

THE DISTRIBUTION OF GLASS ON THE MOON; P. E. Clark, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA and A. Basu, Geology Department, Indiana University, Bloomington, Indiana

Orbital geochemical data have been used extensively to show the nature and extent to which major geochemical terranes and deposits found at the landing sites can be found on the lunar surface as a whole. This work has been possible because these remote data are available for most of the sites for which samples have been collected and analyzed. We continue to study the relationship between remote and in-situ observations at the landing sites more quantitatively, and to interpret its significance. Here, we are reporting some aspects of our findings which could be useful in the selection of sites for and construction of future lunar bases.

One material which has been considered important as a potential building material is lunar glass (1,2). Some of our most recent work has involved correlating remote orbital data and ground-based spectral observations (3,4,5) with in-situ data (3,6,7,8). Such correlations indicate show the remote signatures of major known glass deposits associated with landing sites, and other such deposits can thus be located on the nearside where the remote signatures are present.

Not surprisingly, glass deposits have the following characteristics in the remote data: low Al/Si, high Mg/Al, moderate to high Mg, spectral peaks for Fe- or Ti-rich mafic silicates. On the basis of these characteristics, some of the glass deposition sites which are most readily detected include: the Apollo 15 green glass deposits and Sulpicius Gallus, the Taurus Littrow orange glass deposits, deposits within and adjacent to the southern portion of the Crisium basin, and scattered highland sites, such as those northeast of Smythii possibly associated with Al Khwarizmi. Many but not all of these sites are associated with the present maria basins, and the remainder with areas which are potentially buried basin sites within the lunar highlands. We are now attempting to extract quantitative data on the abundance of glass at major deposition sites.

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