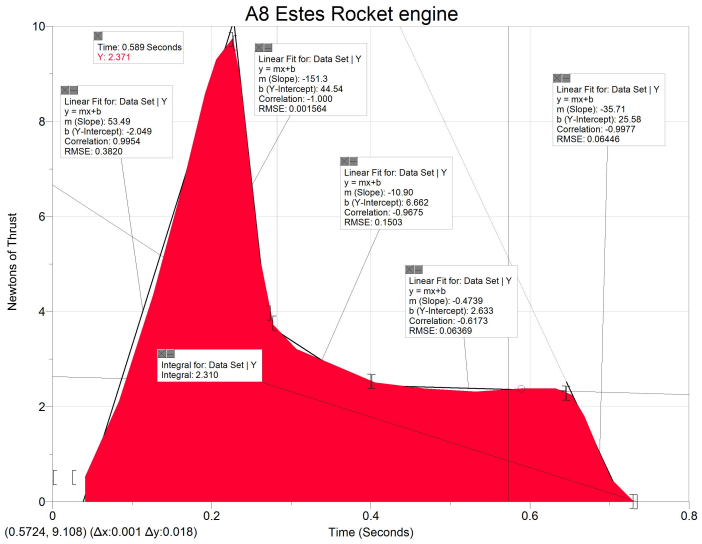
The image you see below is the result of the curve analysis showing slopes and times from the static test I performed on an Estes A-8 rocket motor. The colored area indicates the integral of force * time which is the impulse of the rocket motor.



The following code displays a graph of the integral of the thrust force and time for the rocket motor which is known as the rocket motor's IMPULSE. The data used to determine the slopes of the thrust curve was experimentally determined using a Vernier Force Probe and a LabPro interface. The data was then put into this LB program and produced the image you see when the program was run.

```
'A-8 Estes Rocket Motor Thrust Integration Ver 1.0

'This program uses static test thrust curve data to draw an thrust-
time integration of the
'Estes A-8 rocket engine.

nomainwin

WindowWidth =500
WindowHeight =500

graphicbox #w.g, 10, 10, 480, 400

open "Rocket Motor Force*time Integration" for window as #w

#w, "trapclose [quit]"

#w.g, " down ; size 1"
```

```
for tt =0 to .7 step 0.002
'The following times and slopes were determined by using Vernier logge
r pro and static test data
 if tt <=.7 then th = -35.79 *tt + 25.58
 if tt <= .65 then th = -0.0229 * tt + 2.362
 if tt <=0.395 then th = -10.9 *tt + 6.662
 if tt <=0.27 then th = -151.3 *tt + 44.54
 if tt <=0.225 then th = 53.49 *tt + -2.049
 if tt <0.035 then th = 0.0

 #w.g, "up ; goto "; tt *400 /0.8; " "; 400 -th /10 *400;
" ; down ; goto "; tt *400 /0.8; " 400"
next tt

wait

[quit]
 close #w
 end
```