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INTERNATIONAL CO-OPERATION IN THE PEACEFUL USES OF OUTER SPACE

Note verbale dated 13 January 1988 from the Permanent Mission of
the Union of Soviet Socialist Republics to the United Nations
addressed to the Secretary-General

The Permanent Mission of the Union of Soviet Socialist Republics to the United Nations presents its compliments to the Secretary-General and, in accordance with principle IX of General Assembly resolution 41/65 of 3 December 1986, entitled "Principles relating to remote sensing of the Earth from outer space", has the honour to submit a report on the activity of the USSR in the remote sensing of the Earth from outer space and its international co-operation in this field.

The Permanent Mission of the USSR to the United Nations requests the Secretary-General to distribute this report as an official document of the General Assembly under the item entitled "International co-operation in the peaceful uses of outer space" and bring it to the attention of the Committee on the Peaceful Uses of Outer Space.

ANNEX

Report on the activity of the USSR in the remote sensing of the Earth from outer space and its international co-operation in this field, submitted in accordance with principle IX of "The Principles Relating to Remote Sensing of the Earth from Outer Space"

In a comprehensive programme of joint practical action for the peaceful conquest of space, submitted for the consideration of the international community in June 1986, the Soviet Union proposed a concentration of efforts on formulating major projects for the use of space technology to solve problems of social and economic development common to all countries. Among these projects, an important place in the programme is assigned to remote sensing for the benefit of agriculture and the development of the natural resources of the land and of the oceans and seas. Guided by a desire for the comprehensive development and strengthening of international co-operation in space, the Soviet Union declared its readiness to share its space achievements, including achievements in the remote sensing of the Earth, under mutually acceptable conditions.

The USSR devotes much attention to developing space technology for the remote sensing of the Earth. Under its national programme in this field, an all-State space system, Resurs, for studying the natural resources of the Earth and the environment, has been established and is in permanent operation. This system, consisting of three complementary subsystems, a non-real-time photographic one and two real-time ones, is being improved as science and technology develop.

Photographs of the Earth from outer space, produced regularly by the non-real-time photographic subsystem (Resurs-F), are used for the comprehensive study and mapping of natural resources. The photographic equipment used, installed in Cosmos spacecraft and in the manned orbital stations SALYUT and MIR, makes it possible to obtain primary photographic data on a scale of 1:200,000 to 1:5,000,000 over a swath of up to 500 kilometres, surveying 200-6,000 km²/frame, with a ground resolution of 5 to 50 metres.

The two real-time specialized subsystems are designed to observe the land (Resurs-O) and the ocean (Okean-O). Experimental land-observation satellites carry multiband television equipment with a resolution of 45, 170 and 200 metres, and a swath width of 45, 600 and 1,400 kilometres respectively. Ocean-observation satellites carry side-looking radars with a ground resolution of approximately 1 kilometre and a swath width of 450 kilometres, and multiband television equipment offering low and medium resolution in the optical band.

The ground segment of the real-time subsystems of Resurs consists of three receiving stations sited near Moscow, in Novosibirsk and in Khabarovsk. In the direct-transmission mode these stations allow virtually the entire territory of the Soviet Union and many bordering countries to be observed. Information can also be stored on board the satellites, allowing any point on the globe to be observed in

this mode. In addition, the ocean-observation satellites can emit information from their radar and optical sensors to a large number of simplified receivers which may be positioned virtually anywhere.

The Soviet Union devotes considerable attention to the use of space technology in hydrometeorology and the study and monitoring of the environment. The Meteor space-based operational weather system is used for these purposes. Meteor satellites collect global hydrometeorological information in the visible and infra-red ranges and data on penetrating exitance radiation flows in circumterrestrial space, and relay television images of cloud cover and the surface beneath for use in the direct-transmission mode. The orbital data needed to pick up the information are circulated to all countries belonging to the World Meteorological Organization through the world-wide telecommunications network of the World Weather Watch.

The Soviet Union, which has acquired much experience in the use of space technology, is successfully developing international co-operation in studying the Earth's natural resources and environment from space both on a multilateral basis under the Intercosmos programme and through bilateral agreements and contracts.

An important role in the work done in the USSR on the remote sensing of the Earth is played by experiments conducted during the flights of international teams in Soviet orbital stations of the SALYUT and MIR types as part of the Intercosmos programme. An experiment in the remote sensing of the Earth conducted in 1984 by an international team with the participation of Soviet and Indian cosmonauts had important practical implications. Several hundred space images were produced during the experiment, covering nearly 50 per cent of the territory of India. India was given, free of charge, more than 4,800 individual photographic records. Surveys of the territory of the Syrian Arab Republic from outer space were carried out in July and August 1987 during the flight of an international team with the participation of a Syrian cosmonaut. Photographic material from space surveys produced by Soviet and Syrian cosmonauts, and a large quantity of photographic material obtained earlier from the Soviet Salyut-7 orbital station, were transmitted to the Syrian Arab Republic free of charge.

In June 1987 the relevant organizations of the USSR and the Syrian Arab Republic signed a long-term agreement on co-operation in the field of remote sensing. Similar agreements were concluded with organizations in Poland and Czechoslovakia, Hungary, Cuba, Romania and other countries. The intergovernmental agreement between the USSR and Australia signed on 1 December 1987 provides for co-operation between the two countries in the practical uses of remote sensing.

The Soviet Union's international activity in the remote sensing of the Earth is guided by the Principles Relating to Remote Sensing of the Earth from Outer Space approved in General Assembly resolution 41/65 of 3 December 1986. This activity is aimed at the peaceful use of outer space in the interests of all States, especially the developing ones, and takes place in accordance with the principles of equality and mutual advantage, respecting the inalienable right of States to full and permanent sovereignty over their own natural resources.

The foreign trade associations Soyuzkarta (Central Geodesy and Cartography Office) and Vneshtekhnika (USSR State Committee on Science and Technology) work with foreign clients to provide the necessary co-operation in solving problems associated with the supply of space photographs, the provision of various geodesic services, aerial surveys, cartography, the comprehensive study of natural resources and the environment, and the provision of information from the Soviet Union's operational satellites.
