Overall, the state of U.S. superconductor research, said Wisconsin's David Larbalestier, is healthy.

But looking ahead, it is not easy to predict when these devices will be ready for commercial use. Many of the electronic applications soon will be. Larbalestier pointed out that, considering that it took 15 or 20 years before silicon was fully appreciated as a semiconducting material, then in the six years we have been working with HTSCs we have come a long way. We have gained a lot of understanding of these materials, but our research also goes to define our ignorance of them. These are complicated materials, he pointed out, and the models we have are not very good, and they are not predictive.

Paul Chu outlined several areas that would help us to gain a better understanding of HTSCs. Better samples of the materials at higher purities would allow us to differentiate between intrinsic and extrinsic effects. Growing larger crystals would allow for the use of other analytic tools, such as neutron scattering, to examine their structure. Chu would like to see more work with other materials: At present, he said, there are some 75 compounds that are high-temperature superconductors, but they all fall into two or three groups. The elements that make them up are similar, with varying amounts of each. By bringing in other components to broaden the base of materials, one might gain some insight into the mechanisms at work in high-temperature superconductivity.

'There is a wrong kind of realism, timid and static, which tells man to live for his existence alone. . . . The kind of realism we need is the realism of vision.'

— Space scientist Krafft Ehricke, 1957

Colonize Space! Open the Age of Reason

Proceedings of the Krafft A. Ehricke Memorial Conference, June 1985



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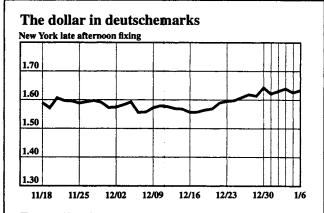
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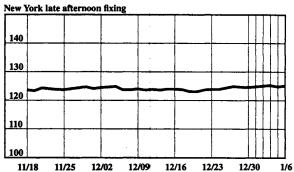
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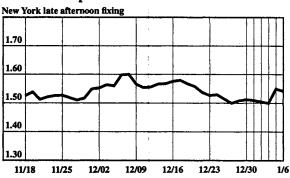
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