

Reducing Spectra in IRAF

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This document is a prettier version of the cheat sheet that I use whenever I'm doing spectral reductions. As usual, the best place to start for more detailed information is [Josh's IRAF tutorial](#). For simplicity's sake I assume that you're trying to extract the spectrum of an object contained in `obj.fits` (which has already been dark subtracted and flat fielded) and its associated comparison lamp is called `comp.fits`.

1. Enter IRAF and load the `noao`, `onedspec`, `twospec`, and `apextract` packages.
2. Use `apall` to extract the object spectrum: `apall obj`
3. Extract the comparison spectrum using the same extraction aperture as before:
`apall comp ref=obj recen- trace- back- intera-`
4. Identify lines of known wavelength in the comparison spectrum with `identify`:
`identify comp.ms`
5. Use `hedit` to edit the header to correlate the comparison spectrum with the object spectrum: `hedit obj.ms REFSPEC1 comp.ms add+ ver- show+`
6. Use `dispcor` to apply the dispersion correction as calculated from the comparison spectrum: `dispcor obj.ms`

Now you have a dispersion-corrected spectrum that `splot` will display with wavelength on the x-axis. Depending on your requirements, you might also want to perform an absolute flux calibration, but that's a matter for another day.