

PHD2 Guiding

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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:
 - camera type "INDI Camera",
 - mount type "INDI Mount",
 - aux type "None"
 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 verify the 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. verify the following settings:
 - in the port section network is selected
 - 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. 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)
- 14. click Connect in the Connect Equipment window, in the camera section
 - (the button should now say Disconnect)
- 15. IF YOU ARE GOING TO BE AUTOGUIDING:
 - in INDI Configuration window verify the following settings:
 - Hostname: localhost
 - port: 7600
 - driver: VATT-GUIDE-INDI
 - Port: [empty]
 - click Connect in the Connect Equipment window, in the mount section
 - (the button should now say Disconnect)
- 16. click Close in the Connect Equipment window
- 17. 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.
- 18. Set binning to the allowed maximum of 8x8:
 - 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.]
- 19. 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 box); Guide output DISABLED should appear in the lower left of the main window. This should prevent PHD2 accidentally interfering, e.g., with the PEPSI guider.
- 20. 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 start appearing

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