

# FLAMINGOS Shutdown Procedure at KPNO

*Version 2.0, 2003-Mar-07, Friday*

*Version 2.1, 2003-Mar-21, Friday*

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During the latest instrument engineering period we obtained assistance from Bob Marshall and Steve Grandi in modifying the network configuration files for FLAMINGOS'S primary computer, *flamingos1b*. From testing done in the Phoenix lab in Tucson on 2003-Mar-06, we believe that *flamingos1b* is now properly configured to use dhcp; the dhcp servers in Tucson and at Kitt Peak have been modified to detect the hardware MAC address from *flamingos1b's* ethernet card, and then assign the correct name and ip address to *flamingos1b* when it is booted in Tucson or at either the 2.1-m or the 4-m telescopes.

This procedure should be valid for moving FLAMINGOS between telescopes, and for shutting down the instrument in case of a lightning storm.

## Shutting Down the Instrument

1. *Verify the observer has finished transferring data.*<sup>1</sup>
2. *Look for a flamingos1b window.* The prompt should look something like `4mguest@flam-4m-1b{1}`, if at the 4-m.
3. *Verify status of wheels and send them to their home positions.*
  - *Look for a gui titled UFStatus.* If it is not running, launch another one by typing:  

```
xterm -e ufstatus_tkgui.pl &
```
  - *Determine the status of the wheels* by clicking on the Update All button.
  - *Verify the last column*, titled Home Type, shows that all wheels have home type Limit Switch. Any wheel that has home type Near Home **must** be sent to its home position before shutting down the instrument.
  - *Configure all the wheels to their home locations.* If there is time, it is a good idea to set all of the wheels to their home positions prior to shutdown; that way, when the instrument is brought up at the next telescope the motor controller/indexers will report the correct values. If there is a shortage of time, the decker, filter, lyot, and grism wheels may be left where they are (provided their home types are all Limit-Switch), but the gui will not accurately report their positions at the next telescope.
  - The Mos wheel **must** be set to the imaging position prior to shutdown in all cases. In the **flamingos1b** window (see item 2, above) type the following:  

```
config.mos.wheel.pl
```

    - At the prompt type `y`, which will give a list of valid positions. Type `10` to select the imaging hole. When the script finishes it will print out the final position obtained by the mos wheel.
  - To move the decker, filter, and/or grism wheels type the following in the flamingos1b window (see item 2, above):  

```
config.filter.grism.decker.wheels.pl
```

    - At the prompt type `a`, `c`, or `e`, to select the wheel to move. Note only one wheel may be moved at a time. A list of valid positions should print out. For any of these motors type `0` to select the home position. When the script finishes it will print out the positions of the wheels at a ~5 second interval until the moving wheel finishes or timesout (if it times out, call for help).
  - To move the lyot wheel type the following:  

```
engineering.set.lyot.wheel.pl
```

    - A list of valid positions should print out. Type `0` to select the home position, labeled *Hartmann1*. When the script finishes it will print out the final position obtained by the wheel.

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<sup>1</sup> In the fall of 2003 we hope to implement Save the Bits or the new DTS protocol, so there should be no reason for the observer to still be transferring data the morning after the last observing night.

#### 4. Configure the Flamingos template fitsheader for the next telescope.

Within the *flamingos1b* window type one of the following:

- If moving from the 4-m to 2.1-m: `config.location.pl -t kp2m`
- If moving from the 2.1-m to 4-m: `config.location.pl -t kp4m`

#### 5. Configure Baytech networked AC power switch for the next telescope.

The ip address and gateway entries need to be changed for each telescope.

- `telnet baytech` if typing in the *flamingos1b* window, or
  - if at the 4-m, `telnet flmn-4m-p`; if at the 2.1-m `telnet flmn-2m-p`.
- Login as \_\_\_\_\_, password \_\_\_\_\_.
- Type 3 to select the configuration option from the RPC-3 menu.
- Type the appropriate numbers to change the IP and gateway entries:

<i>Destination</i>	<i>Baytech Name</i>	<i>Baytech IP</i>	<i>Gateway</i>
4-m	flmn-4m-p	140.252.52.86	140.252.52.1
2.1-m	flmn-2m-p	140.252.53.86	140.252.53.1
NOAO Tucson	flmn-p	140.252.31.86	140.252.31.41
MMT	flamingos1p	128.196.100.38	128.196.100.1
GemSouth	flamp	1702.17.3.102	171.17.3.1

- Hit return several times. It should eventually prompt you to logout and save the changes.

#### 6. Close all windows except the *flamingos1b* window.

- Close ds9
- Logout of iraf: look for a window with `cl` as its prompt; type `logout` and close the window.
- Close the flamingos daemons running in windows titled TEMP, MOTOR, MCE4.
- Close UFSTATUS and Record\_Temperatures

#### 7. Poweroff *flamingos1b*.

- Within the *flamingos1b* window login as `su`, password = \_\_\_\_\_.
- Type `poweroff`.
- Please wait several minutes (~3) for the computer to fully shutdown. Once you type `poweroff` from the Kitt Peak computer your connection to *flamingos1b* will be killed, even though *flamingos1b* still is in the process of shutting down.

8. *Disconnect network fiber.*
9. *Disconnect orange AC power cord (should be plugged into unswitched RUPS).*
10. *Turn off APC UPS in the back of the computer rack.*
11. *Attach pink cart, unbolt from telescope.*
12. *Install Mos Dewar window cover for transport.*

## Installation at new telescope.

### 1. *Mos Window cover*

- Remove if at the 4-m, before bolting onto telescope.
- If at 2.1-m, install purge line for daytime operation.

### 2. *Plug orange AC cord into unswitched RUPS.*

### 3. *Plug in network fiber to Flamingos' fiber-RJ45 converter.*

Verify the cable is plugged in correctly before booting the computer.

### 4. *Turn on APC UPS in back of computer rack.*

### 5. *Turn on the power to flamingos1b.*

- Flip down the door on *flamingos1b*, hit the black power and reset toggle buttons. These buttons are clearly labeled; *you should not need to hit the red reset pushbutton.*
- If everything is hooked up properly, *flamingos1b* should boot by itself.

### 6. *Verify flamingos1b is on the network.*

- From a Kitt Peak computer, see if you can ping *flamingos1b* and/or log into it. To ping it, type `ping flmn-4m-1b` or `ping flmn-2m-1b` from a Kitt Peak computer. To log into *flamingos1b*:
  - If at the 4-m, type: `rsh -l 4mguest flmn-4m-1b`. Password is \_\_\_\_\_.
  - If at the 2.1-m, type: `rsh -l 2mguest flmn-2m-1b` using the same password.

### 7. *Proceed to instrument startup, as described in the Flamingos manual.*

- The manual describes how to log into *flamingos1b* from the Kitt Peak, and how to operate Flamingos. Several additional steps need to be performed during the T&E night. These steps may be performed immediately after *flamingos1b* is powered up:
  - a. *Verify network connectivity.* From *flamingos1b* verify these machines respond to ping (the prompt in the example is for the 4-m, after logging in, as in step (6) above):

- 4mguest@flmn-4m-1b{1} ping baytech
- 4mguest@flmn-4m-1b{2} ping iocomm
- 4mguest@flmn-4m-1b{3} ping polaris
- 4mguest@flmn-4m-1b{4} ping bordeaux

If there is not response from the baytech, check that the /etc/hosts files has the correct ip address entered for the baytech.

- b. *Verify reasonable data transfer rate.* FTP from **flamingos1b** to **tan** (4-m) or to **azure** (2.1-m) should take only 3-15 seconds per image.
- c. *Align lyot stop.* Move telescope way out of focus, and image a very bright star on FLAMINGOS. Use `engineering.tweak.lyot.wheel.pl` to adjust lyot stop until central obscurations match on another.
- d. *Make guide camera confocal with Flamingos.* Focus on FLAMINGOS first, then adjust the guide camera. It is best to pick an average focus on FLAMINGOS, say at pixel location (1300,1300).
- e. *Verify TCS communications.* Check by running an imaging dither sequence.
- f. *Verify the actual instrument/rotator Position Angle is known by Flamingos.*
  - At the 2.1-m the racks run East-West and the slits run North-South, with the Mos access port at the South. This corresponds to a position angle of 0 degrees. The user cannot change this parameter at the 2.1-m, so it should be fine, unless the instrument is put on incorrectly.
  - At the 4-m the default installation is with the rotator at 90 degrees and the racks running North-South, with the Mos access port on the West. The parameter **ROT\_PA** should be set in the template fitsheader, and may be changed by running the script `config.mos.dither.pl`. Enter the rotator's actual value.
- g. *Verify guiding for Mos observations works.* This can be done in imaging mode. Setup the instrument to dither with a throw of 10 arcseconds should be sufficient.