

Malina, Clancy

Trigger Frame (t=0)	Projectile Launch Frame	Projectile Launch Time(s)	x (m)	y (m)	v <sub>x</sub> (m/s)	v <sub>y</sub> (m/s)	v (m/s)	Launch angle (degrees)	Actual Range (m)	Predicted Range (m)	Difference	%Diff	Notes:
132	140	0.27	-1.62	2.04	4.50	17.50	18.07	75.59	11.20	16.56	5.36	32.37%	Very high angle
630	640	0.33	-1.32	2.16	11.36	13.12	17.36	49.12	14.85	32.19	17.34	53.86%	Very large difference between predicted and actual - wind?
112	121	0.30	-1.11	2.36	11.27	11.66	16.22	45.97	13.70	28.94	15.24	52.67%	Very large difference between predicted and actual - wind?
136	144	0.27	-0.99	2.50	13.55	12.91	18.71	43.61	32.25	38.15	5.90	15.46%	Added a fifth elastic band - seems to have stabilized it - also began watching to wait for wind to slow down.
165	172	0.23	-1.43	2.10	10.12	16.70	19.52	58.79	28.75	35.71	6.96	19.49%	
245	254	0.30	-0.98	2.69	11.07	13.52	17.47	50.69	28.25	32.60	4.35	13.35%	
434	443	0.30	-0.75	2.76	13.59	11.56	17.84	40.38	30.20	35.03	4.83	13.79%	
239	247	0.27	-0.96	2.51	13.09	11.38	17.34	40.99	27.20	33.05	5.85	17.71%	
261	269	0.27	-1.06	2.42	13.56	12.24	18.26	42.07	28.05	36.35	8.30	22.84%	
213	221	0.27	-1.18	2.44	11.04	14.28	18.05	52.29	28.75	33.95	5.20	15.31%	
Average (Launc 4-10):		0.27	-1.05	2.49	12.29	13.22	18.17	46.97	29.06	34.98	5.91	16.85%	
Uncertainty (Launch 4-10):		0.01	0.08	0.08	0.56	0.70	0.29	2.66	0.63	0.74	0.51	1.29%	
554	561	0.23	-1.14	2.51	13.31	17.49	21.98	52.73	40.60	49.36	8.76	17.75%	This was the extra launch with 7 elastic bands. Significant increase in velocity and range.
<div>From Launch 4 to Launch 10 the results were very consistent, and relatively close ~17% of the predicted range. Because the baseball was moving faster, the effects of wind and air resistance would be greater for Team 2.</div>													