

# NVIDIA OpenCL Demo

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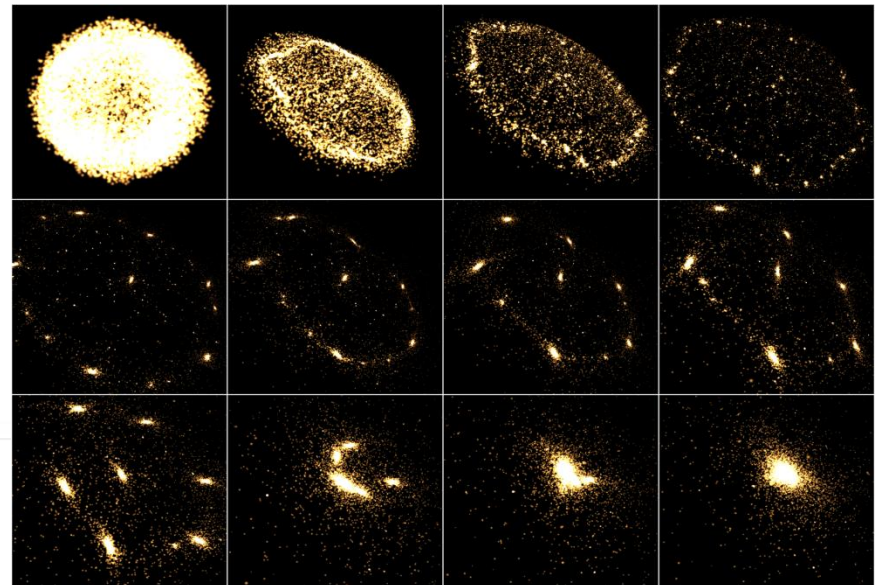
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# Astrophysics N-Body Simulation



- OpenCL All-Pairs N-Body Gravitation Simulation
- NVIDIA GeForce GTX 280 GPU:
  - More than 20B body-body interactions per second
  - 400+ GFLOP/s, 16K bodies at 75+ FPS
    - 20 FLOPS per interaction,  $16K^2$  interactions per frame
- Highly Parallel
- High Arithmetic Intensity



# For More Information



OpenCL Example derived from a GPU Gems chapter

Nyland, L., Harris, M., and Prins, J. "*Fast N-Body Simulation with CUDA*". *GPU Gems 3*. Addison-Wesley, 2007

Also NVIDIA CUDA code sample

[http://www.nvidia.com/content/cudazone/cuda\\_sdk/CUDA\\_Advanced\\_Topics.html#nbody](http://www.nvidia.com/content/cudazone/cuda_sdk/CUDA_Advanced_Topics.html#nbody)