

TOTAL AND SPECTRAL EMITTANCE OF LUNAR FINES by  
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Abstract

The thermophysical properties, the total and spectral emittance, in principle, contain information of value for heat balance calculations on the lunar surface and diagnostic spectral information in regards to the surface mineralogy. Our spectral emittance results cover the wavelength range from 2.5  $\mu\text{m}$  to 14.5  $\mu\text{m}$ , whereas other investigators results go from 6  $\mu\text{m}$  to 11.8  $\mu\text{m}$ . The total emittance results are calculated from the spectral emittance results and are for a temperature range from 90°K to 400°K.

The spectral results are a function of material bulk density, however, this effect gradually disappears with increasing wavelength and from a wavelength of 7  $\mu\text{m}$  and longer the effect is negligible. A minimum in emittance occurs for all Apollo fines between 3  $\mu\text{m}$  and 4  $\mu\text{m}$  wavelength.