

A practical introduction to IRAF (Image Reduction and Analysis Facility)

Logging on to the observatory laptops:

Username: bwooster

Password: Jeeves!

STARTING AND EXITING IRAF

`cl` Start IRAF (Preferably from an `xgterm`, otherwise some graphic functions will fail)
`logout` Exit IRAF

You need to start IRAF from the directory that contains the file "login.cl" (startup settings)

For the observatory laptops this means `/ home / iraf / iraf / local`

IMPORTANT STARTUP SETTINGS

Check the image format by typing `show imtype`, if it says something else than "fits", change this by typing `set imtype = "fits"`. This is very important since one can work directly with the .fits format, which all modern observatories use to store data.

The default image buffer size in IRAF is probably too small (ALFOSC images are larger than 2k x 2k pixels), in that case we should increase it, otherwise only part of the images will be seen in the reductions! Check the current buffer size by typing `show stdimage`, if this is smaller than 2048 then increase it with `set stdimage = imt2048`. Check again with `show stdimage`.

IRAF, PACKAGES AND TASKS

IRAF works with routines (called `tasks` in IRAF language) that all belong to so called `packages`.

In order to use a task, the corresponding package must first be loaded, this is done simply by typing the package name.

Luckily, the `help` command works on any task regardless of which package it is located in, the syntax is `"help taskname"` and it often gives the task's package name at the beginning of the help text.

Some package and task related commands:

<code>package</code>	What packages are loaded
<code>name</code>	Loads package "name"
<code>bye</code>	Unloads the latest package (<i>not really necessary</i>)
<code>?</code>	Lists the tasks in the current package
<code>? name</code>	Lists the tasks in package "name"
<code>??</code>	Lists all tasks currently loaded
<code>help</code>	Help for current package
<code>help name</code>	Help for a package
<code>help taskname</code>	Help for a task

IRAF AND DIRECTORIES

Commands like `cd`, `dir`, `mkdir`, `delete`, `diskspace` works in IRAF. Typing just `"cd"` means going to the home directory. Typing `"back"` means going back to the previous directory.

The IRAF home directory is found by typing `show home`, and all parameters for all tasks that have been set by the user are stored in the strangely named directory "uparm". Use `show uparm` to find its path.

DISPLAYING IMAGES

To display (fits) images with IRAF, open up a graphical window by typing `"!ds9 &"`.

Then type `"disp filename"`, where 'filename' is a .fits file in the current directory (or try the IRAF test image `dev$pix`)

Another useful task, for analyzing fits images is `imexa filename`. There are a lot of keyboard commands in imexa, e.g. "c" and "l" for making intensity plots along columns and rows, respectively (requires `xgterm`).