

Characterization of the South Pole Cryptic Region by the High Resolution Stereo Camera on Mars Express

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The distribution of the Martian south polar cap is not symmetric during the springtime retreat. On the opposite site of the residual cap a so-called cryptic region is found between latitudes 75oS and 85oS and longitude 150oW and 310oW. A major puzzle about the cryptic region is that the albedo appears almost as dark as the bare ground but the surface temperature still remains cold. The area occupies the same area from year to year. There are several special surface features in the cryptic region, for example, spiders, fans, polygonal crack patterns, and Dalmatian spots according to the MOC observations. The formation of these surface features might be controlled by the seasonal evolution of the surface ice layer. The High Resolution Stereo Camera (HRSC) on Mars Express has taken images of the south polar area during recent orbits and provided a data base for the generation of seamless high-resolution and colour image mosaics with a resolution of up to 12.5 m/px. We will use the new HRSC data (in combination with MOC) to characterize the cryptic region.