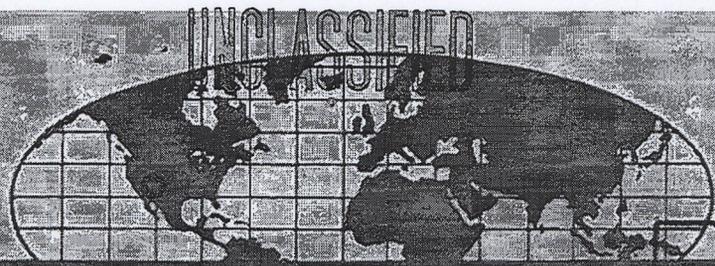


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NORTH AMERICAN AIR DEFENSE COMMAND

W O R

WEEKLY INTELLIGENCE REVIEW (U)

INTELLIGENCE

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WIR 48/64
27 Nov 1964

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Issue No. 48/64, 27 November 1964

The WIR in Brief

Portion identified
as non-responsive
to the appeal

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as non-responsive
to the appeal

Space

SPACE LISTING AND OVER-ALL SPACE STATUS
REPORT PRESENTED

As of 1300Z, 23 November 1964.

MOST RECENT INTERCEPTS OF SOVIET SPACE
VEHICLES LISTED

Report as of 17 November.

MARS LAUNCH(ES) TO COME LATE IN OPTIMUM
PERIOD OR EVEN AFTERWARDS

Propulsion requirements more rigorous but
miss distances likely to be smaller.

COVER: Converted Z-Class missile-carrying
submarine (Photo OFFICIAL USE ONLY;
this caption, ~~SECRET~~)

NOTE: Pages 20, 22, and 23 of this issue are
blank.

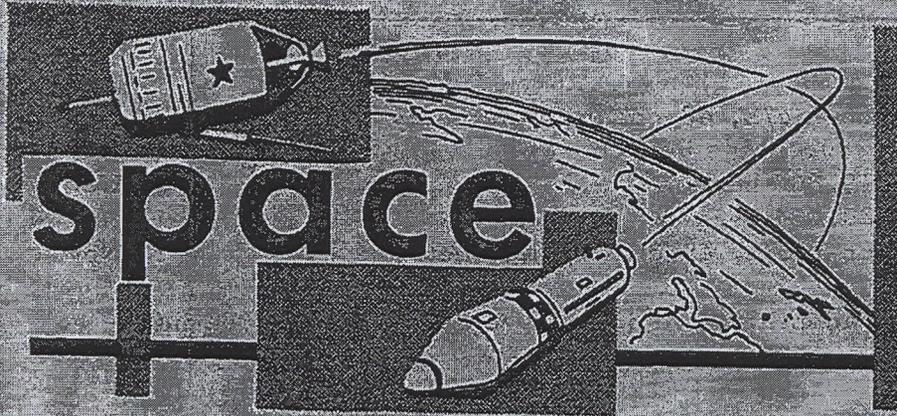
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significant
intelligence
on space
developments
and trends

Space Listing and Over-all Space Status Report Presented

The over-all space-vehicle status as of 1300Z, 23 November 1964, was as follows:

	<u>US</u>	<u>UK</u>	<u>Can</u>	<u>USSR</u>	<u>Total</u>
Payloads in Earth orbit	108	2	1	13	124
Payloads in Sun orbit	6			4	10
Payloads in Earth-Moon orbit				1	1
Pieces of debris in Earth orbit	326	1	2	15	344
Pieces of debris in Sun orbit	5				5
Payloads impacted on Moon	3			1	4
TOTALS	448	3	3	34	488
Objects decayed or de-orbited	215			232	447

A listing of Soviet payloads and their principal orbital parameters is shown on page 21.

(SPADATS)
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Most Recent Intercepts of Soviet Space Vehicles Listed

The following have been reported as the most recent intercepts of transmissions from Soviet space vehicles as of 17 November 1964:

<u>Vehicle</u>	<u>Signal Intercepted</u>	<u>Date</u>
	50X1 and 3, E.O.13526	



50X1 and 3, E.O.13526

Three of the above transmitting vehicles have decayed since the intercepts were made:

- Cosmos 25 decayed 21 November
- Cosmos 39 decayed 17 November
- Cosmos 40 decayed 18 November

(Various ELINT monitors)

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Mars Launch(es) To Come Late in Optimum Period or Even Afterwards

The optimum period for launch of a Mars probe in 1964 opened about 1 November and will end in about mid-December. (These optimum periods occur once each 25 months for the planet Mars.)

The US has launched one such probe -- a failure -- during this period and expects to launch an alternate vehicle before closure of the Mars window. The Soviets have not yet taken advantage of the current target season. However, the possible appearance of the SMRISs within the next week could indicate that the Soviets are still planning a Mars probe, since they are prone to launch interplanetary probes late in the optimum period. Propulsion requirements, which the Soviets can meet, are somewhat more rugged for late launches, but demands on guidance-injection accuracy are lighter.

Launches can be made any day during the optimum period, the optimum time of launch changing each day. Actually, two optimum times are available daily -- one for a minimum-energy launch, the other for a shorter flight time. Dates and times of minimum energy launches of Mars probes during the period 28 October through 27 November 1964 were given on page 9, WIR 43/64. Similar data for the period 28 November through 19 December follows:

<u>Launch Date</u> (1964)	<u>Launch Time</u> (Z)	<u>Time of Flight</u> (Days)	<u>Arrival Date</u> (1965)
28 Nov	1446	238	24 Jul
29 Nov	1437	238	25 Jul
30 Nov	1432	237	25 Jul
1 Dec	1424	237	26 Jul
2 Dec	1419	236	26 Jul





3 Dec	1413	235	26 Jul
4 Dec	1408	234	26 Jul
5 Dec	1400	234	27 Jul
6 Dec	1355	233	27 Jul
7 Dec	1350	232	27 Jul
8 Dec	1343	232	28 Jul
9 Dec	1338	231	28 Jul
10 Dec	1331	231	29 Jul
11 Dec	1325	231	30 Jul
12 Dec	1319	230	30 Jul
13 Dec	1315	229	30 Jul
14 Dec	1309	229	31 Jul
15 Dec	1303	229	01 Aug
16 Dec	1258	229	02 Aug
17 Dec	1252	229	03 Aug
18 Dec	1245	230	05 Aug
19 Dec	1239	231	07 Aug

(SPADATS; NORAD)

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Soviet Space Vehicle Listing, as of 23 November

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Soviet Vehicles in Earth Orbit

Soviet Designation	Launch Date	Inclination to Equator (degrees)	Period (Minutes)	Apogee (kilometers)	Perigee (kilometers)	Life Expectancy or Decay Date
Cosmos 17	22 May 63	48.98	92.2	565.6	248.6	July 1966
Polyot 1	1 Nov 63	58.92	102.1	1406.2	336.1	Over 25 years
Electron 1	30 Jan 64	60.65	169.3	7120.1	400	Over 50 years
Electron 2	30 Jan 64	60.03	1356.3	67838.8	582.6	Over 50 years
Polyot 2	12 Apr 64	58.05	92.2	462.2	306.5	1967
Electron 3	10 Jul 64	60.86	168.2	7027.0	402.7	Over 50 years
Electron 4	10 Jul 64	60.77	1313.9	66283.1	458.5	Over 50 years
Cosmos 36	30 Jul 64	49.0	91.9	506.7	256.1	May 1965
Cosmos 41	22 Aug 64	64.8	714.5	39758.5	440.5	Over 50 years
Cosmos 42	22 Aug 64	48.97	98.0	1122.0	235.1	2d Qtr., 1966
Cosmos 43	22 Aug 64	48.98	97.7	1104.9	229.5	1st Qtr., 1966
Cosmos 44	28 Aug 64	65.01	99.3	820.7	663.2	Over 50 years
Cosmos 49	24 Oct 64	48.88	91.29	440.3	263.5	1st Qtr., 1965

Soviet Vehicles in Heliocentric (Sun) Orbit

		Inclination to Ecliptic (degrees)	Period (Days)	Aphelion (In AUs)*	Perihelion (In AUs)*	
Lunik 1	2 Jan 59	0.01	449.5	1.315	0.9766	Indefinite
Venus probe	12 Feb 61	0.58	300	1.019	0.7183	Indefinite
Mars 1	1 Nov 62	2.683	519.1	1.604	0.9237	Indefinite
Zond 1	2 Apr 64	(Not Available)				

Soviet Vehicles in Barycentric (Earth-Moon) Orbit

Lunik 4 2 Apr 63 (Not Computed)

Soviet Vehicles Resting on Surface of the Moon

Lunik 2 12 Sep 59 (Not Applicable)

*AU -- astronomical units. Roughly, 1 AU = 93 million statute miles (mean distance from Sun to Earth).

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