revisions were made at the AAS meeting in Pasadena, which was marked by sharply rising interest in public policy questions among the society's membership.

—WILLIAM SWEET

Military uses and rising costs jeopardize space station

Two years ago, when the members of the European Space Agency, Canada and Japan agreed to join in planning for the space station project despite reservations about subordinating themselves to US technology and objectives, it seemed a triumph of President Reagan's personal diplomacy and a striking vote of confidence in NASA's technical prowess (PHYSICS TODAY, May 1985, page 77). That was before the Challenger disaster and before the Iran–contra affair, and it was before the Pentagon began to drastically escalate its claims on the space station.

In mid-December, when negotiations about design and construction of space station components were beginning to pick up momentum, the Pentagon asked NASA to delay talks until it could be determined whether any proposed agreement would preclude military use of the platform. About the same time, Defense Secretary Caspar Weinberger gave President Reagan a briefing in which he urged the President to approve a plan for early deployment of a missile defense system based on rocket interceptors.

In all previous negotiations military use of the space station had been carefully finessed. Top NASA officials said off the record that they took it for granted that the Strategic Defense Initiative Organization would want to get aboard once the platform was built, and in negotiations they took pains to inform foreign partners that the Pentagon was a potential user of the station. At the same time, the actual agreements with foreign partners said that the station would be used only for peaceful purposes, and ESA's charter restricts the organization to peaceful activities.

When negotiations resumed in February this year following a US interagency review of a draft intragovernmental agreement, the State Department endorsed a statement that there had been no change in the US position toward the space station since Reagan issued his invitation to foreign countries in 1984. The statement, signed by representatives of the United States, Canada, Japan and the 12 ESA member states participating in the project, said: "All partners confirm their intention that the space station should provide the opportunity to establish a long-term mutually beneficial relationship for the exploration and use of outer space. They further confirm that the space station will be developed and used for peaceful purposes."

All parties are thought to be eager to see a final agreement reached by September, when the two-year conceptual design phase is scheduled to end and Phase C–D—design and construction—is scheduled to begin. Pryke stresses that real negotiations are taking place now—that talks have gone well beyond the preamble phase.

If the question of whether the Pentagon is to use the space station has been resolved, the answer is not publicly known and still must be considered, in detail, by the foreign partners. One report indicates that the Pentagon withdrew its request to use the station for Star Wars research and tests; another indicates that the President has signed a classified decision finding on how DOD will use the station.

Cost escalation. Independently of that issue, NASA Administrator James C. Fletcher conceded in testimony this winter that the space station might cost the United States $12–13 or $14–15 billion rather than $8 billion as originally estimated. The latest internal NASA estimates are rumored to be well above $20 billion.

The changed estimates may be of little direct concern to foreign partners, whose contributions are fixed. But they do concern Congress, which warned, when it originally authorized the space station, that cost overruns would not be tolerated. One measure of the space station's sudden vulnerability is the ad campaign launched by aerospace contractors to save it. During the winter full-page ads favoring the project were placed in leading newspapers and magazines by companies such as Boeing and Lockheed. "Space research is this generation's call to greatness," the ad from Boeing said.

At this writing, leading Administration officials have just gone to the President with a recommendation to proceed with a smaller version of the space station that would cost about $4 billion less. The plan reportedly has been endorsed by James C. Miller, director of the Office of Management and Budget, National Security Adviser Frank C. Carlucci, Presidential science adviser William R. Graham and Fletcher. Fletcher's office would not comment on the report.

Apparently the plan calls for a smaller power supply that would support less modules and equipment. It remains to be seen whether the new version still could accommodate all the equipment that Europe, Canada and Japan want to deploy.

Other issues. Plans for Columbus, the name given the European program for the space station, have become increasingly complicated as various national interests have been accommodated on the European side. The current agreed-upon plan for Columbus includes a permanently attached laboratory module and a polar satellite that is to complement an identical NASA satellite. The Europeans have proposed, in addition, a separate but co-orbiting platform for experiments with sensitive instruments and an astronaut-tended free flyer that could become the basis for an independent European station.

Whether the Columbus flotilla turns out to have two, four or some other number of vessels, it probably will not have three and it clearly will not make it to the new New World by 1992, in time for the 500th anniversary of Christopher Columbus's voyage, as originally hoped. The latest target date seems to be 1995.

—WILLIAM SWEET

AIP will start a new magazine, Computers in Physics, in 1988

Robert R. Borchers, associate director for computation at Lawrence Livermore National Laboratory, will be the editor of *Computers in Physics*, a new magazine–journal that AIP plans to start publishing next year. Borchers was recommended for the position by a search committee headed by Howard J. Voss of Arizona State University.

Borchers will edit *Computers in Physics* at Livermore, relying on a board of associate editors who will select scholarly articles on the basis of assessments from referees. The editor's job is part-

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time, but AIP will provide him with full-time staff support.

Computers in Physics will have two parts, one consisting of archival articles, the other of news stories and features such as reviews and columns. The major topics covered in the magazine will be the use of computers in computational and experimental physics and astronomy, and computers in physics and astronomy education.

AIP staff at the institute's Woodbury, Long Island, facility will be responsible for copy-editing the archival articles, and a staff in New York will be responsible for news reporting and integration of editorial material and production. The New York staff will share offices with PHYSICS TODAY and the AIP statistics, advertising and marketing divisions at 140 East 45th Street, two blocks from AIP headquarters, and graphics will be handled by the PHYSICS TODAY art department.

Robert Marks, AIP director of publishing, will act as publisher of *Computers in Physics*, and Edward Greeley, AIP manager of advertising and exhibits, will be responsible for its advertising sections.

The magazine–journal will appear bimonthly and will be available to AIP society members for $20 per year. The price for individuals who are not members of AIP societies will be $30 per year, and the library rate will be $250.

The American Physical Society has agreed to offer its members a special introductory subscription to the first three 1988 issues as a check-off item on their 1987–88 member dues bills. Other member societies will be offered the option of including a similar offer on their 1988 member dues bills.

A pilot issue is planned for early this fall. Editorial material or suggestions should be addressed to Robert R. Borchers, PO Box 808 L 66, Livermore CA 94550.

AAPT elects Wheeler to be its new president in 1988

Gerald Wheeler of Montana State University is the new vice president of the American Association of Physics Teachers. He succeeds Robert Resnick of Rensselaer Polytechnic Institute, who is 1987 president-elect. Donald F. Holcomb of Cornell is this year's AAPT president.

Wheeler received his BA from Boston University in 1963 and his MA and PhD from the State University of New York at Stony Brook in 1968 and 1972. He taught at Temple University from 1972 to 1981, when he joined the faculty at Montana State.

WHEELER

Wheeler is among the handful of scientists who have worked on a large variety of television science programs. He is a consultant or adviser to AIP's radio and television projects, to PBS television's "Voyage of the Mimi" project and to "3–2–1 Contact," the popular show produced by Children's Television Workshop. While at Temple Wheeler was the creator and host of "Sidewalk science," which aired on the CBS television affiliate in Philadelphia. Segments of "Skywatch," an astronomy program he created, still appear on Montana television.

Wheeler has served as chair of AAPT's committee on science education for the public, AIP's committee on public information and education, and the College Board's committee on the physics achievement exam. He also has worked as a high school physics teacher and has trained Peace Corps physics teachers for foreign assignments.

Joining Wheeler as newly inaugurated members of AAPT's executive board are James Nelson, a teacher at Harriton High School in Rosemont, Pennsylvania, and Ronald E. Smith, a physics professor at Northeast Louisiana State University in Monroe, Louisiana.

Coburn elected 1988 president in Vacuum Society balloting

The American Vacuum Society has elected John W. Coburn to be 1987 president-elect. He will become president in 1988, succeeding Paul H. Holloway, a professor of materials science and engineering in the Surface and Thin Film Laboratory at the University of Florida, Gainesville.

Coburn is manager of the plasma– and laser–surface interactions group at the IBM Almaden Research Center in San Jose, California. Coburn received a bachelor of science degree in 1956 and master of science degree in 1958 from the University of British Columbia. He earned a PhD in electrical engineering in 1967 at the University of Minnesota. He was a physics fellow at Simon Fraser University in 1967–68, and he has been a member of the IBM research staff since 1968. His research interests include the physics and chemistry of plasma processing environments, ion–solid interactions and thin film and surface science.

In other AVS election results, William D. Westwood, manager for materials research and gallium arsenide devices at Bell–Northern Research in Ottawa, was reelected clerk; N. Rey Whetten, staff physicist in the VLSI Technology Laboratory of the General Electric Research and Development Center in Schenectady, New York, was reelected treasurer.

Three new directors were elected to serve two-year terms: Carolyn Rubin Aita, an associate professor and joint teacher–researcher in the materials science department and Laboratory for Surface Studies, University of Wisconsin, Milwaukee; James M. E. Harper, a research staff member in exploratory silicon materials and processes at the IBM Thomas J. Watson Research Center, Yorktown Heights, New York; and James S. Murday, head of the surface chemistry branch at the Naval Research Laboratory in Washington.

New trustees are John A. Thornton, professor of materials science and research professor in the Coordinated Science Laboratory, University of Illinois, Urbana–Champaign; and Harold F. Winters, a member of the research staff at the IBM Almaden Research Center in San Jose. □

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