

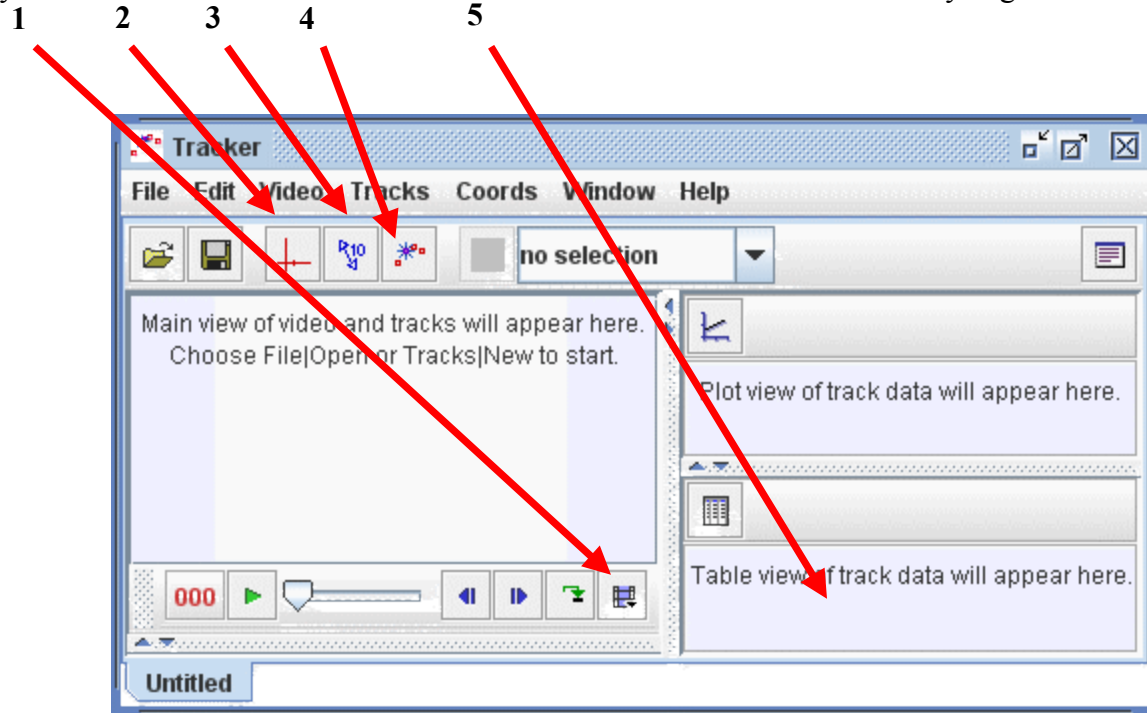
Tracker - Getting Started Guide

(modified from original version obtained from Tracker itself)

Downloading Tracker

- Click on the following link and download the latest version: <http://www.cabrillo.edu/~dbrown/tracker/>

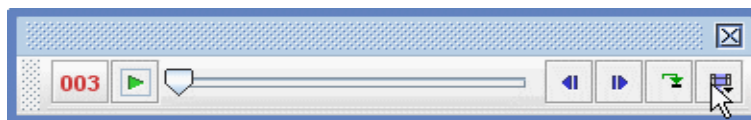
When you first open Tracker it appears as shown below. Here's how to start analyzing a video:



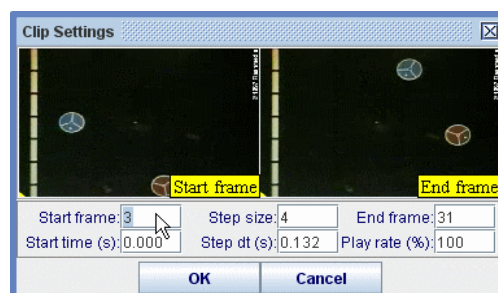
For more information about Tracker's user interface, including user customization, see [User Interface](#).

1. Identify the frames ("video clip") you wish to analyze


Display the clip settings by clicking the **Clip Settings** button at the right end of the player as shown.

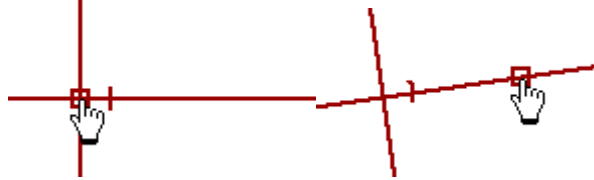


In the Clip Settings dialog, set the **Start** and **End** frames to define the range you wish to analyze. You can drag the player's slider to scan through the video and quickly find the frames of interest. If the video contains too many frames to analyze (more than 20 or so can become tedious), increase the **Step Size** to automatically skip frames. For more information see [Setting video clip properties](#).




2. Set the reference frame origin and angle

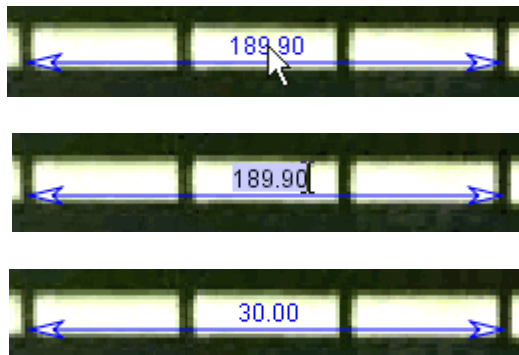
Click the **Axes** button  to show the coordinate axes. Drag the origin and/or x-axis to set the reference frame origin and angle. A common choice for the origin is the initial position of an object of interest. For more information see [Axes](#), or for alternate ways to set the origin and/or angle consider a [Calibration Point Pair](#) or an [Offset Origin](#).




The video scale and reference frame origin and angle uniquely define the **coordinate system** used to convert pixel image positions to scaled world positions. In some videos the coordinate system properties may vary from one frame to the next (e.g., if the camera is zoomed the scale will change, or if panned the origin will change). Tracker makes it easy to handle such videos--see [Coordinate System](#) for more information.

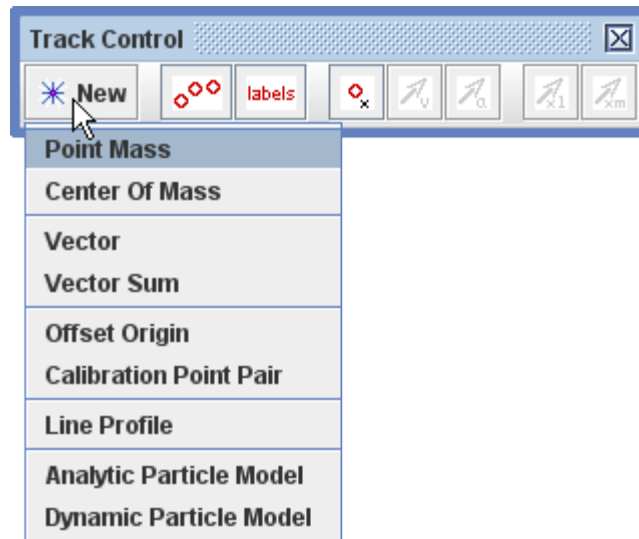
3. Calibrate the video scale

Click the **Tape Measure** button  to show the tape measure. Drag the two ends of the tape to positions that are a known world distance apart (for example, the ends of a meter stick or other object with known dimensions in the video image). Then double-click the tape readout and enter the known distance. For more information see [Tape Measure](#), or for an alternate way to calibrate the video consider a [Calibration Point Pair](#).



4. Track objects of interest with the mouse.

Click the **Track Control** button  to show the track control. Then click the **New** button and choose a track type from the menu of choices. Most moving objects are tracked using **Point Mass** tracks.



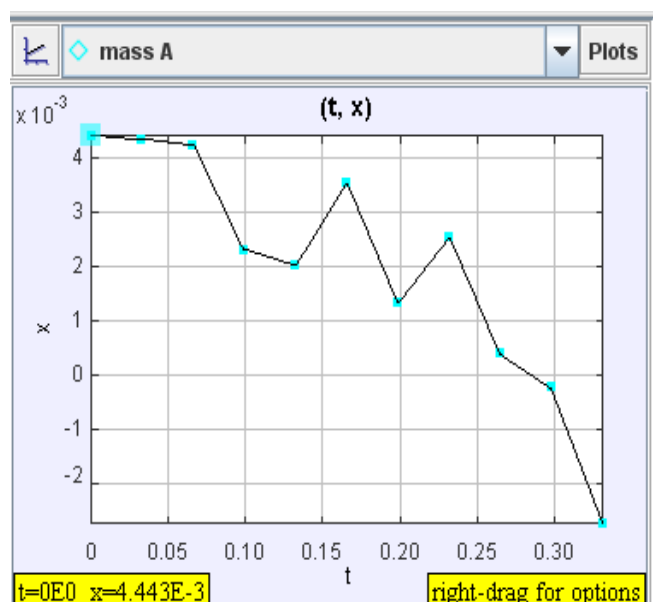
Mark the position of the object at every frame by holding down the **shift** key and clicking the mouse (crosshair cursor) as the video automatically steps through the video clip. Don't skip frames--if you do, velocities and accelerations cannot be determined.

You can always adjust a marked position by dragging it with the mouse or selecting it and nudging with the arrow keys. Right-click the video to zoom in for sub-pixel accuracy.

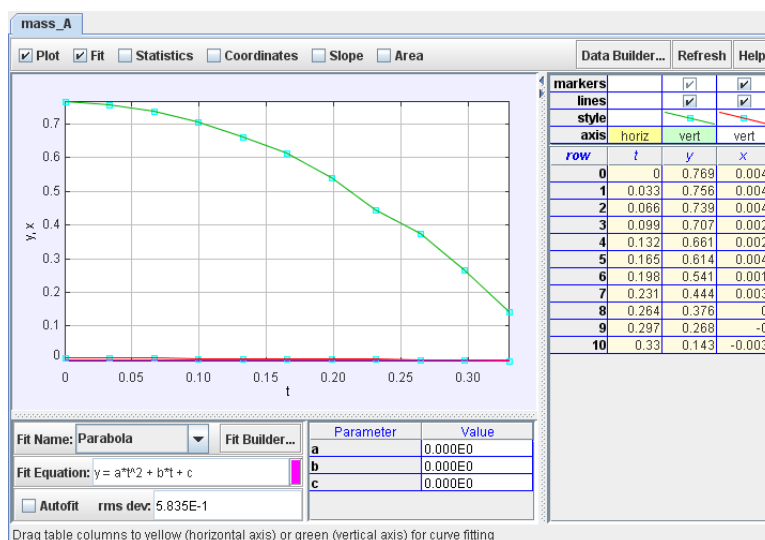
For more information on tracks and the track control, see [Tracks](#). For detailed information on a specific track type, see [Point Mass](#), [Center of Mass](#), [Vector](#), [Vector Sum](#), [Offset Origin](#), [Calibration Point Pair](#), [Line Profile](#), [Analytic Particle Model](#) or [Dynamic Particle Model](#).

5. Data Analysis

Tracker's **Graph View** displays track data in a graphic form. To change the variables on the axis just right-click on them and select the desired variable. Right click on the graph and select **Analyze....** This brings up **Data Tool**



In the **Data Table** window click the **Fit** option. Select the best fit line.



6. Print or copy/paste images for reports

In the **Data Table** window, select **Copy** → **Image** from the **Edit** menu. Paste this into your lab report.

To create the motion map, return to the **Tracker** window. Click on the **Axes** and **Tape Measure** buttons to remove them from the image. In the **Track Control** toolbar, click on the **Velocities** button. To copy an image, choose the desired view from the **Edit|Copy Image** menu or right-click a view and choose **Copy Image**. Pasting printed or copied images into notes and reports is an excellent way to document your video analysis results.

7. Save your work in a tracker (.trk) file



Click the **Save** button or **File|Save As...** menu item to save your work in an XML-based **tracker file** with the extension ".trk". When a saved tracker file is opened, Tracker loads the video, sets the clip and coordinate system properties, and recreates all tracks, custom variables and views. For more information see [XML Data Files](#).