

6. Divide your Clean Image Frame by your Clean Flat Frame, with normalization included.

This last step needs a little clarification. The flat field frame is a bumpy image. You would like to divide out these bumps from your image so that it is smoother. Ideally, the bumps should be tiny differences, so that you should be essentially dividing your image by “1”. However, the actual pixel values of the flat field will not be close to “1” in value, but could be very close to large intensities such as 30,000. To “normalize” your flat field, you want to divide out the large 30,000 from the entire image. However, if you take this literally and divide the flat frame by a scale factor of 30,000—well, the flat field image will go to zero!

Suggested procedure is to open the Clean Flat Field Frame, and find the average pixel value over a large region in the middle of the image. We will show a suggested method in part D. Let us call this average pixel value FLAT FACTOR, and will be just a number and not an entire image.

The final flat corrected image is found from:

FINAL CALIBRATED IMAGE = (FLAT FACTOR / Clean Flat Field Frame (Step 5))*Clean Image Frame (Step 4)