

Planning an Observational Program

I. Identify science goal (not just topic of interest)

determine necessary precision, sample size, optimal measurements (i.e. which telescope, which instrument, depth, filters, resolution, etc.)

Doing this homework is not only necessary to a successful program but also essential to convince the TAC to give you the time!

2. Pre-telescope homework

a) construct sample (coordinates, magnitudes, etc.

b) target visibility (coordinates,
telescope coordinates, airmass calculation,
moon location

<http://imagiware.com/astro/airmass.cgi>

<http://www.ing.iac.es/ds/staralt/index.php>

c) identify necessary calibration targets or control
samples

d) prepare necessary support materials

finding charts, airmass charts, standard star catalog, data storage, log books, ...

e) devise observing strategy

how many calibrations?

how long should exposures be?

should I divide the exposures?

should I observe in different filters
consecutively?

should I repeat fields at different times?

organize observations to minimize airmass

f) prepare backup program

what are you going to do if there are some clouds?
what are you going to do if the seeing isn't
as good as you hoped for?

3) at the telescope (in the afternoon)

a) get the latest info on the telescope/instrument

b) familiarize yourself with the instrument in
the afternoon

c) take those calibrations that you can do in
the afternoon (biases, dome flats, darks)

d) go have dinner

4.) At the telescope (after dinner)

- a) check instrument and telescope status
- b) get ready for twilight flats (if necessary)
- c) acquire pointing star/set telescope coordinates
- d) take calibrations while sky isn't quite dark (focus)
- e) go to your first field/focus/wait for darkness

5) At the telescope (during the night)

be as efficient as possible!

decide on next object before the current exposure is finished.

Do whatever analysis you need to while current exposure is happening.

keep monitoring focus (if necessary)

stay on top of observing conditions (any signs of clouds?)

is the instrument behaving itself?

6) At the telescope (in the morning)

- a) take any necessary calibrations
- b) secure telescope and instrument
- c) save data
- d) go to bed!