## **DISPLAYING FITS HEADERS**

In order to see information about the exposures, it is possible to display the fits header by typing "imhead filename". However, this only gives a very shortened version, to see the full header instead type "imhead filename I+" (small L)

## **EXECUTING IRAF TASKS**

Most tasks have parameters which must be setting before running them. Now, there are many ways to start tasks in IRAF, but the most straightforward way is by using an input parameter editor, by typing "epar taskname". When you're happy with all parameter settings, launch the task by typing ":go" in the editor... (or abort with CTRL+C)

Remember to always check the results after a task (reduction step) has been performed !

Typing "lpar *taskname*" instead shows the current parameters for a task (stored in the uparm directory). If you think these are already OK and don't want to go through the editor, you can start a task by simply typing its name.

To make a task's parameters go back to default settings, type "unlearn taskname".

#### ABORTING TASKS

If something goes wrong, like running a lengthy task with the wrong parameters, you should easily be able to abort the task by pressing CTRL + C. After this, you should probably type flpr (known as a *Flipper* in IRAF language) in order to get things back to usual. A second "Flipper" could help if there is still something wrong, and if two Flippers didn't do the job, a logout and restart of IRAF will.

# USING LISTS OF FILENAMES FOR TASKS

To simplify things, lists of (fits) images can be used in IRAF both as an input for the parameter editor and in calculations. Lists are easily made with an ordinary text editor, e.g. "emacs bias.list &" and can look something like:

me150001.fits me150002.fits me150003.fits

me150013.fits me150014.fits

assuming that we have 14 bias exposures, observed on the 15 of May (letter 'e') 2003 (letter 'm').

Instead of typing all these filenames each time we do a task, it is instead possible to write @bias.list (e.g. in the parameter editor for a task performed on all these images).

Lists that could come in handy during the reductions could be called e.g. bias.list, dark.list, specflat.list, Rflat.list, and so on...

# SIMPLE CALCULATIONS ( + - \* and /)

Calculations are carried out on .fits files as input and output. The task is called **imarith** and the syntax is best described through the following examples:

Subtract 15.3 from "bias.fits" with the result "output.fits"	imarith bias - 15.3 output
Divide "dark.fits" with 700 and call this "dark_out.fits"	imarith dark / 700 dark_out
Multiply "test.fits" with 10 and overwrite "test.fits"	imarith test * 10 test
Subtract "Masterbias.fits" from a list of flats (specflats.list) and use similar filenames as the input (but with a "new" in front)	imarith @specflats.list - Masterbias new@specflats.list