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Global Distribution Trend of High-Ca Pyroxene on the Lunar Highland by Satellite Hyperspectral Remote Sensing

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The studies using the spectral data obtained by Spectral Profiler (SP) and Multiband Imager (MI) onboard the Japanese lunar explorer SELENE/Kaguya revealed the global distributions of the purest anorthosite (PAN), olivine-rich materials, orthopyroxene-rich, and spinel-rich materials over the entire Moon. However, the global distribution of high-Ca pyroxene (HCP)-rich sites has been unclear so far. In addition to mare region, which is dominated by HCP, it has been reported that several ray craters on highland regions show HCP-dominant spectra. Thus, the global distribution of HCP-rich sites, especially for the lunar highland regions, would provide important information for the structure and evolution of the lunar crust and mantle. Thus, using the global data set of the SP, we conducted the global survey to find HCP-rich sites on the Moon, especially for the lunar highland regions. Here, we report the global distribution trend of the HCP-rich sites based on this survey.

Keywords: Remote-sensing, Hyperspectral, Kaguya