The Gazette, Montreal, Saturday, August 15, 1987

SCIENCE/MEDICINE

Soviets and U.S. scientists agree to joint exploration of outer space

By William J. Eaton
Los Angeles Times

MOSCOW — Soviet and American scientists agreed this week to co-operate on a wide range of space research, including investigations of whether there is life on other planets.

Soviet and American scientists met for a week under the terms of a space co-operation agreement signed April 15 by Foreign Minister Eduard Shevardnadze and Secretary of State George Shultz.

Their first joint project under the agreement is a satellite to be launched later this month with two monkeys, 10 rats, fish and other living organisms aboard for a 14-day flight.

The purpose is to study the impact of weightlessness on the vital functions of the animals, said Yevgeny Ilyin, a section chief in the Soviet health ministry's Institute of Medico-Biological Problems.

A list of 26 Soviet-American experiments was approved by working groups from the United States and the Soviet Union, Ilyin said at a news conference.

The possibility of finding life on Mars or another planet was included among future projects, said Oleg Gazenko, the Soviet institute's director.

He said the possibility of a joint flight to Mars wasn't discussed during the week-long talks but added it might be raised at another time.

Samuel Keller, a representative of the U.S. National Aeronautic and Space Administration, said there was a "debate over Mars" and whether some form of life could exist on that planet. As for the possibility of future research with the Soviet Union in this field, he said: "We are certainly interested in extra-terrestial intelligence."

The scientists agreed to exchange information from manned space flights, with the aim of improving medical treatment and monitoring of astronauts and cosmonauts.

They also decided to make a more profound study of how human metabolism changes when humans are placed in orbit — one effect has been the loss of calcium from bones in prolonged space journeys.

Finally, they agreed to issue a set of books in Russian and English on space research findings for the 15 years after 1975.

Keller said the agreement was the start of a much broader effort "across the field of space science," including a planetar conference in the Soviet Union next fa and sessions on astrophysics and earth sc ences in the United States in 1988.

The scientists said the U.S. and Sovi governments have 90 days to approve th agreement but they expected no problem in ratification.

The meeting marked the re-establish ment of space co-operation that was bro ken off by the United States in 1980 afte the Soviet invasion of Afghanistan.

"We are extremely pleased," Keller said. "We are taking small steps in wha we see as a positive direction."

448054

Box 4

THE WHITE HOUSE
WASHINGTON

12/1/86

TO: All

FROM: DONALD T. REGAN
CHIEF OF STAFF

Check with Al Keel
If this is sensitive intelligence that the Pres. cannot know then we'll set schedule a meeting
ditto if its something to mention in SOU.
otherwise do this in Jan.

DTR

Meeting Request with President from NASA Administrator Dr. James Fletcher

SCHEDULE PROPOSAL November 26, 1986

TO: FRED RYAN

FROM: ALFRED H. KINGON

REQUEST: Meeting with the President and Dr. James Fletcher on America's competitiveness in space

PURPOSE: To receive a briefing from Dr. Fletcher and representatives of the CIA on the preliminary results of a study on the Soviet and U.S. civil space program.

BACKGROUND: NASA and the CIA have been preparing a study on the Soviet and U.S. civil space program. This study is anticipated to show where the U.S. has fallen behind the Soviet space program and where we still hold a competitive edge.

The joint study is scheduled to be completed in the early spring, however, there is expected to be the first launch of a new Soviet "heavy lift" vehicle (the first of its kind) early next year. The launch of this new vehicle will attract considerable attention.

DATE: Early 1987

DURATION: 30 Minutes

LOCATION: Oval Office

PARTICIPANTS: William Casey (CIA), Dr. James T. Fletcher (NASA), Larry Gershwin (CIA), Sally Ride (NASA), Dr. William Graham (OSTP)

SEQUENCE OF EVENTS: The President will be briefed by Mr. Casey and Dr. Fletcher on their findings.

(Robinson/BE)
February 22, 1984
11:00 a.m.

PRESIDENTIAL REMARKS: SIGNING CEREMONY FOR EXPENDABLE LAUNCH VEHICLE EXECUTIVE ORDER
FRIDAY, FEBRUARY 24, 1984

Secretary Dole, Members of Congress, ladies and gentlemen, welcome to the White House.

It's space that brings us together today, and on the way over I was thinking back to how thrilled we all were when men first walked on the moon. For thousands of years, when people gazed into the night sky, they looked on the moon with wonder. The moon controlled the ocean tides, lighted fields at harvest-time, and exerted an irresistible pull on the human imagination. When an American spaceship landed on the moon, the moment represented centuries of advances in navigation and exploration. It seemed the crowning achievement of human ingenuity and courage.

Today we know that first moon landing was not just a crowning achievement but a great beginning. The dream of regular space travel and the use of space to enrich life on Earth is becoming a reality -- a working part of our everyday lives. Five centuries ago, America was the New World. Today, space is the New World. And just as Columbus' discovery marked the beginning of growing ties between the Old World and the New, we're beginning to create more and more ties between planet Earth and outer space.

Our approach to space has three elements. First, we're determined to put a permanently-manned space station into orbit -- and to do so within a decade. The space station will

NASA SP-4102

MANAGING NASA IN THE APOLLO ERA

Arnold S. Levine

The NASA History Series

Scientific and Technical Information Branch 1982
National Aeronautics and Space Administration
Washington, D.C.

Moon. Surveyor, intended to soft-land on the Moon, take photographs, and analyze soil; [illegible] the Orbiting Observatories, which were designed to carry a variety of experiment packages; Nimbus, a weather satellite intended as a more advanced system than the Tiros spacecraft transferred from ARPA in 1959; and Syncom, a communications satellite designed, like the Army's Advent, to provide synchronous twenty-four-hour coverage. What NASA lacked was program direction. But the arrival of new personnel, the addition of new programs, and the dramatic shift in national priorities following the presidential election of John F. Kennedy pushed NASA far indeed from the modestly funded, science-based agency contemplated by President Eisenhower.

THE LUNAR LANDING DECISION AND ITS AFTERMATH

The decision to go to the Moon was predictable, if not inevitable. Few things seem inevitable until after they have occurred. At the beginning of 1961 the future of NASA's manned program was uncertain. In December 1960 a PSAC committee had reported that a manned lunar landing was feasible but that it would cost between $26 and $38 billion. President Eisenhower refused to approve any manned program beyond Mercury, save for $29.5 million for a spacecraft for Apollo, as NASA's lunar landing program was designated in the summer of 1960. In addition, the Space Council met so seldom and accomplished so little that Eisenhower proposed abolishing it; nor would the Kennedy administration necessarily take a more favorable view. In a report of 10 January 1961, the Ad Hoc Committee on Space chaired by Jerome Wiesner, an engineer at the Massachusetts Institute of Technology soon to become Kennedy's Science Adviser, had warned the President-elect of grave deficiencies in the national space program: "inadequate planning and direction . . . the lack of outstanding scientists and engineers." The report had further criticized NASA for emphasizing its manned spaceflight program at the expense of the more scientifically productive unmanned probes. The report argued that Mercury exaggerated "the value of that aspect of space activity where we are less likely to achieve success. . . . *We should stop advertising Mercury as our major objective in space activities.*" While it was hastily prepared and offered the President no new options, the report did make explicit the beliefs of many influential scientists. The worth of the civilian space program, their argument ran, was proportional to the scientific information obtained. This was only another way of saying what NASA officials would not have denied—that a manned program, especially a Moon mission, could not be justified on purely scientific grounds.

This is Kennedy's position.

Why did President Kennedy commit the nation to a lunar landing as and when he did? The decision was shaped by many considerations: the knowledge that it was possible; the crucial role of Vice President Lyndon Johnson; the humiliating news of Yuri Gagarin's Earth-orbital flight of 12 April and the failure of the Bay of Pigs invasion a week later; and the conviction—strengthened by

NASA Administrator James Webb and Defense Secretary Robert McNamara—that a manned lunar landing was the logical, inevitable way for the United States to demonstrate its superiority in space. Within NASA, the feasibility of lunar landing had been under study since 1959. The Space Task Group had worked out precise guidelines, and a headquarters study committee chaired by George Low had reported in February 1961 that "the manned lunar landing mission could be accomplished during the decade . . . at a cost of just under $7 billion through FY 1969."[15] Moreover, NASA was able to make a better case than the Air Force that it was the agency best equipped to manage such a program. Webb undercut the Air Force's attempt to take over the space program by negotiating jurisdictional agreements with McNamara and Deputy Secretary Roswell Gilpatric, both of whom wished to bring the services under tighter control.

Another ingredient in President Kennedy's decision was the role of Vice President Johnson. As chairman of the Senate Preparedness Investigating Subcommittee, he had been one of the prime movers behind the Space Act, and later of the "Johnson Rider," by which NASA had to seek annual authorizing legislation before requesting appropriations. On 20 April Congress revised the Space Act so that the Space Council, now located in the Executive Office and chaired by the Vice President, would "assist" as well as advise the President. Johnson then installed his own man, Edward Welsh, as the Council's Executive Secretary, rather than have the post filled by a NASA official, as President Eisenhower had done. Johnson was now the ex officio head of the national space effort; indeed, he was quicker than Kennedy to seize the political implications of space exploration. By revitalizing the Space Council and using it to review the space program, persuading Webb to accept the appointment to head NASA, emphasizing the importance of space for national prestige, and drumming up congressional support against the time when it would be needed, Johnson did more than anyone except Kennedy to make the lunar landing decision possible.

When Kennedy came before Congress on 25 May 1961 to request a $549 million supplemental appropriation for NASA, he outlined what were to be the principal features of the civilian space program for the next eight years. He proposed an advance on a broad front: a lunar landing within the decade (this was the language suggested by NASA), scientific investigations, worldwide operational satellite communications and weather prediction systems, and the concurrent development of liquid-fuel boosters (by NASA) and solid-fuel boosters (by the Air Force).

The steps taken by NASA officials were an adequate response to the challenge Kennedy presented. As is the way of organic decisions, this one tended to reorder all NASA's programs with reference to one central, all-important goal. Ranger and Surveyor, originally conceived as open-ended and predominantly scientific programs, were now to do the preliminary scouting of the lunar surface for Apollo. An even more important shift pertained to the role of NASA prime contractors. Instead of the centers doing most of the work in-house and using industry for support services, the roles were to be reversed, with industry handling

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THE NATIONAL SPACE POLICY

- STRENGTHEN THE SECURITY OF THE UNITED STATES;
- MAINTAIN UNITED STATES SPACE LEADERSHIP;
- OBTAIN ECONOMIC AND SCIENTIFIC BENEFITS THROUGH THE EXPLOITATION OF SPACE;
- EXPAND UNITED STATES PRIVATE SECTOR INVESTMENT AND INVOLVEMENT IN CIVIL SPACE AND SPACE RELATED ACTIVITIES; AND
- COOPERATE WITH OTHER NATIONS IN MAINTAINING THE FREEDOM OF SPACE FOR ACTIVITIES WHICH ENHANCE THE SECURITY AND WELFARE OF MANKIND.

PRESIDENT RONALD REAGAN
JULY 4, 1982

THE CAPACITY TO DOMINATE SPACE IS ESSENTIAL TO THE UNITED STATES AS A LEADING WORLD POWER.

PRESIDENT JOHN F. KENNEDY
JULY 17, 1963

" WE MUST SAIL SOMETIMES WITH THE WIND AND SOMETIMES AGAINST IT," SAID OLIVER WENDELL HOLMES, "BUT WE MUST SAIL, AND NOT DRIFT, NOR LIE AT ANCHOR." SO WITH MAN'S EPIC VOYAGE INTO SPACE—A VOYAGE THE UNITED STATES OF AMERICA HAS LED AND STILL SHALL LEAD.

PRESIDENT RICHARD M. NIXON
JANUARY 5, 1972

Reagan

Space Exploration

We will never forget them, nor the last time we saw them, this morning, as they prepared for their journey and waved good-bye and "slipped the surly bonds of earth" to "touch the face of God."

— *Address to the nation on the Space Shuttle Challenger disaster, The Oval Office, January 28, 1986*

When we come to the edge of our known world, we're standing on the shores of the infinite. Dip your hand in that limitless sea; you're touching the mystery of God's universe. Set sail across its waters and you embark on the boldest, most noble adventure of all. Out beyond our present horizons lie whole new continents of possibility, new worlds of hope, waiting to be discovered.

— *Remarks to participants in the Young Astronauts Program, June 11, 1986*