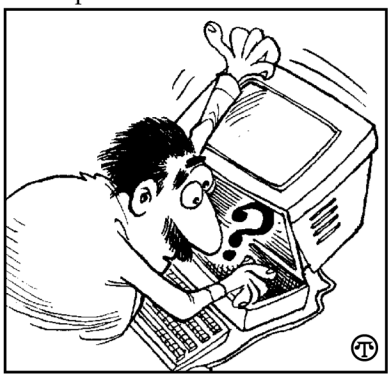
THE SCIENCE OF

LIGHT

The Next Silicon?

(NAPS)—Silicon Valley may someday have to be renamed. That's because the material responsible for the computer revolution is on its way to becoming obsolete. The question is, what will replace silicon?



Light and laser beams may soon replace silicon in the inner workings of computers.

According to experts, one likely possibility is light. Computers already use light to transmit information (fiber optics), and it may soon be possible to replace electricity with laser beams.

A so-called "optical computer" would run on laser power. Unlike wires, light beams are able to pass through one another, making three-dimensional microprocessors possible. In fact, an optical transistor has already been invented.

Another theoretical option is the quantum computer, which would use a combination of laser and radio beams. The beam would be directed on a carefully arranged collection of atomic nuclei, each of which is spinning like a top. As the beam bounces off the atoms, it flips the spins of some of them. Complex computations can then be performed by analyzing how the spins have been flipped.

For more information about the science of light, visit the Optical Society of America's Web site at www.osa.org.