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Overview of 14 discoveries 1969-2015 from Apollo measured movements of lunar dust

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The only engineering and scientific measurements of adhesive fine lunar dust which caused various severe problems for Apollo astronauts, equipment and deployed observatories were made by Apollo Dust Detector Experiments we invented in 1966. Here we show 14 key discoveries 1969 to 2015 from Apollo 11, 12, 14 and 15. By reading again unique Apollo 11 tapes with 2012 technologies the first complete set of digital measurements shows severe dust contamination caused by Lunar Module ascent and why first NASA and Bellcomm analog reports were incorrect. Apollo 12 and 14 ascents caused unexpected cleansing of collateral dust splashed by astronauts. The 270g matchbox-sized experiment measured lunar weather for about 6 years at 3 sites, showing lightly-shielded solar cells degraded more from dust than from radiation, including the most severe August 1972 SPE. However bare cells degraded more from low-energy radiation. Dust accumulation on horizontal solar cells was of order 1mm thick in 1000 years based on simulated MLS-1 calibrations. Measured only by the Apollo 12 orthogonal solar cells, dust fell off a vertical cell as the sun rose. Sunrise effects caused levitation of dust to 100cm height and associated horizon brightening we link to Horizon Glow. Measured suites of unpredicted forward-scattering of sunlight at very low elevation angles could be important operationally for polar regions. Limitations are discussed towards improving future missions.