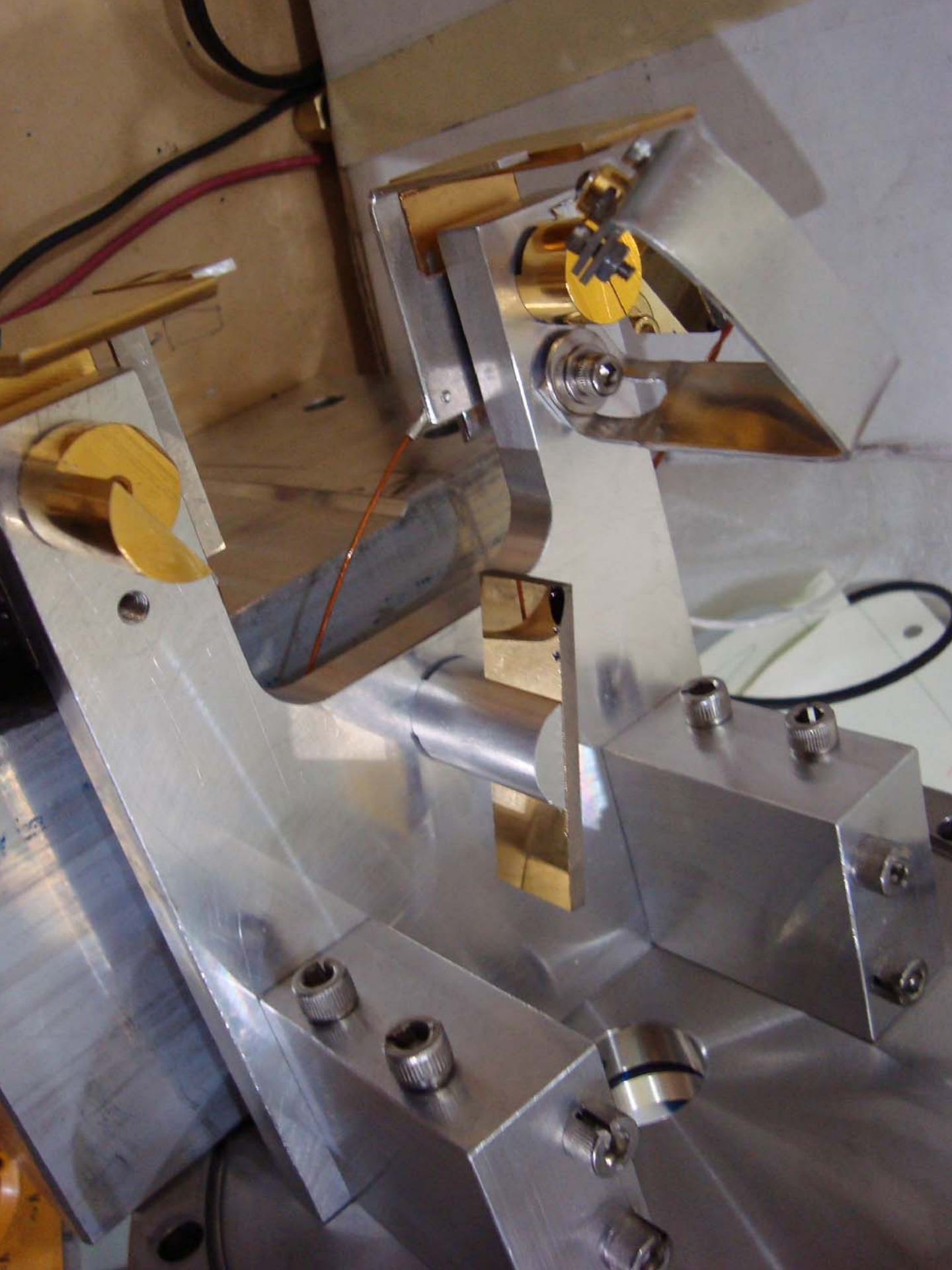
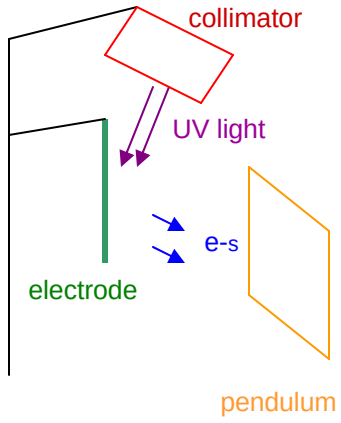


My goals: Improve old design

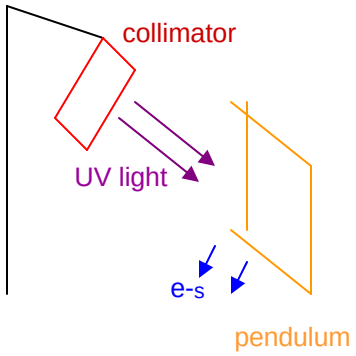
- Using 2 LEDs – one (2) aimed at the pendulum to knock charge off and one (1) aimed at an electrode facing the pendulum to put charge on

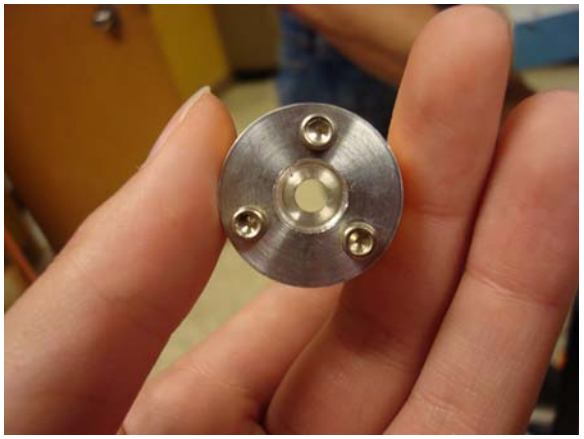
•Collimator to reduce UV light diffraction

1

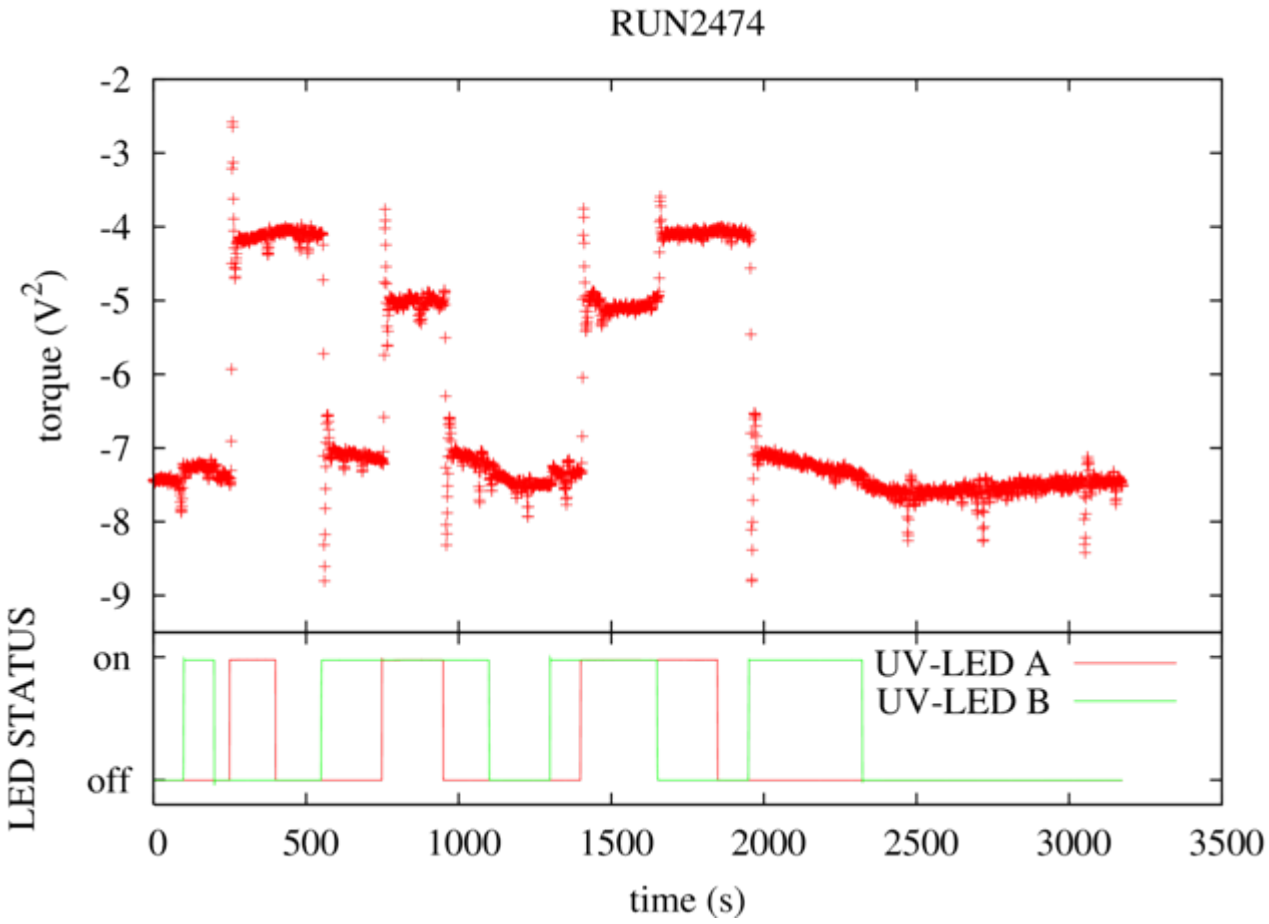


2



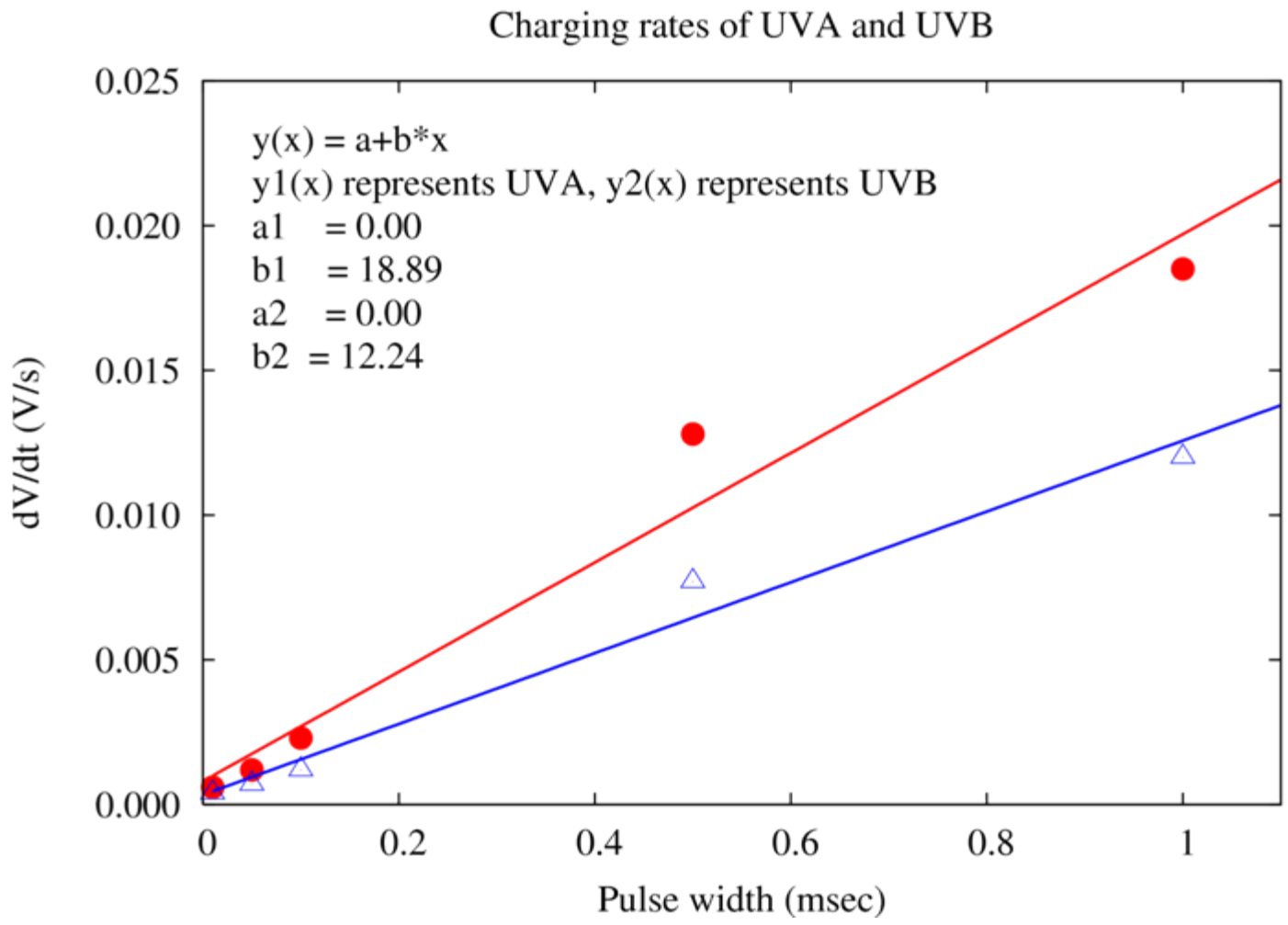


Charge Management: it can be done



Charging rates

- Important in order to manage charge
  - Problem: when UV LED is turned on the pendulum is charged too quickly to determine the charging rate
  - Solution: pulse UV light at different pulse widths and the slope (dV/dt) vs. the pulse width will yield the charging rate



•After a calibration of dQ/dt=C*dV/dt where C is about 10pF the charging rate of UVB turned out about 3.1 x 10^{-11} Coulombs/sec and for UVA, 4.7 x 10^{-11} C/s.