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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*!

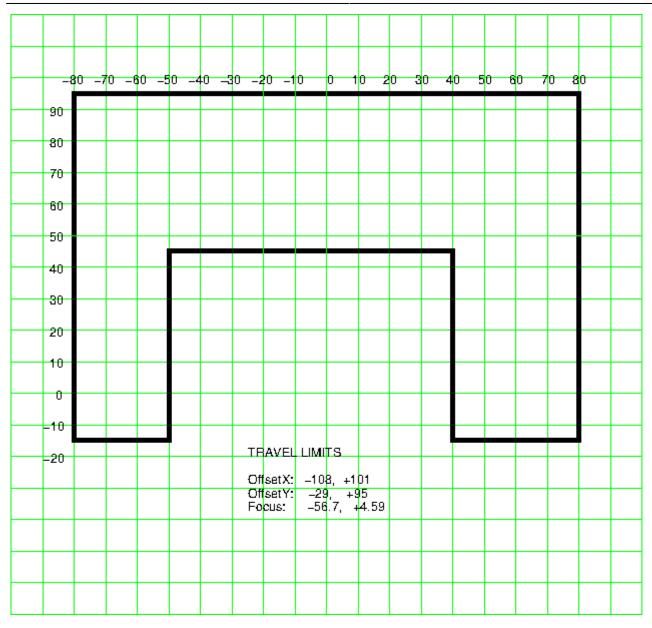
- (\*) When using VATT4k and GUFI, these motors move the two filter wheels for the science camera, the guider camera's filter wheel, the guider camera's 3-axis translation stage, and the stage carrying the center mirror and the U mirror.
  - start indiserver
    - click the indiserver icon on the desktop
    - (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.)
- 8. near the bottom of the window, turn on the cooler
- 9. IF YOU ARE GOING TO BE AUTOGUIDING:
  - click on the "INDI-VATT-GUIDE" 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,
  - 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.
- 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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