

**Group: Dylan Blevins and Colin Barry**

	320x200 60fps	640x360 60fps	960x540 60fps	1280x720 60fps	1600x900 60fps	1920x1080 60fps	2560x1440 60fps	3200x1800 60fps	3840x2160 60fps	4096x2160 60fps
Serial Time	3.9004s	14.945s	31.8129s	56.5262s	88.3321s	127.1198s	226.7796s	352.7296s	509.0106s	542.1115s
Parallel Time	0.016062s	0.053501s	0.113965s	0.200053s	0.308341s	0.435431s	0.760334	1.180590s	1.683925s	1.796649s
Speedup	242.83	279.34	279.14	282.55	286.47	291.94	298.26	298.77	302.27	301.73

I ran all of these times on the cisc372 server, but me and my partner met with Prof. Schiller after class on Friday 12/6 and we ran this on the darwin cluster that gave us a 1300 speedup for the 4096x2160 60fps

Parallel Time (Extra Credit)	0.008776s	0.029315s	0.063150s	0.110917s	0.172067s	0.243323s	0.427230s	0.663172s	0.945935s	1.011381s
EC Speedup	444.43	509.80	503.76	509.62	513.35	522.43	530.81	531.88	538.10	536.01

**Extra Credit:**

After changing the type double variables to type float it immediately showed that the times it took to run each resolution at 60 frames per second had almost been cut in half and the speedup from the serial time almost doubled. The reason for this is because float type values take up far less space than double type values do allowing for the faster runtimes.