MARS PATHFINDER LANDING SITE: EVIDENCE FOR A CHANGE IN WIND REGIME AND CLIMATE FROM LANDER AND ORBITER DATA. R. Greeley[1], M. D. Kraft[1], R. O. Kuzmin[2], and N. T. Bridges[3], [1]Arizona State University (Department of Geology, Box 871404, Tempe, AZ 85287-1404, Greeley@asu.edu), [2]Vernadsky Institute (Russian Academy of Sciences, Kosygin St. 19, Moscow 117975, GSP-1 RUSSIA), [3]Jet Propulsion Laboratory (4800 Oak Grove Drive, Mail Stop 183-501, Pasadena, CA 91109).

Abstract. Surface features related to the wind are observed in data from the Mars Pathfinder lander and from orbit by the Viking Orbiter and Mars Global Surveyor missions. Features seen from the surface include wind tails associated with small rocks, barchanoid duneforms, ripplelike patterns, and ventifact flutes cut into some rocks [1]. Features seen from orbit include wind tails associated with impact craters, ridges inferred to be duneforms, and modified crater rims interpreted to have been eroded and mantled by windblown material. The orientations of these features show two prevailing directions, one inferred to represent winds from the northeast which is consistent with strongest winds predicted by a general circulation model to occur during the Martian northern winter under current conditions [2], and a second wind pattern oriented ~90 degrees to the first. This latter wind could be from the W-NW or from the E-SE and was responsible for cutting the ventifacts [3] and modifying the crater rims. The two wind regimes could reflect a change in climate related to Mars' obliquity or some other, unknown factor. Regardless of the cause, the MPF area has been subjected to a complex pattern of winds and supply of small particles, in which the original surface formed by sedimentary processes from Tiu and Ares Vallis events [4] has been modified by repeated burial and exhumation.

References: [1] Greeley, R. et al. (1999) *JGR, 104,* 8573–8584. [2] Greeley, R., A. Skypeck, and J. B. Pollack (1993) *JGR, 98,* 3183-3196. [3] Bridges, N. T. et al. (1999) *JGR, 104,* 8595–8615. [4] Ward, A. W. et al. (1999) *JGR, 104,* 8555–8571.