

Table 1. Mariner 9 images used in mapping

PCNO	Resolution (m/px)
114807	101
114809	101
120201	101
120209	100
120210	100
120219	100
120220	100
120221	100
120222	100
120223	100
120224	100
120225	100
120226	100
120227	100
120228	100
120229	100
120230	100
120231	100
120232	100
120233	100
120234	100
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120236	100
120237	100
120238	100
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120251	100
120252	100
120253	100
120254	100
120255	100
120256	100
120257	100
120258	100
120259	100
120260	100
120261	100
120262	100
120263	100
120264	100
120265	100
120266	100
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120268	100
120269	100
120270	100
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120272	100
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120274	100
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120276	100
120277	100
120278	100
120279	100
120280	100
120281	100
120282	100
120283	100
120284	100
120285	100
120286	100
120287	100
120288	100
120289	100
120290	100
120291	100
120292	100
120293	100
120294	100
120295	100
120296	100
120297	100
120298	100
120299	100
120300	100

Table 2. Lambert albedo and colors of surface units in the south polar region (Herkenhoff and Murray, 1990a)

Unit	Visual	Red	IRV
Residual polar ice cap (unit A)	0.18-0.43	0.27-0.53	1.2-1.6
Partial frost cover (unit A)	0.04-0.21	0.11-0.22	0.5-0.7
Dust mantle (unit A)	0.04-0.05	0.14-0.18	0.3-0.8
Dark material (unit A)	0.02-0.05	0.04-0.10	0.1-0.2
Layered deposits (unit A)	0.03-0.05	0.10-0.13	0.5-0.2

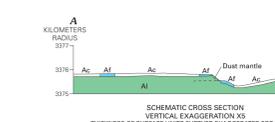
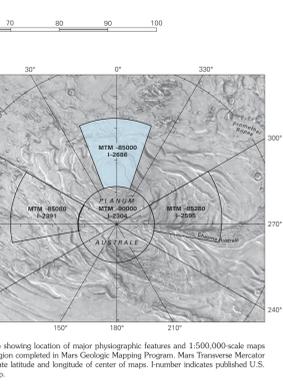
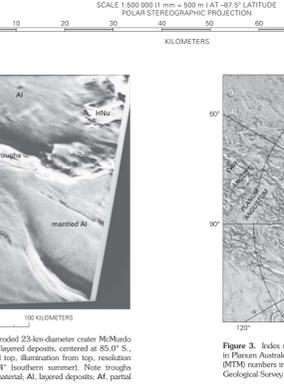
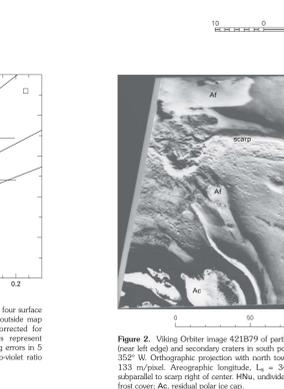
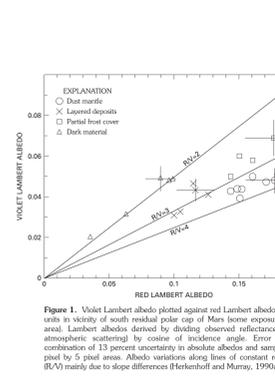


Figure 1. Violet Lambert albedo plotted against red Lambert albedo for four surface units in vicinity of south residual polar ice cap of Mars. Some exposures outside map area. Lambert albedo defined by dividing observed reflectance (corrected for atmospheric scattering) by cosine of solar zenith angle. Error bars represent combination of 10 percent uncertainty in absolute albedo and sampling errors in 5 pixel by 5 pixel areas. Albedo variations along lines of constant red-to-visual (R/V) mainly due to slope differences (Herkenhoff and Murray, 1990a).

Figure 2. Viking Outlier image 42187 of partly eroded 23-km-diameter crater McMurdo (top left edge) and secondary craters in south polar layered deposits, centered at 85.0° S, 352° W. Orthographic projection with north toward top. Illumination from top, resolution 133 m/px. Aerographic longitude, $\lambda = 348.4^\circ$ (southern summer). Note troughs superimposed on steep right of center HNU, unreddened material, AI, layered deposits, AI, partial frost cover, Ac, residual polar ice cap.

Figure 3. Index map showing location of major physiographic features and 1:500,000-scale maps in Planum Australe region completed in Mars Geologic Mapping Program. Mars Transverse Meridian (MTM) numbers indicate latitude and longitude of center of maps. 1-number indicates published U.S. Geological Survey map.

Figure 4. Mars Global Surveyor MOC 1 Mars Orbiter Camera image 7206 of part of south polar residual ice cap (unit A) and layered deposits (unit A), contained at lat 86.9° S, long 350° W, taken during southern spring when surface was covered by seasonal frost. Illumination from right. Arrow indicates ~240-m-diameter crater first mapped near right edge; note circular depressions and arcuate scarps on map. Because of seasonal frost cover, summertime albedo variations between on map are not visible, and unit AI is not visible.



GEOLOGIC MAP OF THE MTM-85000 QUADRANGLE, PLANUM AUSTRALE REGION OF MARS

By Ken Herkenhoff 2001