和1.25英寸接口，方便连接目视附件。

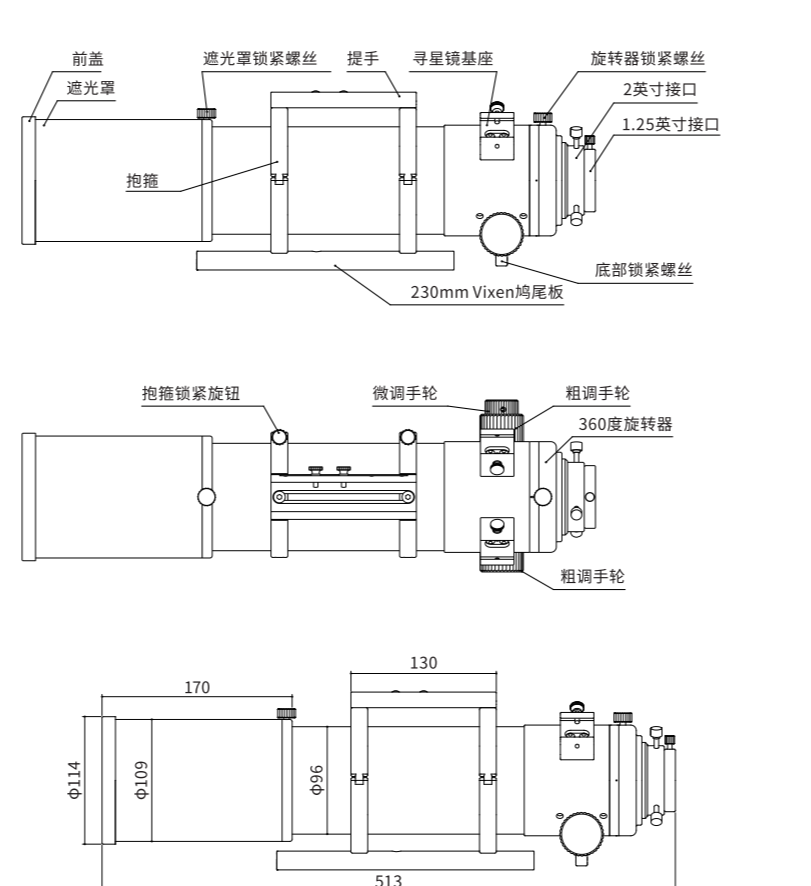
FF90 APO规格:

- 有效口径: 90mm
- 焦距: 609mm
- 焦比: F6.8
- 物镜类型: 四片式全分离APO (包括一片ED玻璃)
- 成像圈: 44mm
- 调焦筒缩进状态下后端最长连接长度: 93mm (从M54×0.75外螺纹算起)
- 拍摄模式: 75mm (从M48×0.75外螺纹算起) 93mm (从M54×0.75外螺纹算起)
- 观测模式: 112mm (从1.25英寸目镜基座算起) 122mm (从2英寸目镜基座算起)
- 全长: 513mm (含1.25英寸接口缩进状态) 599mm (含1.25英寸接口伸长状态) 550mm (加拍摄接口缩进状态) 636mm (加拍摄接口伸长状态)
- OTA重量: 3.92kg
- 总重 (包含提手、抱箍和鸠尾板): 4.52kg
- 末端接口: M64×1-M54×0.75 M54×0.75-M54×0.75 M54×0.75-M48×0.75 (内置M48×0.75 滤镜螺纹)

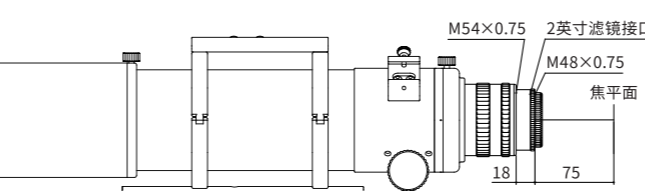
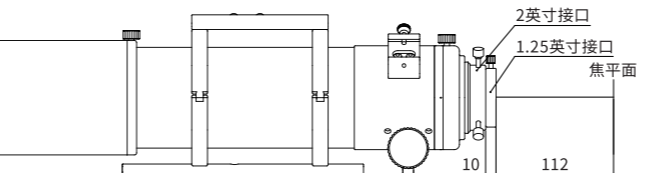
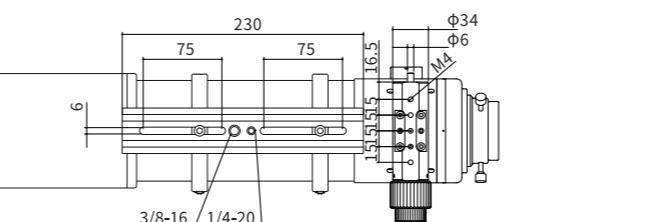
四段式拍摄连接管



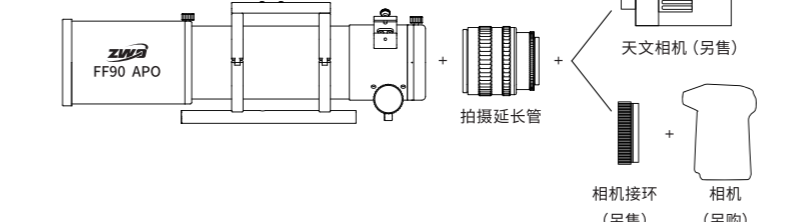
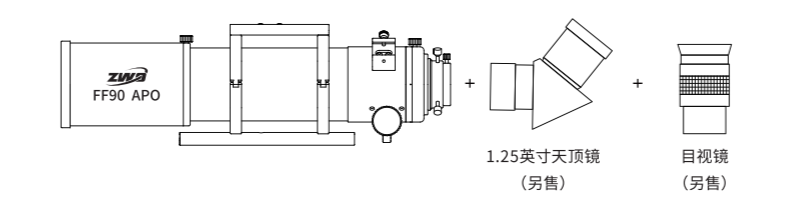
产品尺寸及部件图



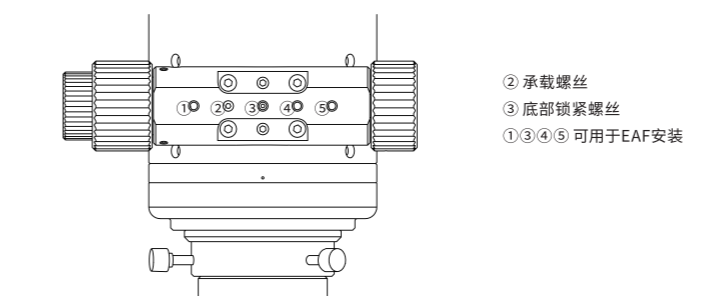
目视模式



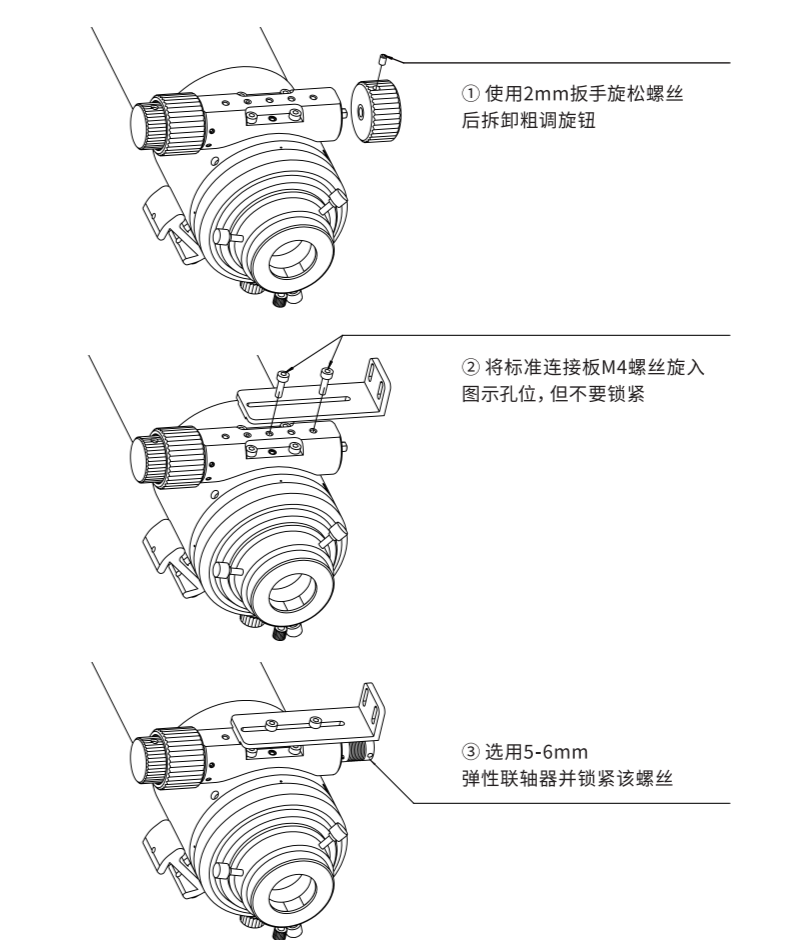
拍摄模式



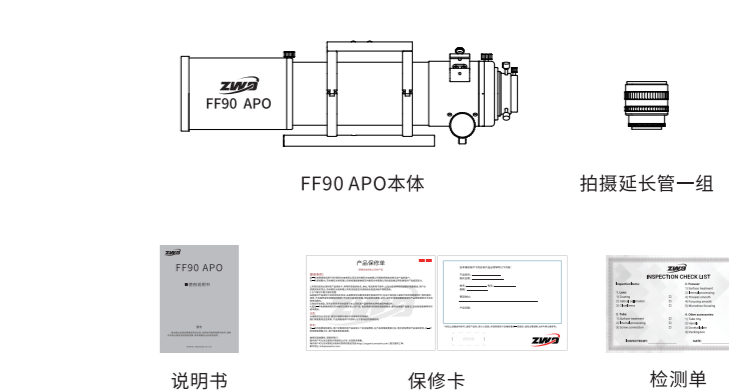
调焦器锁紧螺丝示意图



EAF安装示意图



包装含有





FF90 APO

User Manual

WARNING

DO NOT LOOK AT SUN THROUGH TELESCOPE.
IT WILL CAUSE IRREVERSIBLE DAMAGE TO YOUR EYE.

www.zwoastro.com

English

Please read this user manual carefully before using the product.

The FF90 APO is an OTA with an aperture of 90mm, a focal length of 609mm, and a native focal ratio of F6.8. It is designed for both visual observation and astrophotography.

The FF90 APO features a four-element optical lens design (three elements in the front and one in the rear), including one piece of ED glass, which can effectively reduce chromatic aberration. The FF90 APO supports 44mm full-frame imaging with great performance of the surrounding star points.

The FF90 APO is a self-flattened design that allows to avoid calculating the back focus, after attaching the imaging accessories, users can directly use it for imaging after the OTA is in focus. (The maximum accessory connection from the base of M54×0.75 male thread is 93mm).

The FF90 APO OTA weighs only 3.92kg and the gross weight is 4.52kg (including the tube rings, dovetail plate, handle).

The FF90 APO also comes standard with a photographic extension tube, which includes M48×0.75&M54×0.75 adapters, it also contains a built-in 2-inch filter thread for easy imaging connections.

The FF90 APO features a retractable dew shield, further reducing overall length and enhancing portability. The inside of the tube is pasted with matting felt to better eliminate stray light, while the exterior sports a sleek blue-and-white color scheme with high-quality CNC machining and paint finish.

On the handle bar of FF90 APO, it designs a finder base slot. Besides, there are two finder bases on both sides of the focuser, which not only eliminates the need for disassembling when changing the position of the finder scope but also provides additional mounting positions for other astronomical accessories.

In terms of the focuser, the FF90 APO is equipped with a dual-speed R&P 3-inch rigid focuser, which has a 1:10 fine adjustment and a 360° scale field rotator at the rear end for precise angle adjustment.

Photographic Extension Tube

The FF90 APO's dovetail plate is a 230mm standard Vixen dovetail plate, which slotted 1/4 screw holes as well as 3/8 screw holes for direct tripod attachment.

The rear interface of the FF90 APO includes both 2-inch and 1.25-inch adapters, enabling compatibility with a wide range of observing accessories.

FF90 APO Specifications:

Aperture size: 90mm

Focal length: 609mm

Focal ratio: F6.8

Objective lens: Quadruplet air-spaced APO (including one ED glass)

Image circle: 44mm

Maximum allowable optical path length (from rear thread to sensor, when focuser is fully racked in)

Imaging mode:

75mm (from the base of M48×0.75 male thread)

93mm (from the base of M54×0.75 male thread)

Visual Mode:

112mm (from the end of 1.25" eyepiece holder)

122mm (from the end of 2" eyepiece holder)

Total length:

513mm (including 1.25" adapter as dew shield contracted)

599mm (including 1.25" adapter as dew shield fully stretched)

550mm (including the photographic extension tube as dew shield contracted)

636mm (including the photographic extension tube as dew shield fully stretched)

Net weight: 3.92kg

Gross weight (Including tube ring&dovetail plate) : 4.52kg

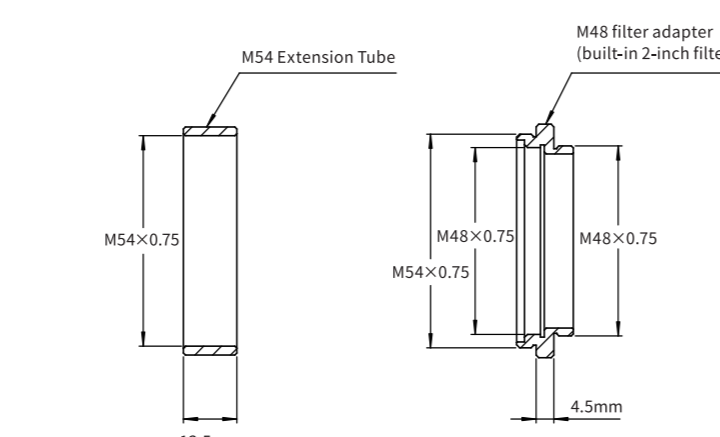
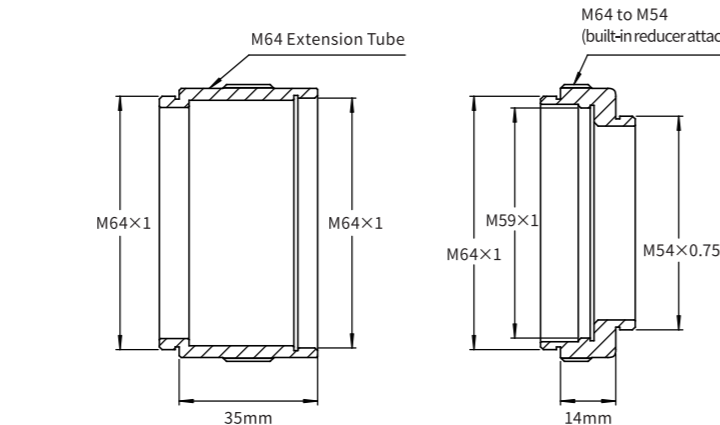
Rear-end thread type:

M64×1-M54×0.75

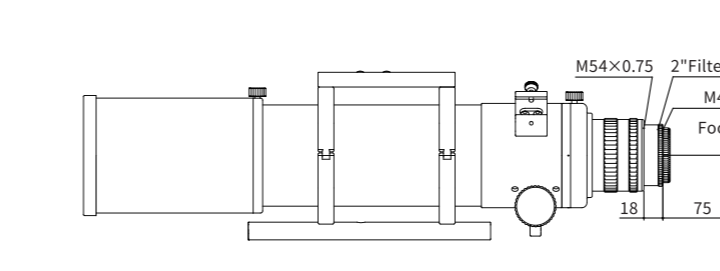
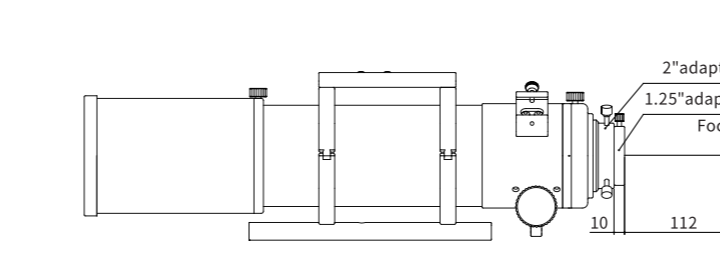
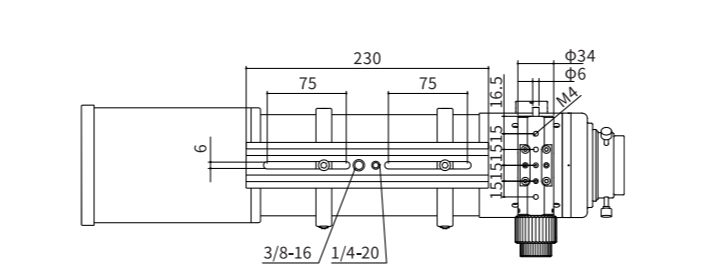
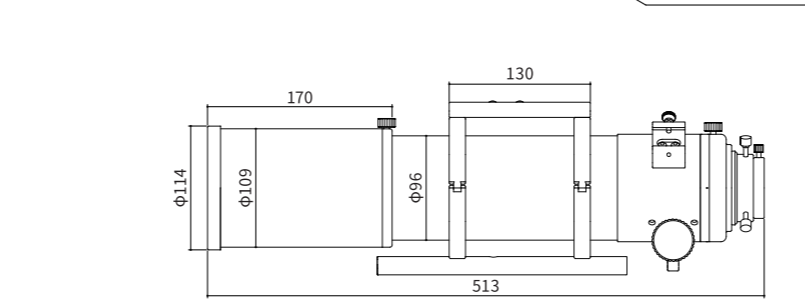
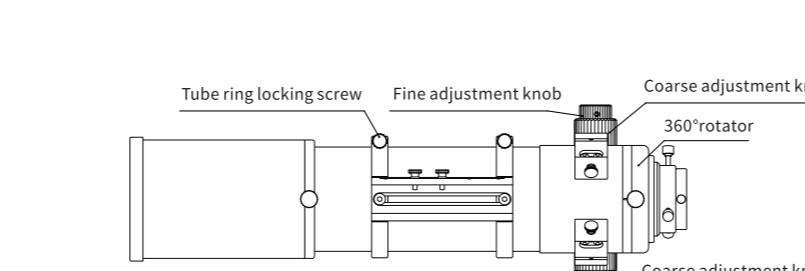
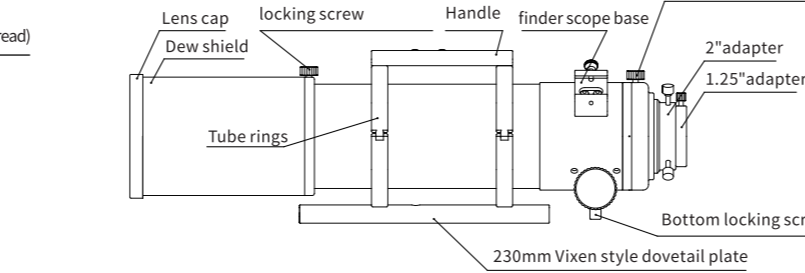
M54×0.75-M54×0.75

M54×0.75-M48×0.75 (includes built-in M48×0.75 filter thread)

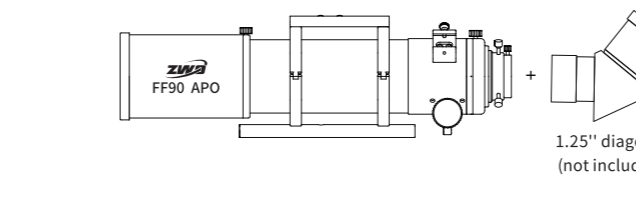
Product Overview and Dimensional Diagram



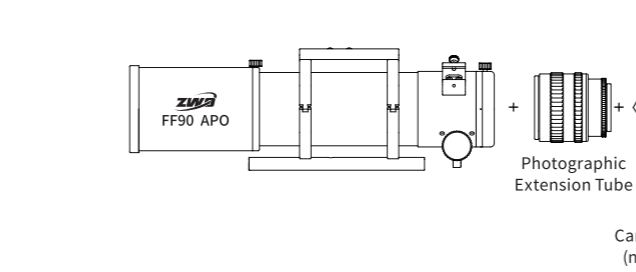
Product Overview and Dimensional Diagram



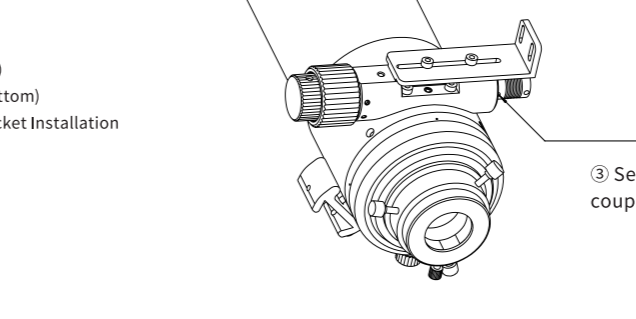
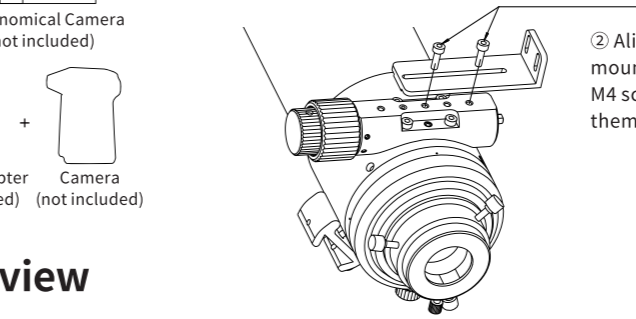
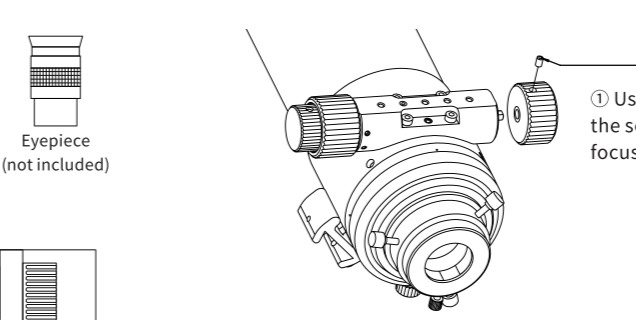
Observing mode



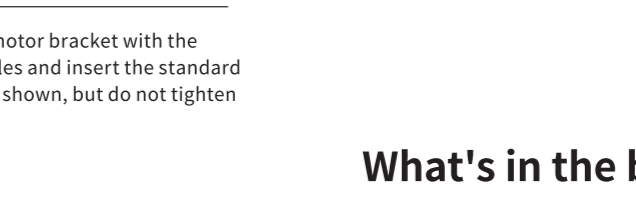
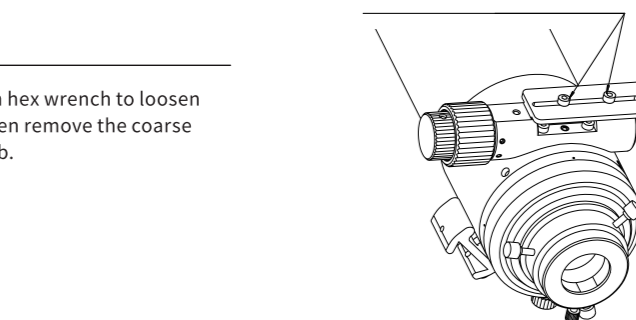
Imaging mode



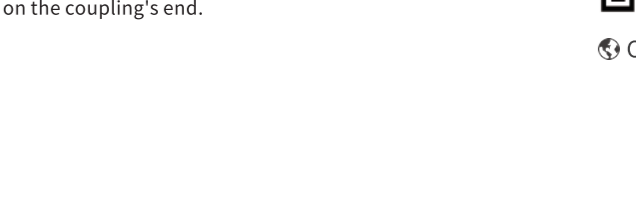
EAF Installation Steps



What's in the box



Observing mode



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