Dangers Associated with Lunar Dust

- Dust was cited by Apollo astronauts as one of the most significant challenges to human exploration of the Moon
- Dust carried into habitable modules can come into contact with biologic tissue
- Inhalation risks are well known in Earth environments
- Electrostatically charged and irradiated regolith grains may be much more reactive than in a passivating Earth atmosphere

Dust Charing System

- High vacuum operation (~10\(^{-8}\) Torr)
- Dust can be charged via.
  - Tribocharging
  - UV Photoemission
  - Electron flood gun
- Charged grains can be made to ‘hop’ by applying a potential to the cup or a grid above
- Grain charge is measured when it passes through a Faraday tube connected to an amplifier

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