



## **Photoemission from glass dust grains: First measurements**

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Dust grains are present in the interstellar space and also on surfaces of space objects like the Moon. The grains are charged by photoemission caused by solar UV radiation and by charged particles from the ambient plasma (solar wind, planetary magnetospheres). A balance of different charging processes on both sunlit and night sides of the Moon causes interesting phenomena as dust horizon glow, dust fountains, and dust levitation. To contribute to a better understanding of these processes, we present laboratory investigations that use a single  $\text{SiO}_2$  grain of micron size (an archetype of the lunar dust) caught in the electrodynamic trap. We irradiate it by HeI (21.2 eV) photons and electrons and discuss a contribution of these two processes to the grain charge. The grain specific charge is evaluated by an analysis of its motion and position in the trap. We compare equilibrium charge-to-mass ratios given by the electron emissions induced by electrons and by the UV photons from the HeI lamp. First measurements indicate that the resulting charge is about twice larger for photoemission than that caused by an electron impact.