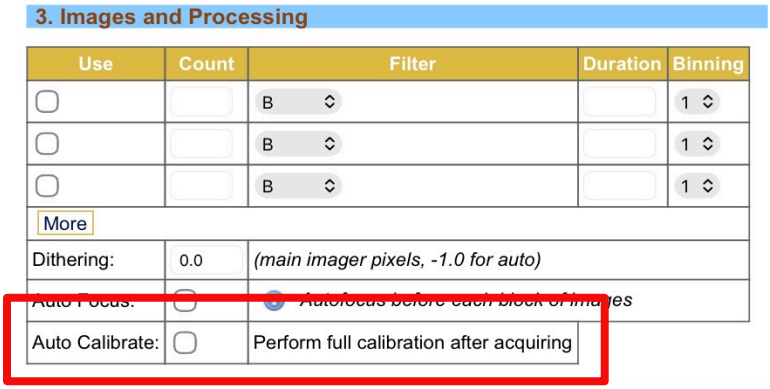
Calibration and Flats

The camera uses a Sony IMX455 industrial-grade CMOS imaging chip. The accepted method for calibrating CMOS images is to use a flat from which a matching dark frame has been removed, and a dark frame matching the exposure of the imaging frame. In a remotely operated community system such as the RRT, practicality requires calibration at the time the image is captured. This requires that the "auto-calibration option" be enabled on all plans. Failure to do so will result in uncalibrated images.

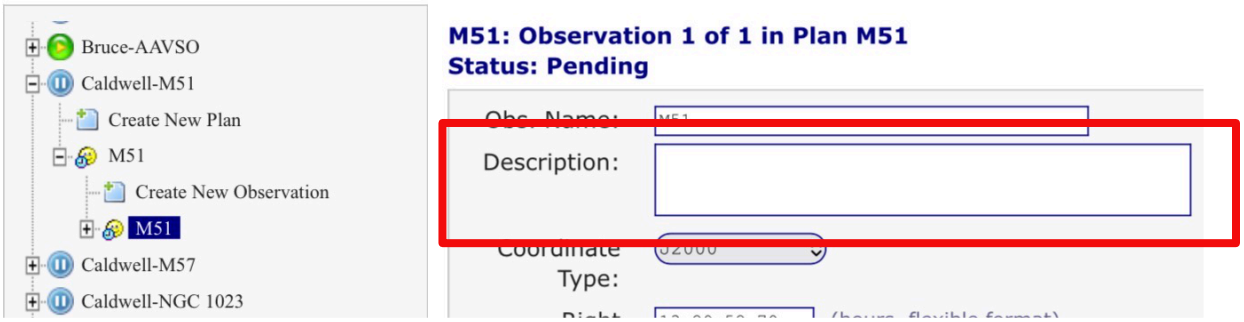


To facilitate auto-calibration, a fresh sheet of flats is maintained in the system for each available filter, binned 1X1 and 3X3. In addition, a library of darks, listed below, is maintained for those same binning. Choosing an exposure from the exposure list below will provide a matching dark for your images. However, this chip has such low dark current that choosing an in-between exposure is a very reasonable option, as the difference in dark current from one exposure to the next is demonstrably insignificant across nearly the entire chip.

1
1.5
2
2.5
3.25
4.25
5.5
7.25
9.5
13
17
23
31
42
56
75
100
134
177
240

Using special imaging directives

Users are encouraged to insert **#nopreview** and **#nosolve** in the “Description” window of each “image set” when setting up a plan in Scheduler. These can be done in the Scheduler Browser. Click on the project name and add the directives in Description.



This will speed up the imaging cadence and allow the system to process more images. Leave out #nopreview only if you plan to watch the execution in the web-based observatory control; while solving each image as it is taken is not necessary, as the mount is managed by APCC and tracks reliably.