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TCS 29 16 50
NIE 111-1-69
26 March 1970

MEMORANDUM TO HOLDERS
NATIONAL INTELLIGENCE ESTIMATE
NUMBER 11-1-69

The Soviet Space Program

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Submitted by

[Signature]
DIRECTOR OF CENTRAL INTELLIGENCE

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Submitted by

Richard L. Jensen
DIRECTOR OF CENTRAL INTELLIGENCE

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Authority <u>NNI 984036</u>
By <u>JPM</u> WARA Date <u>1/16</u>

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THE SOVIET SPACE PROGRAM

1. Since the publication of NIE 11-1-69, several developments have directly affected the Soviets' capability to carry out major space ventures. Their principal effect will be to delay the time when certain of these ventures can be undertaken. But in addition these developments have undoubtedly caused the Soviets to take a serious look at their overall program, and they may result in some realignment of near-term objectives.

2. The very large launch vehicles at Area J at Tyuratam are essential to any plans the Soviets may have for a manned lunar landing mission, a manned lunar orbiting mission, or the very large (300,000 pounds) space station referred to in NIE 11-1-69. On 3 July 1969, the Soviets attempted the initial launch of one of those vehicles. That launch was probably intended to send an unmanned spacecraft to the vicinity of the moon and return it to earth. The vehicle exploded, causing extensive damage to the J-1 launch pad. Since we believe that both Area J launch pads would be required for a manned lunar landing mission, the Soviets must repair the pad as well as solving the launch vehicle problems before that mission can be undertaken.

3. The SL-12 is the launch vehicle that we judged the Soviets would use to orbit a large space station (weighing about 50,000 pounds) and to launch a variety of unmanned lunar and planetary probes. It has now failed in 12 of the 18 launches attempted. This high rate of failure cannot be attributed to any obvious or easily remediable cause, or to any one component of the system; it appears to result from shortcomings in quality control and in test and check-out procedures. The solution may require a major overhaul in the program, starting at the managerial level.

4. Even the orbiting of a small space station appears to pose some minor problems. We had judged that the Soviets could use the reliable SL-4 system to launch two Soyuz-type spacecraft, which would then rendezvous and dock to form a station that could support three men for up to three months. However, the Soyuz 6-7-8 operation in October 1969, which appeared to be a step toward such a space station, was only partially successful because of radar failures during rendezvous and docking attempts that involved both automatic and manual procedures. These problems can probably be worked out within a short time.

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5. We have judged for several years that the Soviets were not competing with the timetable of the US Apollo program. We have also estimated, nonetheless, that their manned lunar landing program carried priority over other ventures for the use of Area J launch vehicles and facilities. In NIE 11-1-69, we estimated that a landing was unlikely to occur before 1972 but that it could conceivably be attempted by late 1971. Because of the delay in the schedule imposed by the explosion, the program has almost certainly been delayed for at least a year and probably more.

6. A number of statements, both public and private, by highly placed Soviet political and scientific officials have suggested that space stations will figure prominently in the Soviet space program. The President of the Academy of Sciences, the Director of the Institute of Space Research, and a host of other knowledgeable persons have stressed the scientific and economic value of space stations and have indicated that a manned lunar landing would not be attempted in the near future. Brezhnev has said that space stations are the "decisive means for the exploration of space" and "man's main road to space." Soviet statements have referred to economic applications such as the discovery of new mineral and petroleum deposits, monitoring of crop development, hydrographic and oceanographic surveys, and the survey of forest resources including fire spotting. Although Soviet statements never mention the potential military applications of their developments, a manned space station could provide a base for a variety of military missions such as early warning, intelligence collection, and command and control. The SS-7 ICBM firings from Tyuratam on each of three successive days while the Soyuz 6, 7, and 8 spacecraft were in the vicinity [] lead us to believe that the Soviets are developing some of these military applications.¹

7. Those programs of space applications for civil and military purposes which have been generally successful are likely to receive continued support. There are numerous reports, however, of increasing pressure in the USSR to reduce spending on scientific projects that do not have direct, economic value. On the other hand, an accomplishment that would serve in some degree to refurbish the image of their space program would undoubtedly be welcome to the Soviet leaders. They may consider that the establishment of a space station would meet both the requirement of practicality and the needs of propaganda. In any case, for technical reasons alone, space stations of the Soyuz type are likely to figure more prominently than the manned lunar landing in the Soviet space program for the next few years.

8. In the near future, the Soviets may orbit a small space station composed of Soyuz-type spacecraft. A more impressive accomplishment would be the orbiting of a large space station (about 50,000 pounds) but that venture must await the resolution of the SL-12 troubles. An attempt to orbit the very large space station (300,000 pounds) could not be undertaken until the problems

¹ Specific details of Soviet future space weapons capabilities will be discussed in the appropriate military estimates which will be published later this year.

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with the Area J launch vehicle have been corrected. And, even if the mission were given overriding priority for the use of the J vehicles, the life support system required for a station of that size also would be a pacing item.

9. We estimated last year that a manned circumlunar flight was not likely. The successful flight of Zond 7, in August 1969, however, was a rehearsal for a manned circumlunar flight, indicating that as late as that time the Soviets were working toward such a mission.

10. Whatever the near-term situation, we believe that the manned lunar landing mission remains on the books as a venture to be carried out in due course. But aside from the delay for technical reasons, other factors including economic considerations may serve to delay it even further. Moreover, the Soviets may consider that further delay would not necessarily work to their disadvantage, particularly if the landing should occur at a time when US manned space activity is at a reduced level and if the Soviets could advertise their mission as a first step toward a more complicated enterprise (e.g., a lunar base).

11. In sum, while the Soviets appear to be moving ahead in several areas of their space program, including deep space probes, about as we expected they would, holders of NIE 11-1-69 are advised that the judgments in that estimate as to the sequence and timing of Soviet attempts at manned lunar landings and manned lunar orbiting are no longer valid and that more precise estimates are not possible at this time. Technical problems with both the J vehicle and the SL-12 booster will delay a manned lunar landing until 1973 at the earliest and probably beyond. Nevertheless, a lunar landing mission remains on the books as a venture to be carried out in due course. Meanwhile, space stations of the Soyuz type are likely to figure more prominently than the manned lunar landing in the Soviet space program for the next few years.

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