

Ultraviolet and Magnetic Perspectives at Reiner Gamma and the Implications for Solar Wind Weathering

Reiner Gamma swirl may be unevenly shielded from solar wind weathering and hydration by its associated magnetic anomaly.

- Lunar swirls such as Reiner Gamma (Fig. 1) are associated with magnetic anomalies which may stand off solar wind, reducing weathering and hydration at the surface.
- Ultraviolet (UV) wavelength sensitivity to surface scattering may be used to explore patterns in reduced solar wind exposure.
- Spatial profiles (Fig. 1) in different regions of Reiner Gamma show $>2\sigma$ variance in far-UV and near-UV signals that correspond to variance in magnetic intensity and geometry (Fig. 2).
- These results suggest that Reiner Gamma may not be evenly shielded, and this variation may be observed by the future Lunar Vertex mission

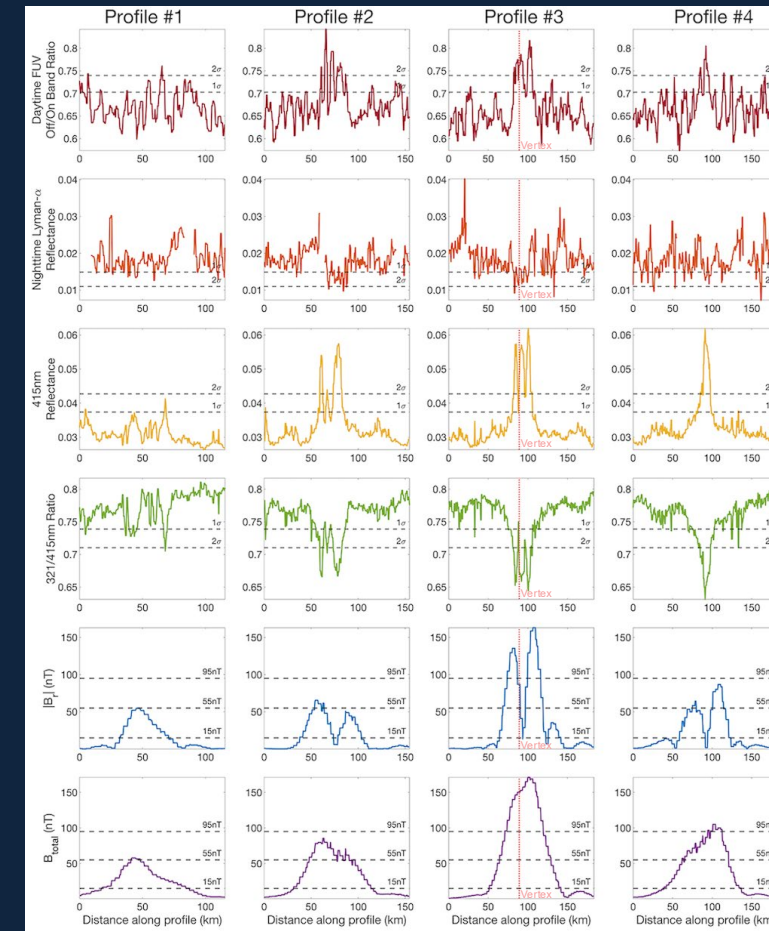


Figure 2: Comparison of four profiles in far-UV from LRO LAMP and near-UV from LROC WAC to magnetic field surface model intensity and geometry. Lunar Vertex landing site marked by pink dotted line on Profile #3.

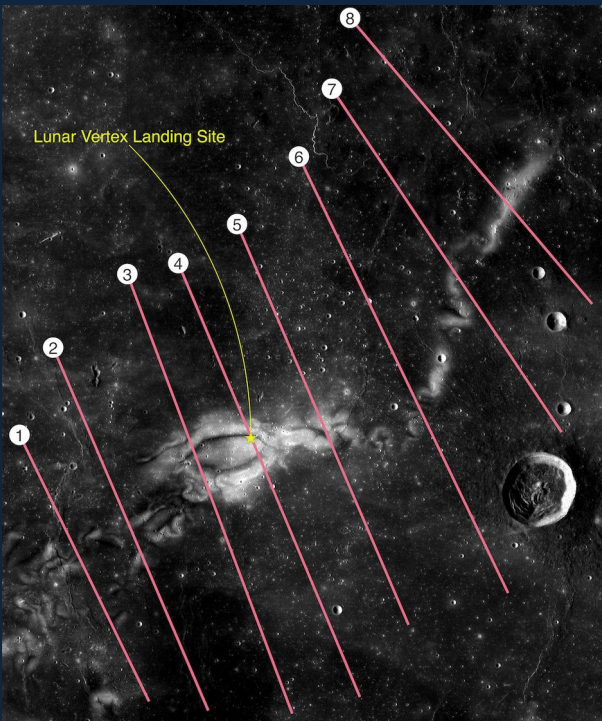


Figure 1: Spatial profiles across Reiner Gamma were collected to sample regions of potential solar wind weather variation predicted by magnetic modeling.