FLIGHT International, I June 1972 813 US-USSR RESEARCH AGREEMENT

Soviet and US scientists drew up a preliminary agreement
last week which is expected to lead to substantially
increased co-operation in space research. The agreement
was established at the end of three days of meetings which
followed the two-week Cospar meeting in Madrid, held to enable the international exchange of space-research information.

A Nasa spokesman said in Houston later that they were extremely optimistic about the new agreement. He said that the discussions, which had been highly technical, had been related chiefly to exchange of information on planetary exploration. No details of the agreement are available, however, until it has been ratified by both countries, and this is expected to take about 60 days.

RUSSIA TO LAUNCH INDIAN SPACECRAFT

India's first nationally designed and built satellite is to be launched by the Soviet Union in 1974. The satellite, which will be purely scientific, will carry several experi-ments developed by Indian research establishments and will be equipped for data storage and relay.
The launch agreement was signed as part of the Indo-Soviet research agreement of May 10 (Flight, last week, page 768). Present co-operation extends to the supply of Soviet equipment to the Thumba launch site and the launch of Soviet M-100 meteorological sounding rockets at a rate of one per week.

SECOND MOLNIYA 2 LAUNCHED

The Soviet Union launched another of its second-genera-tion communication satellites, Molniya 2, on May 19. The satellite was placed in an orbit ranging from 290 miles, 460km to 25,000 miles, 39,300km over northern Russia. Its inclination is at 65-5° to the Equator and its orbit lasts llhr 45min. The first Molniya 2 was launched last year on November 24, since when the Russians have continued to launch further satellites in the Molniya 1 series.

JAPANESE GARP MISSION

A four-man mission, headed by Tsuyoshi Amishima of Japan's Development Committee, is to visit the United States and Europe in mid-June for two weeks to prepare for Japan's participation in the Global Atmospheric Research Programme, scheduled to begin in 1975. The mission is expected to visit the National Aeronautics and Space Administration, spacecraft manufacturers in the USA and departments of the World Meteorological Organisation in Europe. The purpose of the visit is to study administrative and financial arrangements for satellite construction and launching, in addition to ground facilities for satellite launchings. The mission is being sent by Shiro Kiuchi, director-general of the Science and Technology Agency.

ESRO-CANADA CO-OPERATION AGREED

The European Space Research Organisation is to co-operate with Canada in a communications technology satellite project. The satellite is being developed by the Canadian Communications Research Centre for launch in 1975. Under the agreement, Esro is to collaborate with Canadian industry in developing selected components from advanced materials, which would be tested on the satellite with a view to possible application in spacecraft of the 1980s, In effect, Canada will receive component technology in return for supplying Esro with the early opportunity to test those components. The particular components involved are travelling-wave tubes, solar cells and part of the ampli-fying system. These systems will then be applied to the first European comsat, which could be launched as early as 1978.

The satellite project is the first designed to test the use of 10GHz frequencies in satellite communications and will be used to develop links between isolated communities. The project was first announced in April last year, when Nasa signed an agreement to launch the satellite in return for the right to include some advanced electronics. RCA and Spar Aerospace of Canada have been contracted to provide some sub-systems.

ASTRONAUT RESHUFFLE

Astronauts Edgar Mitchell, Apollo 14 lunar-module pilot, and James Irwin, LM pilot on Apollo 15, have both announced plans to leave Nasa within the next few months. Irwin was one of the back-up crew for Apollo 17 with Alfred Worden and David Scott, who have now been assigned to the space shuttle programme. They will be joined by Apollo 16 command-module pilot Ken Mattingly. John Young, Charles Duke and Stuart Roosa have now been named as Apollo 17 back-up crew. The departure of Mitchell and Irwin reduces the number of active astronauts to 43.

A report on the new Soviet solar observatory "Prognoz" describes the spacecraft as a round-ended cylinder serving as the main spaceframe, to which sensors are attached, as well as a sealed container for instruments and electronics. Indicated are I low-frequency RF radiation aerial; 2 magnetometer boom; 3 solar paddle; 4 instrument compartment; 5 directional VHF antenna; 6 long-wave RF radiation antenna; 7 experiment sensors; 8 attitude-reference Sun sensor. The 845kg spacecraft was launched in April 14 into a 9S0km x 200,000km Earth orbit ("Flight," April 27, page 599). The report said that solar and lunar gravity causes the orbital height to vary as much as 400km

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