# Widefield Imaging (Camera Lenses and CCD Cameras)

CAA 8<sup>th</sup> June 2016 by Daniel Coe

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### Widefield Imaging Setup

Camera Lens + Adaptor + CCD Camera or Webcam





Geoptik CCD to Lens Adaptor - Nikon or Canon (£79)





Gerd Neumann Filter Drawer Adaptor (£various)





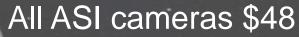


ZWO Optical - ASI T2 to Canon EOS Adaptor

For ASI cooled cameras \$38



2" Filters only









Teleskop Service Germany (63 Euros + P&P)

Only good for colour CCD cameras, as it has no filter mounting.



#### Backfocus

Important to set backfocus correctly in order to achieve focus

- The Canon DSLR back focus measurement is 44/45mm
- My Atik 460 backfocus is 13mm (ASI120 is 12.5mm)
- Geoptik depth is 19mm

So the calculation to work out what mm spacing I would need to get the lens to focus is:

Canon 45mm – Atik 13mm – Geoptik 19mm = 13mm

It's important to get an extension ring that is slightly shorter than the required 13mm in this example. So in my case I use a 10mm T thread spacer ring to achieve focus.

#### **Filters**

The Geoptik adaptor will take a single 1.25" and 2" filter

If you use a mono CCD camera you will need to manually change the Red, Green and Blue filters to get a colour image (not enough backfocus for a filter wheel).

The Geoptik adaptor is better suited to a colour CCD camera or webcam.

But with a mono CCD camera you can use narrowband filters like a Ha filter to create mono images or just an UV/IR or Luminance filter.

#### Focusing

No auto focus - so manually focusing can be hard work You could focus in the daytime on DSLR and then remove lens Set lens f/ number on camera then remove it

TeleFokus from Teleskop Service Germany (70 Euros + P&P)





They come in three sizes 75, 105 and 135mm diameters

#### Focusing



TeleFokus consists of two rings joined together.

One ring is tightly connected to a non moving part of the lens, whilst the other is fixed to the moving part of the lens (focus ring).

You then use the larger focus knobs to finely focus the lens.

#### IC1805 - Heart and Soul Nebula



Canon 70-300mm Lens

Set to 100mm @ f/6

10 x 600 secs

Ha Filter

Unbinned

#### IC1805 - Heart and Soul Nebula



80mm Refractor

Using 0.8x reducer

### IC1805 - Heart and Soul Nebula



80mm Refractor

Using 0.67x reducer

## IC405 - Flaming Star Nebula



Canon 70-300mm Lens

Set to 200mm @ f/7.1

20 x 300 secs

Binned 2x2

#### Orion Nebula and Horsehead Nebula

Canon 70-300mm Lens

Set to 100mm @ f/6

15 x 300 secs

Unbinned

# The End

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