

GUIDE TO USING TRACKER SOFTWARE

- 1.) Scroll to the bottom and use the link to install Tracker. (Might require a restart)
(Link to Tracker: <http://www.cabrillo.edu/~dbrown/tracker/>)
- 2.) Open Tracker. Then click on “Video” and “Import”.
- 3.) Find your video and Open it within Tracker.
- 4.) Hit play to make sure your video looks smooth.
- 5.) Use the magnifying glass zoom (I find 100-400% zoom works well) at the top of Tracker to zoom in on the rocket just before release.
- 6.) Click the button to “show or hide coordinate axis” (looks like a purple L shape). Drag the center of the coordinate axis to the launching point of your rocket.

Take this chance to setup your “Calibration” as well.

Click on the “Show, hide or create calibration tools” option at the top of the Tracker window (to the left of the “show or hide coordinate axis”).

Choose “New”, “Calibration Stick”. A blue bar should pop up.

Drag this bar to vertically line up with the your meter stick. Click on the number, and set the blue bar height to 1.000. Tracker’s measurements will not be scaled into meters.

7.) Now, click the “Create” button at the top of Tracker and choose “Point Mass”. A little legend should pop up that says mass A. Click on that legend where it says mass A and rename it to ROCKET.

8.) Now, you will start tracking your rocket path. Hold down the “Shift” key (“Shift” and “Command” for a mac) and click on the rocket one time. Did anything happen? If not, do so again. And again. And again, until the rocket moves. You are using Tracker to mark the rocket’s position at all points along its path. The program will step through in time steps that the video used.

9.) Keep “Shift” + Clicking on the rocket for its entire parabolic path. Notice that the table towards the lower right of the Tracker program is filling itself in and the graph on the top right is plotting the rocket’s position versus time relative to the origin.

10.) Tracker doesn’t do calculations very well, so we’re going to use excel. In order to get your data into excel:

Highlight the columns of Data in tracker for Time, X Position and Y Position.

Right Click and choose “Copy Selected Data”, As Formatted

Open an excel spreadsheet and paste your data into excel.

11.) You have Time and you have Position in the x-and-y directions. You can use this to generate graphs that will tell you the acceleration in the x and y-directions for the Rocket. Use your Rocket videos and find the acceleration in the x-and-y directions. Determine the precision of your experimentally determined accelerations in the X and Y directions.

How close is your “x” acceleration to zero?

Why isn't it zero?

How close is your “y” acceleration to 9.8 m/s^2 ?