NASA–ESA probe to Giacobini–Zinner

US space scientists are fond of complaining about NASA's decision not to support a Halley probe, and yet if one is willing to stretch definitions a little, the United States will in fact be sending a craft to Halley. On 11 September, the International Cometary Explorer—a spacecraft built by Fairchild Space Company for NASA's Goddard Space Flight Center—is to fly through the tail of Giacobini–Zinner, where it will study the magnetic and electric fields and plasmas of the comet's tail.

The spacecraft was launched in August 1978, with sponsorship of NASA and ESA, as the International Sun–Earth Explorer, to study the solar wind, the Earth's magnetosphere and their interactions. After completing that mission, the spacecraft was renamed the International Cometary Explorer and was diverted onto a course to reach Giacobini–Zinner in September 1985, which will be the first intercept of a spacecraft with a comet.

After completing that mission, it is to have the additional task of joining the Halley flotilla, which consists of the two Soviet Vegas (PHYSICS TODAY, March 1985, page 113) Giotto, and two Japanese probes. On two occasions, 31 October 1985 and 28 March 1986, NASA's International Cometary Explorer will pass between the Sun and Halley's comet. On the first pass it will be quite a long way off from the comet, but the second time it will be 180 000 miles away, close enough to measure the upstream solar wind.

Japan's first spacecraft to Halley, which was launched 7 January with a plasma-wave probe, an ion sensor and a magnetometer aboard, will miss the comet by several million miles. The second Japanese craft, "Planet A," is to be launched this month and is expected to come within about 60 000 miles of Halley. Its primary mission is to make ultraviolet television images of the comet's hydrogen coma.

on the "mandatory" space science program, which excludes everything having to do with Earth and everything related to microgravity, come to 134 million accounting units—roughly $110 million. ESA estimates that it spends about one-seventh as much a year on space science as NASA; Frank McDonald, chief scientist at NASA, guesses that total European spending on space science, taking the programs of the individual countries into account, is probably one-fourth or one-fifth what the US spends. He agrees that the level of European spending has been an "anomaly." Europe's combined GNP is comparable to that of the US, and European allocations for fields such as particle physics and radioastronomy also are about the same as those of the US.

The intention now is to boost annual expenditures by ESA to around 200 million accounting units by the early 1990s, which will still leave ESA very far behind NASA, but more capable—ESA officials hope—of bargaining with NASA as a serious potential partner. As stated in the "Horizon 2000" report, the hope is to produce a "quantum jump in scientific significance" and to give Europe "the means of being an equal partner in a worldwide prospectus in space science, while honoring its cultural heritage and scientific tradition."

The long-term science program adopted at Rome rests on four "cornerstones":

- the Solar–Terrestrial Program, which is to involve two medium-size projects, a space observatory at the L1 Lagrangian point between Earth and Sun, and a cluster of satellites to investigate plasma physics in the magnetosphere
- an x-ray observatory, containing multiple telescopes, to be complementary to NASA's AXAF
- an 8-meter dish antenna, employing heterodyne equipment for high-resolution spectroscopy, to make observations in the as yet unobserved part of the submillimeter spectrum
- a mission to bring back pristine material from primitive bodies such as asteroids or comets.

The last project might be undertaken with US involvement, Bonnet indicated, and he considers the submillimeter antenna a prime candidate for the space station.

Bonnet said that the technical problems that need to be overcome have been identified for the four cornerstone projects, with the aim of seeing to it that requisite technology matures in the next 15–20 years, which "otherwise might not happen." In addition, the agency will continue to select smaller projects on an ongoing basis by traditional means.

The European Retrieval Carrier, EURECA, has a special status because it is to be launched from the space shuttle with the capability of staying up on its own for a period of months and then returning to the shuttle. Bonnet said there is a lot of interest in EURECA among European scientists. —WS

Biedenharn is new editor of mathematical physics journal

Lawrence C. Biedenharn of Duke University has been appointed the new editor of the *Journal of Mathematical Physics*, which is published by AIP, effective 1 July. Biedenharn succeeds John Klauder of AT&T Bell Labs, Murray Hill, who was with the journal for 6½ years and is now secretary of the International Union of Pure and Applied Physics.

Biedenharn has worked primarily on general applications of symmetry to quantum physics. He was chairman of the *Journal of Mathematical Physics* review committee that recommended elimination of page charges for the journal. That recommendation has been accepted, and starting January 1986, no page charges will be made and no free reprints will be supplied to authors. (Page charges were eliminated for the *Review of Scientific Instruments* starting January 1985.)

Submissions for the *Journal of Mathematical Physics* should go to Lawrence C. Biedenharn, Editor, JMP, Science Drive, Duke University, Durham, NC 27706.

Science journalist Patrusky wins an AIP writing award

Ben Patrusky is the winner this year of the AIP Science Writing Award in Physics and Astronomy given to a journalist. The award was made to Patrusky in recognition of his article "The Wandering Continents," which was published in the *World Book Year Book*.

Educated at City College of New York and Columbia Journalism School, Patrusky currently is director of the Council for the Advancement of Science Writing "Horizons of Science" briefings. He is a contributing editor to *Science 85*, and he has writtten for *Mosaic*, the *Newsday* Sunday magazine supplement, and *Signature*, in addition to doing seven major features for World Book's *Science Year* since 1979.

East German physicist released by US in East–West exchange

As part of the exchange of four East Europeans imprisoned in the US on espionage charges for 25 Western agents held in jails in East Germany and Poland, Alfred Zehe, a solid-state physicist from the University of Dresden, was freed on 11 June. Zehe had been sentenced last April to eight years in prison for buying classified US Navy documents from a civilian double agent seeking money for the papers (PHYSICS TODAY, May, page 79). The papers Zehe received described Navy antisubmarine and communications systems that were even then considered no longer significant to national security.

Zehe had been arrested in November 1983 at the Boston meeting of the