MAMM Ascending Image Mosaics

Two versions of the MAMM Ascending Image Mosaic are provided at 125m spatial resolution, 8-bit radiometric resolution. The purpose of these mosaics is for the observation of glaciological features. The mosaics are specifically not for radiometric analyses and cannot be radiometrically compared with the similar AMM1 mosaic.
The first MAMM ascending image mosaic is a linear scaled version of a radiometrically smoothed amplitude mosaic (referred to hereafter as *linear-scaled mosaic*)(fig. 1). The entire range of values from the 16-bit input range are scaled to the 8-bit output range.
The second version of the 125 image mosaic is a logarithmically-scaled version of radiometrically smoothed mosaic, and is therefore effectively the qualitative equivalent of a smoothed backscatter mosaic (referred to hereafter as *log-scaled mosaic*) (fig. 2). For the log-scaled mosaic, values below the equivalent of -25dB (16-bit DN value 340), the noise floor for Radarsat, are not considered in the calculation, but instead set to a value of zero. This mosaic corresponds with the original log transformed 8-bit 125m resolution AMM1 mosaic, though is not radiometrically comparable, and provides the best stretch for interpretation of features.

Output for both are unsigned 8-bit integers, fractional values are truncated.

Equation for linear-scaled mosaic:

16-bit input range : *(5-16,812)*
8-bit output range : *(0-255)*

$$DN_{8-bit} = \frac{DN_{16-bit} - 5}{65.67}$$

Equation for log-scaled mosaic:

16-bit input range: *(340-16,812)*
8-bit output range : *(0-255)*

$$DN_{8-bit} = 150.39 \times (\log_{10}(DN_{16-bit}) - 2.53)$$

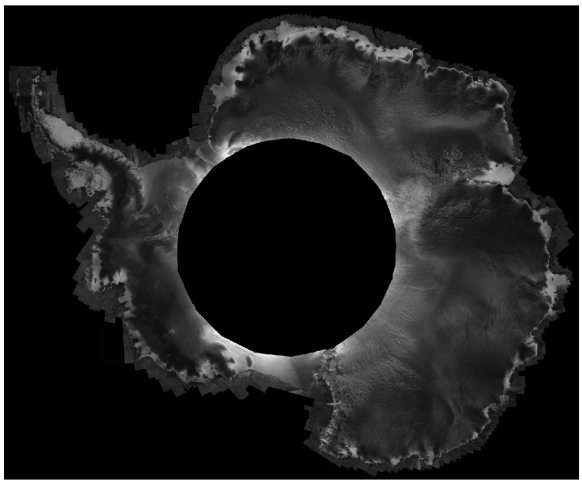

Fig. 1: Linear-scaled 8-bit 125m mosaic

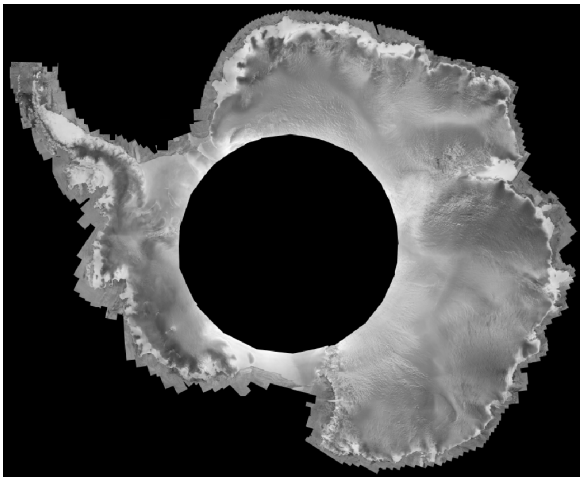

Fig. 2: Log-scaled 8-bit 125m mosaic