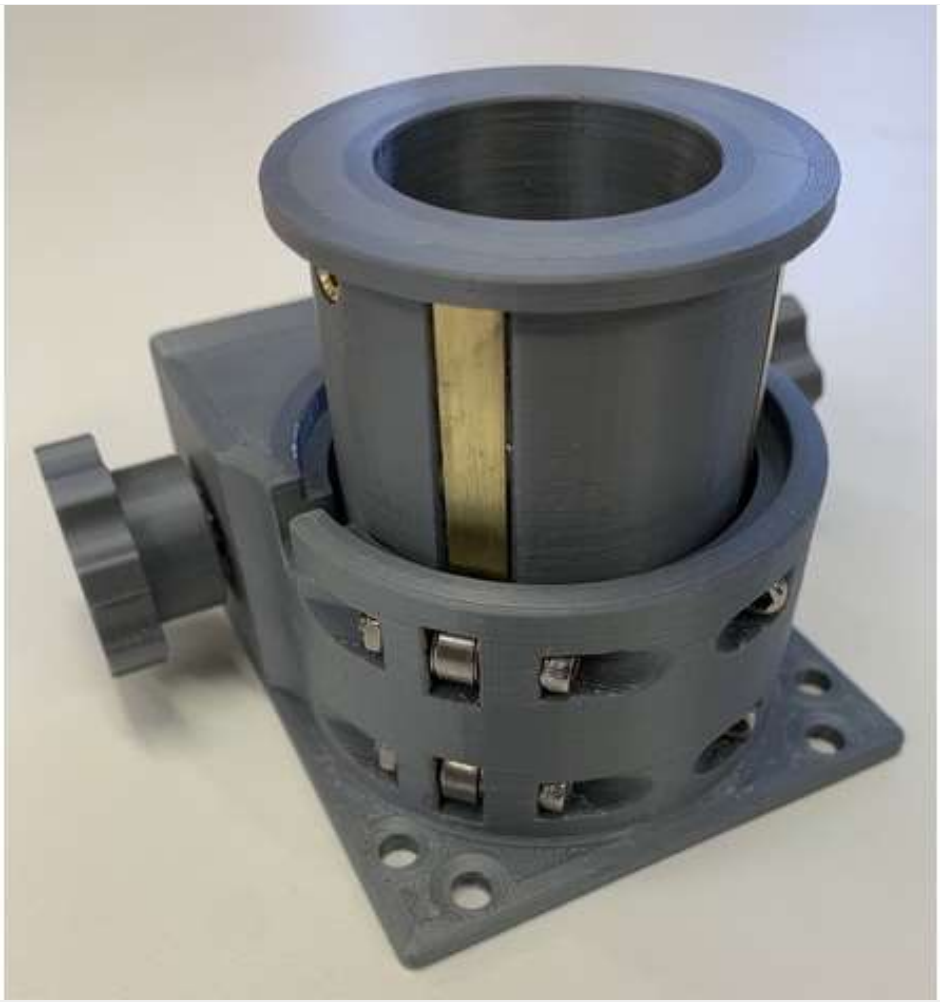
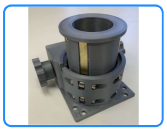
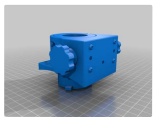
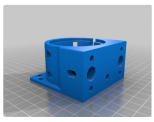
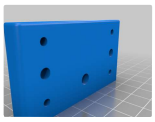
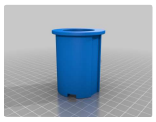
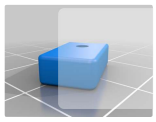
Crayford Focuser 1 1/4 inch

by scbeme December 17, 2021





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Summary

1 1/4" Crayford Focuser

Here's my affordable, light-weight 1 1/4" focuser I designed for my 8" Newtonian reflector. Use 'as is' or customize to meet your requirements. Mine works great!

Minimum racked-in height = 40mm
Maximum racked-out height = 70mm
Drawtube travel = 30mm
Maximum drawtube extension below base = 23mm
Weight = 200g
3D print material = PLA
Curved base for 10.25 inch OD tube
Mounting holes: 48mm x 63mm
Base dimensions: 68mm x 77mm

Additional details available at:
https://leisurenotes.com/?page_id=5

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Print Settings

Printer brand:

Prusa

Printer:

I3 MK3S

Supports:
No

Resolution:
0.2

Infill:

Filament color:

silver

Filament material:

PLA

Notes:

Here are the 3D printer settings I used:

Printer: Prusa MK3S+
Slicer app: PrusaSlicer
Filament: Prusament PLA
Nozzle temperature: 215
Bed temperature: 60
Layer height: 0.20mm
Supports:
Drawtube — none
Printed with top end on platter
Base — everywhere
Note: Rookie mistake here regarding support material. I had support material everywhere. In hindsight, I suspect the base can be printed with very little support material. The most likely spots are the two pinion rod pressure rods.
Printed with focuser base on printer platter
Perimeters: 6
Solid layers (top and bottom): 8
Minimum shell thickness (top and bottom): 0.7mm

So you now have the settings that worked for me. Again, I'm a novice using my 3D printer and I suspect some of my perimeter and layer settings might be overkill.

Also please make sure you compare your printer tolerances with my mine. The inside hole diameters printed using my printer average 0.2mm smaller than the CAD diameter setting. So my 3D models have holes that are intentionally 0.2mm diameter larger so the final, printed hole sizes will be very close to the required size. For example, if I need a 3mm hole diameter for a M3 screw, my 3D model will have a 3.2mm diameter hole.

How I Designed This

Design Tool: MoI3D CAD program

Education

documentation.

https://www.thingiverse.com/thing:4424419

This 2" focuser design plus several others were studied before I started creating my original design. If you're interested in making your own, I have additional details and CAD file formats available at:

https://leisurenotes.com/?page_id=580

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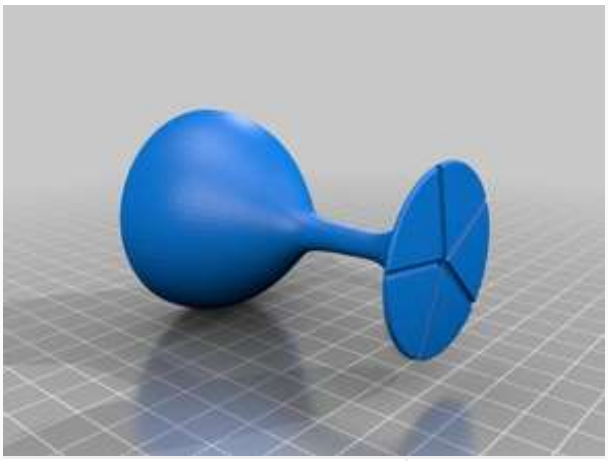

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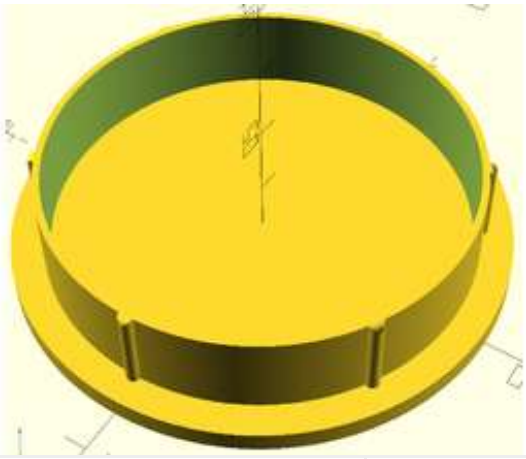

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Star Projector Dec 30, 2022

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