There are two types of 'image'. One is nanomaggies image, also called corrected-frames image. SDSS provides a [2048, 1489] pixels nanomaggies for each field. Another one is called 'counts' image. The transformation vector from nanomaggies to counts is called 'calibration vector' in SDSS corrected-frames documentation.

Another kind of image stored in the corrected-frames FITS file is the sky background image. To get the original counts image that the scientists produced, we should add the sky background back to the counts image.

Data number = img/calibration-img + sky-img.

Sky image has 256*ny pixels. SDSS provides x-girds and y-grids vectors, ranging from [0, 256] and [0, ny] (the smallest value of ny would not be smaller than 186, according to the documentation), and the size for x-grids and y-grids vector is 2048, 1489. Therefore, we can interpolate the sky image back to 2048*1489 pixels. The 'size' of the sky image actually doesn't change, number of pixels changes.

I have uploaded the code, but I still need some time to examine the code in detail.