MARCI REGIONAL AND GLOBAL MAPPING OF MARS. S.W. Lee[1], M.Wolff[2], and B.A. Cantor[3] [1]Denver Museum of Nature & Science, 2001 Colorado Blvd., Denver, CO 80205 slee@dmns.org, , [2]Space Science Institute, Boulder, CO 80301, [3]Malin Space Science Systems, San Diego, CA 92121

The Mars Color Imager (MARCI) instrument on the Mars Reconnaissance Orbiter (MRO) mission provides the capability to image the entire planet daily in seven different wavelength bands (five narrow-bandpass visible wavelength filters and two UV filters) at a maximum spatial resolution of 1 km/pixel. Typically, thirteen orbital "swaths" are obtained daily. MRO began transitional science observations in late-September 2006, and MARCI has been operating since that initial turn-on.

MARCI has a 180° field-of-view, necessitating creation of map-projected images to adequately view and analyze the data. Assembly of global and regional mosaics, corrected for viewing and lighting geometry and selected to eliminate discrete atmospheric features (i.e. optically thick dust or condensate clouds) are routinely derived data products from this instrument. However, corrections for atmospheric aerosol "hazes" are performed for each image prior to creating a map projection. The completed global or regional mosaics are radiometrically, photometrically, and "atmospherically" corrected (see Figure 1).

One of the main goals of producing such map products from the MARCI data is to detect and quantify surface albedo variations at the highest spatial and temporal resolutions possible. This will eventually allow seasonal and secular variations in surface albedo, related to erosion/deposition of dust and frosts, to be tracked.

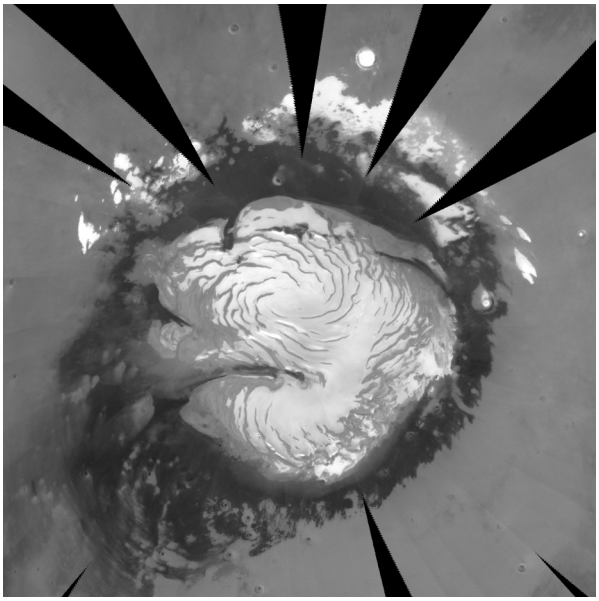

Figure 1: MARCI mosaic of the North Polar Region, created using images obtained through the 600nm filter. Images cover the period 29 September through 2 October 2006. The map is in stereographic polar projection, and the area covered is covered is 70°N to 90°N latitude. A simple Minnaert photometric correction has been applied.