List of Some Extra Credit Projects:

(worth up to 1 lab grade unless stated otherwise)

0. A) Kepler’s First Law (proof); B) *Kepler’s 3 laws (Proofs): worth up to 2 lab grades.

1. Proofs of Shell Theorems (must be mathematically rigorous: any dispute about this will be adjudicated by a math professor!)

2. Electric field due to a ring of charge at any point in the plane containing the charge (my handout) (worth up to 2 lab grades).

3. E=mc2: Poincare’s derivation of it for light from electrodynamics.

4. Appendix of my handout on motion of a charged particle in a constant magnetic field.

5. My handout on muonium.


7. Electrostatics on the 3 sphere.