Hi Rob,

Nice talking to you today. I've attached a document describing how to allow external machines to connect to the HTTP server offered within PWI4. Eventually I'm hoping to simplify the steps involved, but for now this should work.

The Python sample code for controlling PWI4 can be found here:

<http://planewave.com/files/software/PWI4/python/pwi4_client.py>

<http://planewave.com/files/software/PWI4/python/pwi4_client_demo.py>

<http://planewave.com/files/software/PWI4/python/pwi4_build_model.py>

<http://planewave.com/files/software/PWI4/python/platesolve.py>

Descriptions as follows:

pwi4\_client.py: This module provides a class called "PWI4" that shows how to send commands to PWI4, retrieve status, etc.

pwi4\_client\_demo.py: This is a simple example showing how to use pwi4\_client

pwi4\_build\_model.py: This is a more complete script using pwi4\_client, which is actually a fully functional tool for building a pointing model. The script will slew to various points around the sky, take an image, run the image through PlateSolve, and add the data to the pointing model. By default it uses a "virtual camera" interface provided by PWI4 to generate artificial starfields, but if you just implement your own routine in take\_image() to take an exposure with your camera and save it to the specified filename as a FITS image, then you should be able to use the script to build a real model. You'll also want to update the pixel scale setting at the top of the script.

platesolve.py: Provides a simple wrapper around the "ps3cli" platesolver tool (see link below). This is used by pwi4\_build\_model.

Note that PWI4 communication takes place over an HTTP server hosted on port 8220. I'm still working on writing up the documentation, but hopefully the Python script is pretty self-explanatory (and usable as-is).

Just to give you an example, when PWI4 is running you can load a web browser and navigate to the following URL:

<http://localhost:8220/status>

to retrieve the status of the system. Or you can go to:

<http://localhost:8220/mount/connect>

to ask PWI4 to make a connection to the mount. Or:

<http://localhost:8220/mount/goto_ra_dec_j2000?ra_hours=10.5&dec_degs=80.2>

to slew the mount to J2000 RA = 10.5 hours, Dec = 80.2 degrees.

You can see the full list of supported commands and arguments by browsing through the pwi4\_client.py source.

If you have any questions, please let me know!

Kevin