

Figure 1: Meqtrees SKA simulation and Meqtrees-generated dirty image of four 1 Jy point sources located at (R.A.:  $0^h0^m0.1^s$ , Dec.: $28^d0^m1^s$ ), (R.A.:  $0^h0^m0.1^s$ , Dec.: $26^d45^m10^s$ ), (R.A.:  $0^h0^m0.1^s$ , Dec.: $29^d15^m00^s$ ), and (R.A.:  $0^h0^m0.1^s$ , Dec.: $28^d50^m00^s$ ), without Cortes beam applied. Simulation: log-spiral configuration with  $N_a = 150$ ; field center: R.A.= $0^h0^m0.1^s$ , Dec.= $28^d0^m1^s$ ; observing freq.: 1400 MHz; number of frequency channels: 64; channel increment: 5.0 MHz; antenna diameter: 12.0 m.; integration time: 60 sec.; scan length: 90 min.; FWHM of primary beam:  $\sim 75'$ ; Stokes parameter in image: I; imaging weights: uniform; number of convolution functions for w-projection: 128; image size in pixels: 2048; image size in arcmin: 273; image displayed, zoomed in, and brightness-contrast colormap adjustments with casaviewer; colormap used: 'isophotes'.

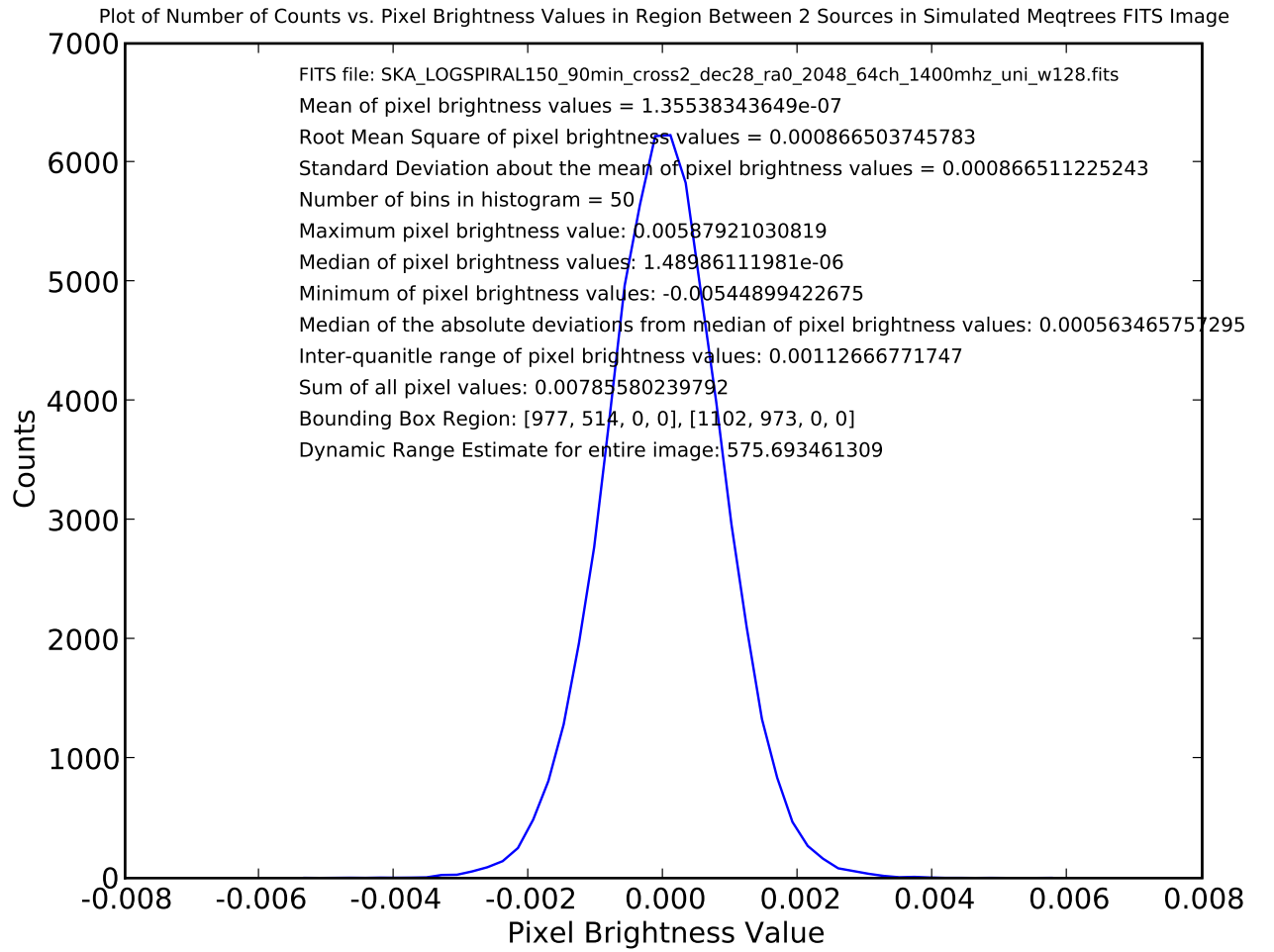


Figure 2: Line plot of counts vs. pixel brightness value for a specified bounding box region (bottom left corner = [977,514,0,0], top right corner = [1102,973,0,0]) between bottom two sources in Fig. 1. Statistical measures calculated within the bounding box region are included in the plot. The dynamic range estimate is for the entire image and is taken as the ratio of the brightest (largest) pixel value in the image to the rms of pixel brightness values in the bounding box region.

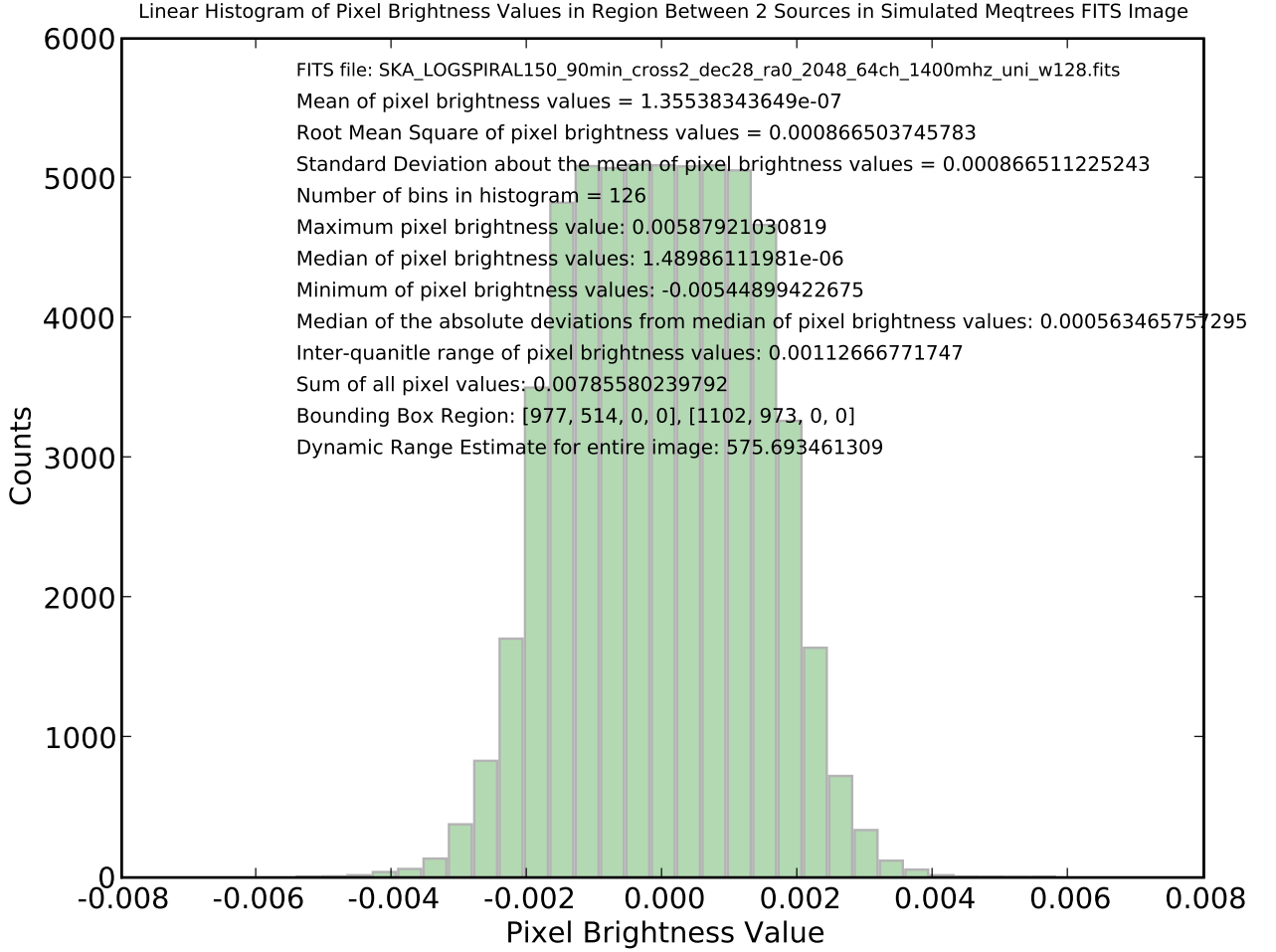


Figure 3: Histogram of counts vs. pixel brightness value for specified bounding box region (bottom left corner = [977,514,0,0], top right corner = [1102,973,0,0]) between bottom two sources in Fig. 1. Histogram generated using the 'image.histograms' CASA function for a particular chunk of the image in bounding box region (see <http://casa.nrao.edu/docs/casaref/image.histograms.html>). Statistical measures calculated within the bounding box region are included in the plot. The dynamic range estimate is for the entire image and is taken as the ratio of the brightest (largest) pixel value in the image to the rms of pixel brightness values in the bounding box region.

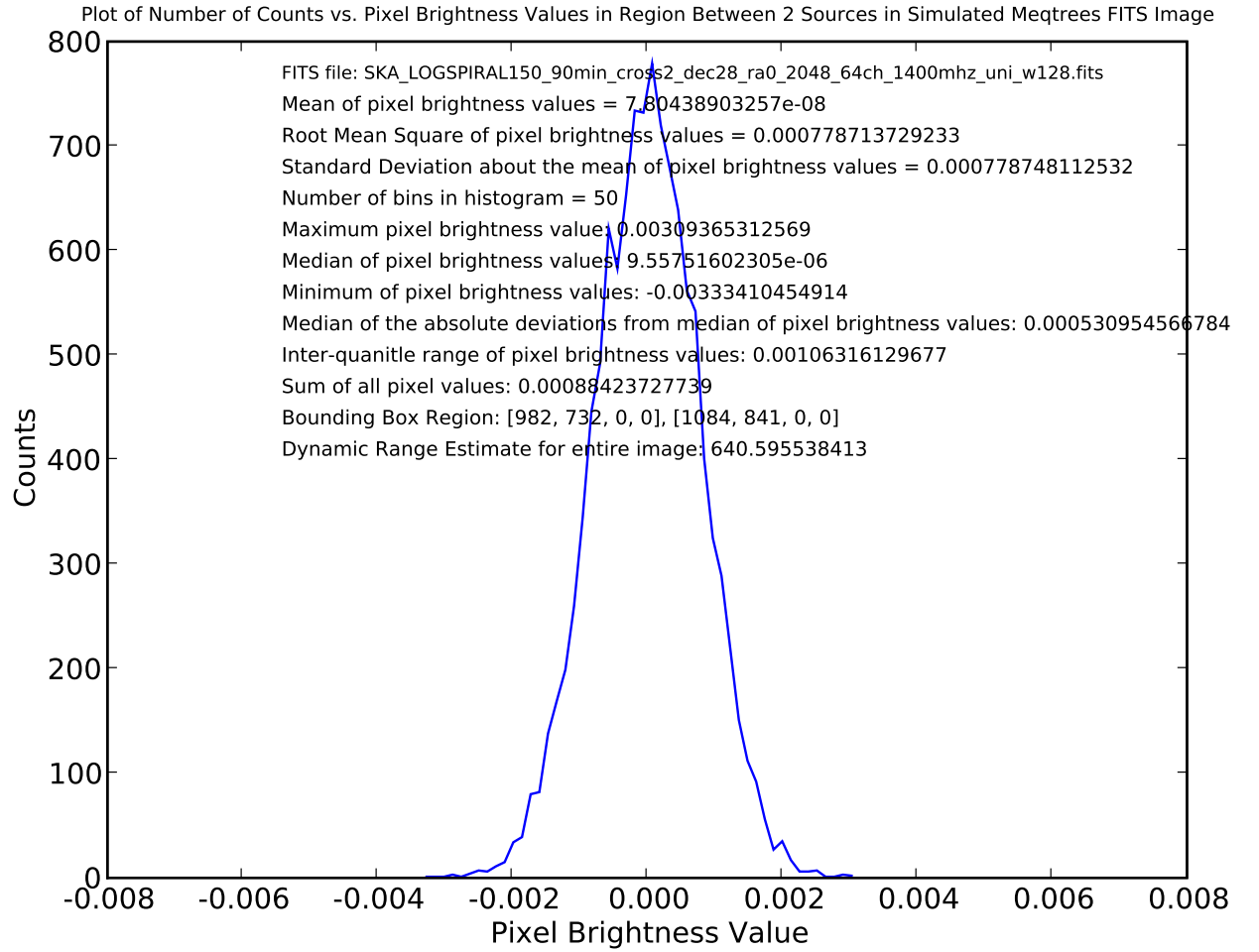


Figure 4: Line plot of counts vs. pixel brightness value for the specified smaller bounding box region (bottom left corner = [982,732,0,0], top right corner = [1084,841,0,0]) between bottom two sources in Fig. 1. Statistical measures calculated within the bounding box region are included in the plot. The dynamic range estimate is for the entire image and is taken as the ratio of the brightest (largest) pixel value in the image to the rms of pixel brightness values in the bounding box region.

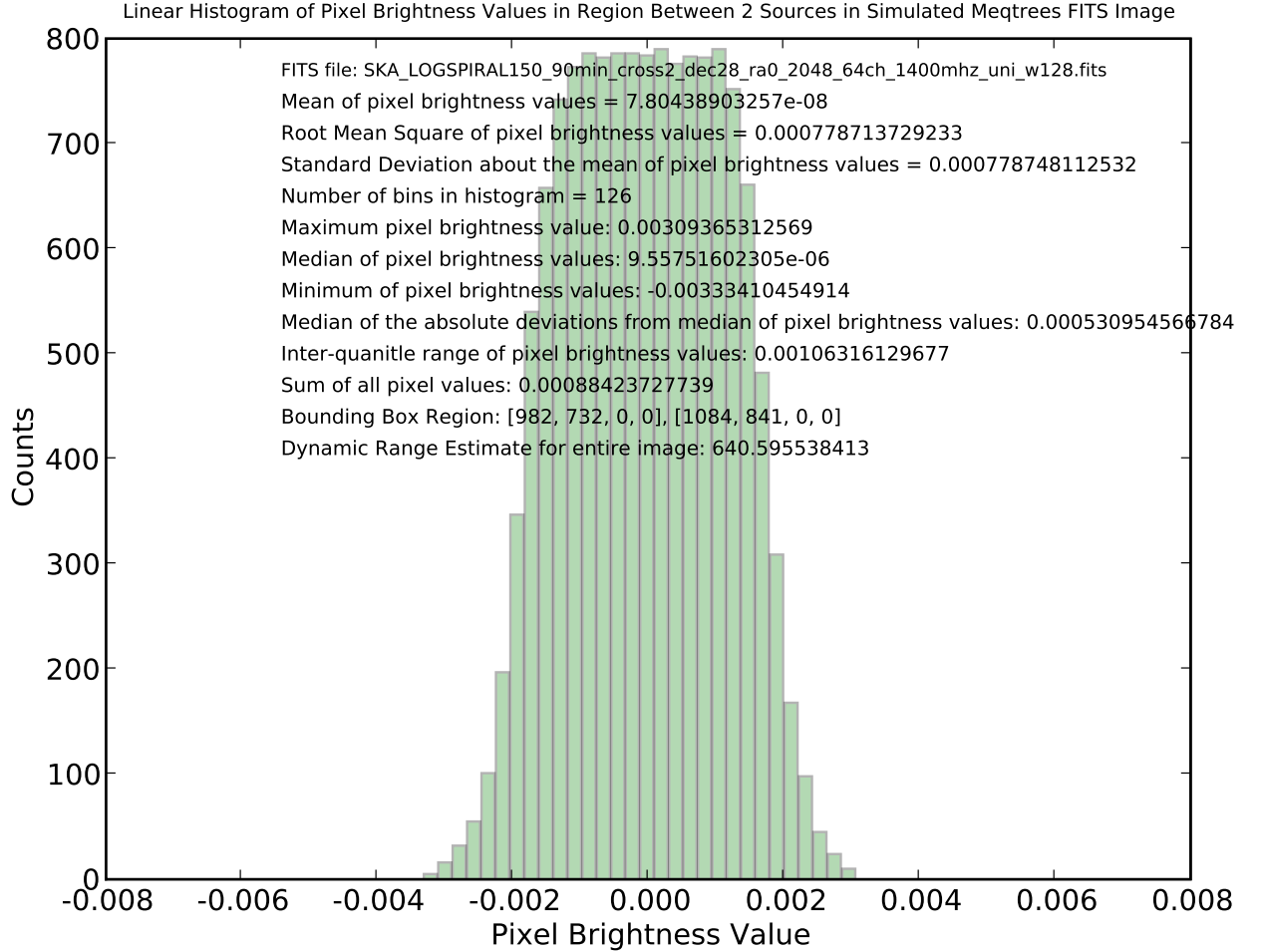


Figure 5: Histogram of counts vs. pixel brightness value for the specified smaller bounding box region (bottom left corner = [982,732,0,0], top right corner = [1084,841,0,0]) between the bottom two point sources in Fig. 1. Histogram generated using the 'image.histograms' CASA function for a particular chunk of the image in bounding box region (see <http://casa.nrao.edu/docs/casaref/image.histograms.html>). Statistical measures calculated within the bounding box region are included in the plot. The dynamic range estimate is for the entire image and is taken as the ratio of the brightest (largest) pixel value in the image to the rms of pixel brightness values in the bounding box region.

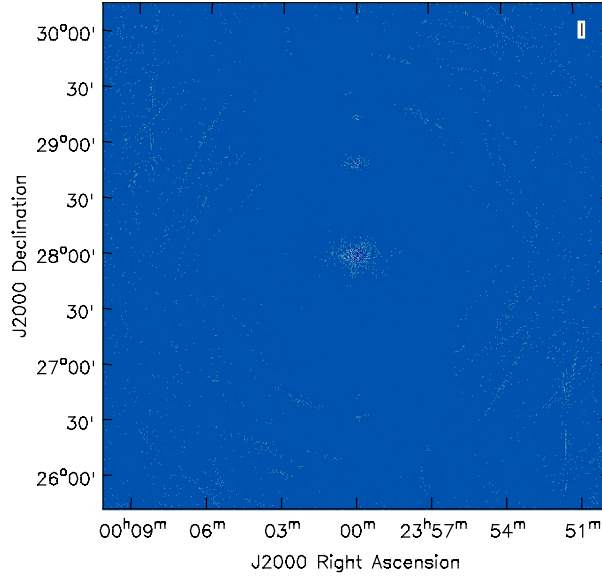


Figure 6: Meqtrees SKA simulation and Meqtrees-generated dirty image of four 1 Jy point sources located at (R.A.:  $0^h0^m0.1^s$ , Dec.: $28^d0^m1^s$ ), (R.A.:  $0^h0^m0.1^s$ , Dec.: $26^d45^m10s$ ), (R.A.:  $0^h0^m0.1^s$ , Dec.: $29^d15^m00s$ ), and (R.A.:  $0^h0^m0.1^s$ , Dec.: $28^d50^m00s$ ), with Cortes beam applied. Simulation: log-spiral configuration with  $N_a = 150$ ; field center: R.A.= $0^h0^m0.1^s$ , Dec.= $28^d0^m1^s$ ; observing freq.: 1400 MHz; number of frequency channels: 64; channel increment: 5.0 MHz; antenna diameter: 12.0 m.; integration time: 60 sec.; scan length: 90 min.; FWHM of primary beam:  $\sim 75'$ ; Stokes parameter in image: I; imaging weights: uniform; number of convolution functions for w-projection: 128; image size in pixels: 2048; image size in arcmin: 273; image displayed, zoomed in, and brightness-contrast colormap adjustments with casaviewer; colormap used: 'isophotes'.

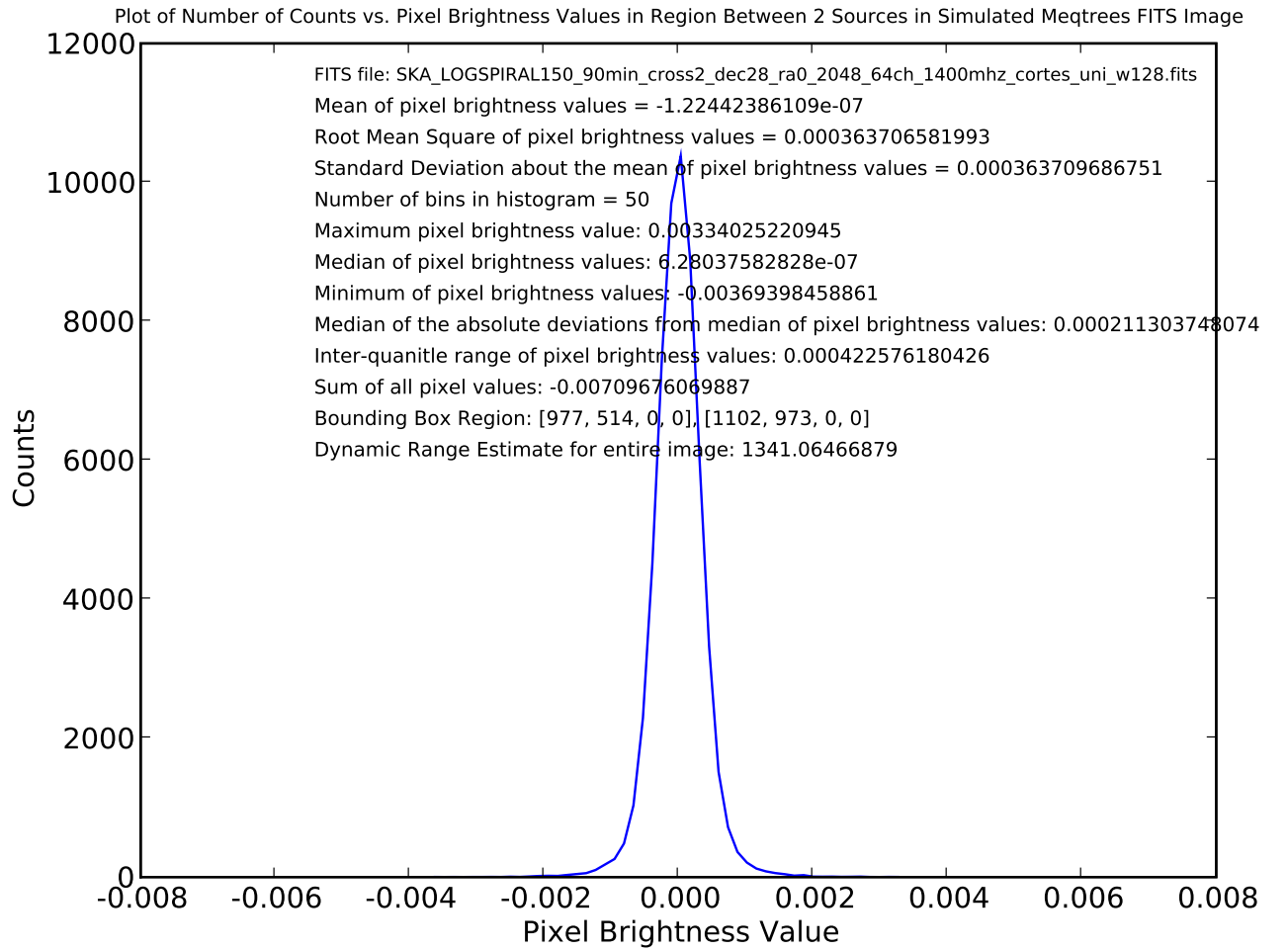


Figure 7: Line plot of counts vs. pixel brightness value for a specified bounding box region (bottom left corner = [977,514,0,0], top right corner = [1102,973,0,0]) between bottom two sources in Fig. 6. Statistical measures calculated within the bounding box region are included in the plot. The dynamic range estimate is for the entire image and is taken as the ratio of the brightest (largest) pixel value in the image to the rms of pixel brightness values in the bounding box region.

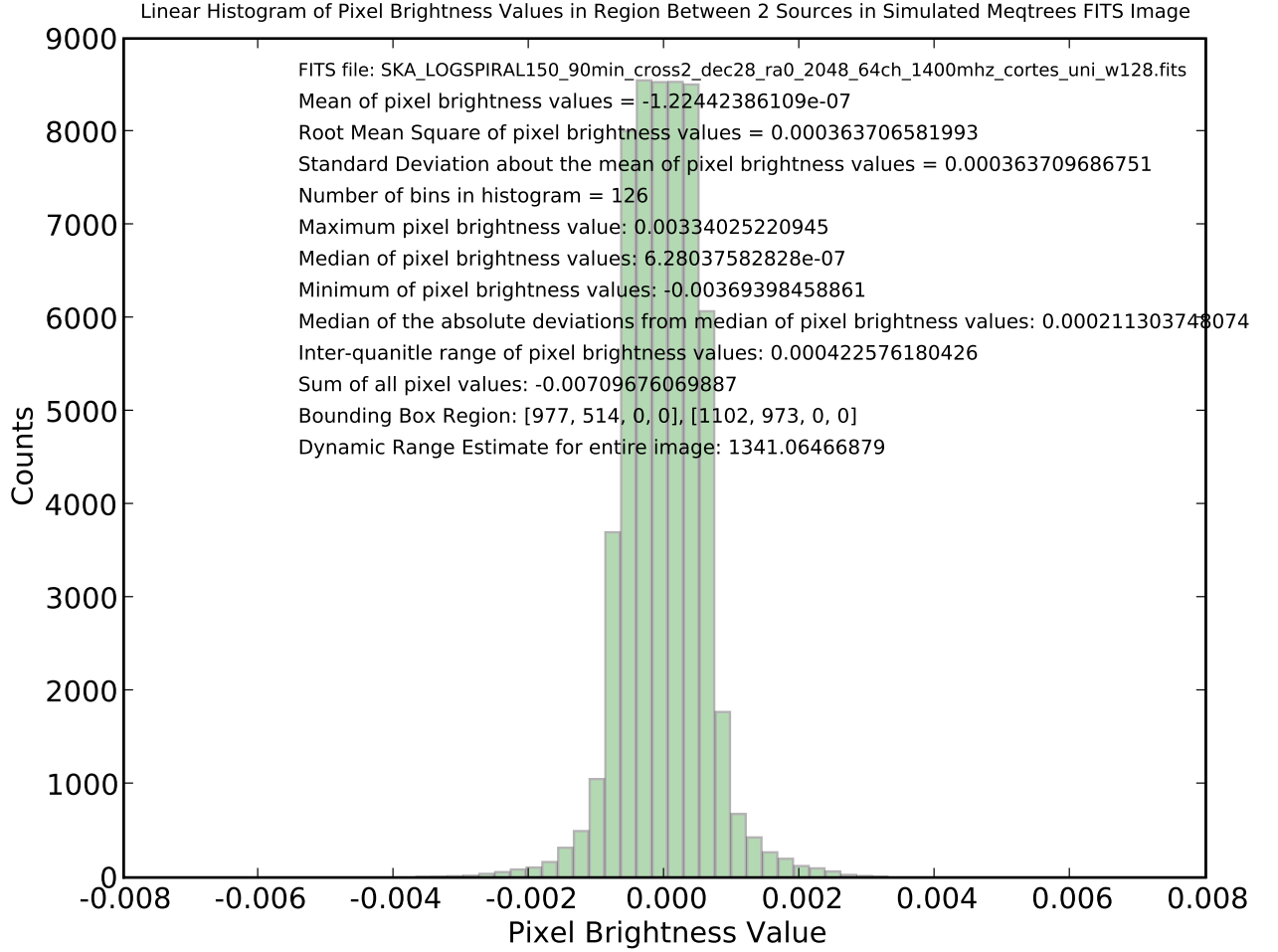


Figure 8: Histogram of counts vs. pixel brightness value for specified bounding box region (bottom left corner = [977,514,0,0], top right corner = [1102,973,0,0]) between bottom two sources in Fig. 6. Histogram generated using the 'image.histograms' CASA function for a particular chunk of the image in bounding box region (see <http://casa.nrao.edu/docs/casaref/image.histograms.html>). Statistical measures calculated within the bounding box region are included in the plot. The dynamic range estimate is for the entire image and is taken as the ratio of the brightest (largest) pixel value in the image to the rms of pixel brightness values in the bounding box region.



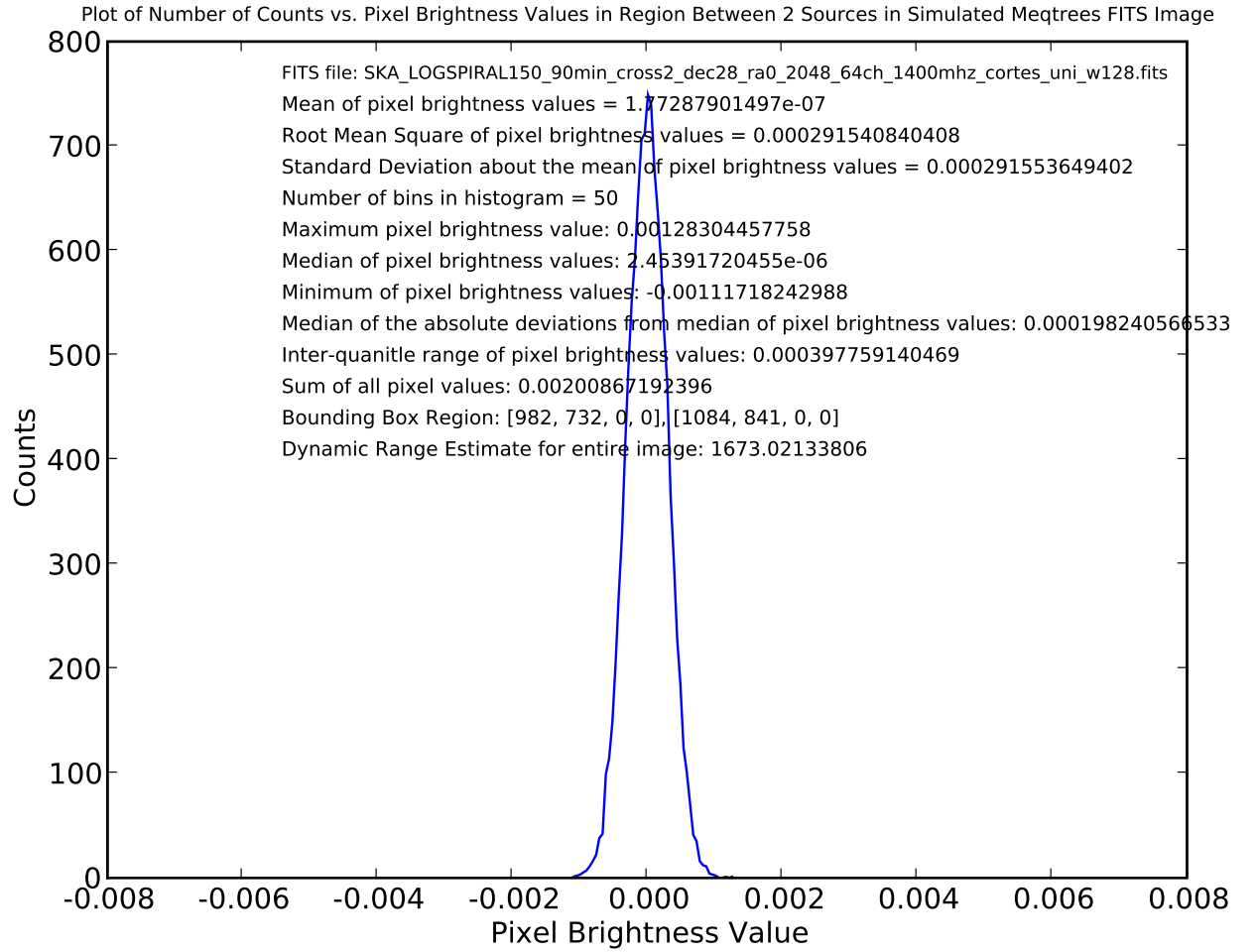


Figure 9: Line plot of counts vs. pixel brightness value for the specified smaller bounding box region (bottom left corner = [982,732,0,0], top right corner = [1084,841,0,0]) between bottom two sources in Fig. 6. Statistical measures calculated within the bounding box region are included in the plot. The dynamic range estimate is for the entire image and is taken as the ratio of the brightest (largest) pixel value in the image to the rms of pixel brightness values in the bounding box region.

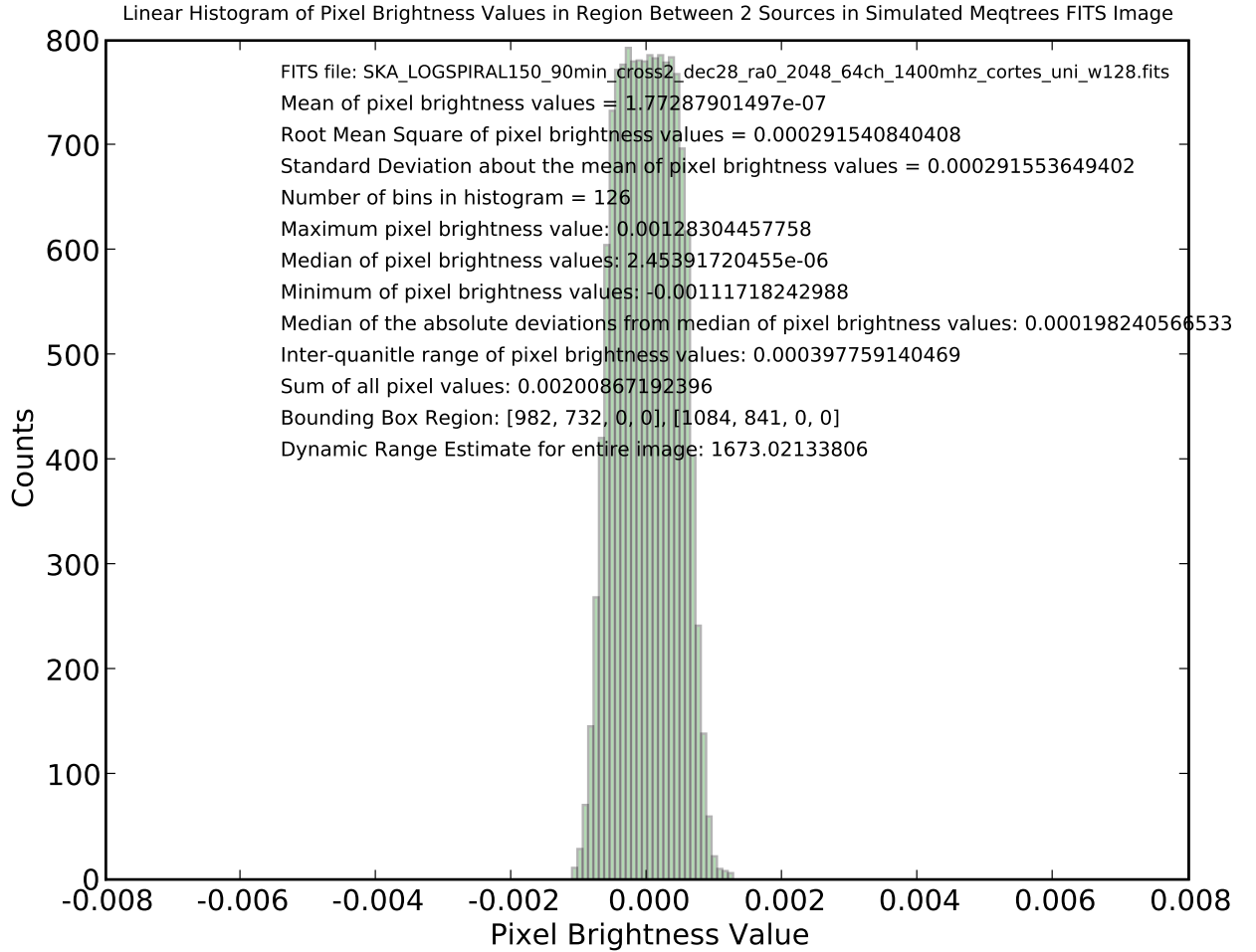


Figure 10: Histogram of counts vs. pixel brightness value for the specified smaller bounding box region (bottom left corner = [982,732,0,0], top right corner = [1084,841,0,0]) between the bottom two point sources in Fig. 6. Histogram generated using the 'image.histograms' CASA function for a particular chunk of the image in bounding box region (see <http://casa.nrao.edu/docs/casaref/image.histograms.html>). Statistical measures calculated within the bounding box region are included in the plot. The dynamic range estimate is for the entire image and is taken as the ratio of the brightest (largest) pixel value in the image to the rms of pixel brightness values in the bounding box region.

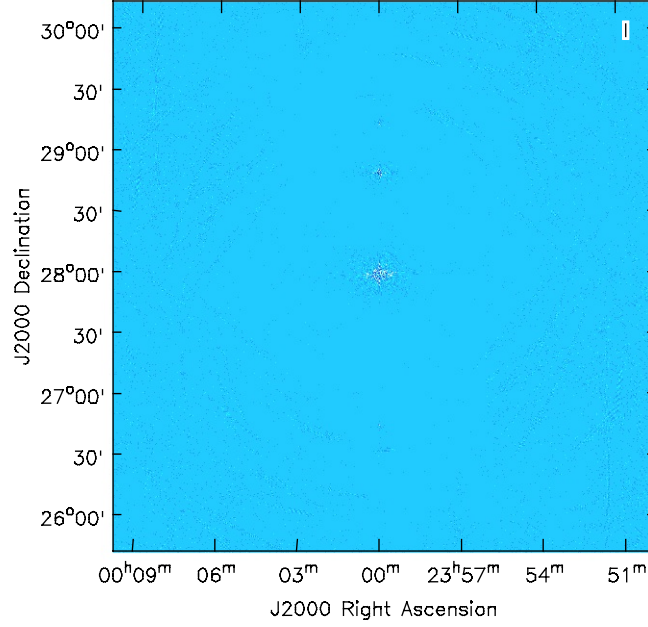


Figure 11: Meqtrees SKA simulation and Meqtrees-generated dirty image of four 1 Jy point sources located at (R.A.:  $0^h0^m0.1^s$ , Dec.:  $28^d0^m1^s$ ), (R.A.:  $0^h0^m0.1^s$ , Dec.:  $26^d45^m10^s$ ), (R.A.:  $0^h0^m0.1^s$ , Dec.:  $29^d15^m00^s$ ), and (R.A.:  $0^h0^m0.1^s$ , Dec.:  $28^d50^m00^s$ ), with Cortes beam applied and pointing error model ( $l_{offset} = 0.00172179$ ,  $m_{offset} = 0.00041211$ ) also applied. All other observation, simulation, and imaging parameters same as in Figure 1.

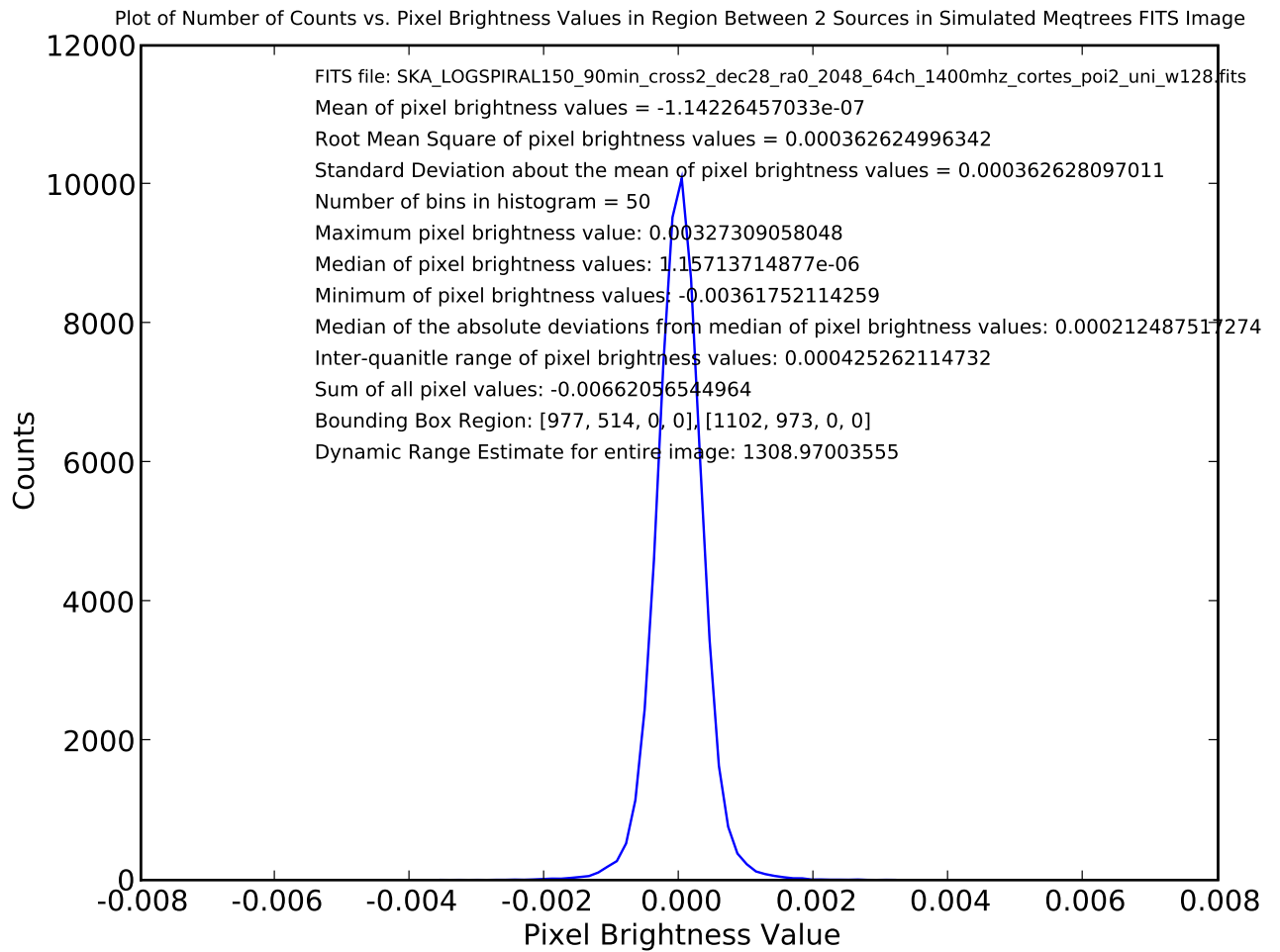


Figure 12: Line plot of counts vs. pixel brightness value for a specified bounding box region (bottom left corner = [977,514,0,0], top right corner = [1102,973,0,0]) between bottom two sources in Fig. 11. Statistical measures calculated within the bounding box region are included in the plot. The dynamic range estimate is for the entire image and is taken as the ratio of the brightest (largest) pixel value in the image to the rms of pixel brightness values in the bounding box region.

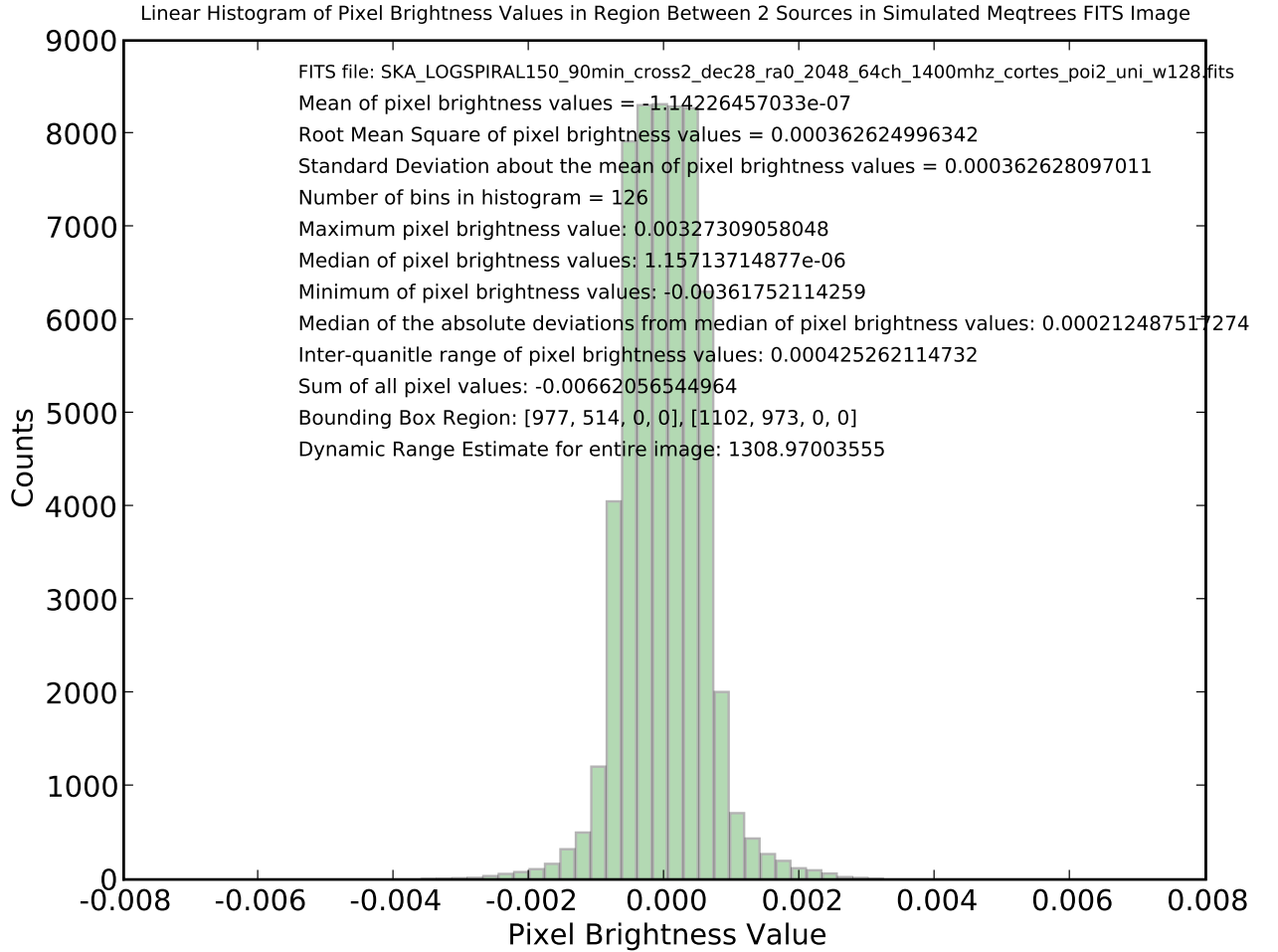


Figure 13: Histogram of counts vs. pixel brightness value for specified bounding box region (bottom left corner = [977,514,0,0], top right corner = [1102,973,0,0]) between bottom two sources in Fig. 11. Histogram generated using the 'image.histograms' CASA function for a particular chunk of the image in bounding box region (see <http://casa.nrao.edu/docs/casaref/image.histograms.html>). Statistical measures calculated within the bounding box region are included in the plot. The dynamic range estimate is for the entire image and is taken as the ratio of the brightest (largest) pixel value in the image to the rms of pixel brightness values in the bounding box region.

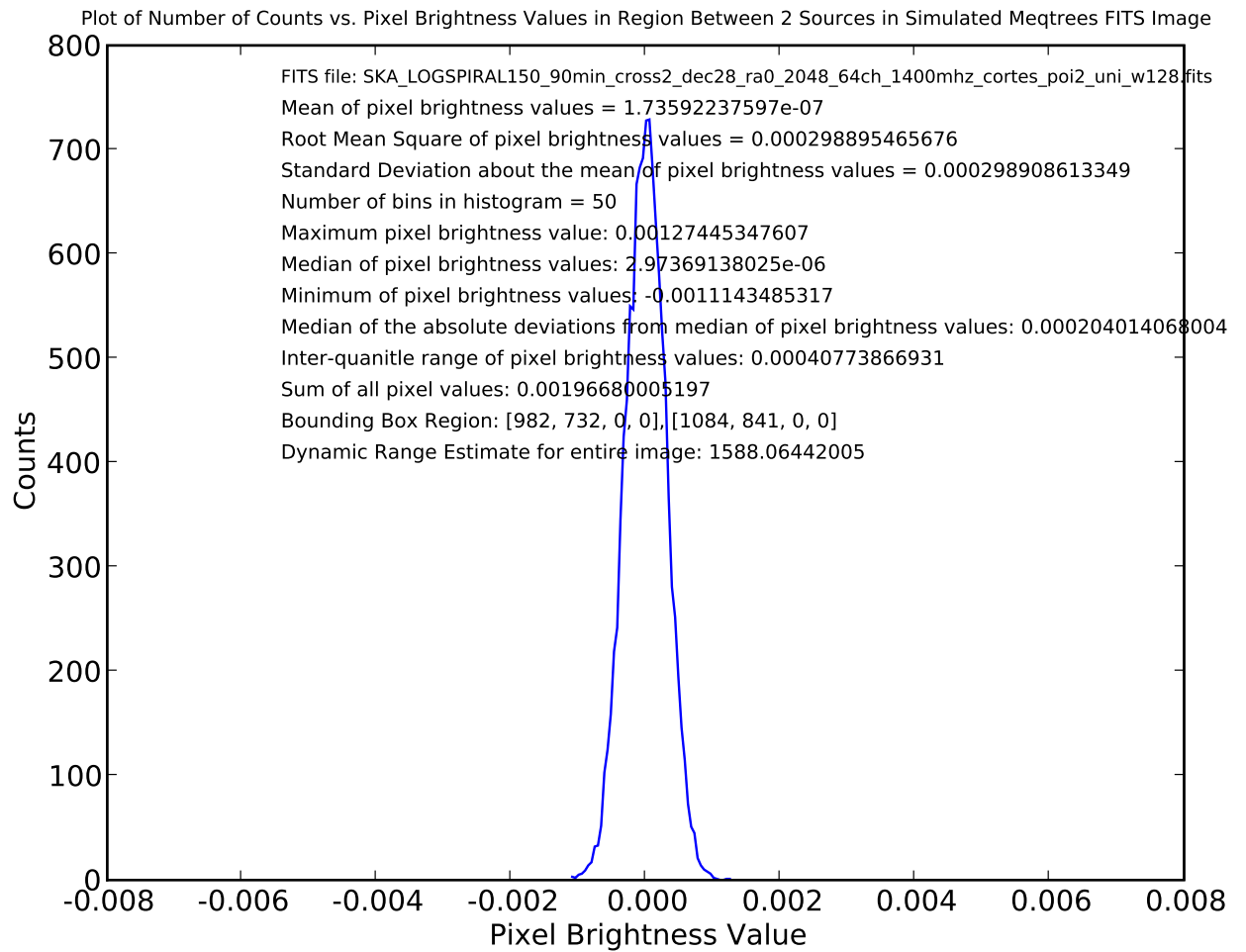


Figure 14: Line plot of counts vs. pixel brightness value for the specified smaller bounding box region (bottom left corner = [982,732,0,0], top right corner = [1084,841,0,0]) between bottom two sources in Fig. 11. Statistical measures calculated within the bounding box region are included in the plot. The dynamic range estimate is for the entire image and is taken as the ratio of the brightest (largest) pixel value in the image to the rms of pixel brightness values in the bounding box region.

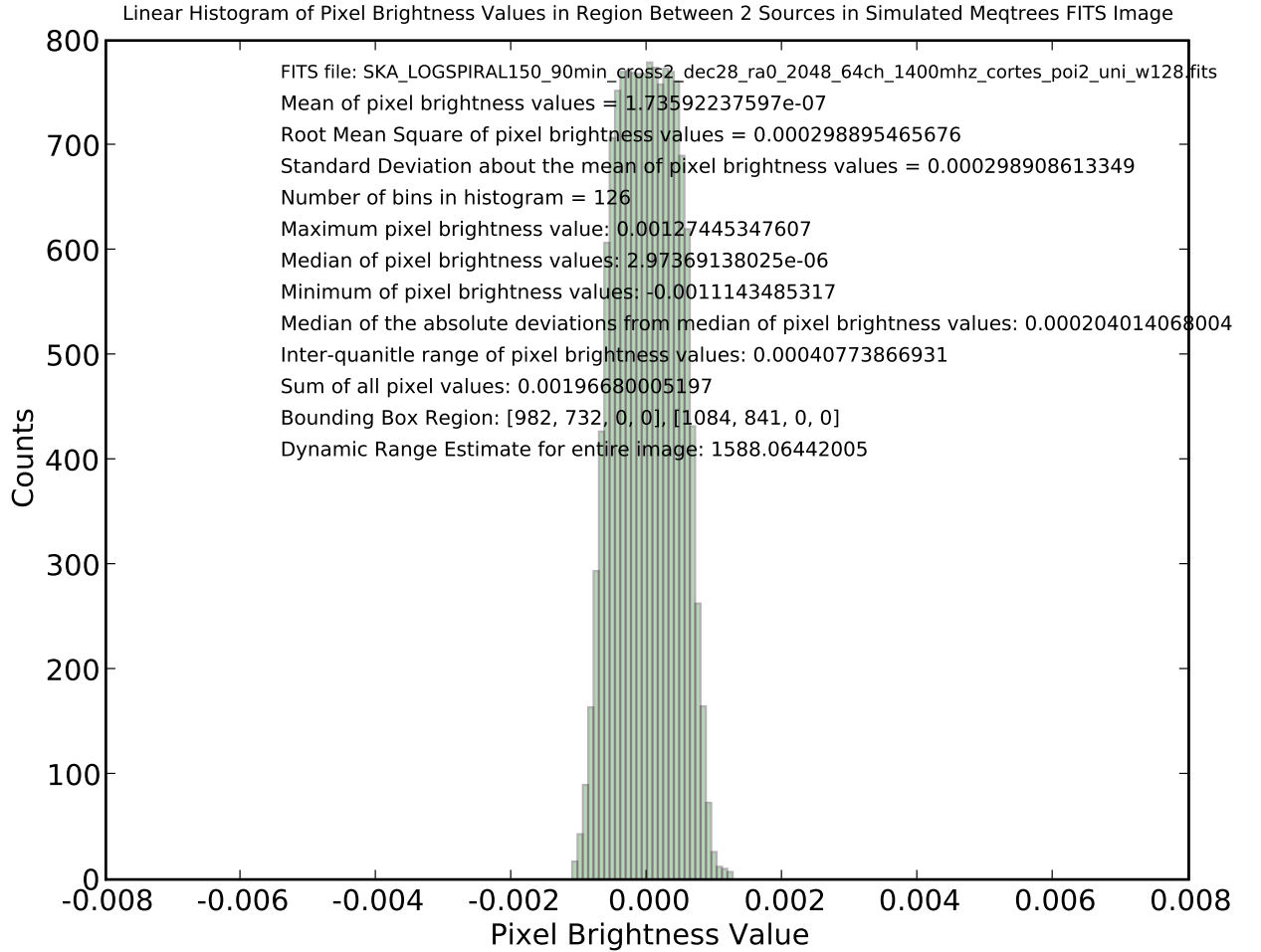


Figure 15: Histogram of counts vs. pixel brightness value for the specified smaller bounding box region (bottom left corner = [982,732,0,0], top right corner = [1084,841,0,0]) between the bottom two point sources in Fig. 11. Histogram generated using the 'image.histograms' CASA function for a particular chunk of the image in bounding box region (see <http://casa.nrao.edu/docs/casaref/image.histograms.html>). Statistical measures calculated within the bounding box region are included in the plot. The dynamic range estimate is for the entire image and is taken as the ratio of the brightest (largest) pixel value in the image to the rms of pixel brightness values in the bounding box region.