

## AUTOMATIC OBSERVING LOGS

### *A Quick Overview*

- To use automatic logging, you'll need to work in the Data Acquisition window, or any other window using the CCDACQ package.
- **Loginit:** Run *loginit* at the start of the run, night, or any other time you want to start a new set of logs.
- The logging program works automatically — intervene to add additional information to the logs only when you care to.
- Test exposures are not logged.
- **Addlog:** Test exposures *can* be added to the logs explicitly by running *addlog image*, where *image* gives the name of observation that you wish to add. *Addlog* can also be used to log any observations that may have been taken before *loginit* was called for the first time.
- **Remark:** Use *remark* at any time to fill in comments, seeing, or any other notes that you want to add to the logs.
  - Use *remark* with no arguments to annotate the last observation recorded.
  - Use *remark image* to annotate or revise the logs for the observation called *image*.
- **Viewlog:** Use *viewlog* to see the logs on the screen.
- **Printlog:** Use *printlog* to make hardcopies of the logs.
- T<sub>E</sub>X is used to format the logs. You can use T<sub>E</sub>X macros as desired in your entries.
- The logs are generated in *Postscript* and T<sub>E</sub>X form as well as paper hardcopies.

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### *More On Getting Started: Loginit*

- *Loginit* is an IRAF command that asks for the stuff that goes in the header section on the logsheets. This is the stuff that stays constant over a run, night, or some such observation set.
- You must always run *loginit* at the start of your program. You can run it again later as desired (such as at the start of subsequent nights). You can also rerun *loginit* at any time to revise the page headings for any existing logs if you specify the identifying name of the logs (see below).
- The first time that you run *loginit* after *obsinit*, you will be asked to select the instrument specific logsheet format. Current choices are “direct” or “goldcam.” You will not be asked this again (unless you run *obsinit* again), but can “epar *loginit*” to change the format explicitly.
- *Loginit* asks for a convenient identifying name for the logs (like ‘night1,’ for example). This name should be something handy to help you sort out one set of logs from another. You actually don’t need to refer again to the name in routine use, but it serves as the root for all the files generated by the logging programs, such as the Postscript and T<sub>E</sub>X outputs.
- You can also specify the number of the first log page. This gives you the flexibility to number your pages consistently with logs from previous nights, runs, or so on.
- You can use T<sub>E</sub>X macros for formatting. For example, you might enter a filter as H $\alpha$  to get a nice H $\alpha$  on the logsheets.

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### *Annotating the Log Entries:* **Remark**

- Most of the information on the log sheets is obtained automatically from the observation headers. Use *remark* to enter comments, notes, seeing, focus, or other information external to the data taking system.
- Typing *remark* with no other words invokes its default operation, which is to ask you to fill in information for the last exposure completed.
- *Remark* will not work on exposures in progress.
- Type *remark image* to fill in information for the observation specified by *image*. This can be done at any time.
- *Remark* overwrites any old information, and thus can be used to revise old comments. The old comments and information are shown for convenience.
- You can use  $\TeX$  macros for formatting.

### *Adding Entries to the Logs by Hand:* **Addlog**

- Test observations, as well as any observations recorded before the logs are initialized by *loginit*, will not be logged. *Addlog* can be used at any time to add any observation to the logs.
- Use *addlog image* to add the observation named *image* to the logs. Several images can be specified at once by use of wildcards.
- **WARNING:** The name *image* should be unique, so that *remark* can locate its record for later annotation. For example, if several images called ‘test’ are added to the logs, *remark* will only locate the first one.

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### *Looking at the Logs on the Screen: Viewlog*

- Use *viewlog* to look at the formatted logs on the screen.
  - *Viewlog* in suntools invokes the *Unix dvipage* command. Type ‘g’ to go to the last page, ‘spacebar’ to move forward one page, and ‘-’ to move back one page. The *man* entry for *dvipage* lists more capabilities.
  - *Viewlog* in X windows invokes the *Unix xdvi* command. Type ‘n’ to move forward one page, and ‘p’ to move back one page. The *man* entry for *xdvi* lists more capabilities.
- Use *viewlog oldlog* to see the logs named *oldlog* from a previous night, or whatever (the  $\text{\TeX}$  file for *oldlog* must still be available for this option to work).
- Unfortunately, the logs printed from the *viewlog* window will not truncated — use the *printlog* command, instead.

### *Making Hardcopies of the Logs: Printlog*

- Use *printlog* to print the formatted log sheets on the laser printer.
- Use *printlog oldlog* to see the logs named *oldlog* from a previous night, or whatever (the  $\text{\TeX}$  file for *oldlog* must still be available for this option to work).
- A Postscript file is generated at the same time. It will have the form *logname.ps*, where *logname* is the name that you entered with *loginit*. A  $\text{\TeX}$  *logname.dvi* file is also generated.
- Always leave a copy of your logs on the mountain. There is a multi-ring holepunch in the LTO office.

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### *How the Logging Programs Work*

- The *loginit* IRAF routine starts things off and does the following:
  - It gets the identifying name *logname* for the logs, and hides it in the *.kpcddlog* file in your main directory. This hidden file is looked at by all other programs to figure out how to name the other files.
  - It fills out the page headings on the logsheet, making a T<sub>E</sub>X file of the name *lognamehead.tex*.
  - It gets the page number of the first logsheet page and puts it in a T<sub>E</sub>X file of the name *lognamepage.tex*.
- Running *loginit* again does not affect the record of observations, itself, only the page heading information. You can thus use *loginit* at any time to revise the headings without any effect on the observation record, itself, if you take care to specify the same *logname*.
- The parameters from the actual observations are obtained by *addlog*, which is called by *postproc.cl* at the completion of the observations. The parameters are saved in a file *logname.lis* in the main directory — this is the real record of the observations.
- The *remark* command updates the entries in *logname.lis*. The *logname.lis* file can be edited directly like any other text file, although you are warned to be very careful if you try this, as the formatting programs expect a specific number and form of the entries.
- Both *viewlog* and *printlog* build the T<sub>E</sub>X version of the logs. Both routines then call T<sub>E</sub>X to complete the final formatting. This means that if new observations have been obtained after formatting the logs, the T<sub>E</sub>X and Postscript files will be ‘stale’ until either *viewlog* or *printlog* are run again. Only *logname.lis* is updated as the observations are obtained.

- The use of  $\TeX$  to format the logsheets gives you the advantage to make your own use of  $\TeX$  macros to format your inputs, at the risk of making  $\TeX$  mistakes. While it's not possible to check the validity of  $\TeX$  macros outside of  $\TeX$ , itself, the logging programs do provide some simple checks. In developing the programs, we often found ourselves wanting to use some of the special characters that  $\TeX$  reserves for itself, namely,  $\#$ ,  $\%$ ,  $\&$ ,  $\sim$ , and outside of  $\TeX$  math mode,  $\_$ , and  $\^$ . The logging routines check for these characters and build the proper  $\TeX$  escapes around them if they are not already present, on the assumption that you really intended to use them literally. The routines also look for a non-terminated math-mode, which would happen if you left the final  $\$$  off of a math expression.