SPECIAL ISSUE:

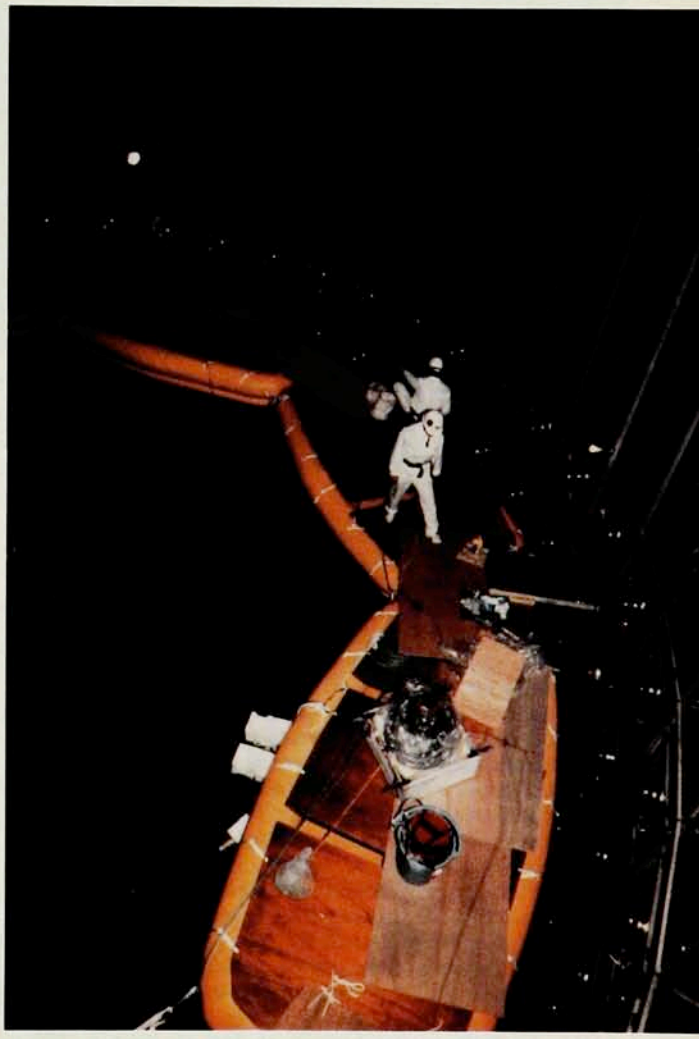
PHYSICS IN JAPAN

日本の物理

Because of Japan's recent remarkable achievements in science and industry, we offer you this special issue on physics in Japan. The articles all deal with topics where Japanese physicists are working at the frontiers of knowledge.

Two of the articles cover space and astrophysics. Japanese scientists have been in the forefront of studies triggered by the stellar explosion in the Large Magellanic Cloud known as SN1987a, which was optically observed on 23 February. Minoru Oda, director-general of the Institute of Space and Astronautical Science, describes space science in Japan, with the primary emphasis on x-ray astronomy, in his article beginning on page 26. He mentions the Japanese satellite Ginga's recent observation of x-ray emission from SN1987a.

Observational neutrino astrophysics is covered by Masa-Toshi Koshiba beginning on page 38. Koshiba, while professor of physics at the University of Tokyo and director of the university's International Center for Elementary Particle Physics, conceived, designed and led the Kamiokande project, which recently observed neutrinos from SN1987a. Koshiba's successor as principal investigator is Y. Totsuka. Koshiba has joined Tokai University; until next August he is at CERN. In the photo at right, graduate students install 20″ photomultiplier tubes from life rafts floating on the water in the 16-meter-high Kamiokande detector.



Chikara Hayashi, chairman of the Ulvac Corporation, headed a government–industry–university project on ultrafine particles. Hayashi's article, beginning on page 44, discusses these particles and also briefly describes the project system.

Research on high-T_c superconductivity in Japan is described by Shoji Tanaka, a professor of solid-state physics at the University of Tokyo, in his article starting on page 53. Tanaka led the Japanese group that confirmed superconductivity in Ba-La-Cu-O after learning of the work by Georg Bednorz and Alex Müller (see the news story on page 17). In an accompanying sidebar on page 57, Sadao Nakajima of Tokai University writes on the New Superconducting Materials program, which he organized in 1984. At that time Nakajima was director of the Institute for Solid State Physics at the University of Tokyo.

Graphite intercalation compounds are the subject of the article starting on page 64 by Hiroshi Kamimura, who is a professor of physics at the University of Tokyo and chairman of the physics department. While president of the Physical Society of Japan, he helped establish an international collaboration between Japanese and American physicists on graphite intercalation compounds and helped improve communication between the Physical Society of Japan and The American Physical Society.

This month's Reference Frame column (page 9) also deals with Japan. George Pake, retired group vice president of the Xerox Corporate Research Group, writes about "Physics, Japan and US Competitiveness."

GLORIA B. LUBKIN
Editor, PHYSICS TODAY