
5. DEEP INSIDE THE NUCLEON

During the 1960's a new particle accelerator was under construction that eventually resolved the quark quandary. Built under the direction of Wolfgang Panofsky with \$114 million in AEC funds, the Stanford Linear Accelerator was 2 miles long and arrow-straight. Based on microwave technology invented at Stanford University during the late-1930's, this device pushed electrons from 0 to about 20 GeV in a *single* pass along its length. Most other

accelerators of the day, like Berkeley's Bevatron and the Brookhaven AGS, imparted small doses of energy to the particles in every circuit as they sped around a circular path many thousands of times per second.

Stanford physicists had pioneered a very different acceleration method. Starting in the late 1940's, they built a series of longer and more pow-



Figure 11. Aerial view of the Stanford Linear Accelerator Center.