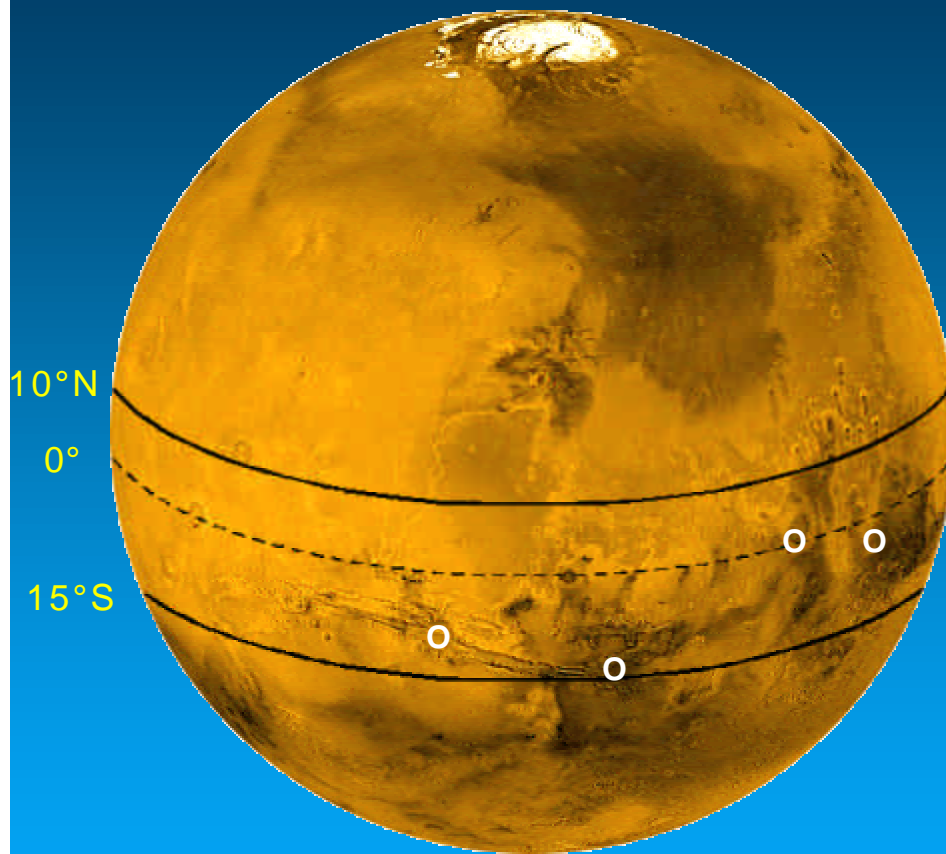
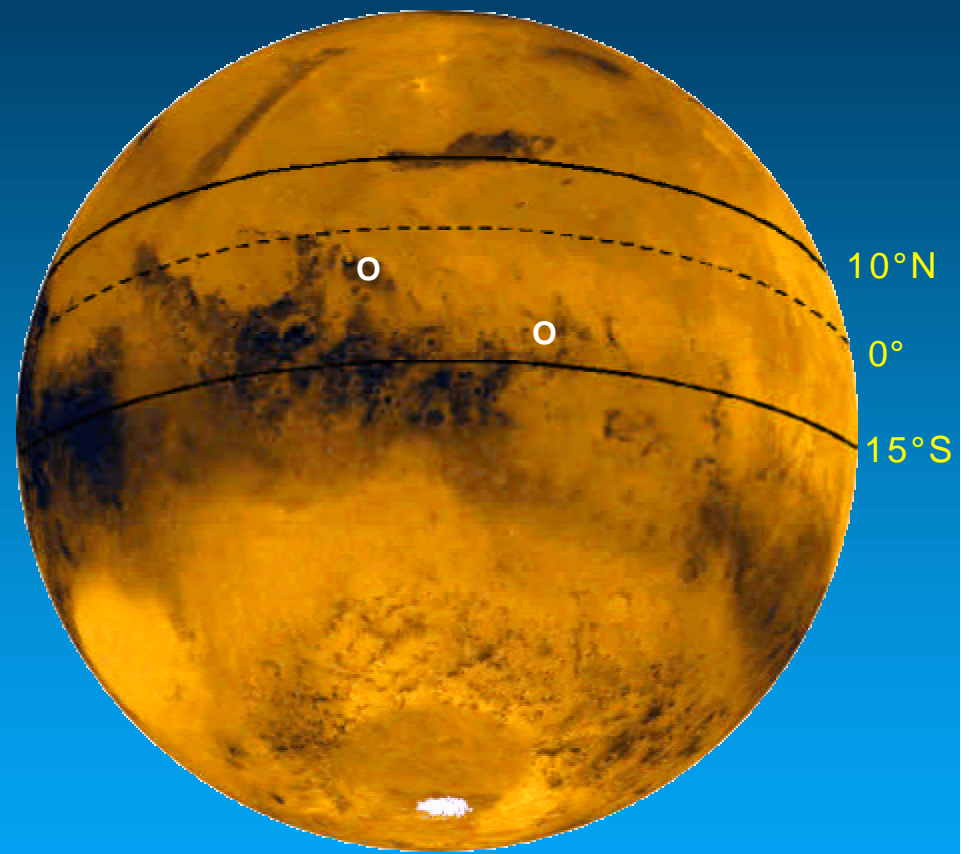


PROPOSED MARS LANDING SITES FOR MER A & B



West Hemisphere
Centered at:
30°N, 30°W



East Hemisphere
Centered at:
30°N, 210°W

EOS CHASMA

Who: R. Kuzmin, R. Greeley, D. Nelson, J. Farmer, C. Klein

What: Potential sites for the MER-A lander

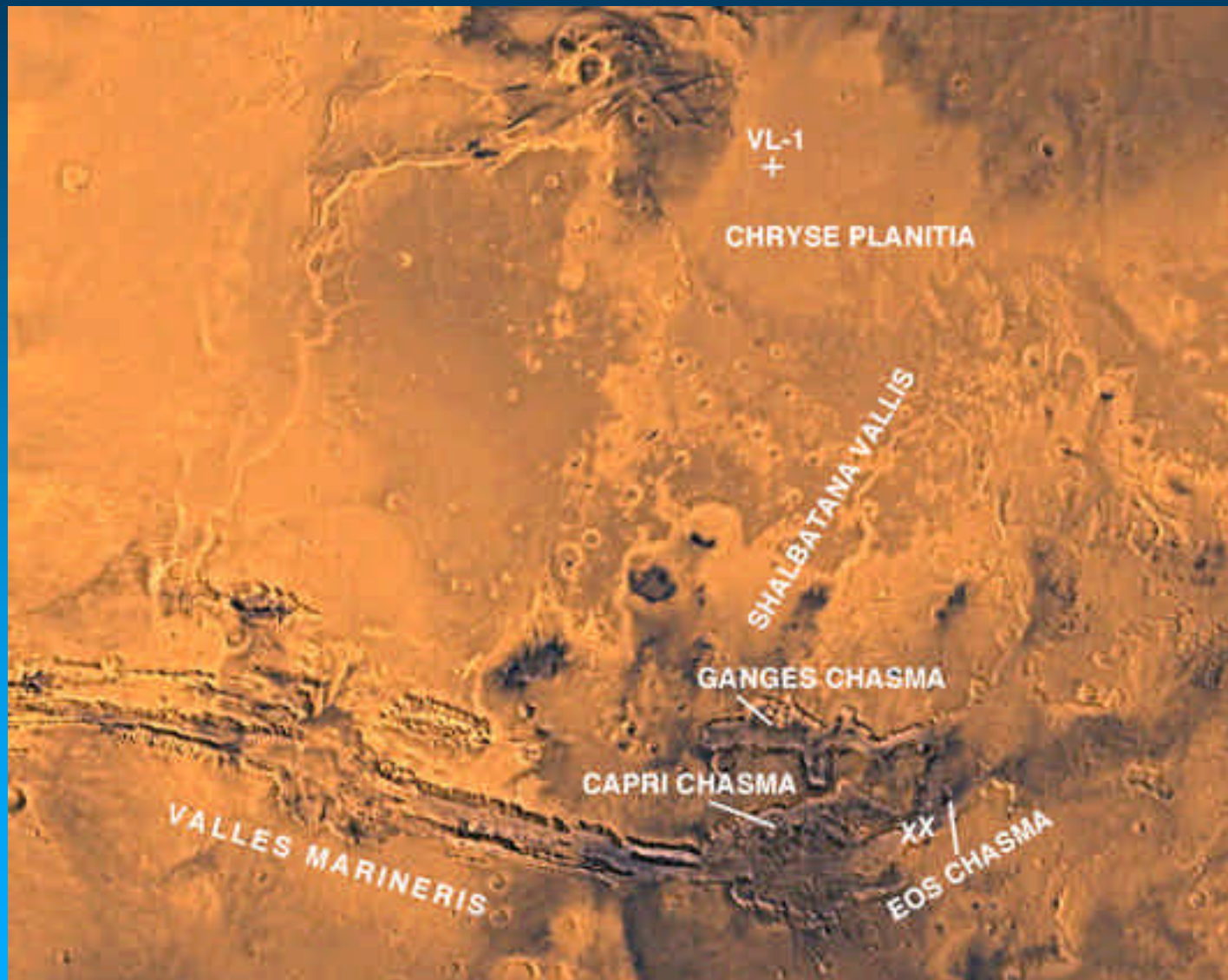
When: For the 2003 launch opportunity

Where: East end of Valles Marineris

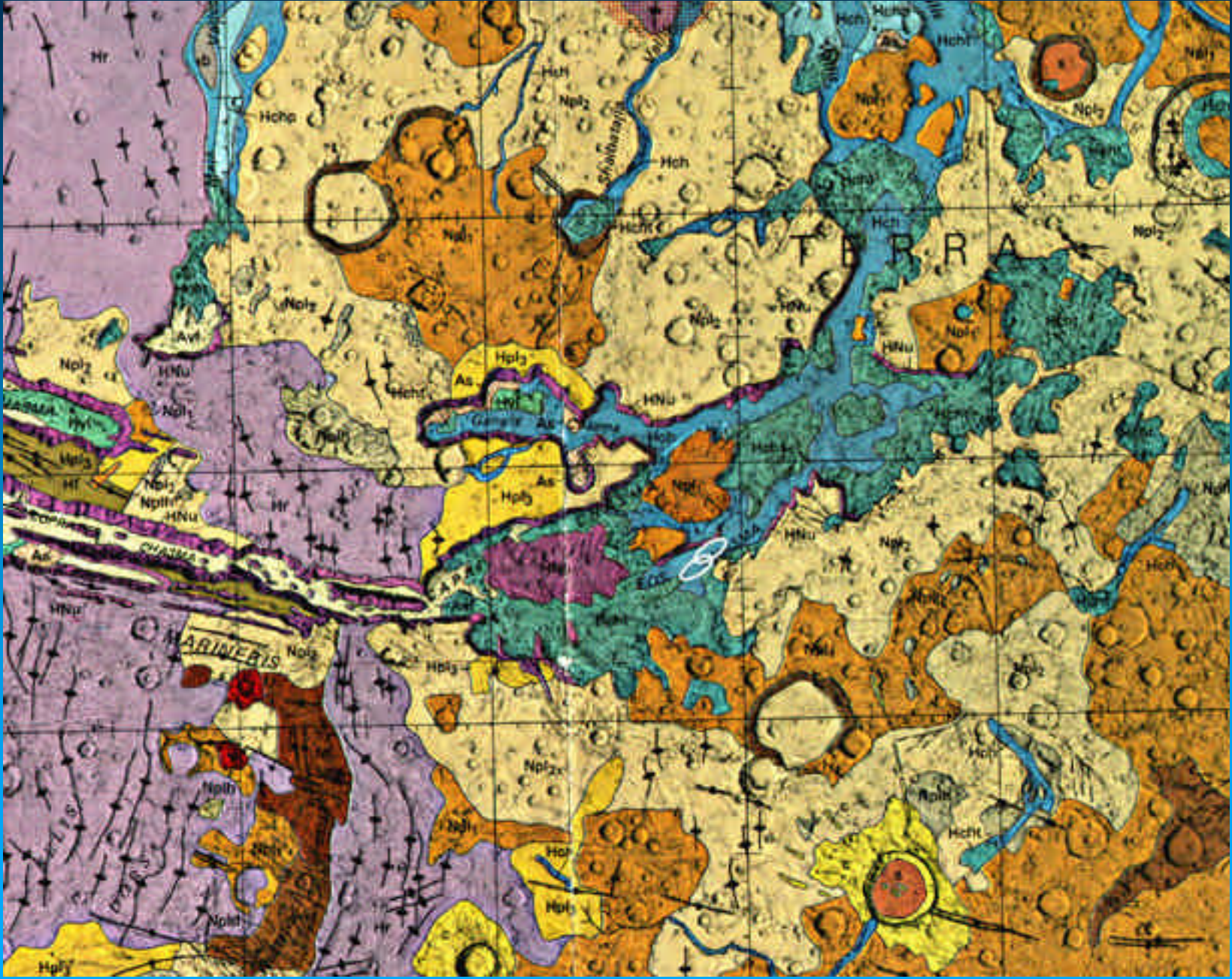
Why: It has a high potential to meet the science objectives

How: SAFELY!

EOS CHASMA MER-A Site



GENERAL GEOLOGY, EOS SITE (Scott & Tanaka, 1986)



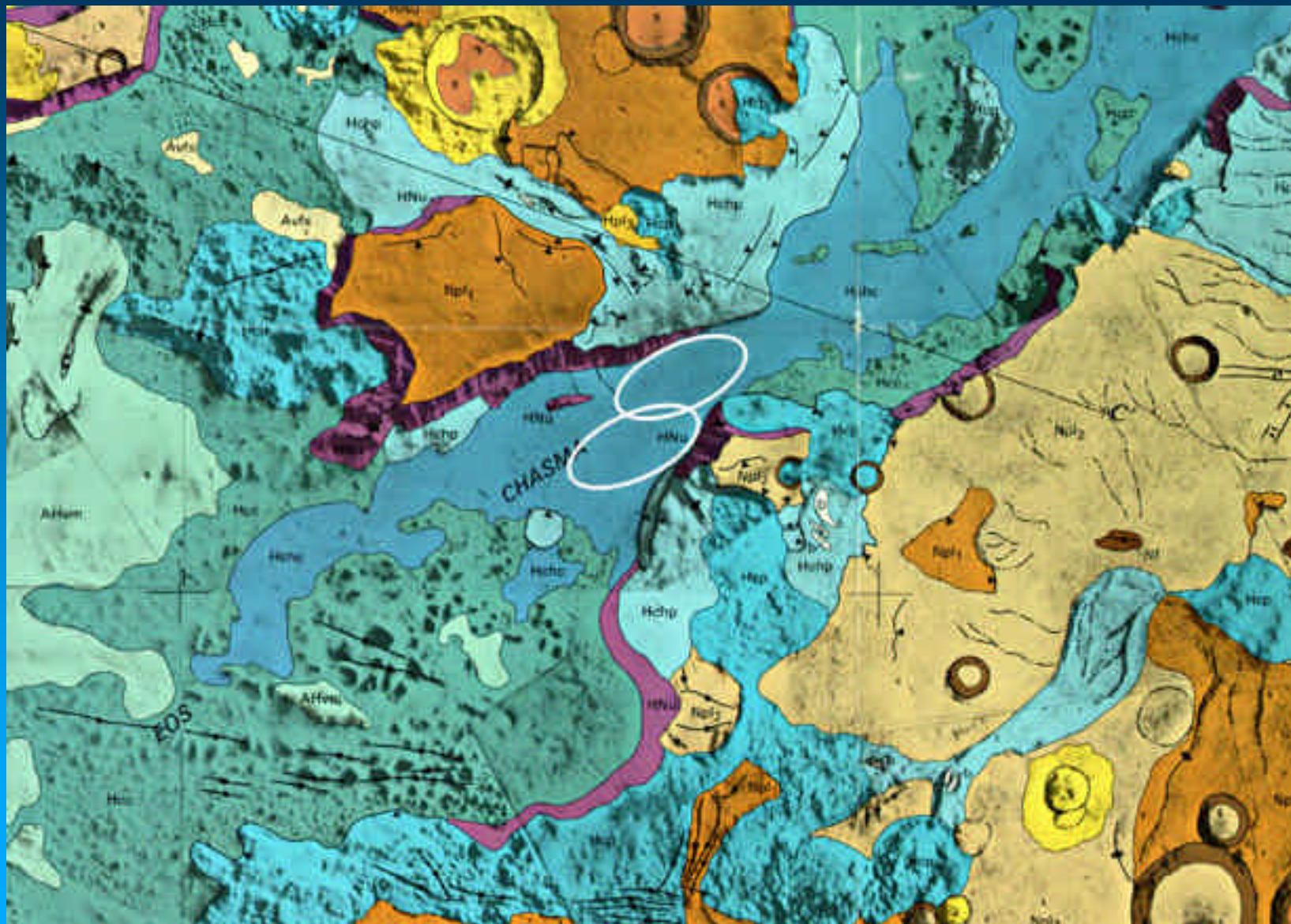
EOS CHASMA

Scientific Characteristics

- Major Hesperian-age channel system
- Chaotic terrain source (sub-surface water + local ponding?)
- Associated with *Valles Marineris* (tectonic, hydrothermal activity?)

It is an excellent candidate site for “ancient groundwater” environments

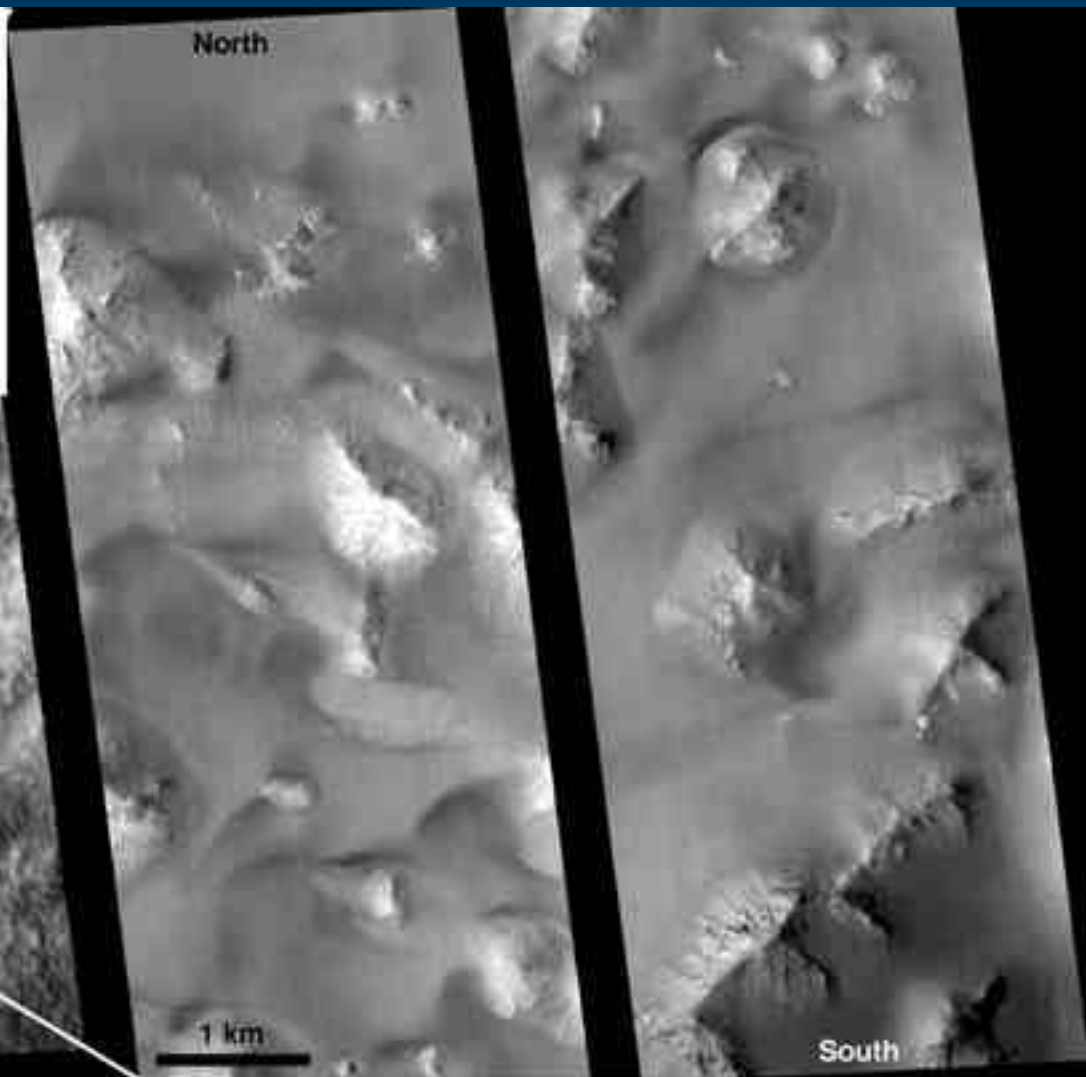
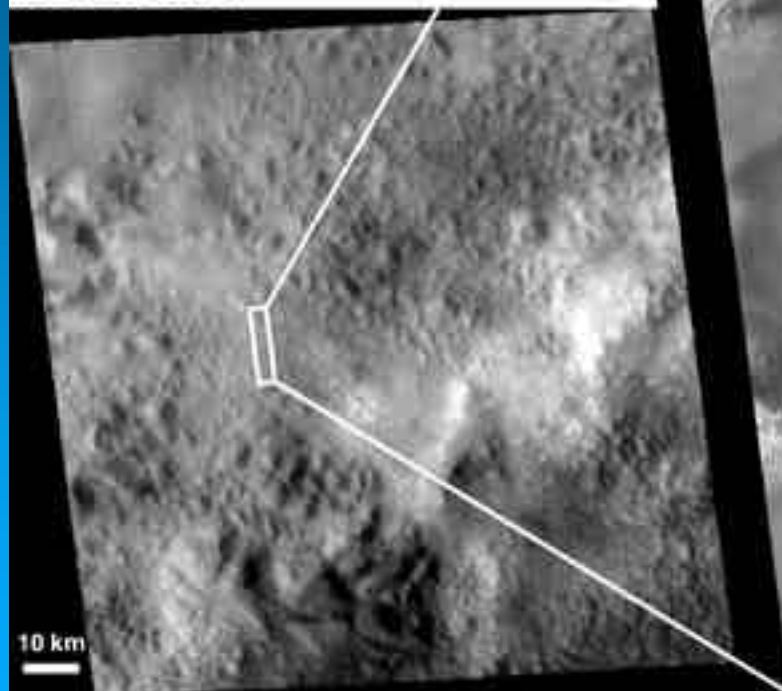
LOCAL GEOLOGY (Witbeck et al., 1991)



EOS CHAOS

MOC M07-05585
Ls 214.95°
Center Lat. 17.12°S
Center Lon. 46.15°W

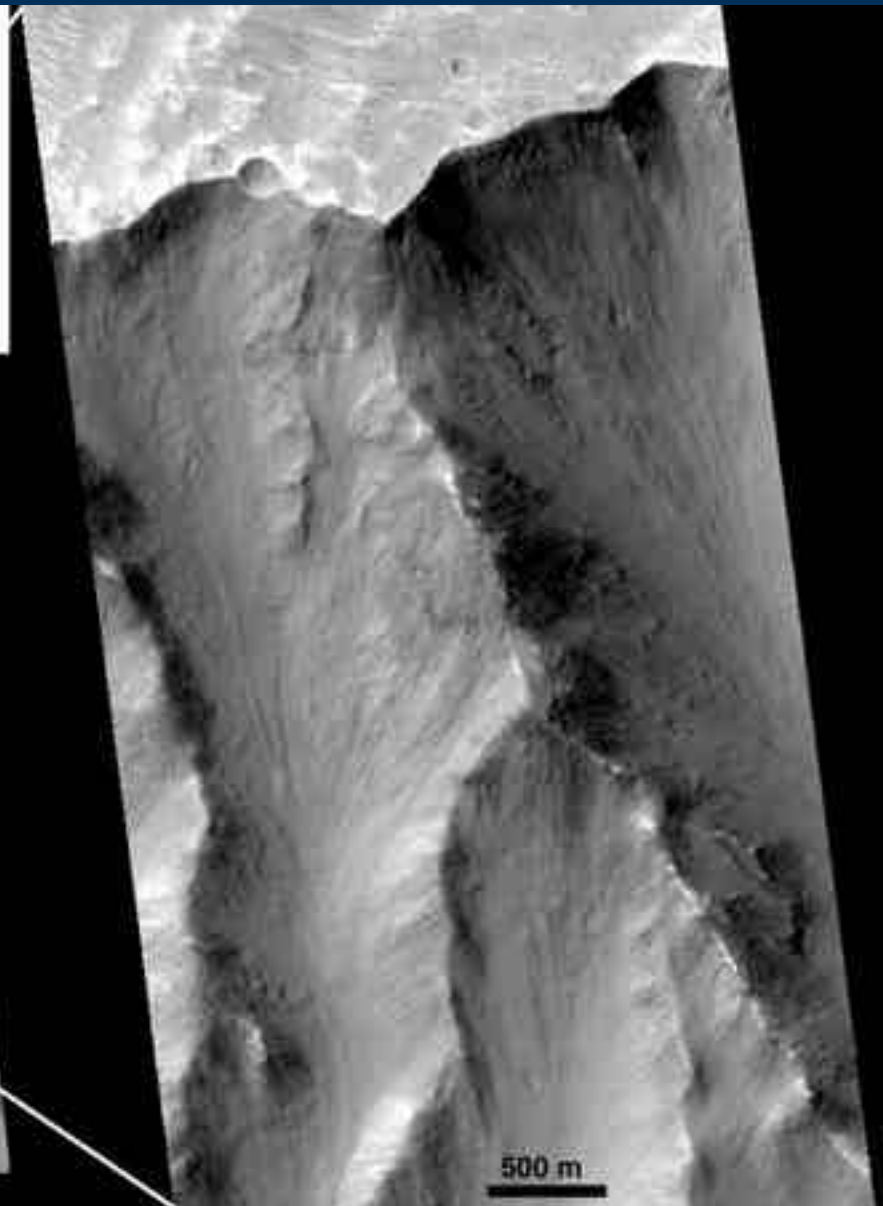
MOC M07-05586

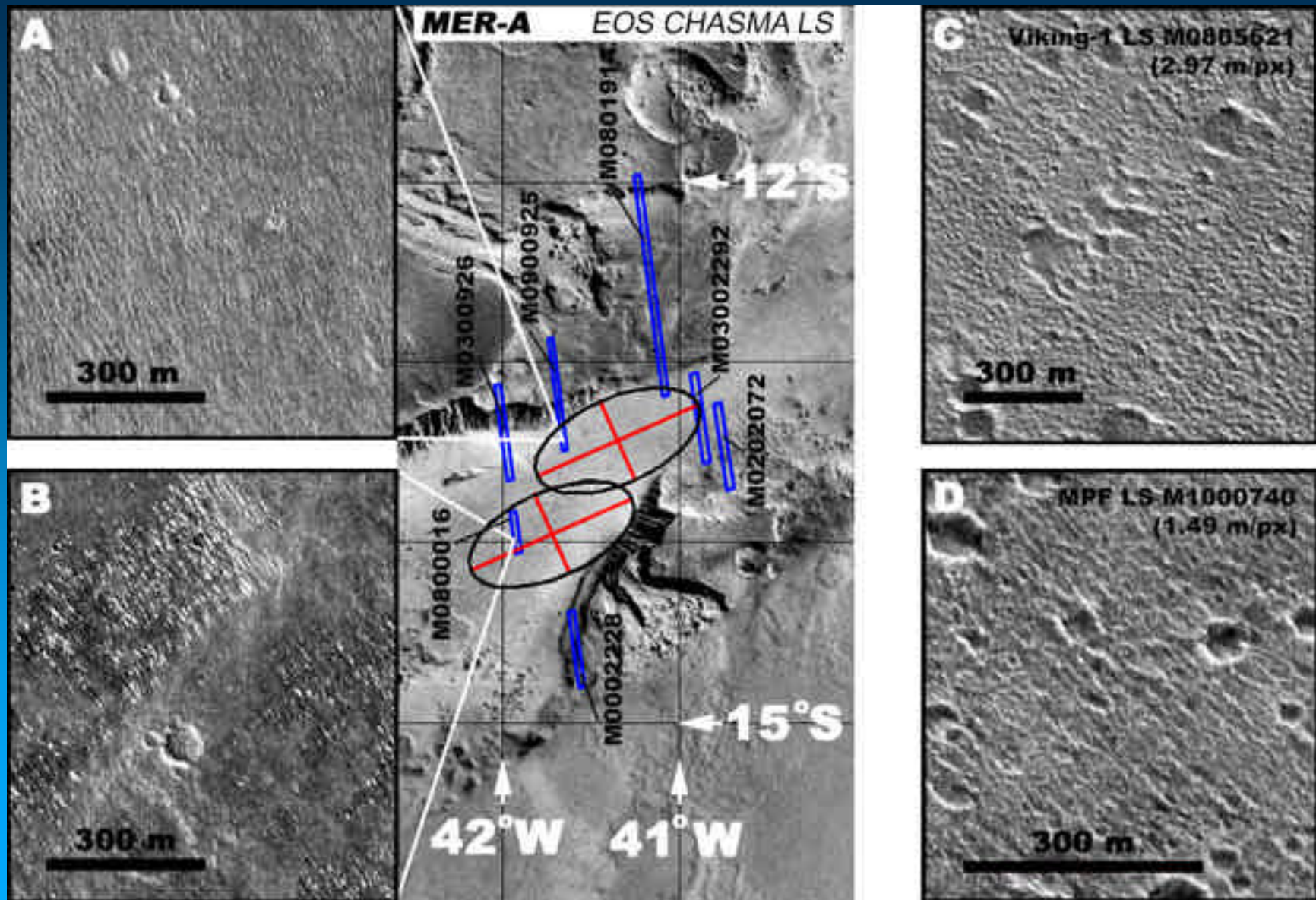


EOS CHASMA

MOC M03-00926
Ls 165.62°
Center Lat. 13.39°S
Center Lon. 42.33°W

MOC M03-00927





EOS CHASMA

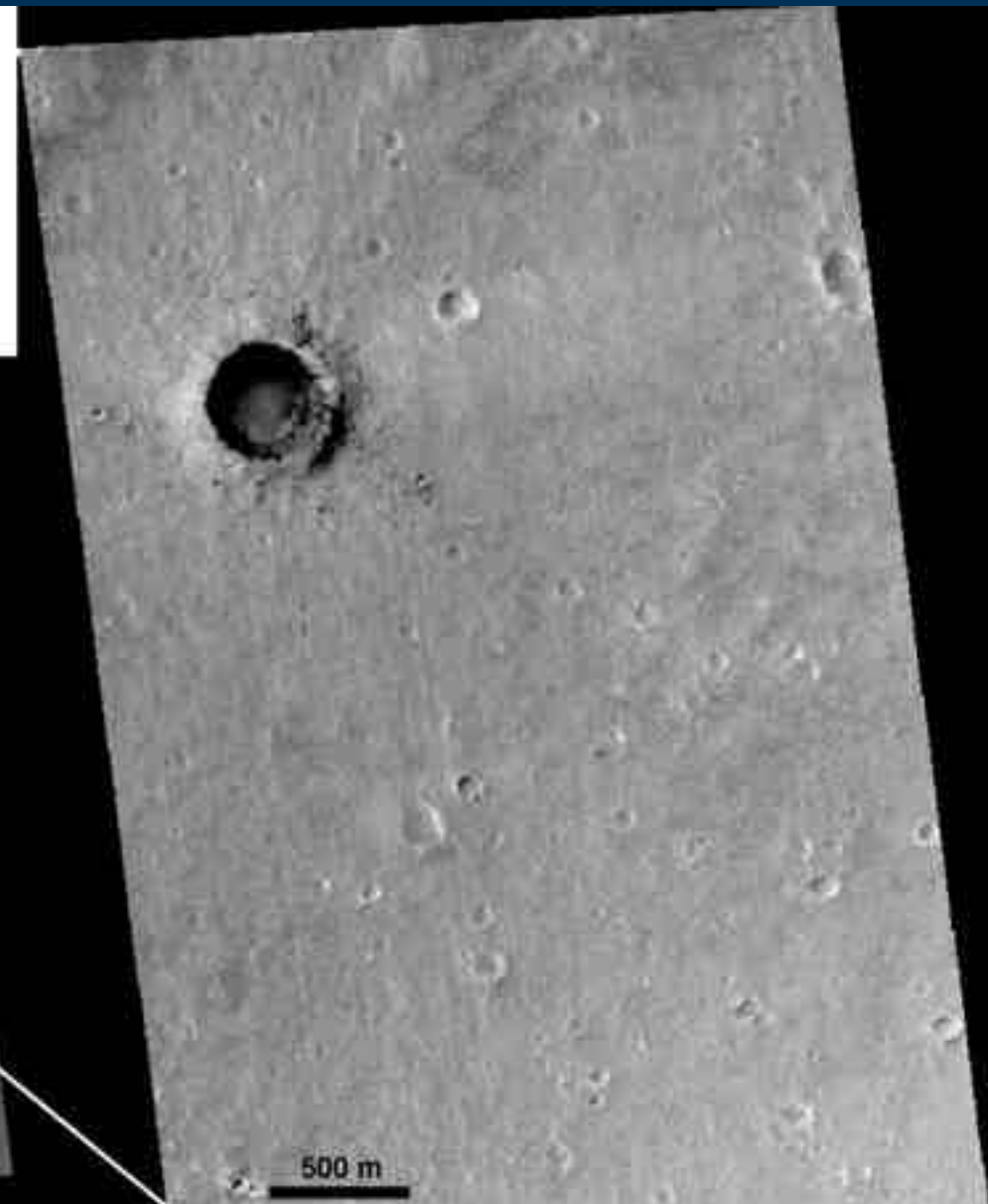
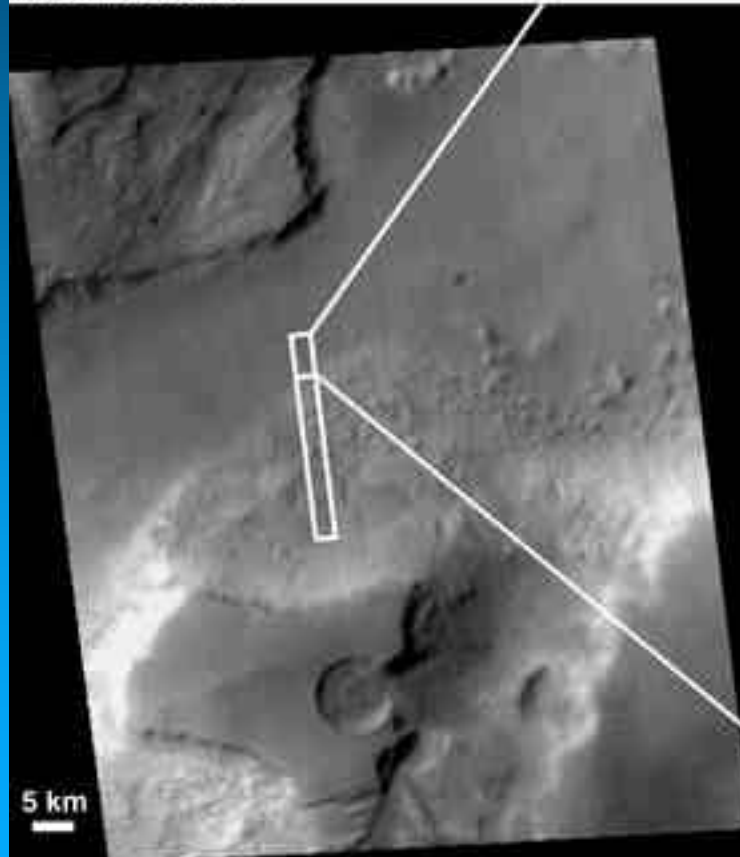
Site Characteristics

- **Location:** 13.5°S, 41.5°W; -3.5 km elevation, 56 km ellipse @ 66° azimuth
- **TES thermal inertia (3 km footprint) = medium to coarse sand**
- **Albedo = 0.13 to 0.20 suggests little dust**
- **Viking IRTM suggests 10 to 20 % “rocks”**
- **Radar (low resolution; Harmon et al., 1992)**
0.05 to 0.08 @ 12.6 cm wavelength
0.05 to 0.06 @ 3.5 cm wavelength

EOS CHASMA

MOC M02-02072
Ls 155.27°
Center Lat. 13.48°S
Center Lon. 41.11°W

MOC M02-02073



EOS CHASMA

MER-A Science Potential

- **Characterize rocks and minerals derived from groundwater, fluvial, and lacustrine environments**
 - primary rocks and minerals (composition and texture)**
 - alteration products (test hydrothermal hypothesis, etc.)**
- **Determine surface geology (fluvial, aeolian, mass-wasting, etc. processes)**
- **Study near-surface stratigraphy exposed locally (e.g., in small crater walls)**
- **Assess stratigraphy of channel walls (~100 pixels high)**