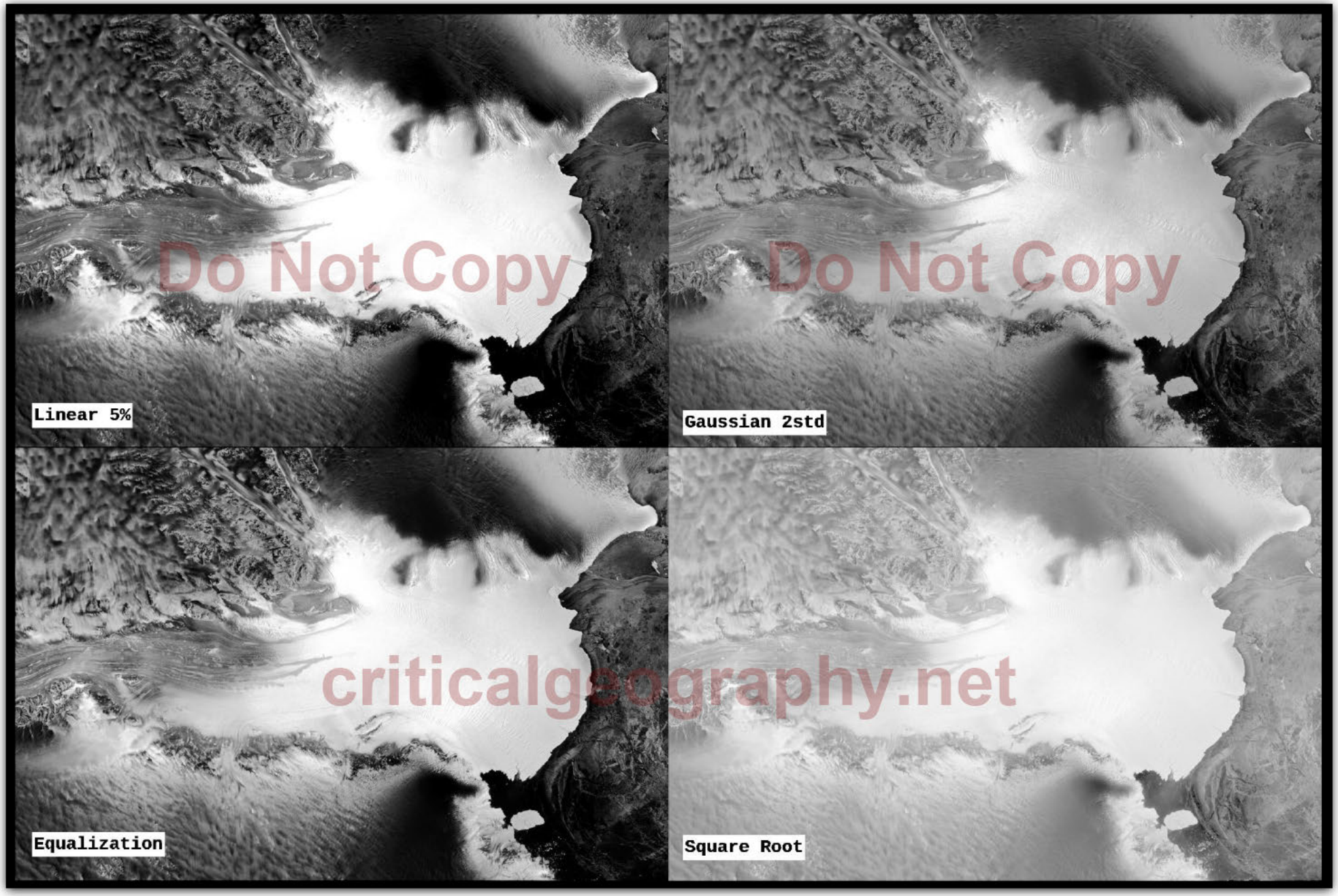
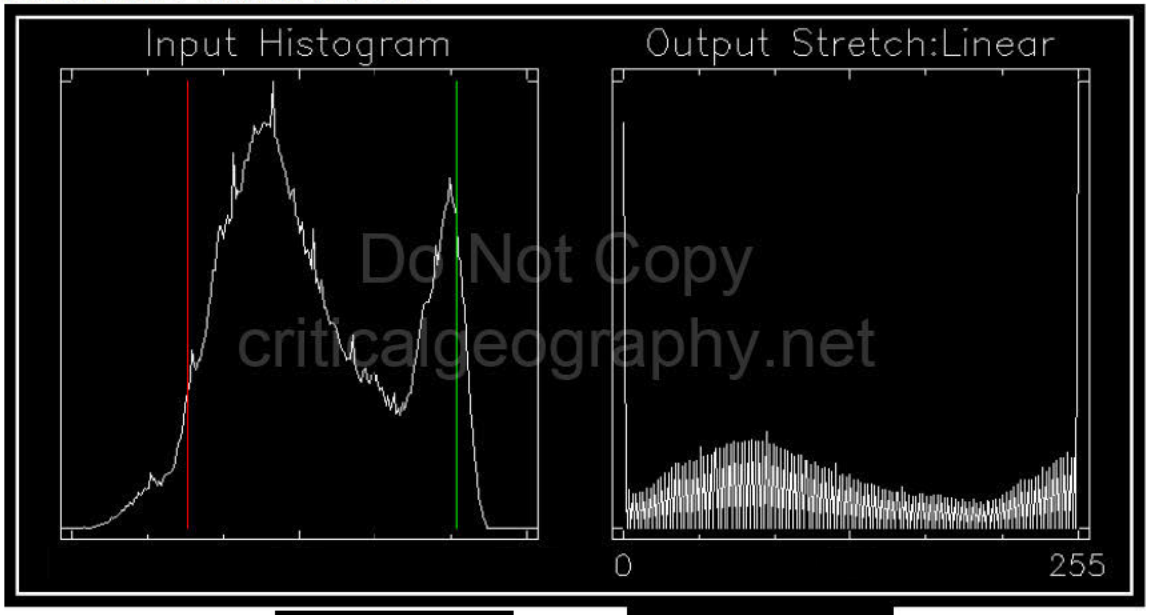
Task 1: Image Contrast Stretch

Portions of this document have been redacted to prevent academic integrity violations and plagairism

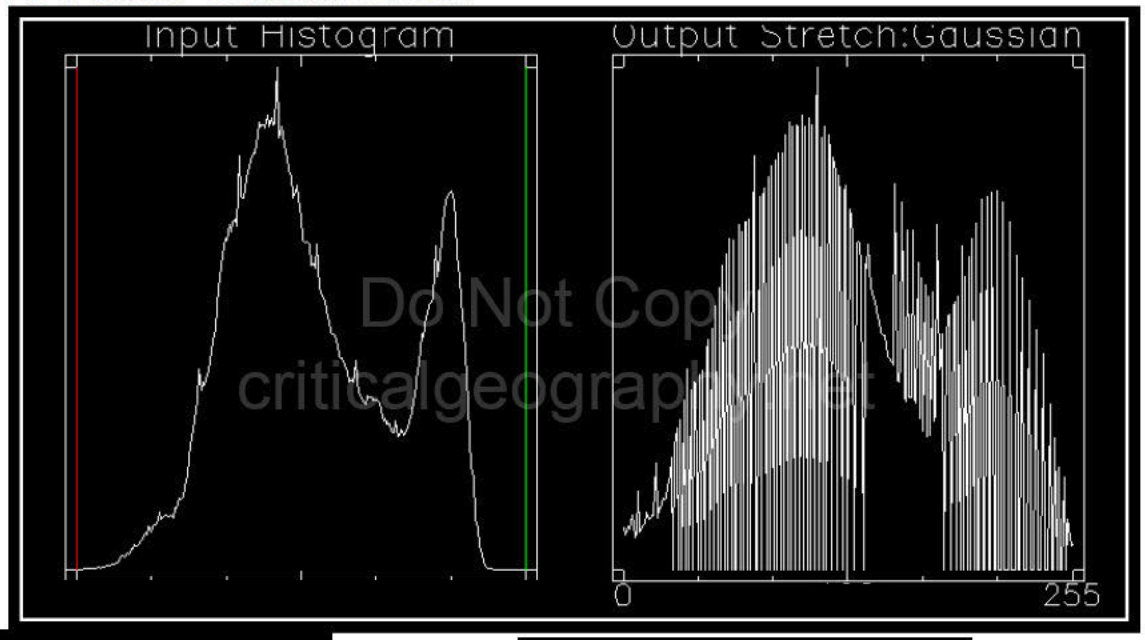


QUESTION 1: Linear Stretch



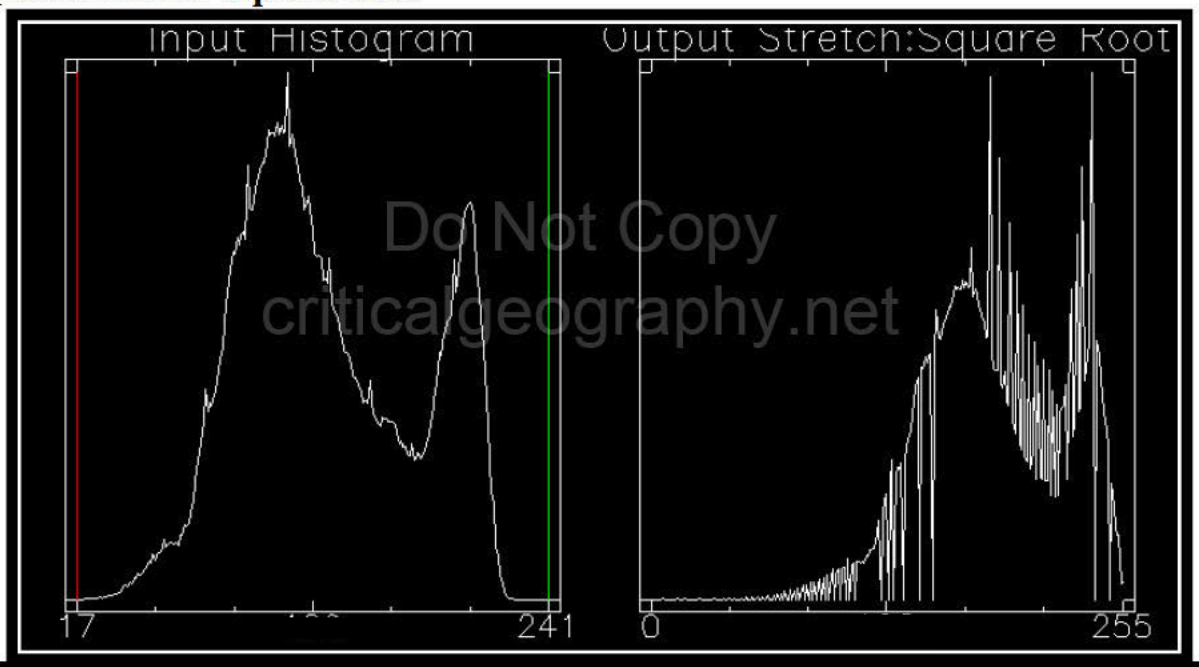
Applying the linear stretch caused the histogram to quite literally stretch horizontally so the histogram would fill the full range. Pixels below the [redacted] all become 0, and pixels about the [redacted] all become 255. The values [redacted] are reassigned to fill the new range while maintaining the general shape of the distribution.

QUESTION 2: Gaussian Stretch



Applying this stretch changed acted similarly to the linear stretch in that it reassigned the extreme values [redacted]

QUESTION 3: Square Root



[redacted]

QUESTION 4: Equalization

[redacted]

This stretch [redacted] the curve so there would be closer to [redacted] for each DN value. This helped give more contrast between [redacted] values. The resulting image has the most [redacted] balance.

TASK 2: VISUALIZING WITH DIGITAL ELEVATION MODELS

[redacted] converted the DEM to hue values (hue being the "portion of the rainbow" part of color). In the DEM, the highest elevations have the highest DN values (255) and these become red (hue 240). The lowest elevations have DN of 0 [redacted]

We converted [redacted] to value which is a measure of the "blackness" (lower values are more black), so the [redacted] did not change much in the final image, but the values inverted (i.e., the white areas in the original became black and the black areas became lighter)
For saturation, we converted [redacted] to 170 for all pixels, but since this is a constant, we could have used any band. [redacted]

The benefits to coding the elevations in color is that it allows us to display a third dimension (elevation) [redacted] in clear and concise way. It can also serve to [redacted] certain areas/elevations by [redacted]