

St. Vincent College
PH 171: It's Not Rocket Science

Homework 3
Due Wed. 10/14/2009

Predict the altitude of your latest rocket following the steps outlined in class. Assume that it has a mass (without the motor) of 64 g and a diameter of 1.637 inches. You may decide what coefficient of drag would be most appropriate for your rocket.

Included is a thrust curve for a "C" type motor. But do not assume that, just because the motor falls within the "C" impulse range, it has the maximum allowed impulse for that range. Before calculating the altitude of the rocket flight, work out the impulse of the rocket motor from the graph by counting the number of squares under the curve (including fractional squares) and multiplying by the impulse per square, 0.2 N-s. Use this value as the impulse in your altitude calculation. You can also measure the burn time directly from the graph.

However, you may assume that the motor has a total mass of 24.0 g, of which 10.8 g is propellant.

