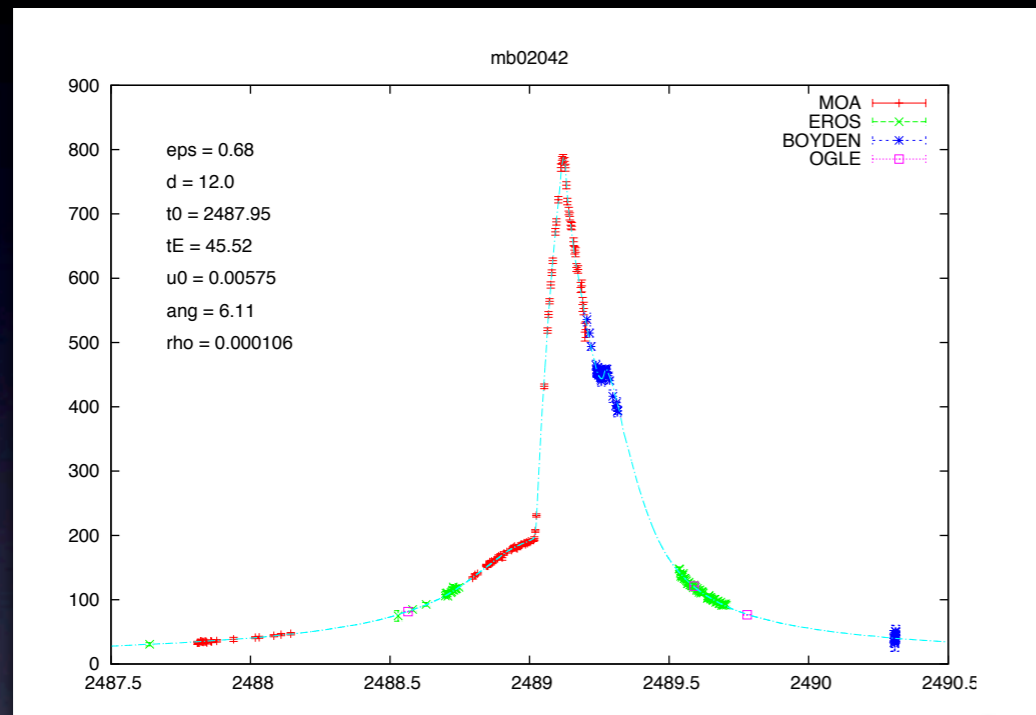
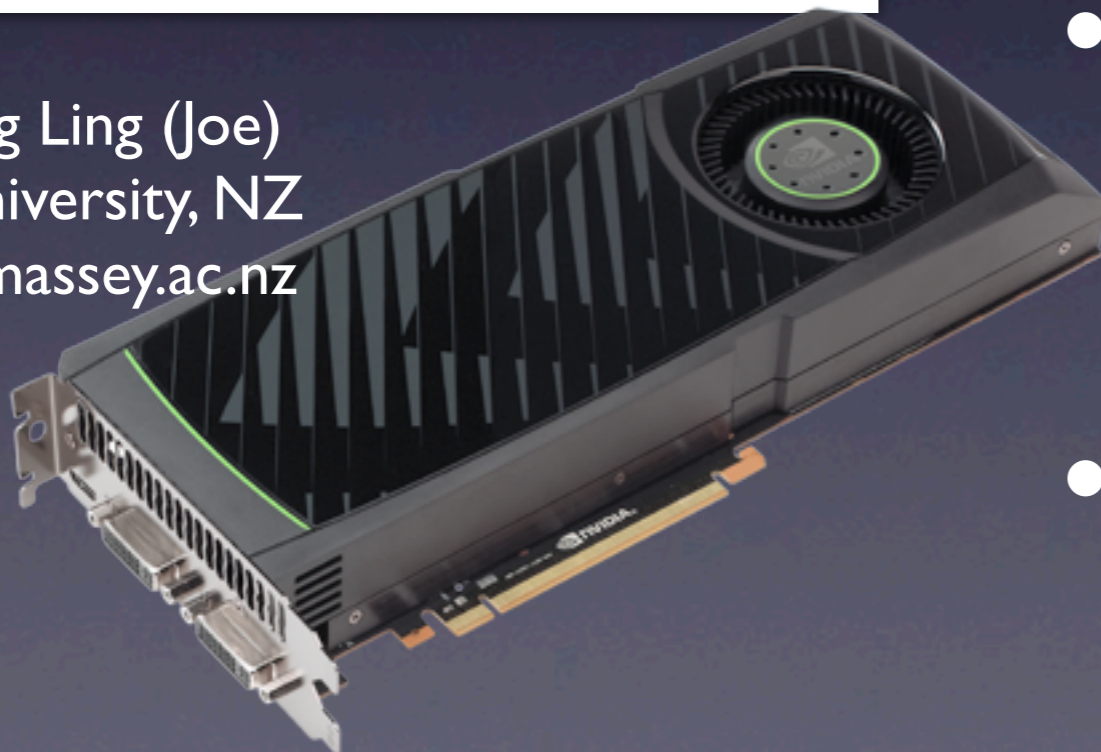


Gravitational Microlensing Modelling using GPU



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- GPU is a massively parallel processor.
- It greatly outpaces CPUs in arithmetic throughput and memory bandwidth.
- Thousands of threads are created in every kernel call instead of only a few like on the CPU.
- It is a cheap supercomputer for scientist.

Cost / Performance ratio

	Intel i7-920 2.66GHz (Quad)	Nvidia GTX480	Speedup
MagMap Generation (520m rays)	74.51s	2.63s	28X
Track Extraction & Chi2 Comp(18k)	844.43s	15.07s	56X

	Intel i7-920 2.66GHz (Quad)	Nvidia GTX480	Quad CPU with 4 x GTX580	222 x CPU BOX
MagMap Generation (2500 maps)	51hrs 45mins	1hr 50mins	26mins	equal performance
Map Searching (~18k tracks per map)	24 days 11hrs	10hrs 28mins	2hrs 27mins	equal performance
Price (NZ\$)	\$1800	\$550	\$6500	~\$400,000