Mapping Minerals On the Moon:
TiO$_2$ Abundances in Volcanic Regions

The Lunar Reconnaissance Orbiter Camera - Wide Angle Camera (WAC) has spectral channels sensitive to the abundance of the mineral ilmenite (specifically its main oxide, TiO$_2$). TiO$_2$ is found in varying abundances in lunar basalts.

The WAC TiO$_2$ map (top) illustrates the range of abundances across volcanic units, from a low of ~2 weight % to as much as 12.6 wt%. Apollo and Luna samples have TiO$_2$ abundances between 0.5 and 10.0 wt%.

This map serves as a key guide to identifying basalt compositions outside of what was sampled by Apollo and Luna, as well as locations for future in situ titanium and oxygen extraction.