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basic Imagery Interpretation report

## Activity and Developments at Selected Soviet Space Research Institutes (S)

STRATEGIC WEAPONS INDUSTRIAL FACILITIES

BE: Various  
USSR

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|--|------------------------|-----------|-----------|-------------|-----------|
| INSTALLATION OR ACTIVITY NAME  |                        |           |           |             | COUNTRY   |
| Activity and Developments at Selected Soviet Space Research Institutes |                        |           |           |             | UR        |
| UTM COORDINATES  | GEOGRAPHIC COORDINATES | CATEGORY  | BE NO.    | COMIREX NO. | NIETB NO. |
| NA   | See below              | See below | See below | See below   | See below |

MAP REFERENCE

ACIC. USATC, Series 200, Sheet 0167-5, scale 1:200,000

LATEST IMAGERY USED

NEGATION DATE (If required)

See "Abstract"

NA

| Installation Name                                       | Geographic Coordinates | Category | BE No | COMIREX No | NIETB (MRN No) |
|---|------------------------|----------|-------|------------|----------------|
| Shchelkovo Cosmonaut Training Facility                  | 55-52-33N 038-06-54E   |          |       |            |                |
| Moskva Space Research Facility Tomilino                 | 55-34-52N 037-56-31E   |          |       |            |                |
| Moskva Scientific Research Institute NII Bolshevo 4     | 55-56-28N 037-50-55E   |          |       |            |                |
| Moskva Scientific Research Institute NII-1              | 55-50-50N 037-31-32E   |          |       |            |                |
| Moskva Institute for Space Research IKI                 | 55-39-00N 037-31-42E   |          |       |            |                |
| Moskva Institute of Chemical Physics Academy of Science | 55-42-31N 037-34-42E   |          |       |            |                |

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### ABSTRACT

1. (TSR) This report describes recent developments at six Soviet space-related research institutes. Construction at Shchelkovo Cosmonaut Training Facility, Moskva Space Research Facility Tomilino, Moskva Scientific Research Institute NII Bolshevo 4, and Moskva Scientific Research Institute NII-1 indicated that the Soviets are increasing their capabilities in basic research which has direct application to their space program. A new, probable neutral buoyancy test/training facility at Shchelkovo will enhance the capability of this installation to support training and research for the Soviet's manned space flight program. Moskva Institute for Space Research IKI directs much of the research and development of the Soviet's unmanned space flight programs. The Moskva Institute of Chemical Physics Academy of Science emphasizes advanced, theoretical research into propellants which will have a direct impact on future space launch vehicle and missile propulsion systems.

2. (TSR) This report is based on all applicable KEYHOLE imagery and updates previous NPIC reports on three of these six facilities—[ ] on Tomilino, [ ] on Bolshevo 4, and [ ] on NII-1. This is the first basic report describing Shchelkovo Cosmonaut Training Facility, Moskva Institute for Space Research IKI, and Moskva Institute of Chemical Physics Academy of Science. The information cutoff date for this report is [ ]

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3. (U) This report includes a location map, six annotated photographs, and six tables providing mensural and chronological data.

### INTRODUCTION

4. (TSR) The six installations (Figure 1) discussed in this report are involved in basic and applied research in support of the Soviet space program. Because much of this research was carried out in a laboratory environment, collateral sources were relied upon to identify the mission or programs of a particular institute. The large amount of new floorspace added to these installations during the reporting period indicated that the Soviets are expanding their research support for the space program.

5. (TSR) The current reporting period for three of the six institutes covered by this report was dependent upon the date of the latest imagery used in the previous NPIC reports<sup>1-3</sup> for each installation. All applicable KEYHOLE imagery acquired between the earliest date of [ ] was used in the preparation of this report. This is the first basic report on Shchelkovo Cosmonaut Training Facility, Moskva

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Institute for Space Research IKI, and Moskva Institute of Chemical Physics Academy of Science. The reporting period was determined by the date that the installations were first identified. The specific reporting dates for each installation are listed below.

| Installation | Reporting Period |
|--------------|------------------|
|--------------|------------------|

|                  |            |
|------------------|------------|
| Shchelkovo       | [REDACTED] |
| Tomilino         |            |
| Bolshevo 4       |            |
| NII-1            |            |
| IKI              |            |
| Chemical Physics |            |

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### Shchelkovo Cosmonaut Training Facility

6. (TSR) The Shchelkovo Cosmonaut Training Facility is 18 nautical miles (nm) northeast of the Kremlin, adjacent to the Moscow/Shchelkovo Airfield [REDACTED]. Shchelkovo is the primary training facility for Soviet cosmonauts and consists of a housing and support area and a training and research area. Shchelkovo, also known as the Star City, is one of the most open facilities in the Soviet Union and has been visited by US astronauts, space scientists, and newspaper and magazine correspondents.

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7. (TSR) The cosmonauts and their families live on site. The housing and support area contains 11 apartment buildings, two of which (items 16 and 25, Figure 2 and Table 1) were still under construction; a kindergarten/nursery (item 19); an intermediate school (item 7); and recreation, entertainment, and commercial centers (items 4, 8, and 23) for use by cosmonauts, support personnel, and their families. This area also contains a reception/administration building (item 1) and a probable visitors quarters (item 32). The probable visitors quarters was one of a complex of buildings observed under construction in mid-1973 by a correspondent for a US magazine. At that time the quarters was reported to be a "hotel and dormitory complex, on the shore of a new man-made lake, for US astronauts, technicians and officials" in support of the joint US-Soviet, Apollo-Soyuz Test Program.<sup>4</sup> The completed floorspace of the housing and support area as of [REDACTED] was 109,389 square meters with another 9,702 square meters under construction.

come more sophisticated. Prior to the first manned Soyuz mission in 1967, cosmonaut training was rather simple and emphasized physical conditioning. Yuri Gagarin, the first cosmonaut, received less than a month's training in a centrifuge and had very little simulated training before the flight.<sup>6</sup> This training probably took place at Shchelkovo. As the manned space flight program continued, new and better equipment was added. The large centrifuge section (item 73d) constructed between October 1972 and April 1975 greatly advanced the Soviet capabilities in this type of training. The probable Salyut simulator (item 81) was also a major improvement, and the construction of the probable neutral buoyancy test/training facility added a simulation technique not used before at Shchelkovo.

10. (TSR) Two new foundations which have been observed recently in the training and research area are probably intended to be used as training facilities for future manned space flight missions. One foundation (item 83) is a circular excavation with an outer diameter of [REDACTED] and an inner diameter of [REDACTED]. Four rectangular excavations extend from the circular foundation and are set at 90 degrees from one another; each of these are approximately [REDACTED]. The second new foundation (item 84) is [REDACTED]. No specific function has been associated with this new construction.

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### Moskva Space Research Facility Tomilino

11. [REDACTED] Moskva Space Research Facility Tomilino is in the suburb of Tomilino, approximately 12 nm southeast of Moscow. The Tomilino facility is responsible for research, development, and testing of life-support and safety equipment for flight personnel and cosmonauts, including space suits, antigravity suits, and ejection seats<sup>1</sup>. The facility has also been involved in experiments investigating the physiological and psychological effects of space conditions on human beings. The principal facilities available to support this work at Tomilino include a centrifuge and a man-rated vacuum chamber installed during 1962 and 1963 which has a reported altitude simulation capability of 100 kilometers.<sup>5</sup>

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12. (TSR) Between [REDACTED] a total of 8,117 square meters of floorspace was added to Tomilino (Figure 3 and Table 2). A storage shed was razed during this period, and a shop building (item 1), constructed in the east end of the facility, replaced an administration building. Research/laboratory space accounted

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\*Numbers in parenthesis are not included in total floorspace.

for 5,692 square meters of additional floor space. Two new additions (items 8 and 11) were modifications to accommodate the primary research facilities at Tomilino. An administration/engineer section (item 8) was added to the building which houses the centrifuge, and a research section (item 11) was added to the building that houses the large vacuum chamber.

13. (TSR) The construction observed at Tomilino during this period indicates a general upgrading of the research capabilities of the facility. This activity also indicates that Tomilino will probably have a continued and expanding role in basic and applied aerospace research in the future.

#### Moskva Scientific Research Institute NII Bolshovo 4

14. (TSR) Moskva Scientific Research Institute NII Bolshovo 4 is in the Moscow suburb of Bolshovo, 14 km from the center of Moscow and 2.4 nm from Moskva Missile and Space Development Center Kaliningrad 88.

15. (TSR) The institute is comprised of three distinct areas—a research and development area, a storage area, and a housing area. During this reporting period, a total of 87,007 square meters of floor space was added to the institute, and buildings containing 45,271 square meters of floor space have been removed. The facility now contains 298,566 square meters of floor space (Figure 4 and Table 3).

16. (TSR) In the research and development area, a total of 39,618 square meters has been added. The major floor space is in two administration/engineering buildings (items 2 and 12, Figure 4) which have a combined total of 31,692 square meters. A separately secured facility has been constructed in the east end of the research and development area. The secured facility contains a new probable research building (item 19), a storage building (item 20), and an inflatable probable storage building (item 18). Other construction in this area included an addition to the horizontal test building (item 17).

17. (TSR) The most significant changes have occurred in the storage and housing area. A total of 1,397 square meters of storage floor space has been added to the storage area while 3,271 square meters of storage floor space were removed during this period for a net decrease of 33,874 square meters. The buildings which were removed from the storage area were replaced by six new apartment buildings (items 30–34 and 38). These six new buildings in addition to the three apartment buildings (item 35–37), present prior to the current reporting period, are now considered to be a part of the housing area. A total of 41,092 square meters of housing floor space has been added.

#### Moskva Scientific Research Institute NII-1

18. (TSR) Moskva Scientific Research Institute NII-1 is in northwest Moscow, 6 nm north-

northwest of the Kremlin. The institute is involved in a variety of research programs and probably supports several aerospace and scientific research institutes including Moskva Missile and Space Development Center Kaliningrad 88.

19. (TSR) During the period [redacted] to [redacted], a total of 4,916 square meters of floor space was added to the institute (Figure 5 and Table 4). This increase was mostly in a research/laboratory building (item 1) in the southwest corner of the facility which contains 5,620 square meters of floor space. Other significant construction was in the northeast corner of the facility. An addition (item 7) has been constructed between the test cells of the horizontal test building, and a new probable propellant handling building (item 6) has been constructed nearby. Between August 1978 and March 1979, a 3,064-square-meter research building was raised in the south end of the facility. This resulted in a net increase of 1,852 square meters of floor space during this reporting period.

#### Moskva Institute for Space Research IKI

20. [redacted] The Moskva Institute for Space Research IKI is at 88 Profsoyuznaya Ulitsa in Moscow, southwest of the intersection of Profsoyuznaya Ulitsa and Ulitsa Akademika Orlovcheva. IKI is the chief facility for nonclassified Soviet space research and is a frequent contact point for American scientists involved in joint US-USSR programs.<sup>4</sup>

21. [redacted] IKI consists of 21 buildings with a total floor space of 131,177 square meters (Figure 6 and Table 5).

[redacted] The main research/operations building (item 1) contains 116,064 square meters of floor space.

[redacted] Four probable computer buildings (items 2–5) and two probable research buildings (items 14 and 22) were behind this building. One of these probable research buildings (item 14) reportedly housed two vacuum chambers. The utility building (item 15) supplies electricity, water, and research gases, including argon, neon, and helium to the laboratories, and all conduits were reported to lead underground to the main research building.

22. [redacted] IKI was founded in 1965 to centralize the various Soviet space programs under one directorate. While IKI is the chief Soviet facility for nonclassified space research, some of its research has been classified. Since mid-1973 the institute has placed greater emphasis on astrophysical research (such as the study of the interplanetary plasmas) involving unmanned space equipment.<sup>5</sup> A collateral source indicated that the laboratories within IKI built models of satellites which were then sent to factories where the full-scale satellites were assembled.<sup>7</sup>

23. [redacted] Classified research program was begun in 1977 at IKI to develop large space-based antennas to mon-

| Item |                       | Dimensions<br>(m) |    | Floor space*<br>(sq m) | Use     | First Seen | Complete | Comments   |
|------|-----------------------|-------------------|----|------------------------|---------|------------|----------|--|
|      |                       | L                 | W  |                        |         |            |          |  |
| 1    | Shop bldg             | —                 | —  | —                      | 1,484   | —          | —        | 690 sq m deducted from total below for replaced bldg |
| a    | Support sect          | 14                | 13 | 8                      | (364)   | —          | —        | 2 stories  |
| b    | Shop sect             | 35                | 16 | 8                      | (1,120) | —          | —        | 2 stories  |
| 2    | Storage addition      | 10                | 3  | 3                      | 59      | —          | —        | Complete when first observed                         |
| 3    | Research bldg         | —                 | —  | —                      | 344     | —          | —        | 2 stories  |
| a    | Operational sect      | 19                | 10 | 1                      | (190)   | —          | —        | 1 story  |
| b    | Support sect          | 9                 | 6  | 5                      | (364)   | —          | —        | 2 stories  |
| c    | Support bldg          | 8                 | 16 | 9                      | 960     | —          | —        | 2 stories  |
| d    | Support bldg          | —                 | —  | —                      | 364     | —          | —        | 2 stories  |
| e    | Support sect          | 4                 | 1  | 1                      | (28)    | —          | —        | 1 story  |
| f    | Over-stalled shed     | 52                | 4  | 3                      | (200)   | —          | —        | 2 stories  |
| g    | Support sect          | 49                | 24 | 11                     | 2,252   | —          | —        | 2 stories  |
| h    | Research lab addition | 25                | 24 | 13                     | (1,800) | —          | —        | 3 stories  |
| i    | Research lab addition | 42                | 10 | 9                      | 840     | —          | —        | 2 stories  |
| j    | Admin wing addition   | 36                | 40 | 8                      | (1,440) | —          | —        | 2 stories  |
| k    | Shop addition         | 36                | 40 | 8                      | (1,440) | —          | —        | 2 stories  |
| l    | Storage bldg          | 60                | 15 | 8                      | 900     | —          | —        | 2 stories  |
| m    | Research addition     | 24                | 14 | 17                     | 396     | —          | —        | 2 stories  |
| n    | Storage bldg          | —                 | —  | —                      | 9,300   | —          | —        | 2 stories  |
| o    | Admin wing addition   | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| p    | Storage bldg          | —                 | —  | —                      | 9,300   | —          | —        | 2 stories  |
| q    | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| r    | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| s    | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| t    | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| u    | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| v    | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| w    | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| x    | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| y    | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| z    | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| aa   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ab   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ac   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ad   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ae   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| af   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ag   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ah   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ai   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| aj   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ak   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| al   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| am   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| an   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ao   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ap   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| aq   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ar   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| as   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| at   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| au   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| av   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| aw   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ax   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ay   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| az   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ba   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| bb   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| bc   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| bd   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| be   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| bf   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| bg   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| bh   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| bi   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| bj   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| bk   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| bl   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| bm   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| bn   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| bo   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| bp   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| bq   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| br   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| bs   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| bt   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| bu   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| bv   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| bw   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| bx   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| by   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| bz   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ca   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| cb   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| cc   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| cd   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ce   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| cf   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| cg   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ch   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ci   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| cj   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ck   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| cl   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| cm   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| cn   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| co   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| cp   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| cq   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| cr   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| cs   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ct   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| cu   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| cv   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| cw   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| cx   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| cy   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| cz   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| da   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| db   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| dc   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| dd   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| de   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| df   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| dg   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| dh   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| di   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| dj   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| dk   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| dl   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| dm   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| dn   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| do   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| dp   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| dq   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| dr   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ds   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| dt   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| du   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| dv   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| dw   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| dx   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| dy   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| dz   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ea   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| eb   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ec   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ed   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ee   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ef   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| eg   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| eh   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ei   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ej   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ek   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| el   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| em   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| en   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| eo   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ep   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| eq   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| er   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| es   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| et   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| eu   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ev   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ew   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ex   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ey   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ez   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fa   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fb   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fc   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fd   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fe   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ff   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fg   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fh   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fi   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fj   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fk   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fl   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fm   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fn   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fo   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fp   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fq   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fr   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fs   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| ft   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fu   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fv   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fw   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fx   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fy   | Storage bldg          | —                 | —  | —                      | 8,117   | —          | —        | 2 stories  |
| fz   | Storage bldg          | —                 | —  | —                      |         |            |          |  |



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**Table 4.**  
Construction at Moskva Scientific Research  
Institute NII-1

(Items keyed to Figure 5)

This table in its entirety is classified TOP SECRET RUFF

| Item                   | Function                      | Dimensions<br>(m) |    |    | Floorspace*<br>(sq m) | First Seen |          | Comments                               |
|------------------------|-------------------------------|-------------------|----|----|-----------------------|------------|----------|--|
|                        |                               | L                 | W  | H  |                       | Ucon       | Complete |  |
| 1                      | Research/lab bldg             | —                 | —  | —  | 3,626                 | Jul 76     | Aug 78   |  |
| a                      | Lab sect                      | 49                | 18 | 11 | (1,764)               |            |          | Irreg; overall dimens given; 2 stories |
| b                      | Lab sect                      | 49                | 13 | 15 | (1,274)               |            |          | Irreg; overall dimens given; 2 stories |
| c                      | Support sect                  | 49                | 6  | 11 | (588)                 |            |          | 2 stories                              |
| 2                      | Storage bldg                  | 51                | 6  | 7  | 306                   | —          | Feb 78   | Complete when first observed           |
| 3                      | Storage bldg                  | 12                | 8  | 5  | 96                    | —          | Jul 76   | Complete when first observed           |
| 4                      | Storage bldg                  | 17                | 6  | 6  | 102                   | —          | Jul 76   | Complete when first observed           |
| 5                      | Storage bldg                  | 12                | 6  | 4  | 72                    | —          | Jul 76   | Complete when first observed           |
| 6                      | Prob propellant handling bldg | —                 | —  | —  | 378                   | Apr 77     | Jun 78   |  |
| a                      | Support sect                  | 9                 | 6  | 5  | (54)                  |            |          |  |
| b                      | Operations sect               | 15                | 9  | 7  | (270)                 |            |          | 2 stories                              |
| c                      | Support sect                  | 9                 | 6  | 5  | (54)                  |            |          |  |
| 7                      | Test cell addition            | 29                | 12 | 11 | 336                   | Nov 76     | Jul 77   | Irreg; overall dimens given            |
| Total floorspace added |                               |                   |    |    | 4,916                 |            |          |  |
| Less floorspace razed  |                               |                   |    |    | 3,064                 |            |          |  |
| Net floorspace added   |                               |                   |    |    | 1,852                 |            |          |  |

\*Numbers in parenthesis are not included in total floorspace.

**Table 5.**  
Buildings and Structures at Moskva Institute  
For Space Research IKI  
(Items keyed to Figure 6)

This table in its entirety is classified TOP SECRET RUFF

| Item             | Function                 | Dimensions<br>(m) |    |    | Floorspace*<br>(sq m) | Comments                            |
|------------------|--------------------------|-------------------|----|----|-----------------------|-------------------------------------|
|                  |                          | L                 | W  | H  |                       |                                     |
| 1                | Research/operations bldg | 403               | 18 | 52 | 116,064               | 16 stories                          |
| 2                | Prob computer bldg       | 21                | 21 | 11 | 441                   |                                     |
| 3                | Prob computer bldg       | 21                | 21 | 11 | 441                   |                                     |
| 4                | Prob computer bldg       | 21                | 21 | 12 | 441                   |                                     |
| 5                | Prob computer bldg       | 21                | 21 | 12 | 441                   |                                     |
| 6                | Support bldg             | 10                | 6  | 4  | 60                    |                                     |
| 7                | Support bldg             | 12                | 5  | 3  | 60                    |                                     |
| 8                | Support bldg             | 10                | 4  | 4  | 40                    |                                     |
| 9                | Support bldg             | 32                | 13 | 4  | 339                   | Irreg; overall dimens given         |
| 10               | Storage bldg             | 4                 | 4  | 3  | 16                    |                                     |
| 11               | Shop bldg                | 54                | 19 | 11 | 1,539                 | Southeast half of bldg is 2 stories |
| 12               | Storage bldg             | 20                | 7  | 5  | 140                   | Southeast half of bldg is 2 stories |
| 13               | Storage bldg             | 42                | 9  | 4  | 368                   | Irreg; overall dimens given         |
| 14               | Prob research bldg       | 55                | 55 | 11 | 3,025                 |                                     |
| 15               | Utility bldg             | 55                | 55 | 11 | 3,025                 |                                     |
| 16               | Storage bldg             | 46                | 13 | 3  | 598                   |                                     |
| 17               | Cooling towers           | —                 | —  | —  | —                     | No floorspace given                 |
| 18               | Storage bldg             | 14                | 6  | 5  | 84                    |                                     |
| 19               | Storage bldg             | 31                | 13 | 7  | 403                   |                                     |
| 20               | Storage bldg             | 30                | 13 | 6  | 390                   |                                     |
| 21               | Support bldg             | 13                | 10 | 8  | 130                   |                                     |
| 22               | Prob research bldg       | —                 | —  | —  | 3,132                 |                                     |
| a                | Shop sect                | 54                | 20 | 10 | (1,080)               |                                     |
| b                | Labor sect               | 54                | 20 | 10 | (1,080)               |                                     |
| c                | Support sect             | 54                | 18 | 10 | (972)                 |                                     |
| Total floorspace |                          |                   |    |    | 131,177               |                                     |

\*Numbers in parenthesis are not included in total floorspace.

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itor US microwave communications and radars. IKI is also reported to have been involved in a classified program to install infrared detectors on Soviet military satellites.<sup>9</sup>

#### Moskva Institute of Chemical Physics Academy of Science

24. (TSR) The Moskva Institute of Chemical Physics Academy of Science is on the south bank of the Moskva river in the city of Moscow on both sides of Vorobyevskoye Shosse (street). The 39,335 square meters of floorspace at the institute are contained in 15 buildings (Figure 7 and Table 6). Another 10,213 square meters of floorspace will be added when the research/laboratory building cur-

rently under construction (item 16) is complete.

25. [ ] The Institute of Chemical Physics is reportedly involved in theoretical research into high-energy liquid and solid propellants. Personnel at the institute are involved in combustion studies of perchlorate and nitrate compounds including ammonium and potassium perchlorate, ammonium nitrate, and high-energy additives such as RDX and HMX. Investigations into combustion instability and the synthesis of metallic solid-propellant additives are also being carried out at the institute. These basic research programs will have direct impact on propulsion systems for future space and missile systems.<sup>10,11</sup>

Table 6.  
Buildings and Structures at Moskva Institute  
of Chemical Physics Academy of Science  
(Items keyed to Figure 7)

This table in its entirety is classified TOP SECRET RUFF

| Item             | Function          | Dimensions<br>(m) |    |    | Floorspace*<br>(sq m) | Comments                                |
|------------------|-------------------|-------------------|----|----|-----------------------|---|
|                  |                   | L                 | W  | H  |                       |   |
| 1                | Research/lab bldg | —                 | —  | —  | 10,728                |   |
| a                | Research/lab sect | 38                | 18 | 19 | (2,736)               | 4 stories                               |
| b                | Research/lab sect | 41                | 18 | 15 | (2,133)               | 3 stories; irreg overall dims given     |
| c                | Research/lab sect | 54                | 18 | 15 | (2,835)               | 3 stories; irreg overall dims given     |
| d                | Research/lab sect | 28                | 18 | 15 | (1,512)               | 3 stories                               |
| e                | Research/lab sect | 30                | 18 | 15 | (1,512)               | 3 stories; irreg overall dims given     |
| 2                | Research/lab bldg | —                 | —  | —  | 10,350                |   |
| a                | Research/lab sect | 41                | 18 | 19 | (2,844)               | 4 stories; overall dims given           |
| b                | Research/lab sect | 81                | 18 | 15 | (3,699)               | 3 stories; irreg overall dims given     |
| c                | Research/lab sect | 54                | 18 | 15 | (2,241)               | 3 stories; irreg overall dims given     |
| d                | Research/lab sect | 34                | 18 | 15 | (1,566)               | 3 stories; irreg overall dims given     |
| 3                | Support bldg      | —                 | —  | —  | 211                   |   |
| a                | Support sect      | 14                | 7  | 4  | (98)                  |   |
| b                | Operations sect   | 14                | 7  | 6  | (98)                  |   |
| c                | Tower             | 5                 | 3  | 8  | (15)                  |   |
| 4                | Support bldg      | —                 | —  | —  | 397                   |   |
| a                | Loading dock      | 15                | 5  | 4  | (75)                  |   |
| b                | Storage sect      | 23                | 14 | 5  | (322)                 |   |
| 5                | Research/lab bldg | —                 | —  | —  | 7,606                 |   |
| a                | Research/lab sect | 31m diam          | 24 |    | (3,421)               | 4 stories                               |
| b                | Research/lab sect | 27                | 8  | 4  | (216)                 |   |
| c                | Support sect      | 25                | 11 | 7  | (550)                 | 2 stories                               |
| d                | Research/lab sect | 21                | 15 | 19 | (945)                 | 3 stories                               |
| e                | Research/lab sect | 30                | 8  | 7  | (480)                 | 2 stories                               |
| f                | Research/lab sect | 27                | 11 | 7  | (594)                 | 2 stories                               |
| g                | Support sect      | 26                | 14 | 8  | (728)                 | 2 stories                               |
| h                | Research/lab sect | 28                | 12 | 7  | (672)                 | 2 stories                               |
| 6                | Storage bldg      | —                 | —  | —  | 419                   |   |
| a                | Storage sect      | 29                | 7  | 4  | (203)                 |   |
| b                | Support sect      | 9                 | 8  | 4  | (72)                  |   |
| c                | Support sect      | 16                | 9  | 4  | (144)                 |   |
| 7                | Apartment bldg    | 61                | 15 | 14 | 2,745                 | 3 stories                               |
| 8                | Lab bldg          | 24                | 15 | 8  | 720                   | 2 stories                               |
| 9                | Lab bldg          | 24                | 15 | 8  | 720                   | 2 stories                               |
| 10               | Storage bldg      | 15                | 11 | 4  | 165                   |   |
| 11               | Storage bldg      | 10                | 8  | 5  | 80                    |   |
| 12               | Admin/engr bldg   | 64                | 12 | 8  | 1,536                 | 2 stories                               |
| 13               | Support bldg      | —                 | —  | —  | 714                   |   |
| a                | Support sect      | 31                | 18 | 6  | (558)                 |   |
| b                | Support sect      | 13                | 12 | 5  | (156)                 |   |
| 14               | Research/lab bldg | —                 | —  | —  | 2,674                 |   |
| a                | Research/lab sect | 79                | 15 | 7  | (1,185)               | 2 stories                               |
| b                | Research/lab sect | 33                | 14 | 11 | (462)                 | 3 stories                               |
| c                | Support sect      | 27                | 23 | 12 | (621)                 | 3 stories                               |
| d                | Research/lab sect | 29                | 14 | 11 | (406)                 | 2 stories                               |
| 15               | Research/lab bldg | 18                | 15 | 12 | 270                   | 2 stories                               |
| 16               | Research/lab bldg | —                 | —  | —  | (10,213)              | Bldg ucon; first observed ucon Jun 1975 |
| a                | Support sect      | diam 8m           | 6  |    | (25)                  |   |
| b                | Research/lab sect | 33                | 16 | 14 | (1,584)               | 3 stories                               |
| c                | Support sect      | 20                | 16 | 5  | (320)                 |   |
| d                | Research/lab sect | 33                | 16 | 14 | (1,584)               | 3 stories                               |
| e                | Support sect      | 20                | 16 | 5  | (320)                 |   |
| f                | Research/lab sect | 33                | 16 | 14 | (1,584)               | 3 stories                               |
| g                | Support sect      | 20                | 16 | 5  | (320)                 |   |
| h                | Admin sect        | 21                | 13 | 23 | (1,092)               | 4 stories                               |
| i                | Research/lab sect | 47                | 18 | 22 | (3,384)               | 4 stories                               |
| Total floorspace |                   |                   |    |    | 39,335                |   |

\*Numbers in parenthesis are not included in total floorspace.

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## REFERENCES

## IMAGERY

(TSR) All relevant KEYHOLE imagery acquired between [REDACTED] was used in the preparation of this report. The latest date of imagery used for each installation is presented in the Introduction.

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## MAPS OR CHARTS

ACIC, US Air Target Chart, Series 200, Sheet 0167-5, scale 1:200,000 (UNCLASSIFIED)

## DOCUMENTS

1. NPIC, [REDACTED] BCA-09/0017/74, *Moskva Space Research Facility Tomilino*, Mar 74 (TOP SECRET [REDACTED])
2. NPIC, [REDACTED] RCA-09/0026/71, *Moskva Scientific Research Institute NII Bolshevo 4*, Jan 71 (TOP SECRET [REDACTED])
3. NPIC, [REDACTED] RCA-09/0069/75, *Moskva Scientific Research Institute NII-1*, Jun 75 (TOP SECRET [REDACTED])
4. "Soviet Space Center Being Expanded," Donald C. Winston, *Aviation Week and Space Technology*, 25 Jun 73, pp 18-21 (UNCLASSIFIED)
5. AEDC/AFSC, [REDACTED] AEDC-SW-01-17-77, *An Overview of Soviet Space Chamber Technology (U)*, Sep 77 (TOP SECRET [REDACTED])
6. CIA/DDI/OSI, [REDACTED] SID/KH/72-9, *Significant Expansion of the Soviet Cosmonaut Training Center "Star Village"*, Sep 72 (TOP SECRET [REDACTED])

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25X1  
25X1

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8. CIA, CR M 77-11415, *Institute of Space Research (IKI)*, 29 Mar 77 (UNCLASSIFIED)
9. CIA, [REDACTED] SI WR 79-013JX, *USSR: Research Under Way to Develop Satellite COMINT Capability (CNF)*, 26 Mar 79 (TOP SECRET [REDACTED])
10. AFSC, F33657-74-C-0007, PHS-115-75-1, *Liquid Propellant and Related Technology in the U.S.S.R. and the People's Republic of China (U)*, Jul 75 (SECRET [REDACTED])
11. DIA/FTD, DST-1850S-008-79, *Solid-Propellant Technology—Foreign (U)*, 16 Apr 79 (SECRET [REDACTED])

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25X1  
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## RELATED DOCUMENT

NPIC, [REDACTED] RCA-09/0050/70, *Moskva Space Research Facility Tomilino*, Apr 70 (TOP SECRET [REDACTED])

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## REQUIREMENT

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