

# Big Data in Sciences

- Genomics
  - Individual genomes in digital form: MBs to GBs
  - Fragments from sequencing devices: 100X
  - Analytical results from genomes: ???X
    - Nature of test, number of individuals, tests over time...
- Observational Astronomy
  - Nightly survey of a significant portion of the sky
    - LSST: A single 8.4meter telescope, 30TB per night
    - GWAC: 72 ground-based cameras, 10TB per night
  - Require online detection of transient objects

The Problem: How do we process these data **fast**?

# Gallop: GPU-Accelerated Genomic Data Processing



