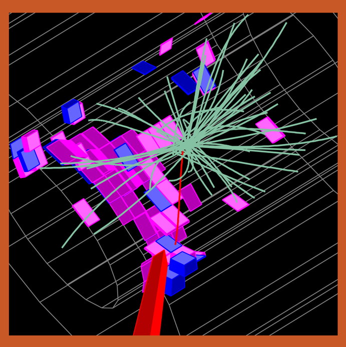
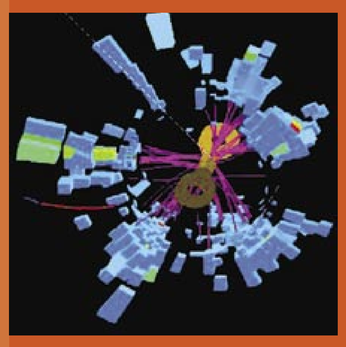
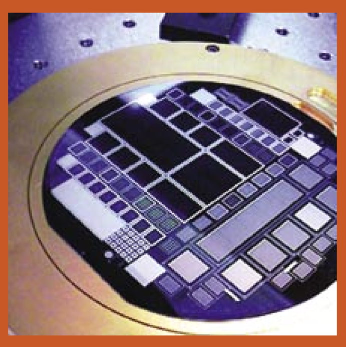
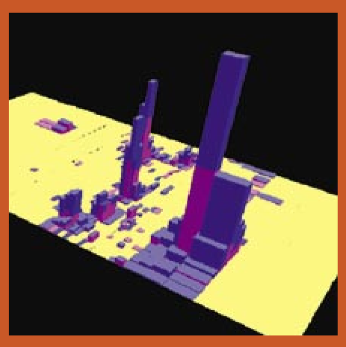
we are
exploring
the extremely
small



TOP ROW (LEFT TO RIGHT)

1 Aerial view of Fermilab Accelerators, with the Main Injector in foreground and Tevatron in the back.
2 The MiniBooNE experiment recorded this neutrino event at the beginning of September. The ring of light, registered by some of more than one thousand light sesors inside the detector, indicates the collision of a muon neutrino with an atomic nuclei.
3 Installation of the CDF Silicon Vertex Detector
4 Three-dimensional computer simlation of a proton-antiproton collision from CDF Monte Carlo Data

BOTTOM ROW (LEFT TO RIGHT)

5 Collisions of particles recorded by the DZero experiment at Fermilab probe distances a billion times smaller than an atom.
6 Installation of the MINOS Detector in Soudan, MN. The detector, built 800 meters deep in a former iron mine, will be used to study beams of neutrinos generated at Fermilab.
7 Wafer of silicon pixel sensors for advanced particle detection.
8 Visualization of the energy associated with particles emerging from a collision.

THE UNIVERSE IS NOT ENOUGH

The universe is a vast celestial laboratory for exploring the most exciting scientific questions of our day. But understanding the universe needs more than a heavenly laboratory. Accelerators are earthbound tools we use to understand the universe and the cosmic laws that govern matter and energy, space and time. In high-energy particle collisions, we can recreate distant forms of matter from the first instants of existence. Particle detectors reveal for us the microscopic world of particles and forces—and open new windows on the cosmos.

Fermilab's Tevatron is the most powerful particle accelerator in the world. More than 2,500 researchers from 32 countries carry out experiments at Fermilab devoted to expanding our knowledge of the universe. They explore collisions of protons and antiprotons; study the exotic behavior of neutrinos; seek the elusive trace of dark matter; track the source of ultra-high-energy cosmic rays; and create the next generation of particle accelerators and detectors to capture the signatures of the invisible.

Fermilab