

Table 1. Earth-Based Spectral Classification of Small Lunar Pyroclastic Deposits

Group	Sites	Mafic Band			Lithology
		Center, μm	Depth, %	Shape	
1	Atlas South Franklin Alphonsus West	0.94	4-5	asymmetrical	mixed highlands wall rock (opx), glass-rich juvenile material, lesser basaltic cap rock (cpx)
2	East of Frigoris, West East of Frigoris, East	0.96	7	approximately symmetrical	mostly fragmented basalt (cpx), little highlands and glassy material admixed
3	J. Herschel	1.0	5-7	symmetrical	juvenile material rich in olivine, admixed highlands (opx)

After Hawke *et al.* [1989].

glass-rich juvenile material with small amounts of basaltic cap rock material. Examples of Group 1 small pyroclastic deposits are found on the crater floors of Atlas (45°N, 45°E) and Franklin (29°N, 48°E) and near Grimaldi (1°S, 64°W).

1.1.2. Small pyroclastic deposits: Group 2. Mafic bands in spectra for Group 2 deposits are centered near 0.96 μm , have greater depths than those of Group 1, and are symmetrical in shape. Group 2 spectra are similar to those of mature mare deposits, and they are dominated by clinopyroxene. Small pyroclastic deposits in Group 2 appear

to consist largely of fragmented plug rock material, with smaller amounts of highlands and/or juvenile materials. Examples of Group 2 deposits are the two small deposits east of Aristoteles crater (50°N, 21°E and 28°E) along the southeast margin of Mare Frigoris.

1.1.3. Small pyroclastic deposits: Group 3. Mafic bands of Group 3 deposits are centered near 1.0 μm , have intermediate depths, are relatively broad and asymmetrical, and are probably multiple bands. Spectra of Group 3 deposits are dominated by orthopyroxene and possibly olivine; the

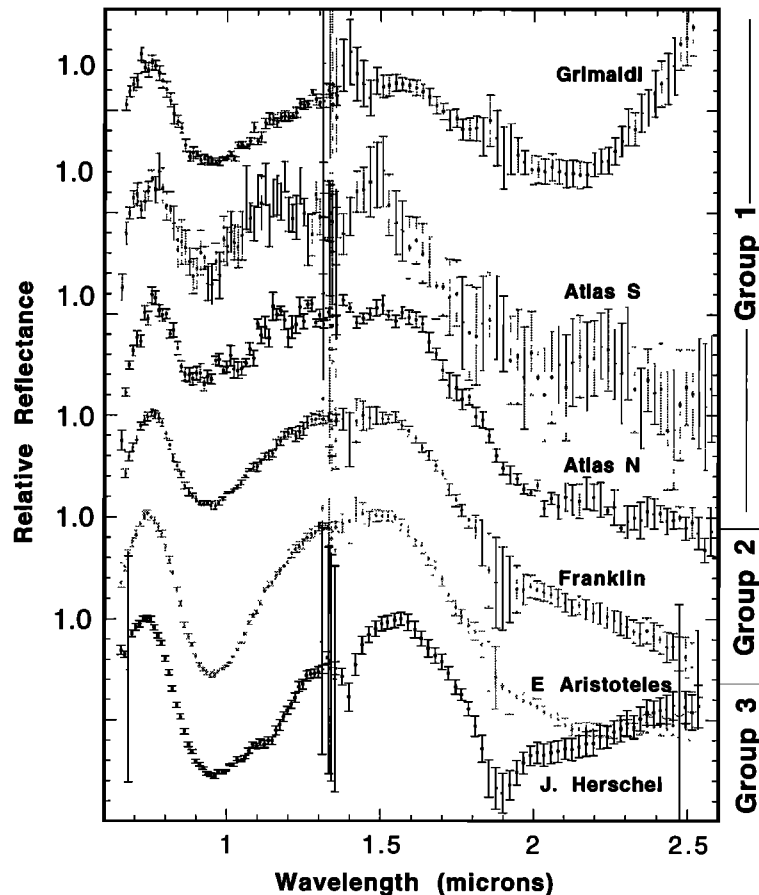


Figure 2. Earth-based spectra for several small lunar pyroclastic deposits [after Hawke *et al.*, 1989]. The spectra have had straight-line continua removed to facilitate comparison of the band depths at $\sim 1.0 \mu\text{m}$. Group 1 deposits include those of Atlas (South), Grimaldi, and Franklin, Group 2 deposits include those of East of Aristoteles (Eastern Mare Frigoris East and West), and Group 3 deposits include those of J. Herschel.