



# BLUE/RED OBSERVING GUIDE

A step-by-step guide to take you from the start of the night to your first science exposure. Please read the “Using Blue/Red Channel” cheat sheet before proceeding with this guide. Be sure to upload your catalog of objects and offset stars before your run.

- 1) Create a directory in the **mmtobs** home directory for your data (`%mkdir 120824`).
- 2) Make sure you have the following open:
  - a. 2 IRAF windows (one for ‘acquisition’ and one for ‘analysis’; click blue ‘star’ icon on the bottom dock)
  - b. ds9 (click the SAO icon on the bottom dock)
  - c. Blue or Red Channel GUI (click BCCS or RCCS icons on the bottom dock)
- 3) In an IRAF window change **directory** into your night specific directory created in step 1. Then type `ccdacq` to establish your acquisition window. DO NOT type any acquisition commands in the ‘analysis’ window, ever.
- 4) Print out log sheets (master copies are in the folder or found at [www.mmt.org](http://www.mmt.org) under Observer’s Tools). Or, if you prefer, a more general spectrograph log sheet is available at <http://james.as.arizona.edu/~psmith/90inch/spectlog.ps>
- 5) In your acquisition window verify the detector temperature:
 

```
ecl> dete
```

The correct detector operating temperature is ~-129 for Blue Channel ~-137 for Red. If the detector temperature differs significantly from these values, alert the TO. If you get a communication error, try typing ‘flpr’ twice at the prompt. If this does not work, try exiting and restarting the IRAF window. If the problem persists, talk to the TO.
- 6) If desired, verify correct parameters in `telpars`, `instrpars` & `detpars` (using either `epar` or `lpar` command). Check the values given as Blue/Red and select as appropriate for the instrument you are using. Note that Red has more rows than columns.
  - a. `telname = mmt`
  - b. `instrname = mmtbluechan/mmtredchan`
  - c. `detname = mmtbluechan/mmtredchan`
  - d. `first col = 1`
  - e. `last col = 2688/520 ; full size`
  - f. `firstrow = 1`
  - g. `lastrow = 512/1032 ; full size`
  - h. `colbin = 1/2`



- a. Verify toggle on ‘lamps control box’ is set to ‘SCCS CONTROL’ so the lamps can be switched on & off by the software tasks.
- b. Confirm with TO that the videoscope is turned down so it is not damaged by the calibration lamps. The videoscope is always off during the day.

c. `ecl> epar comps`

<code>nexpo = 1</code>	Number of exposures
<code>exptime = 30</code>	Exposure time (seconds)
<code>complamp = "HeAr/Ne"</code>	Comparison lamp (*see below)
<code>objecttitle = "arc"</code>	Object title

^d to save edits and exit.

Arc lamps that are available include HeAr/Ne/ThAr/FeNe/HgCd (note: names are case sensitive and delimited by ‘/’, order is not important).

ET = Etalon

If you are working shortward of ~3900A, we recommend use of the HgCd lamp.

d. `ecl > comps`

Calibration sources will be switched on & off automatically.

14) To take a science exposure:

a. `ecl > observe`

Image type (object | zero | dark | flat | comp | focus)  
(object):  
Exposure time (seconds) (0.:16200.) (20.):  
Object title:

You can take all exposure types with `observe`, but it is necessary to use `comps` / `compflat` for calibration frames in order to have the lamps controlled through the software correctly.

- b. If you need to *PAUSE* the exposure for any reason, press ‘**p**’ in the acquisition window (the exposure must have more than 5 seconds left to be able to pause). Once you have paused the integration you have the following options:
  - i. *RESUME* – type a ‘**r**’. Exposure will continue to the end of the integration time
  - ii. *STOP* – type a ‘**S**’ (note capitals). Exposure will stop immediately and be saved to file
  - iii. *ABORT* – type a ‘**A**’ (note capitals). Exposure will NOT be saved, image will be lost
- c. For many more helpful hints & tips please see “An Observer’s Guide to Taking CCD Data with ICE” by P. Massey et al., 2000. A hardcopy should be in the instrument’s folder, or you can find it on our website.

15) If you wish to do repeat any exposures with exactly the same configuration, use `mores`.

16) At the end of your run you must take a copy of your data with you. The **mmtobs** account will be reset in the morning for the next observer. If you have an emergency and lose your data please

contact us as soon as possible, as some data files may be accessible temporarily. However, we do not take responsibility for your data so it is safest to take it with you.