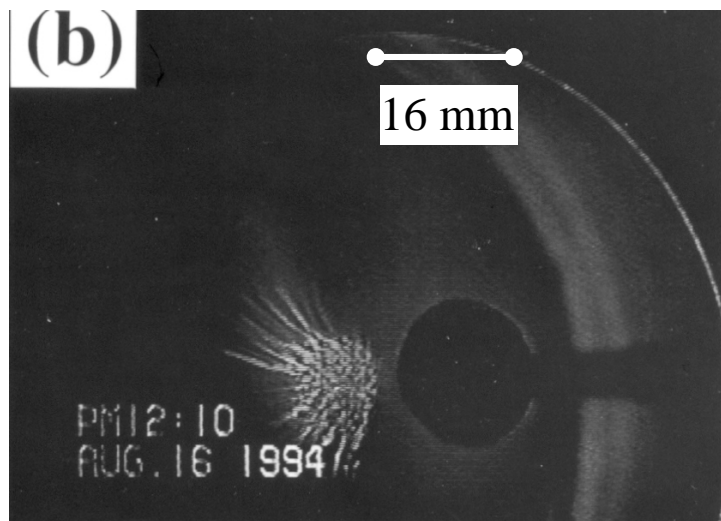
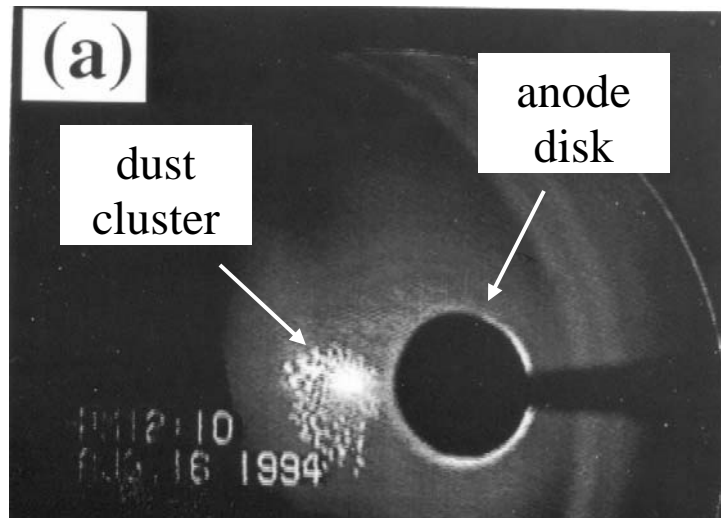


## Coulomb Explosion of a Spherical Dust Cluster



- These single frame images of the Coulomb explosion of a spherical dust cluster are described in: *Confinement of dust particles in a double layer*, A. Barkan and R. L. Merlino, Phys. Plasmas **2**, 3261 (1995).
- The single frame images were obtained from video taken consecutively at 30 fps with a shutter time of 1/60 s.
- The explosion is initiated by suddenly turning of the voltage to the anode disk. This removes the confining potential which holds the negatively charged dust particle (micron size range) cluster together.
- When the anode voltage is turned off, the plasma that provided Debye shielding of the particles is extinguished on a timescale faster than the discharging time of the dust.
- Thus the dust particles suddenly find themselves, unshielded and thus exposed to their full Coulomb repulsion.
- A rough estimate based on the available 2 frames indicated that the dust acceleration is  $\sim 3$  g.