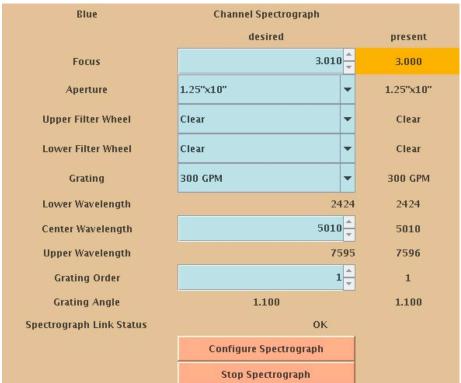# USING BLUE/RED CHANNEL

This is a brief guide to help you get set up for using Blue or Red Channel. See other cheat sheets for information specific to taking exposures and doing focus measurements.

Getting Started: in the control room

1) Computer **pixel** should be logged in as user **mmtobs**. If it is not, please talk to the TO.

2) On the bottom dock you will find icons for:
   a. BCCS -> Blue Channel
      &
   b. RCCS -> Red Channel
   Click the appropriate icon to bring up the control GUI in a web browser. All control of the spectrograph configuration is done through this control GUI.

3) Below is a screen shot of the GUI.

Blue	Channel Spectrograph		
		desired	present
Focus		3.010	3.000
Aperture	1.25"x10"		1.25"x10"
Upper Filter Wheel	Clear		Clear
Lower Filter Wheel	Clear		Clear
Grating	300 GPM		300 GPM
Lower Wavelength		2424	2424
Center Wavelength		5010	5010
Upper Wavelength		7595	7596
Grating Order		1	1
Grating Angle		1.100	1.100
Spectrograph Link Status		OK	
	Configure Spectrograph		
	Stop Spectrograph		

4) Create a directory to save your data into (e.g., `% mkdir 20120823`).

5) Bring up 2 IRAF windows (a quick link is to use the blue 'star' icon on the bottom dock) and a ds9 window (use the SAO icon on the bottom dock).

6) Print out log-sheets either from: http://www.mmto.org/node/307 or copy from a master copy in the folder in the control room.

Controlling the spectrograph

1) Drop-down menus select aperture, filter wheels and grating positions. Select desired configuration, then click on "Configure Spectrograph". 'Present' column on right-hand-side of GUI gives current status of the instrument (i.e., 'moving'). Background color will return to default when the spectrograph is configured.

2) The 'focus' drop down menu selects the collimator location. This value should be determined from the `specfocus` routine (see separate cheat sheet).

3) All numerical entries can be altered either by the arrows or by directly typing in the box (hit 'enter' to confirm the new number). For any changes to be sent to the spectrograph you must hit "Configure Spectrograph".

4) At any time you need to stop the spectrograph motors click "Stop Spectrograph".

Taking exposures

1) Exposures are taken directly through the IRAF interface using ICE (IRAF Control Environment).

2) In one of your IRAF windows type `ccdacq.` Move into the data directory you created. This will be the place to take exposures from.

3) Basic commands you will use:

> `zeros` – to take bias frames
> `observe` – on-sky integrations
> `compflats` – flat calibration exposures
> `comps` – wavelength calibration exposures
> `mores` – repeat the preceding exposure time

4) Typing `help` gives you the following comprehensive list of tasks under the `ccdacq` package

```
   ccdinfo-   print detpars, gain tables, and tempatures
     comps-   make a series of comparison observations
 compflats-   make a series of continuum observations
```

```
  lampfocuses-   make a series of lamp exposures at different
                 focus values
        darks-   make a series of dark observations
     dcaptinfo-  print contents of detcap
      detector-  access detector
       detpars-  edit detector parameters
         flats-  make a series of flat observations
      instrpars- edit instrument parameters
    instrument-  access instrument
         mores-  makes a series of observations with current
                 parameters
       objects-  make a series of imagetype="object" exposures
       observe-  make an observation
       obspars-  edit observing parameters
         tests-  makes a series of test observations
     telescope-  access telescope
       telpars-  edit telescope parameters
         zeros-  make a series of zero observations
```

5) All usual IRAF commands apply (`epar, lpar,` etc.)

Checking your spectra

The second IRAF window and ds9 display can be used to do quick-look tasks on your spectra. All usual commands apply, such as `implot, imexamine,` etc.

Please see "Focusing Blue/Red Channel Using 'SPECFOCUS'" and "Blue/Red Observing Guide" cheat-sheets for further information.

Please report any problems or bugs to Skip Schaller (sschaller@mmto.org).