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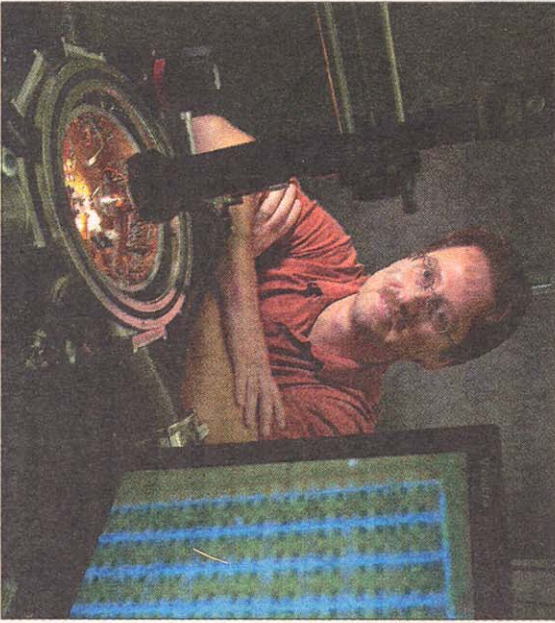
Tech, IBM develop fastest microchip yet

Supercold for speed: Work could make cars, weapons, the Internet run more smoothly.

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New York — In an advance that could affect the future of electronics, communications and even moon exploration, Georgia Tech and IBM Corp. are announcing today that they have set a microchip speed record by applying freezing temperatures found naturally only in outer space.

Direct applications for the research are limited because of the extreme cold involved — 451 degrees below zero. But the work could help improve technology requiring great processing speeds, including radar—using cruise control for



RICH ADDICKS / Staff
Georgia Tech professor **John D. Cressler** led the Tech team. The chip, in the super-cooling container in front of him, can do more than 500 billion cycles a second.

WHAT IT IS

Silicon-germanium chilled to nearly the coldest temperature possible.

HOW IT WORKS

Researchers used liquid helium to cool the chip and stimulated the frozen transistor with electromagnetic energy so it turned on and off 500 billion times a second.

WHAT IT MEANS

The newly proven potential for microchips could lead to improved cellphones, communications networks, automotive radar and defense electronics. A direct application is for electronics in outer space.

➤ Please see **CHIP, A12**

