Chapter 1
Introduction

Photo credit: National Aeronautics and Space Administration

Solar corona photo from satellite data

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The issue of U.S.-Soviet cooperation in space has been the subject of congressional and other debate since the beginning of the space age in the **1950s.** For the most part the two countries have developed extensive space programs in almost complete isolation from each other, with space programs heavily military and strategic in nature. But in light of overall world tensions, U.S.-Soviet cooperation in space has been viewed by both countries as a mechanism for enhancing national prestige, sending peaceful symbolic messages to the rest of the world, pooling important scientific and technical information and insights, and perhaps leading to a genuine reduction of tensions on Earth. In U.S. congressional debates U.S.-Soviet space cooperation has characteristically been promoted as a means of reducing tensions and promoting world peace.

The development of U.S.-Soviet cooperation in space has occurred as part of a growth in U. S.-Soviet scientific and technical (S&T) cooperation overall. Formal cooperation in S&T began between the two countries on a bilateral basis in 1959, with the signing of agreements for scientific exchange programs between the National Academy of Sciences of the United States and the Academy of Sciences of the U.S.S.R. It continued with a variety of inter-institutional agreements between the Soviet Academy of Sciences and such U.S. Government agencies as the National Aeronautics and Space Administration (NASA), the National Oceanic and Atmospheric Administration (NOAA), the Federal Aviation Administration (FAA), the Department of Energy (DOE), and the Department of Agriculture (USDA). In the early 1970s this cooperation culminated in the signing of a broad U.S.-Soviet intergovernmental agreement to cooperate bilaterally in 11 areas of science and technology.

U.S.-Soviet cooperation in space has occurred on a number of levels: on a bilateral intergovernmental basis, in multilateral forums, and through more informal scientist-to-scientist exchange. For example, the United States and the Soviet Union have signed broad agreements to cooperate in space on four occasions, the first two at the interagency level (1962 and 1971, between NASA and the Soviet Academy of Sciences), and the latter two at the intergovernmental level, when an intergovernmental "Agreement Concerning Cooperation in the Exploration and Use of Outer Space for Peaceful Purposes" was signed in 1972 and renewed in 1977. In the multilateral context U.S.-Soviet space cooperation has expanded through international projects and organizations such as the World Weather Watch conducted by the WorId Meteorological Organization (WMO), and the International Maritime Satellite (INMARSAT) system; the United States and the U.S.S.R. have also signed and ratified four U.N. treaties and agreements concerning the peaceful use of outer space.[1] And U, S.-Soviet interaction and discussions without governmentaI-level recognition have also taken place in such forums as the International Astronautical Federation (IAF) and the Committee on Space Research (COSPAR), organized in 1958 as a coordinating body of the International Council of Scientific Unions (ICSU).

Despite these various types of cooperative efforts, the history of U.S.-Soviet space cooperation has been an uneven one, marked by intermittent hopes, occasional accomplishments, and many disappointments. The high level of secrecy surrounding Soviet space activities (due to the absence of a separation between Soviet military and civilian space programs) has impeded the interchange of information and ideas. And it has proved to be exceedingly difficult, in the U.S.S.R. as well as in the United States, to separate the issues of U.S.-Soviet military and political competition on Earth from the pursuit of cooperation in space.

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[1]These are: 1) the "Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies" (1967) (TIAS 6347; 18 UST 2410: 610 UNTS 205): 2) an "Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched in Outer Space" (1968) (TIAS 6599; 19 UST 7570; 672 UNTS 2051 3) the "Convention on International Liability for Damage Caused by Space Objects" (1972) (TIAS 7762; 24 UST 2389; 961 UNTS 187): and 4) the "((~ nvention on Registration of Objects Launched Into Outer Space" (1974) (TIAS 8480 28 UST 695; 1023 UNTS 151 A fifth treaty, an "Agreement Governing the Activities of States on the Moon and Other Celestial Bodies' (1979), has entered into force, but neither the United States nor the U S .S R has signed it.

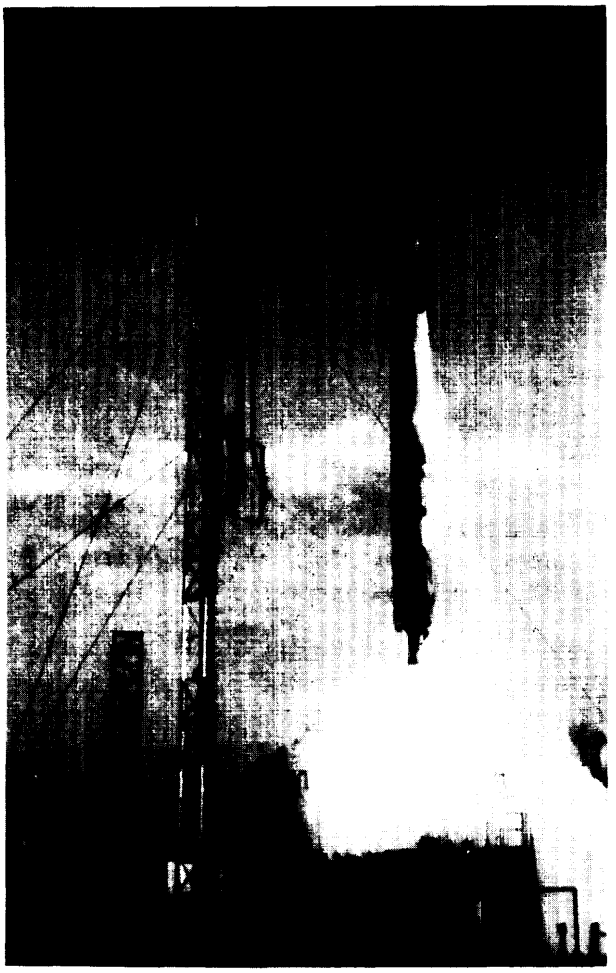

Photo credit *National Air and Space Museum*

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Thus, notwithstanding a stated desire on the part of both countries to pursue such cooperation, U.S.-Soviet space cooperation in practice has tended to follow the course of U.S.-Soviet relations overall. After more than a decade of frustrated attempts to establish space cooperation during the late 1950s and the 1960s, cooperation reached its high point in the mid-1970s, at the height of detente, with the Apollo-Soyuz Test Project (ASTP), before declining to a very low level in the late 1970s and to the lapsing of the 1972 Agreement in 1982. Now, 10 years after ASTP, the renewal of U.S.-Soviet space cooperation on an intergovernmental basis is once again being actively proposed, but many of the same concerns and issues which characterized early efforts at cooperation are also being voiced today.

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The signing of Public Law 98-562 in October 1984 in support of renewing space cooperation with the U. S. S. R., and subsequent proposals for prospective U.S.-Soviet joint projects, have again brought fundamental questions to the fore. What should specific U.S. objectives be, and how should these objectives be reconciled with each other? Is U.S.-Soviet space cooperation primarily a political or scientific endeavor? Does it in fact promote peace or reduce tensions? What should take precedence when scientific and foreign policy objectives conflict? How much "technology transfer" to the U.S.S.R. should the United States permit so as not to jeopardize real scientific and foreign policy benefits? And to what degree should space cooperation fluctuate depending on broader political events?

These and other questions have triggered a great deal of public debate in the United States. One viewpoint, for example, argues that renewed U. S.-Soviet cooperation in space should be vigorously pursued for political, economic, and scientific reasons. At a time when the "weaponization" of space has become a major concern in the United States and abroad, some observers argue that cooperation in space represents a feasible means for altering this trend. At a time when U.S.-Soviet relations are at one of their lowest points of the last few decades, space cooperation is viewed as a means of reducing tensions. And in more quantifiable terms, the potential scientific and economic benefits of renewed cooperation are considered substantive enough in their own right to merit renewed cooperation. Proponents of these views tend to support a relatively large-scale joint U.S.-Soviet cooperative endeavor in space, insulated from the ups and downs of U.S.-Soviet relations and world politics.

Others, however, are more wary of renewed U.S.-Soviet space cooperation, placing more emphasis on the possible negative foreign policy and national security implications. In terms qf potential political benefits, for example, these observers argue that U.S.-Soviet cooperation in space should

not be viewed as the antithesis of militarization of space: one can compete militarily and cooperate at the same time. They argue that space cooperation cannot be insulated from, nor greatly change, broader political events, and may result in Soviet rather than U.S. political advantage. And the scientific and economic benefits, some argue—although real, and at times substantial—are not great enough to offset the technology transfer and national security concerns which would accompany any cooperative venture in space. Proponents of these views tend to oppose renewing cooperation in space, or support pursuing space cooperation on a very low level, perhaps using it as a foreign policy tool when appropriate.

This technical memorandum is designed to sort out these issues as a basis for discussing guidelines and more specific policy approaches in the future. It is not intended to determine whether cooperation should be pursued, nor to prescribe optimal methods for doing so. Instead, it is designed only to clarify the pros and cons of each set of policy issues and highlight the potential conflicts among them.

Following this brief introduction, chapter 2 outlines the history of U.S.-Soviet cooperation in space, and the policy debates which have taken place in the United States since the beginning of the space age. It focuses on bilateral intergovernmental U.S.-Soviet space cooperation, as a background to analyzing policy issues facing Congress today and the kinds of questions these may suggest for the future.

Chapter 3 identifies some potential areas for expanded U.S.-Soviet cooperation in the space sciences. Based on a workshop of space scientists held at OTA in May 1984, the chapter presents a scientific evaluation of past U.S.-Soviet cooperative efforts in the planetary and space life sciences, and enumerates potential projects for the future which could have substantial scientific merit.

Photo credit National Air and Space Museum

The world's first cosmonaut —Laika

Chapters 4 and 5 combine this historical and scientific background with the complex array of foreign policy and national security issues which lie at the heart of any U.S.-Soviet cooperative activity in space. Chapter 4 focuses on French policies since, of all the Western countries, France has had the most extensive and long-term space cooperation with the U. S. S. R., and has tended to approach space cooperation with the U.S.S.R. in terms quite different from those in the United States. Chapter 5 examines all of these issues as they face U.S. policy makers today.