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NORTH AMERICAN AIR DEFENSE COMMAND

WIR

WEEKLY INTELLIGENCE REVIEW (U)

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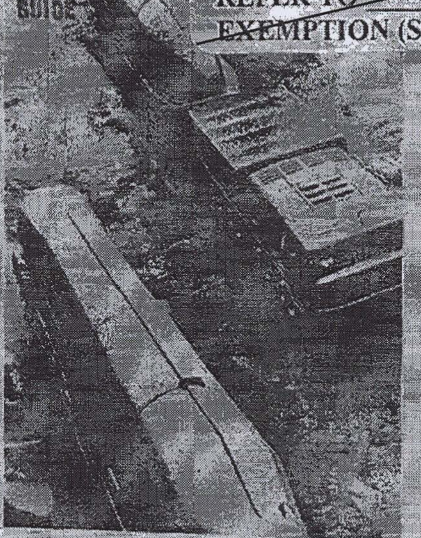

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NORAD Weekly Intelligence Review

Issue No. 45/65, 5 November 1965

The WIR in Brief

Portion identified as non-responsive to the appeal

Portion identified as non-responsive to the appeal

Space

50X1 and 3, E.O.13526

Portion identified as non-responsive to the appeal

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COVER: Missile - 1965 May Day Parade

NOTE: Pages 30, 31, 34, 35, 38, 39 and 42 of this issue are blank.

[redacted] SECRET [redacted]

Missile Range Firing Log

US radar stations detected the following space/missile launches during the period 12 October- 2 November 1965:

Approximate Time & Date of Launch	Launch Vehicle	Launch Site	Range
0424Z, 15 Oct 65	SS-9	Tyuratam	3400 nm
0600Z, 15 Oct 65	2d Molniya 1*	Tyuratam	Orbital
1411Z, 15 Oct 65	SS-4	Kapustin Yar	1050 nm
0815Z, 16 Oct 65	Cosmos 92#	Tyuratam	Orbital
0327Z, 19 Oct 65	SS-11	Tyuratam	3400 nm
0529Z, 19 Oct 65	Cosmos 93**	Kapustin Yar	Orbital
0654Z, 19 Oct 65	SS-8	Tyuratam	3400 nm
0903Z, 26 Oct 65	Unknown	Kapustin Yar	Vertical firing
0817Z, 28 Oct 65	Cosmos 94#	Tyuratam	Orbital
1321Z, 28 Oct 65	SS-4	Kapustin Yar	1050 nm
0316Z, 29 Oct 65	SS-9	Tyuratam	3400 nm
1442Z, 29 Oct 65	SS-4	Kapustin Yar	1050 nm
0308Z, 01 Nov 65	SS-11	Tyuratam	5700 nm
1330Z, 01 Nov 65	SS-4	Kapustin Yar	1050 nm
0422Z, 02 Nov 65	SS-9	Tyuratam	4700 nm

*Launched by the SS-6 ICBM booster-sustainer, injected into parking orbit by the heavy Venik stage, and reinjected into a highly eccentric orbit by the 4th interplanetary stage.
#Launched by the SS-6 ICBM booster-sustainer; injected into parking orbit by the heavy Venik stage.
**Launched by unidentified 2-stage vehicle.

(Shemya & Diyarbakir RADINT, NORAD)
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Non responsive portion

significant intelligence on space developments and trends

Venus Probe(s) Likely 5-19 November

The Soviets will probably launch 1-3 probes to the planet Venus when the launch window (dates most favorable from the standpoint of minimum energy for launch) opens in coming weeks, that is, between 5 and 19 November. Optimum dates would be 12 or 13 November. However, if the Soviets use the big booster which allegedly launched the 12.2-metric-ton Proton 1 on 16 July (WIRs 30/65, 32/65, 33/65), launch could occur any time before the end of the year.

The Soviets have frequently launched interplanetary probes during the latter part of the launch-window opening, or even after it had closed (see table on page 40), but there are excellent reasons for launching early in the favorable period. Early launches will permit:

- Shorter communications distances to Earth when the probe reaches Venus.
- Better conditions for viewing the probe from the Soviets' deep-space tracking facilities in the Crimea.

Optimum launch times:

5 Nov	0343Z
6 Nov	0337Z
7 Nov	0329Z
8 Nov	0323Z
9 Nov	0315Z
10 Nov	0308Z
11 Nov	0300Z
12 Nov	0253Z
13 Nov	0245Z
14 Nov	0238Z
15 Nov	0231Z-0229Z

16 Nov	0222Z
17 Nov	0215Z
18 Nov	0206Z
19 Nov	0158Z

However, launches early in the favorable period may be executed a few minutes later than the times shown, to achieve both higher injection latitude and a few days' shorter flight time. Later in the period, launch will probably be closer to the times shown, but even here the Soviets may launch a little late, in the interests of shortening flight time.
(SPADATS, NORAD)
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Cosmos 94, the Soviets' 15th Photorecce Vehicle for 1965

The Soviets launced Cosmos 94 from Tyuratam at about 0815Z, 28 October. The new vehicle, the 15th photoreconnaissance satellite launched by the USSR this year, will probably be de-orbited 5 November, 8 days after launch. The 5th consecutive photorecce Cosmos to be injected into orbit by the heavy Venik stage, it probably carries a camera system of high resolution (5-8 feet) and may carry instrumentation for the accomplishment of other missions.

Its orbital parameters have been announced as follows:

	By SPADATS	By TASS
Inclination	65.05 degrees	65.0 degrees
Period	89.17 minutes	89.3 minutes
Apogee	278.35 kilometers (150.3 n.m.)	293 kilometers (158 n.m.)
Perigee	239.25 kilometers (129.2 n.m.)	211 kilometers (113 n.m.)

(SPADATS, NORAD)
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Early November Prima For Lunar Probe

The lunar window open on the third and the fourth of November, continues to command most interest. From the propaganda point of view the

third is ideal, for a lunar probe launched on the third would reach the moon at about 2230 Moscow time on the sixth of November and give the Soviets time to publicize a success for their 7 November celebration. Based on Soviet announced missions for the past two probes it is expected that the next attempt will be for a soft landing.
(NORAD)
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Space Listing and Over-All Space Status Report

The over-all space-vehicle status as of 1000Z, 1 November 1965, was as follows:

	US	UK	Can	Italy	USSR	Totals
Payloads orbiting Earth	153	2	1	0	39	195
Payloads orbiting Sun	8	0	0	0	8	16
Debris orbiting Earth	453	1	2	0	141	597
Debris orbiting Sun	8	0	0	0	0	8
Totals	622	3	3	0	188	816
Payloads decayed	165	0	0	1	93	259
Debris decayed	121	0	0	0	504	625
Totals	286	0	0	1	597	884

A listing of Soviet payloads orbiting the Earth as of 1200Z, 28 October is shown on page 41.
(SPADATS)
(OFFICIAL USE ONLY)

Proton 2 Launch Successful from Tyuratam

Proton 2 was launched from the Tyuratam Rangehead at 1229Z, 2 November 1965. Following is a comparison of the orbital elements for Proton 1 and Proton 2:

	Proton 1	Proton 2
Inclination	63.4 degrees	63.447 degrees
Apogee	585.7 kilometers	618.9 kilometers
Perigee	187.8 kilometers	184.4 kilometers
Period	91.85 minutes	92.56 minutes

The inclination of 63.447 degrees is interesting because this particular inclination minimizes the movement of the position of perigee along the Proton orbit. Perigee occurs at approximately 50 degrees north on south to north passes. The perigee is moving at the rate of only .0036 degrees per day. This means that Proton will always reach perigee at approximately 50 degrees north latitude. The altitude of perigee is low and together with the evidently planned inclination, suggests that this vehicle has a specific mission, which has not as yet been determined. [redacted] [redacted] Proton 2 but not from Proton 1 suggests that Proton 2 may be more successful than its predecessor.

The launch system for Proton 1 & 2 may be a two-stage vehicle with a thrust of 2-2.5 million pounds. This is sufficient to place 29,000 pounds in orbit. Tass has announced that Proton 1 & 2 each weighed 12.2 metric tons.
(NORAD)
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50X1 and 3, E.O.13526

Favorable Periods (minimum-energy launch "windows") for Launches of Mars and Venus Probes, 1960-1969

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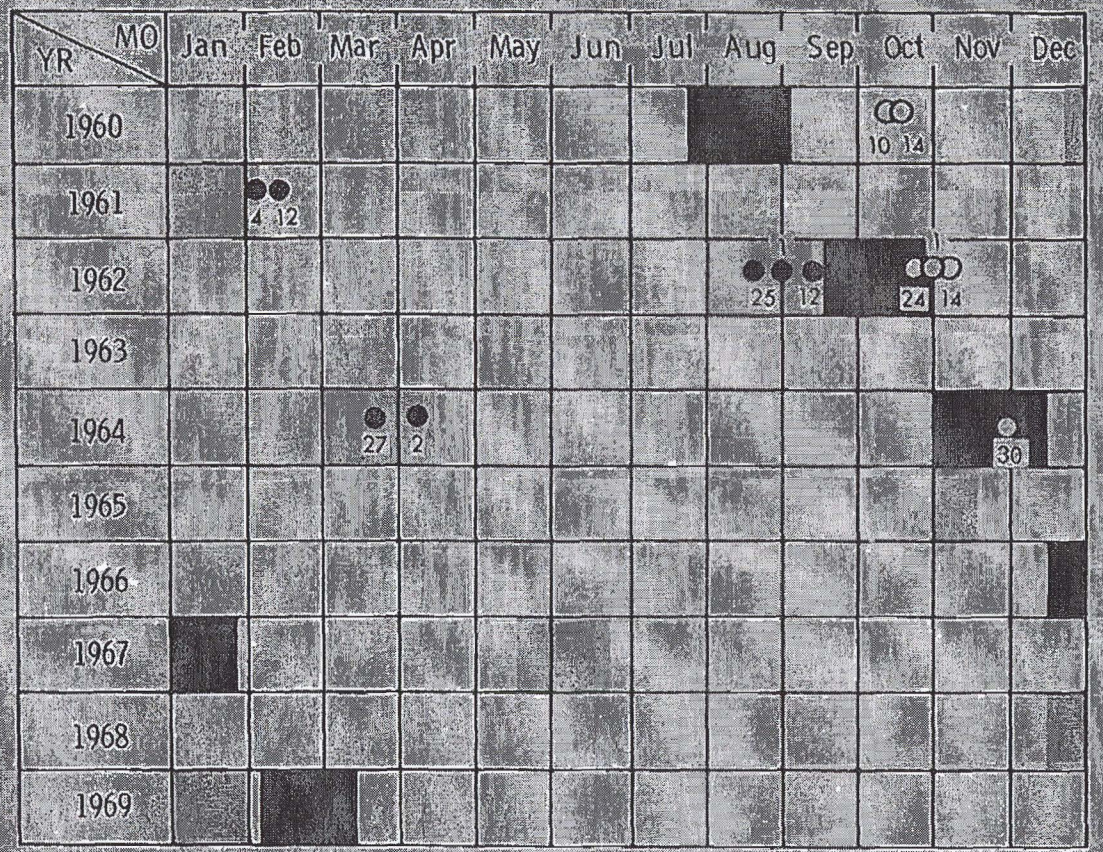

Launch Windows

Mars

Venus

Actual Launches

⊙ Mars

● Venus

14 (actual date)

The Soviets at first launched 2 probes per window opening and then 3 (in 1962). But in 1964 they launched 2 during the Venus window-opening and only 1 when the window for Mars was open. All their attempts to date have failed. Soviet interplanetary launches tend to occur late in, or even after, the periods which are most favorable from a propulsion standpoint.

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Soviet Vehicles in Earth Orbit as of 1200Z, 28 Oct 65 (date as of 1200Z, 22 Oct, except for last 3 vehicles)

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Soviet Designation	Object No.	Date of Launch	Inclination to Equator (degrees)	Period (minute	Apogee (Kilometers)	Perigee (Kilometers)	Number of Revolutions	Estimated Life Expectancy or Decay Date
Polyot 1	683	01 Nov 63	58.95	102.2	1386.9	342.1	10148	Over 50 years
Electron 1	746	30 Jan 64	60.98	169.3	7100.0	415.7	5368	Over 50 years
Electron 2	748	30 Jan 64	58.50	1356.4	66919.7	1503.6	670	Over 50 years
Polyot 2	784	12 Apr 64	58.09	91.3	388.0	288.9	8745	3d Qr, 1967
Electron 3	829	10 Jul 64	60.85	168.1	7021.0	402.4	4013	Over 50 years
Electron 4	830	10 Jul 64	59.16	1313.9	65711.8	1006.2	513	Over 50 years
Cosmos 41	869	22 Aug 64	66.06	714.4	39336.5	789.9	859	Over 50 years
Cosmos 42	864	22 Aug 64	48.95	92.2	543.1	212.5	6429	Jan 1966
Cosmos 43	867	22 Aug 64	48.92	92.3	554.1	213.9	6431	Feb 1966
Cosmos 44	876	28 Aug 64	65.10	99.5	873.2	598.8	6074	Over 50 years
Cosmos 51	947	09 Dec 64	48.81	90.0	314.2	217.4	4983	Nov 1965
Cosmos 53	983	30 Jan 65	48.71	96.2	929.6	216.0	3917	4th Qr, 1966
Cosmos 54	1089	21 Feb 65	56.06	104.1	1637.6	264.1	3350	Over 10 years
Cosmos 55	1090	21 Feb 65	56.03	104.2	1671.2	240.9	3343	Over 5 years
Cosmos 56	1091	21 Feb 65	56.08	103.3	1561.7	263.2	3369	Over 5 years
Cosmos 58	1097	26 Feb 65	65.04	96.8	637.9	571.7	3545	Over 50 years
Cosmos 61	1267	15 Mar 65	56.01	104.1	1635.6	264.1	3044	Over 5 years
Cosmos 62	1268	15 Mar 65	56.04	104.1	1643.0	258.3	3049	Over 5 years
Cosmos 63	1269	15 Mar 65	56.04	103.3	1571.3	255.1	3066	Over 5 years
1st Molniya 1	1324	23 Apr 65	65.47	720.4	39835.4	648.2	365	Over 50 years
Cosmos 70	1431	02 Jul 65	48.75	97.6	1062.2	223.1	1650	2d Qr, 1967
Cosmos 71	1441	16 Jul 65	56.05	95.3	545.9	516.8	1487	Over 50 years
Cosmos 72	1442	16 Jul 65	56.06	95.9	579.7	545.8	1477	Over 50 years
Cosmos 73	1443	16 Jul 65	56.07	95.6	549.6	544.2	1482	Over 50 years
Cosmos 74	1444	16 Jul 65	56.04	96.2	611.8	543.4	1472	Over 50 years
Cosmos 75	1445	16 Jul 65	56.03	96.5	637.0	546.8	1468	Over 50 years
Cosmos 76	1464	23 Jul 65	48.78	91.8	464.6	251.9	1430	4th Qr, 1966
Cosmos 80	1570	03 Sep 65	56.05	115.0	1549.8	1358.1	613	Over 50 years
Cosmos 81	1571	03 Sep 65	56.05	115.3	1554.5	1386.8	611	Over 50 years
Cosmos 82	1572	03 Sep 65	56.05	115.7	1560.5	1412.2	609	Over 50 years
Cosmos 83	1573	03 Sep 65	56.05	116.1	1566.7	1440.2	607	Over 50 years
Cosmos 84	1574	03 Sep 65	56.05	116.4	1572.7	1468.4	605	Over 50 years
Cosmos 86	1584	18 Sep 65	56.06	115.1	1638.7	1277.9	427	Over 50 years
Cosmos 87	1585	18 Sep 65	56.06	115.5	1649.7	1303.3	426	Over 50 years
Cosmos 88	1586	18 Sep 65	56.05	115.8	1661.7	1325.6	425	Over 50 years
Cosmos 89	1587	18 Sep 65	56.05	116.3	1674.5	1349.8	423	Over 50 years
Cosmos 90	1588	18 Sep 65	56.05	116.7	1686.5	1375.4	422	Over 50 years
2d Molniya 1	1621	15 Oct 65	65.19	718.8	39992.0	487.0		Over 50 years
Cosmos 93	1629	19 Oct 65	48.9	92.5	543.6	259.3		Jan 1966
Cosmos 94	1636	28 Oct 65	65.05	89.2	278.4	239.3		Nov 1965