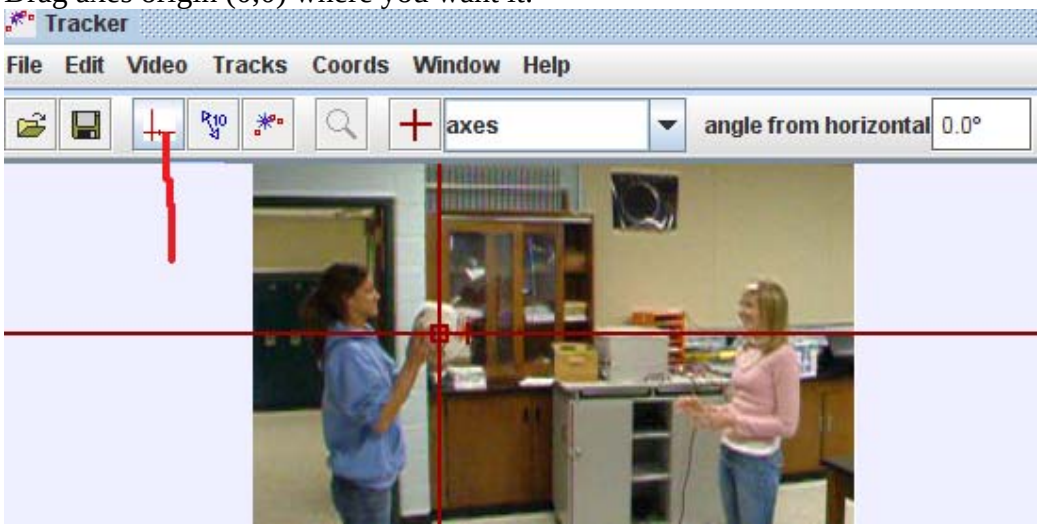
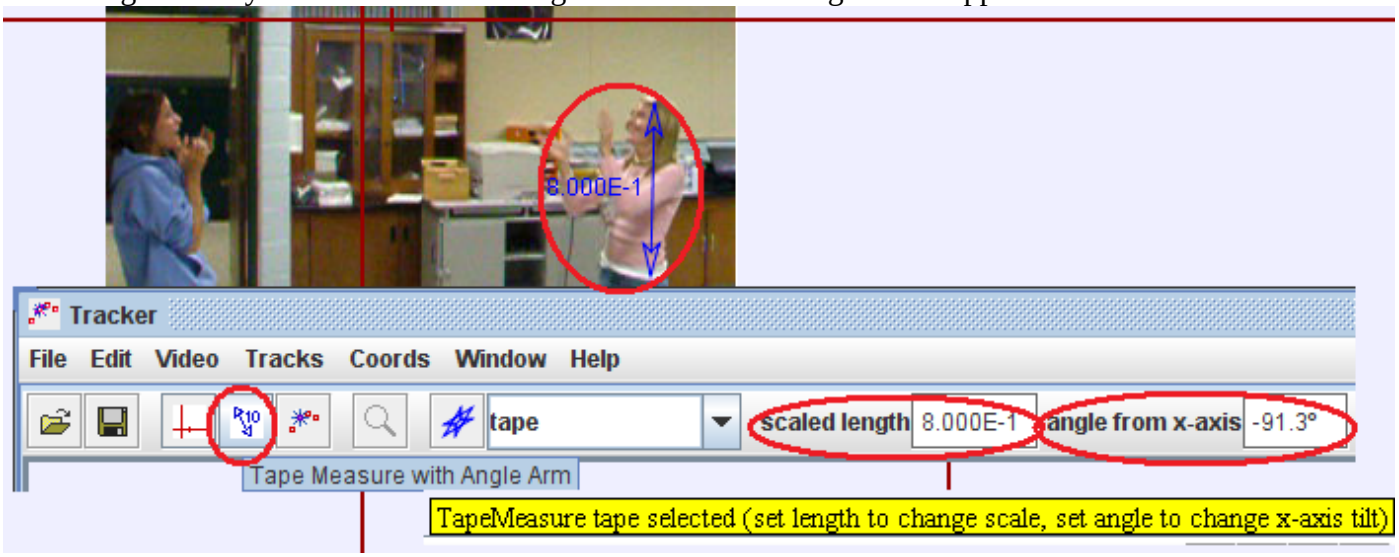
Tracker Pictorial Sample Analysis

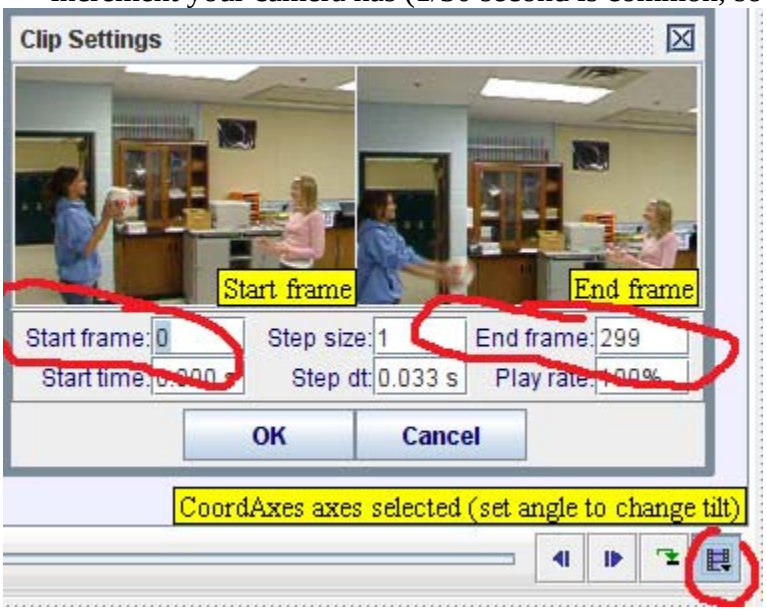
1. Drag axes origin (0,0) where you want it:



2. Calibrate using known length of something. Motion should be in a plane perpendicular to your view (volleyball shouldn't go toward or away from camera, but sideways instead). Girls are about 1.6 m tall on average and boys about 1.8 m on average. I used half her height as an approximation.

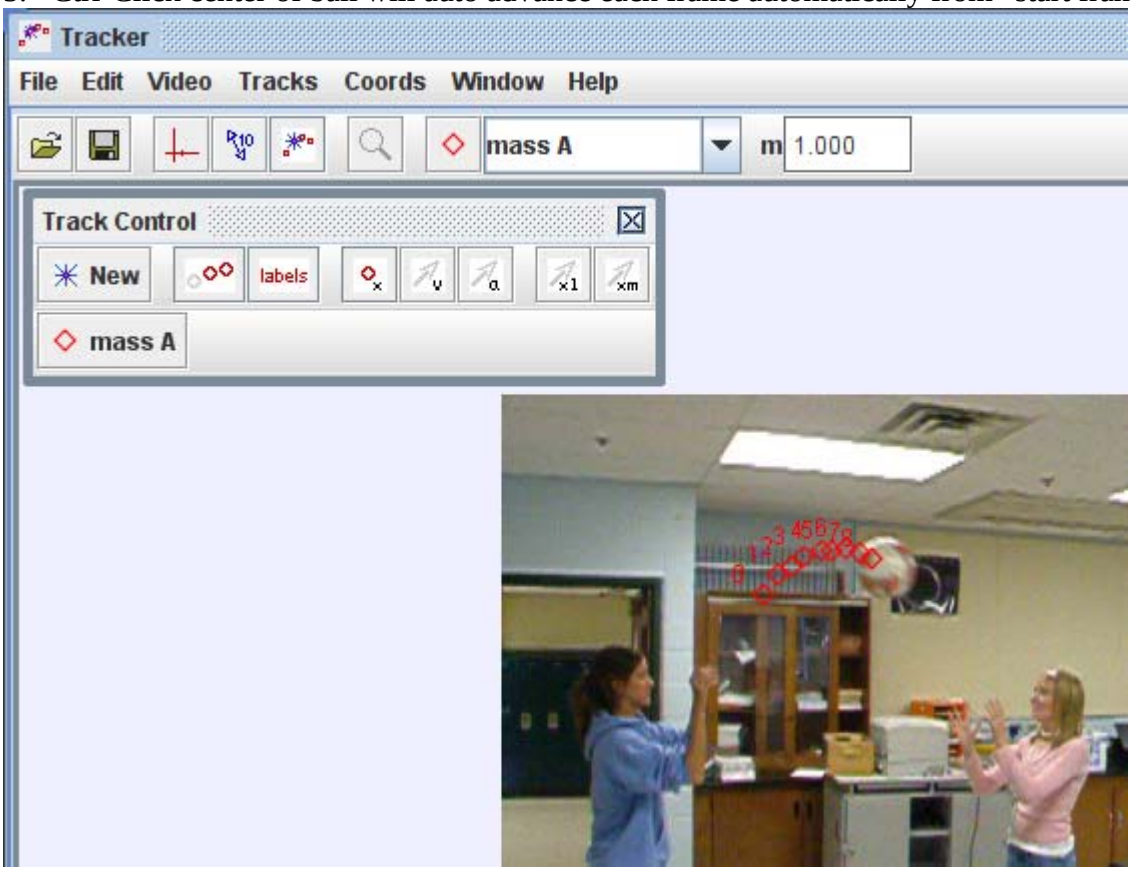


3. Set Start frame, end frame and step dt how you want it. Only include the frames you want and the time increment your camera has (1/30 second is common, so dt = 0.033):

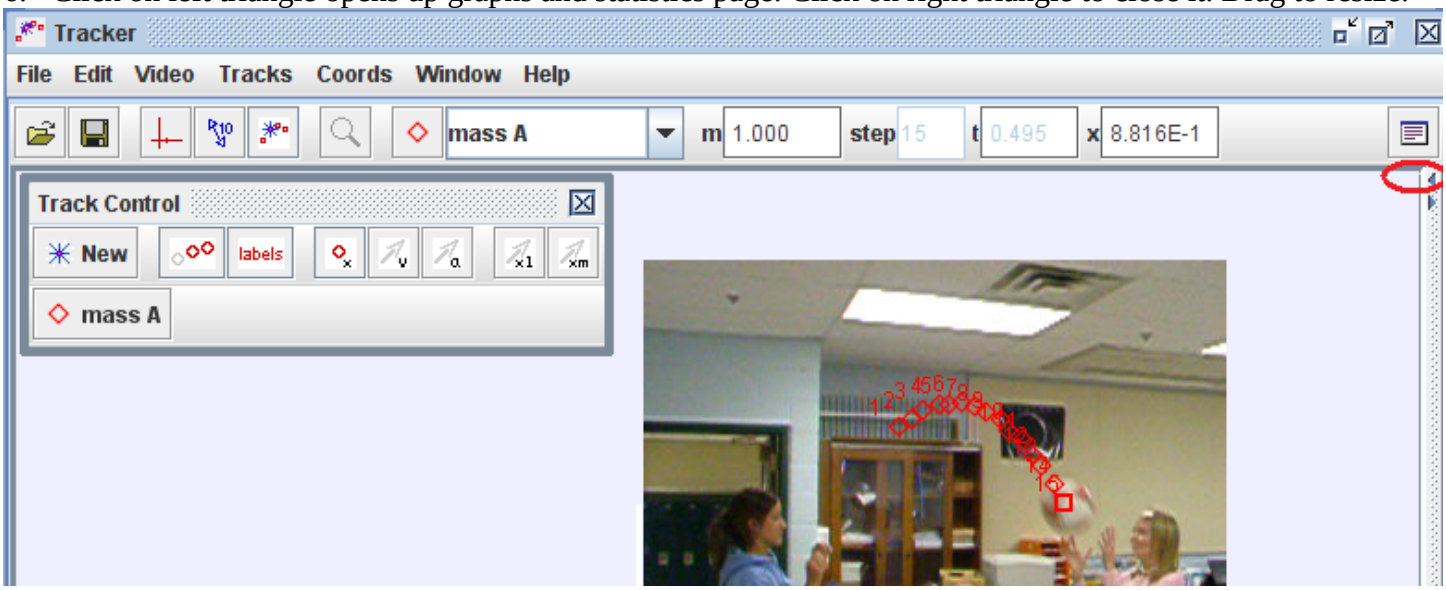


4. I got rid of visible axes and calibration tape to make it less busy, Now I add a new point mass to track. I'll track the center of the ball:

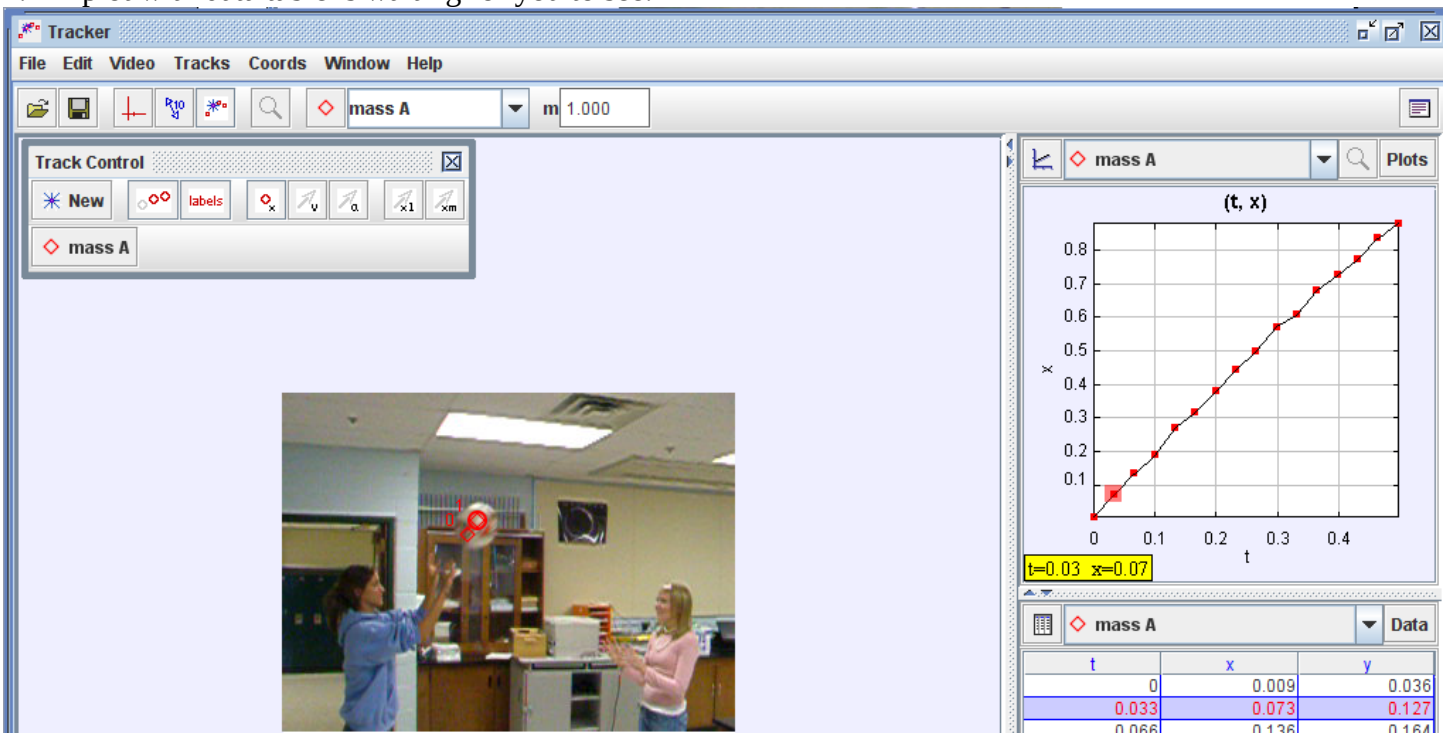
5. Ctrl-Click center of ball will auto advance each frame automatically from "start frame" to "end frame".



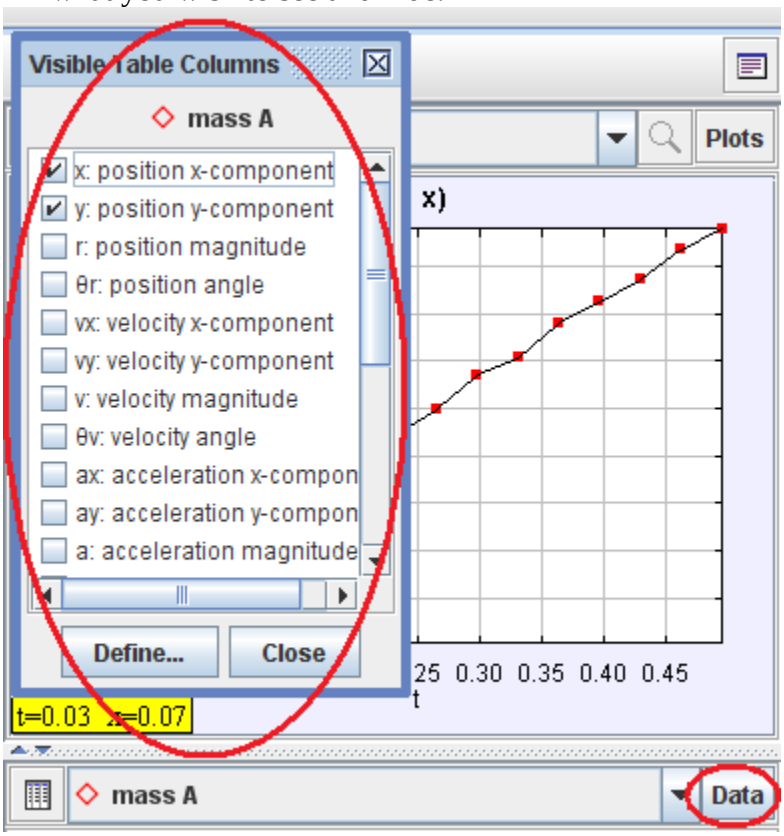
6. Click on left triangle opens up graphs and statistics page. Click on right triangle to close it. Drag to resize.



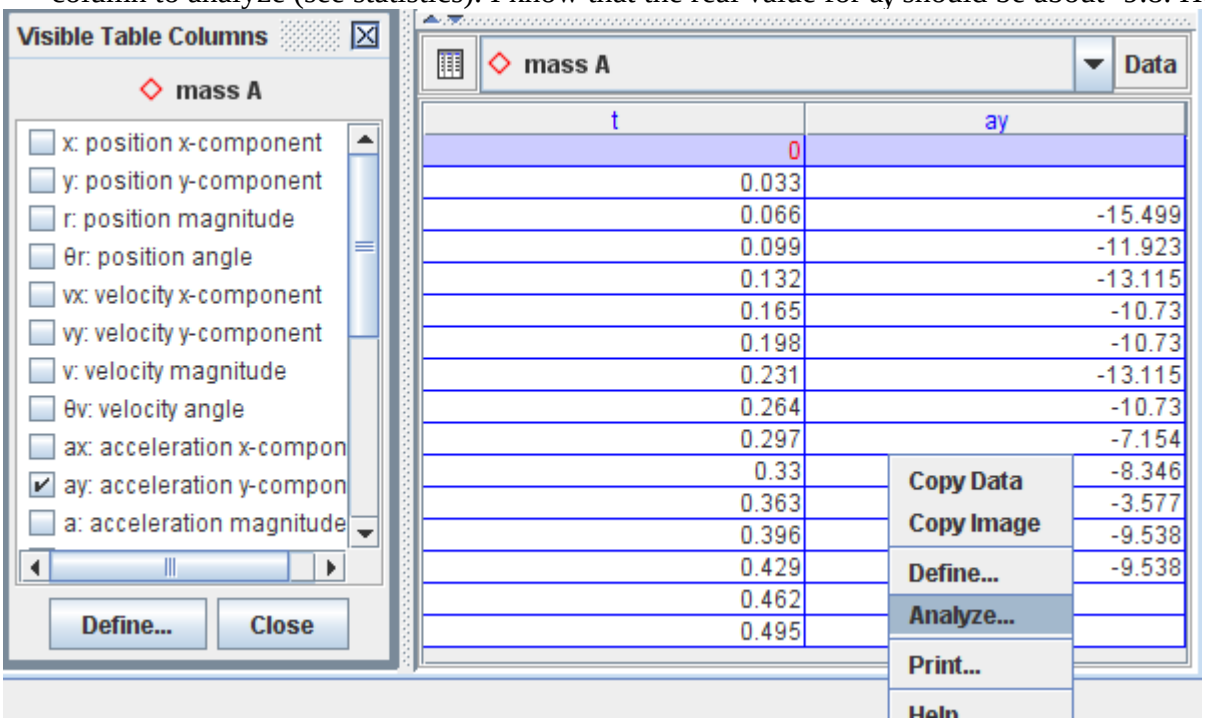
7. A plot with data table is waiting for you to see:



8. Click on Data allows you to pick the data categories you want plotted and tabulated. Check and uncheck what you wish to see and hide.



9. Under data, I unchecked X and Y and chose a_y, the acceleration in the Y direction. I right clicked on the a_y column to analyze (see statistics). I know that the real value for a_y should be about -9.8. How close was I?



10. The a_y plot comes up and I check the statistics box to see statistics for a_y that I selected. The value measured is -10.3 m/s^2, only 5% off from the true known value…pretty good!