US-Soviet space

Towards renewed collaboration?

Washington

A SECRET meeting took place last month in Moscow between representatives of the US National Aeronautics and Space Administration (NASA) and the Soviet Institute for Space Research. According to a source close to the participants, the purpose of the visit was to lay the groundwork for the resuscitation of a bilateral agreement on cooperation in space between the two countries. The previous agreement lapsed in 1982.

The US delegation was headed by Lew Allen, director of the Jet Propulsion Laboratory in Pasadena. Joining him from NASA headquarters in Washington were deputy associate administrator Sam Keller, chief scientist Frank McDonald and Peter Smith, chief of the international programme policy office. Joe Kerwin from the Johnson Space Center in Houston was also there, as were representatives of the Departments of Defense and State and the National Security Council. The meeting was arranged by the Soviet Academy of Sciences, and representatives of all key space institutes were present.

The meeting's chief goal was to discuss potential areas for cooperation, including planetary exploration, life sciences, Earth sciences, solar sciences and astrophysics. No startling new missions were formally considered, although there was informal discussion of a proposal to return a sample from the surface of Mars.

A formal treaty for cooperation in space exploration was signed by the United States and the Soviet Union in 1972. Among the most ambitious efforts carried out was the Apollo–Soyuz Test Project in 1975, when US and Soviet spacecraft docked in orbit and the two crews exchanged visits. Other cooperative efforts included US biomedicine experiments on Cosmos satellites and the sharing of data from Soviet Venera probes to Venus.

After the treaty's first five years, both countries agreed to a five-year extension. But, from 1977 to 1982, relations deteriorated because of the Soviet presence in Afghanistan, the US establishment of diplomatic ties with China and US charges that the Soviet Union had violated the biological weapons convention. The treaty was not renewed in 1982.

By the mid-1980s, the United States was again interested in cooperation with the Soviet Union. On 30 October 1985, President Reagan signed a resolution sponsored by Senator Spark Matsunaga (Democrat, Hawaii) that called for reestablishing the agreement and exploring new areas for "East–West ventures in space". Until recently the Soviet Union has tied renewed cooperation in space to a US decision to end the Strategic Defense Initiative (SDI), but there are signs that that linkage may have been dropped.

That there are scientific benefits to US-Soviet cooperation in space is undeniable, says Nancy Lubin, the author of a 1985 Office of Technology Assessment* report on the subject. But Lubin also says that, before any agreement can be renewed, the United States must more clearly define its policy objectives. How, for example, would the United States show displeasure with a Soviet action, such as the arrest of a US journalist on espionage charges, under the terms of such an agreement?

Technology transfer issues must also be clarified. Lubin says the International Traffic in Arms Regulations defines all space technology as an "implement of war". The Department of Defense is reluctant to have high-technology items leave the United States for Eastern European countries. Lubin argues that these potentially conflicting goals will have to be reconciled before an effective agreement can be renegotiated. **Joseph Palca**

*. *United States-Soviet Cooperation in Space*, Office of Technology Assessment, OTA-TM-STI-27, Washington, DC (1985).

Shroud to be dated

THE Roman Catholic Church is about to see one of its most famous relics submitted to the obvious test: pieces of the Shroud of Turin are to be taken to seven laboratories around the world for radiocarbon dating. Given the sensitivity of current techniques, less than 5 milligrams of cloth can yield a date with an accuracy of ±60 years or so. By grouping all the laboratory results together, the statistics should be considerably better.

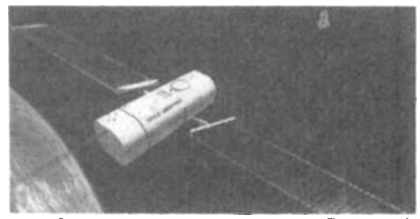
The Pontifical Academy of Sciences, which is responsible for the exercise, has selected five centres able to carry out dating by tandem accelerator mass spectrometry: the universities of Oxford, of Arizona in Tucson and of Rochester, New York; ETH Zurich; and the Centre pour Faibles Radioactivités at Gif-sur-Yvette, France. This technique, in which samples are pyrolized, ionized and accelerated to yield sensitive detections of relative isotope abundances, will be complemented by more conventional dating to be carried out at Harwell (United Kingdom) and the US Brookhaven National Laboratory.

The results of the tests will be available by Easter 1988. Typically such dating can be carried out in less than a month. A sampling room is to be built at Turin, however, and the investigators are also giving themselves enough time to handle their samples with the care appropriate for such rareties. Philip Campbell

Space facility

Washington

WESTINGHOUSE Electric Corporation has joined forces with Space Industries Inc. to produce the first privately owned man-tended space laboratory for research and



manufacturing. The prototype Industrial Space Facility will cost $250 million, and will be available for launch by the space shuttle in late 1990. The facility will consist of a 2,500 cubic foot pressurized cabin attached to a 900–1,800 cubic foot supply module. The solar panels will be able to generate approximately 12 kW of sustainable power, and 60 kW for short duration needs. □

Britain in space

Soviet launch planned

THE British National Space Centre sprang to life last week with an expedition to Moscow, at the invitation of Inter-Kosmos, where a protocol was signed between British and Soviet officials to regulate the terms on which British instruments may be launched by Soviet rockets in the years ahead.

The most immediate application of the agreement is likely to be to the flight of an instrument on the Soviet X-ray satellite Roentgen, likely to be launched in the 1990s. A group at the University of Birmingham has been collaborating informally on the project for some time.

The formal protocol covers ultraviolet and X-ray satellites, solar-terrestrial physics and investigations in the infrared and microwave regions. But the British group appears to have been especially attracted by the Soviet Phobos project, designed to send a landing craft to the surface of Mars and due to be launched in 1988.

According to one member of the British group, the visit was quite separate from other visits in the past few weeks, although the members of the group were careful to emphasize that their first loyalties are to the European Space Agency. Those in the British group understand that there will be visits from scientists from other European countries in the next few weeks, especially from France and West Germany, seeking opportunities for launching scientific instruments for which launching vehicles have recently become scarce throughout the world.

John Maddox