

# PHD2 Guiding

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**updated Oct 3, 2018 by P Gabor**

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 GUF1, 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 and correct drivers
  - 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 usb male connector
    - (connect equipment window should appear)
  2. in connect equipment window:
    - select camera type "INDI Camera",
    - select mount type "INDI Mount",
    - select aux type "None"
  3. in connect equipment window, in the camera row, click on the icon that looks like screwdriver and wrench in an "X"
    - (INDI Configuration window should appear)
  4. in INDI Configuration window check following settings:
    - Hostname: localhost
    - port: 7600
    - driver: Apogee CCD
    - Dual CCD: Main
  5. click the INDI button near the bottom of the window

- (INDI options window should appear)
- 6. select the Apogee CCD tab
- 7. check following settings:
  - in the port section click the network button
  - in the network section:
    - subnet: 10.0.255.255
    - ip:port : 10.0.3.14:2571
- 8. click the connect button in the Connection field
  - (after a few seconds, a bunch of new fields and tabs should appear.)
- 9. near the bottom of the window, turn on the cooler
- 10. IF YOU ARE GOING TO BE AUTOGUIDING:
  - click on the "INDI-VATT-GUIDE" TAB
  - click "Connect"
  - (a UT clock should appear and begin incrementing.)
- 11. exit the INDI options window
- 12. click OK in the INDI Configuration window
- 13. click Connect in the Connect Equipment window, in the camera section
- 14. the button should now say Disconnect
- 15. click Close in the Connect Equipment window
- 16. In the Main tool bar (it may be positioned anywhere in the window),
  - click the Advanced setup (brain icon) button (second from the right); a new window should appear.
- 17. Set binning to the allowed maximum of 8×8:
  - Select the Camera tab,
  - in the group Camera-specific properties, set binning to 8 (pull down selector).
  - [Note. Ostensibly, binning can be set via INDI options as NxM where N and M may take any value you wish. This feature does not work. Binning can really be set only via "brain" button.]
- 18. IF YOU WILL NOT BE AUTOGUIDING: Disable mount guide output:
  - Select the Guiding tab,
  - in the group Shared parameters disable *mount guide output* (uncheck the boGuide output DISABLED should appear in the lower left of the main window. This should prevent PHD2 accidentally interfering, e.g., with the PEPSI guider.
- 19. 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 session 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

stappearing

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