

# Pyxis 2" rotator with Hutech OAG5 Off-Axis Guider for Connection to SCT with Minimum Backfocus

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Want minimum overall backfocus

Want direct coupling with no overhang collisions

Need connection to Atik EFW2 with 54mm thread

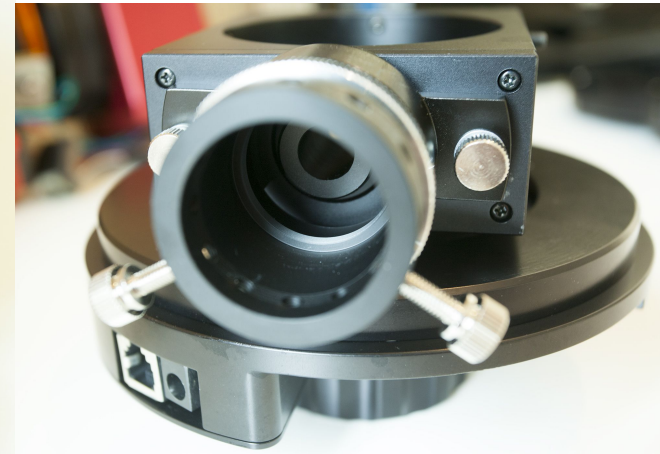
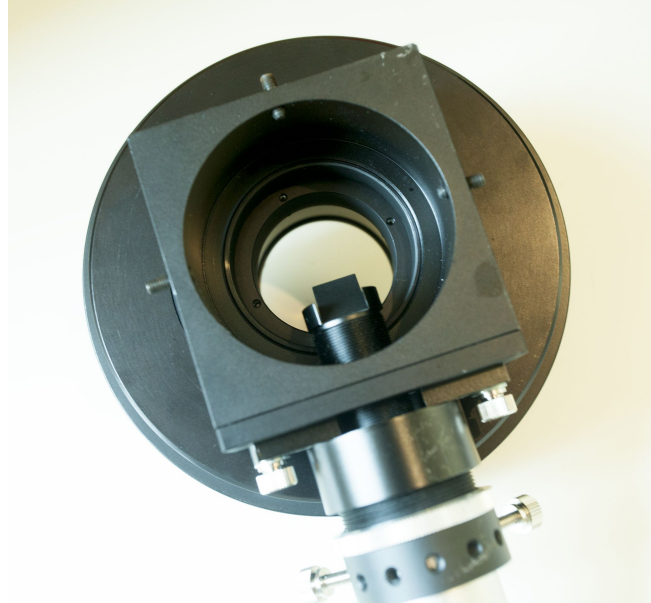
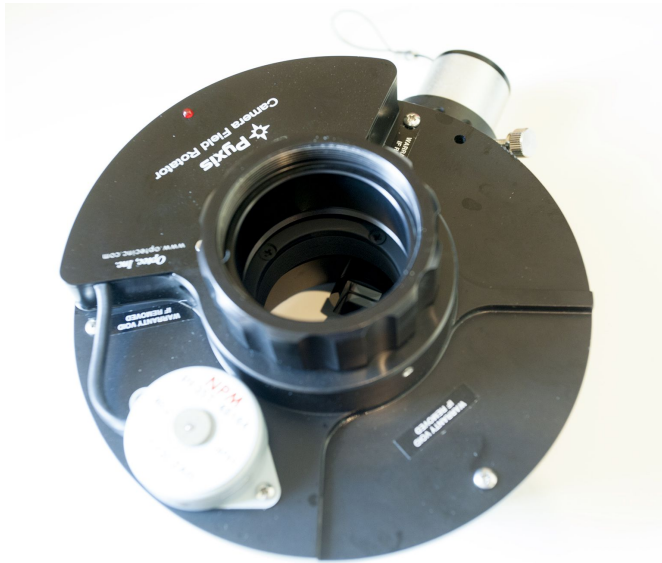
Worked with Optec and Hutech to find solution  
using custom parts from Precise Parts

OAG is used in reverse orientation

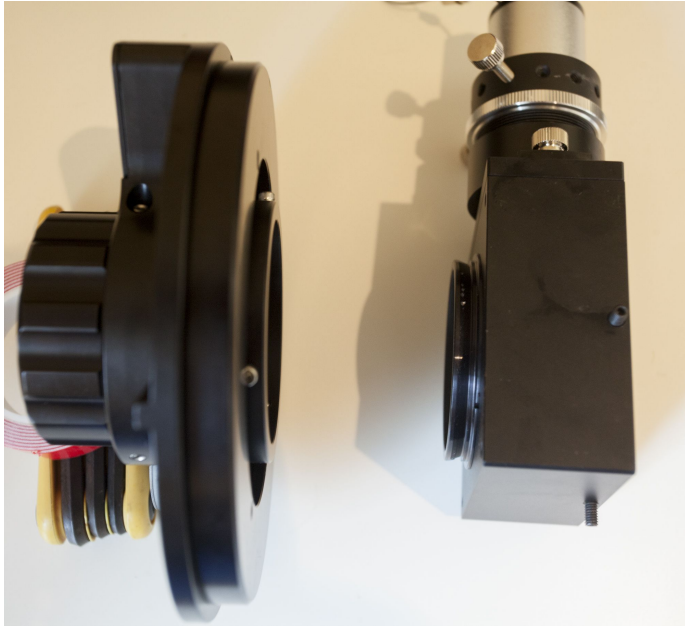
# Final setup with sct connector, OAG5 and EFW2



# Key components



Pyxis SCT connection has interior lip that mates with flange approximately 9mm inside. OAG guide port is narrower deep inside, so guide camera cannot slide in very deeply. OAG is used in reverse orientation from normal, for better connectivity on each side. Pyxis connects directly to SCT port instead of the standard 2" adapter.



Left: Side view showing OAG connection to Pyxis

Right: View of normal T-thread adapter connecting to camera side of (reversed) OAG

Note that there is a very slight overhang of the guide port. It does not clash with the EFW2, but it might with something large.

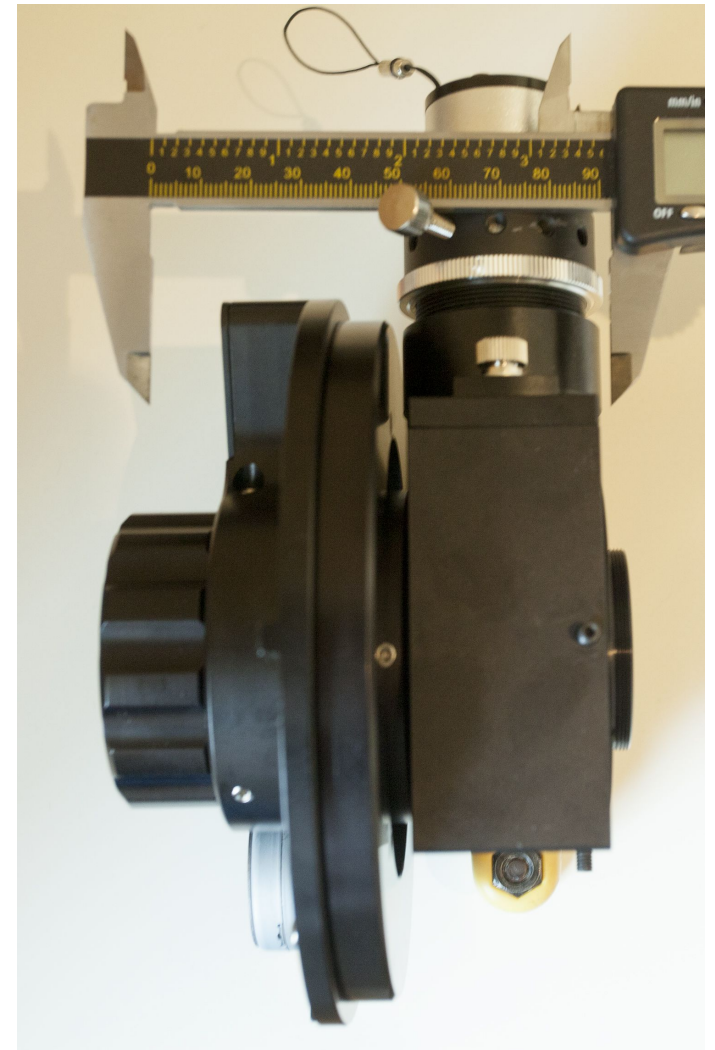
Also, the OAG port slides left and right a bit, to allow adjustment. This is intended to help with selecting a guidestar, but in this configuration there is not much movement.

Total backfocus depth is about 91mm from the rear surface of the sct flange to the t-thread flange.

This is not from the front of the Pyxis sct adapter on the right, but from the interior lip of the adapter that goes flush against the sct flange.

The Atik EFW2 adds 22mm and the Atik CCD adds another 17mm for a total of about 130mm.

This is a good match with the 133mm backfocus of the Celestron EdgeHD 8, and much less than the 146mm of the larger EdgeHD's with and without the 0.7x reducer. But it is longer than the 105mm of the Edge 8 reducer.



# Parts Required

- 117645 Pyxis 2-inch Camera Field Rotator (Please substitute 17639 in place of the 17646 in the kit)
- 90000 Optec Pyxis 2 inch Field Rotator to Borg-Mitsuboshi OAG 5 -REVERSED, L=0.039 in
- 90000 Borg-Mitsuboshi OAG 5 - REVERSED to Atik EFW2 FilterWheel, L=0.051 in
- 90000 Custom adapter, Borg-Mitsuboshi OAG 5 - REVERSED to Generic T-Thread Device, L=0.051 in

First item is the Pyxis itself with SCT adapter

Second is custom adapter to connect Pyxis to the reversed OAG5

Third is custom adapter to connect reversed OAG5 to 54mm EFW2 port

Fourth is additional adapter to allow connection of the OAG5 to a generic t-thread instead of the EFW2

# Final Notes

- The system works very well on EdgeHD 8 with qhy5l-ii
- The Pyxis software works either standalone or with MaximDL and TheSky
- With video on the OAG you can smoothly rotate around and see the guidestar appear in view – either with the Pyxis software or by rotating the Field of View Indicator in MaximDL or TheSky
- I had to remove the cover slip of the qhy to allow it to go deep enough in the guide port to achieve focus, in order to avoid adding a spacer on the imaging side
- The helical focuser adds too much length, but focusing manually at f/10 is easy to do, particularly with video
- The dovetail connection to the OAG on the imaging side is a bit short and does not have much to grab on to. Precise Parts should make the dovetail longer and/or a better fit with the OAG5, but this does work
- My thanks to the people at Optec and Hutech for providing valuable assistance in this project