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PHD2 Guiding

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updated Oct 3, 2018 by P Gabor & C Johnson

All of the required software is currently installed on the vattcontrol server; login as vattobs.

The legacy *VATT Guider App*only controls the stepper motors in the guide box.* Guiding is done with *PHD2*!

(*) When using VATT4k and GUFI, these motors move the two filter wheels for the science camera, the guider camera's filter wheel, the guider camera's 3-axis translation stage, and the stage carrying the center mirror and the U mirror.

• Start indiserver:

- click the indiserver icon on the desktop
- (a terminal window should appear)

Start phd2 guiding:

- click the PHD2 icon on the desktop
- (the PHD2 application should appear)

Configure phd2:

- 1. in the Main tool bar, click icon that looks like a usb male connector
 - (connect equipment window should appear)
- 2. in connect equipment window verify the following settings:
 - equipment profile "vatt imagers" or "vatt spec" depending on your instrument (the imagers are 4k CCD and GUFI),
- 3. in connect equipment window, in the camera row, click on the icon that looks like a screwdriver and wrench in an "X"
 - (INDI Configuration window should appear)
- 4. in INDI Configuration window click the INDI button near the bottom of the window
 - (INDI options window should appear)
- 5. select the Apogee CCD tab
- 6. verify the following settings:
 - in the network section:
 - offset guider (used with imagers) ip:port : 10.0.3.14:2571; slit plate guider (used with VATTspec): 10.0.3.12:2571

- 7. click the connect button in the Connection field
 - (after a few seconds, a bunch of new fields and tabs should appear)
 - (The message "[ERROR] Model is not supported by the INDI Apogee driver" may mean that the camera is not powered up.)
- 8. near the bottom of the window, turn on the cooler
- 9. IF YOU ARE GOING TO BE AUTOGUIDING:
 - click on the "VATT-GUIDE-INDI" TAB
 - click "Connect"
 - (a UT clock should appear and begin incrementing.)
- 10. exit the INDI options window
- 11. click OK in the INDI Configuration window
- 12. click Connect in the Connect Equipment window, in the camera section
 - (the button should now say Disconnect)
- 13. IF YOU ARE GOING TO BE AUTOGUIDING:
 - click Connect in the Connect Equipment window, in the mount section
 - (the button should now say Disconnect)
- 14. click Close in the Connect Equipment window
- 15. (OPTIONAL) Set up automatic frame capture:
 - Select the Global tab,
 - check Enable diagnostic image logging, then
 - in the group Save Guider Images check Until this count is reached, and
 - set the value (100 is the maximum).
 - the files are stored on the vattcontrol server
 - The Dark Library is located in the directory /home/vattobs/.phd2/.
 - The directory /home/vattobs/PHD2/PHD2 CameraFrames... is automatically created for the session.
 - If you need to capture more than 100 images, make a renamed copy of the session directory; new fits files should start populating the original sesson directory.

Move U-Mirror

1. Use the Secondary App to move the Guide Camera stage so that it is on the U-Mirror.

Start Imaging:

- 1. in the bottom left of the PHD2 window there is a button with 2 arrows forming a circle. Click that button.
- 2. the button should gray out, the stop sign button should turn red, and images should start appearing

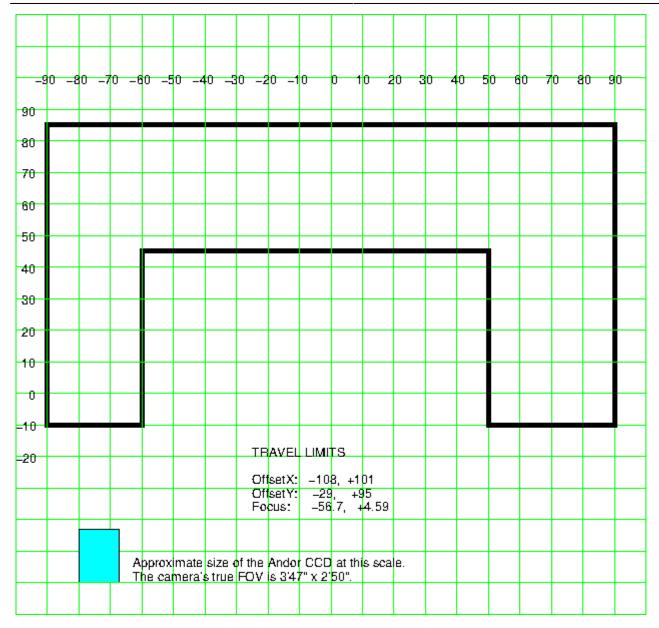
• Start Guiding:

- 1. change the exposure time setting and contrast slider to find an appropriate guide star.
- 2. Click on the guide star
- 3. click on the circular icon i the tool bar that looks like a target

Offset Guider Stage

Note: All numbers are GUI units. The travel limits are accurate but the diagram is only an approximation.

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