An image reduction work flow:

**Project 83**
- Images provided:
  - 5 Bias Images
  - 5 Flat images for each filter (R, G, B), total 15 images
  - 2 images of each science image of each filter (R, G, B), total 6 images per object
  - 4 galaxies images - 24 total science images.

Before any image reduction, remove overscan region and image border (columns 2047 to 2079, rows 0 and 2047)

**Note:**
- Project 83 does not provide Dark Frames.
- In any other case, image reduction should be as follows - in order:
  1. Subtract Bias frame from all images
  2. Subtract Dark from all images (note: make sure the correct darks are used - i.e. Dark Flat and Dark Science)
  3. Subtract Flat from Science Images

Software used - in order of operation:
- MaxImDL 4.10
- Overscan removal
- Bias Median Combine
- Bias Subtract All Images
- Flat Median Combine
- Flat Subtract All Images
- CCDSoft 5.00.153
- Science Image Alignment
- Color Combine
- MaxImDL 4.10
- Low Pass Digital Development
- Unsharp Mask
- Photoshop CS
- Gradient Removal
- Image Heal
- Crop and Save as Final

**Definitions:**
- Bias Image = shortest exposure, defines minimum CCD noise
- Dark Frame = exposure of equal duration as image with shutter closed
- Flat Frame = Image of an evenly illuminated source, used to demonstrate CCD defects
- Science Image = image of the object of interest

**Notes:**
- Dark Frame for flats must be the same duration as the flats
- Bias images must be subtracted from all images before anything else

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