Instructions APM 2“ Herschel wedge

- Please read these instructions carefully before use. Observing the sun can be dangerous. If you do not follow the operating instructions, this can lead to danger and lifelong blindness
- Please keep these instructions for future reference;
- Minors must be supervised by experienced adults.

Product introduction

A Herschel wedge, also known as a Herschel prism or solar prism, is a special optical accessory used in astronomy for observing the sun in white light. It is a prism that is adapted to a telescope in order to safely observe the sun.

How it works

A Herschel wedge splits the incident sunlight into two beams. Around 95 % of the light is deflected outwards by the prism and thus removed from the optical light path of the telescope. Only about 5 % of the light is channelled through the prism to the eyepiece. This reduction in the amount of light makes observing the sun safer, as the observer's eye is protected from the extreme brightness and harmful UV and infrared rays of the sun. The integrated ND3 and polarising filter in the APM Herschel wedge further reduces the

brightness so that the eye is not endangered. Alternatively, a Solarcontinum filter can be used instead of the polarising filter, which makes the image somewhat calmer but also greenish.

Use and safety

When using the APM Herschel wedge, it is important to always ensure that the integrated ND3 filter is not damaged or has been removed.

VISUAL OBSERVATION

Please do not remove the ND3 density filter (1:1000) and the polarising filter (or Solar-Continum filter) of the Herschel wedge from the light path. These filters are screwed into the Herschel wedge and are an essential part of the system. Make sure that the filters are not damaged before using the prism. After connecting the eyepiece to the telescope without using it visually, please aim at the sun and use white paper to preliminarily determine whether light is escaping from the eyepiece. If light leakage (e.g. a blinding light spot) is detected, stop using the telescope immediately and contact us for maintenance. If the light leaking from the eyepiece is not too bright, you can start observing.

PHOTOGRAPHIC OBSERVATION

In general, we recommend the use of astronomical cameras. If conditions allow, a higher frame rate is better to minimise seeing errors. If you are using an SLR camera, you can also use our photo adapter ring. To do this, you must remove the 2’ eyepiece adapter in order to connect the photo adapter ring to the camera. If you are using an astronomical camera or a CCD camera with cooling, you can usually also connect the camera directly to the Herschel wedge. If in doubt, please contact our service department. We offer various adaptation options for a wide range of camera systems.

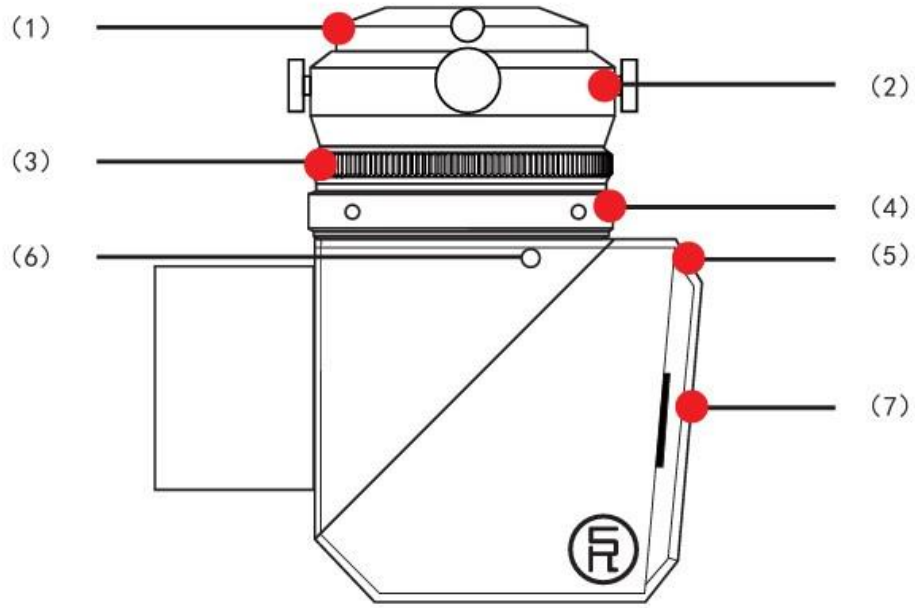
COOLING SYSTEM

The Herschel wedge has holes in its interior for heat dissipation, which prevent the Herschel wedge from overheating over a longer observation period. For safety reasons, it is not advisable to touch the heat dissipation during operation of the Herschel wedge to avoid burns.

OTHER INSTRUCTIONS

The Herschel Wedge does not require any special maintenance, but must be protected from moisture to prevent mould growth on the reflector and filter.

Schematic structure of the APM Herschel wedge



1) 2“ adapter to 1.25’

2) 2“ connection adapter

3) SLR camera adapter ring

4) CAA Image Field Rotator

5) Heat dissipation device

6) Directional locking screw

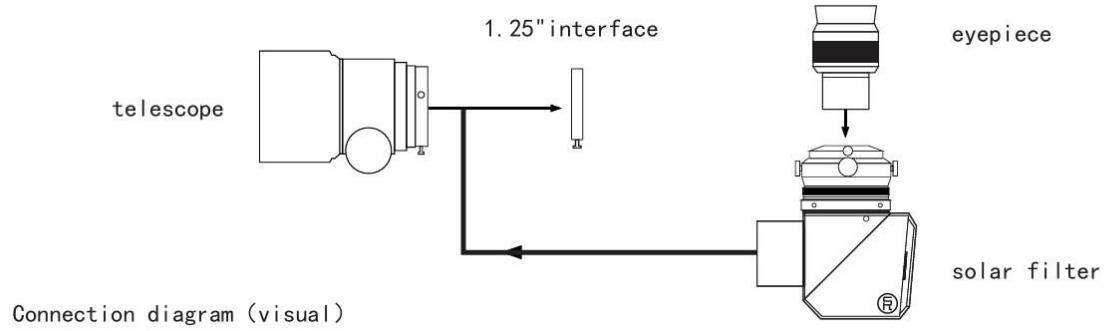
7) Projection surface for solar images

Application

The use of a Herschel wedge is only suitable for refractors, oblique mirror telescopes and similar systems. It must not be used on reflector telescopes such as Schmidt Cassegrain or Maksutov Cassegrain or Cassegrain general.

Adjusting brightness

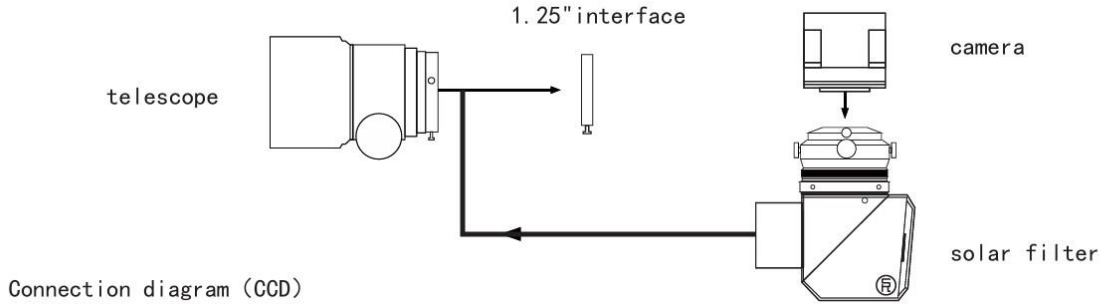
The brightness of the solar images can change under different atmospheric conditions and at different times. To adjust the brightness, the eyepiece holder must be rotated. This is done using the integrated polarising filter until the brightness is comfortable for the user. Clockwise rotation is recommended. The locking screw next to the rotary knob can be used to prevent the brightness from changing during recording.



Connection diagram (visual)

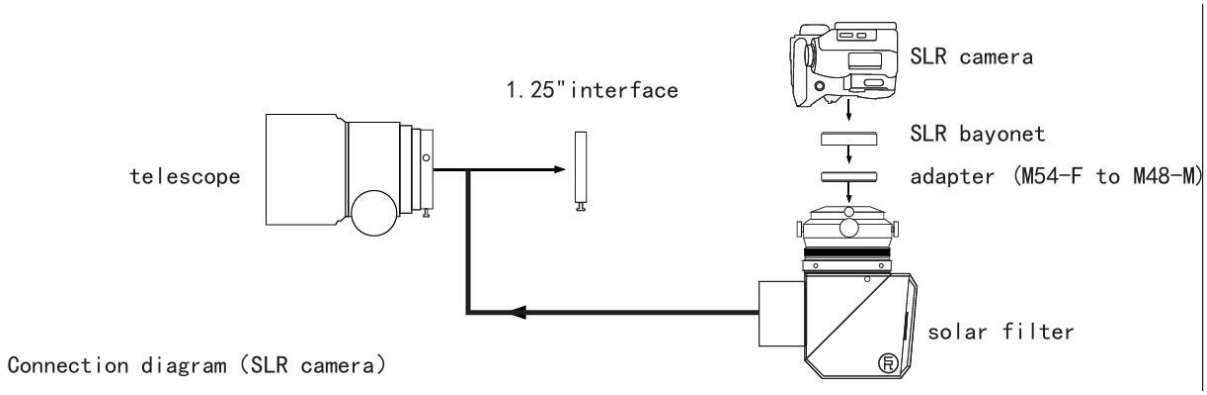
Solar photography

If you are using a camera with a diameter of 1.25 inches, such as the QHY5 III or the ZWO MINI or similar camera, you can insert it into the eyepiece holder and photograph directly without additional accessories (with the enclosed adapter from 2 inches to 1.25 inches).



Connection diagram (CCD)

To connect the SLR camera, unscrew the 1.25’ adapter under the eyepiece holder, mount the adapter ring (M54-F to M48-M) and then connect the camera bayonet.



Connection diagram (SLR camera)