Table 2

SOVIET EARTH SATELLITES [a]

	SPUTNIK I (1957 ALPHA-2)	SPUTNIK II (1957 BETA)	SPUTNIK III (1958 DELTA-2)	SPUTNIK IV (1960 EPSILON)	SPUTNIK V (1960 LAMBDA)	SPUTNIK VI (1960 RHO)
Weight (lbs.)	184 (includes the structural weight).	1,120 (including batteries).	2,130 (plus about 800 lbs. of structural weight, i.e., 2,925 lbs.)	a. Weight of pressurized cabin .... 5,513 b. Weight of de-orbiting retro-rockets, fuel tanks, pumps and associated structure 1,241 c. Weight of instrumentation [c] ..... 3,257 Total 10,011	10,143	10,037.
Configuration	Spherical	Conical [b]	Conical [b]	Unknown but probably very similar to Sputnik V.	Space ship configuration unknown. Emergency escape capsule is a circular cylinder with a hemispherical nose. Two dogs were placed in a pressurized container which was similar in size and shape to that used in Sputnik II.	Unknown but probably very similar to Sputnik V.
Diameter (ft) of Satellites.	1.9	3.3 [b]	5.7 [b]	Estimated at about 8 ft.	Estimated at about 8 ft.	Estimated at about 8 ft.
Length (ft) of Satellite.		6.5 [b]	11.7 [b]	Unknown	Unknown	Unknown.
Date Launched	4 Oct. 1957	3 Nov. 1957	15 May 1958	15 May 1960	19 Aug. 1960	1 Dec. 1960.
Orbit Period	96.17 minutes	103.7 minutes	106 minutes	91.1 min. prior to deorbiting attempt [d].	90.68	88.58.
Perigee (st mi)	142	140	130	189	193	116.
Apogee (st mi)	588	1,038	1,167	219	193	165.
Inclination to Equator (degrees).	64.3	65.4	65	64.89	64.9	65.
Remarks	Successful orbital flight.	Successful orbital flight.	Successful orbital flight.	Unsuccessful recovery attempt.	Successfully recovered.	Unsuccessful recovery attempt.

Table 2 (*Continued*)

	SPUTNIK VII (1961 BETA)	SPUTNIK VIII (1961 GAMMA) Venus Probe Success	SPUTNIK IX (1961 THETA)	SPUTNIK X (1961 IOTA)	SPUTNIK XI (1961 MU)
Weight (lbs.)	14,292	Approx. 14,000	10,360	10,352	10,428.
Configuration	Unknown	Unknown	Unknown	Unknown	Unknown.
Diameter (ft) of Satellites.	Unknown	Unknown	Unknown	Unknown	Unknown.
Length (ft) of Satellite.	Unknown	Unknown	Unknown	Unknown	Unknown.
Date Launched	4 Feb. 1961	12 Feb. 1961	9 Mar. 1961	25 Mar. 1961	12 Apr. 1961.
Orbit Period	89.8 up to Orbit 17 [a].	89.42	88.20 (Rev.)	88.42 (Rev.)	89.09 (Rev.).
Perigee (s. m.)	135	125.2	114	111	110.
Apogee (s. m.)	194	198.6	154	154	188.
Inclination to Equator (degrees).	65.10	65.01	64.87	64.54	65.00.
Remarks	Venus probe failure.	Venus probe success	Successfully recovered	Successfully recovered	Successfully recovered (manned).

[a] Most of these data are based on Soviet announcements or displays. In a few cases telemetry or other information confirms experiments or data.

[b] Not including the last stage which did not separate in the case of Sputnik II.

[c] The meaning of the word "instrumentation" is not known. A weight of 3,257 lbs. seems high for instrumentation only.

[d] At 2352Z, 18 May, deorbiting was initiated, but due to malfunction in the orientation system the vehicle entered a new orbit having a period of 94.25 minutes, a perigee of 190 s.m., and an apogee of 428 s.m.

[e] A transfer to a higher energy orbit is believed to have occurred during the 18th orbit.

Table 2 (*Continued*)

	SPUTNIK I (1957 ALPHA-2)	SPUTNIK II (1957 BETA)	SPUTNIK III (1958 DELTA-2)	SPUTNIK IV (1960 EPSILON)	SPUTNIK V (1960 LAMBDA)	SPUTNIK VI (1960 RHO)
Contents	Internal temperature, pressure instruments, transmitters, chemical batteries.	Dog; cosmic ultraviolet, X-ray, temperature, pressure instruments, transmitters, chemical batteries.	Large variety of research instruments, transmitters, chemical and solar batteries.	Based on Soviet statements, this vehicle contained systems and instrumentation required to check the operation of a life support system for man, an attitude stabilization and control system, and a deorbiting retro-rocket system. It was implied that vehicle did not include apparatus for protection from reentry heating or for braking to safe recovery speeds.	A life support system for man, an attitude stabilization and control system, a deorbiting retro-rocket system, a heat-protection and braking system for re-entry and recovery, a large variety of animal and plant life to determine the effect of launching and recovery and the effect of the space environment on living matter. Instrumentation required to determine these effects and transmit data to earth or store for recovery.	Two dogs, other unidentified animals, insects, and plants. Also instrumentation for investigation of outer space physics.
Radio Frequencies used, MCS.	20	20	20	19.996 (heard until 19 July 1960).	19.995	19.995.
	40	40	66	66	66	66.
		66	70	71	71	71.
		70		76	76	76.
				182	83	83.
				S-band	183	183.
					S-Band	S-Band.
Date of last Signal Intercept.	25 Oct. 1957	10 Nov. 1957	6 Apr. 1960	19 July 1960 on 19.995 mcs.	20 Aug. 1960	2 December 1960.
Date of Satellite Demise.	4 June 1958	14 Apr. 1958	6 Apr. 1960	Indefinite	Recovered 20 August 1960.	2 December 1960.

Table 2 (*Continued*)

	SPUTNIK VII (1961 BETA)	SPUTNIK VIII (1961 GAMMA) Venus Probe Success	SPUTNIK IX (1961 THETA)	SPUTNIK X (1961 IOTA)	SPUTNIK XI (1961 MU)
Contents	Probable Venus probe failure.	Used as a launching platform for Venus probe No. 1. Contents not known, but scientific instrumentation unlikely.	Identified by Soviets as "Space Ship No. 4." Probably basically similar to SPUTNIK V carried a dog and other biological specimens as precursors to manned flight. Recovery after one earth-revolution.	Identified by Soviets as "Space Ship No. 5." Probably basically similar to SPUTNIK IX. Carried a dog and other biological specimens. Recovered after one earth-revolution.	Carried the first man into near-space. Recovered after one earth-revolution. TV, telemetry, radiotelephone and radiotelegraph monitored the man's behavior and reactions during flight. Undoubtedly carried solar and cosmic ray radiation measuring equipment.
Radio Frequencies used, MCS.	20	20	20		...
	66	66	10.005	10.005	9.019.
	71	71	19.995	19.9	20.005.
	76	76	66	66	66.
	2,825	922.8	71	71	71.
		2,825	76	76	76.
			83	83	83.
			182	183	134.
			2,740	2,800	183.
			2,790		2,820.
Date of Last Signal Intercept.	4 Feb. 1961	12 Feb. 1961	9 Mar. 1961	25 Mar. 1961	12 Apr. 1961.
Date of Satellite Demise.	Unknown	25 Feb. 1961	Recovered 9 Mar. 1961	Recovered 25 Mar. 1961	Recovered 12 Apr. 1961.

TOP SECRET

Table 3

SOVIET SPACE PROBES [a]

	LUNIK I [b]	LUNIK II [b]	LUNIK III [b] (1959 THETA) [c]	VENUS PROBE [d]
Weight (lbs.)	797	858	959	1418.
Configuration Diameter (ft.) and Length (ft.) of Satellite.	A portion of the experimentation weight was affixed to the last stage rocket bodies, and a portion in special containers—a 2.7 foot diameter ejectable sphere in the case of Luniks I and II and a cylinder—truncated cone in the case of Lunik III, which was probably also separated. The last stage of all three Luniks was probably essentially the same as that displayed at New York and other expositions. Shape: A cone and cylinder, 17½ feet long, 8½ feet in diameter. Weight of empty last stage including instrumentation: varying slightly, about 3,250–3,400 pounds.			Cylinder with hemispherical end, length 6.67 feet, diameter 3.44 feet.
Date Launched	2 January 1959	12 September 1959	4 October 1959	12 February 1961.
Orbit Period	450 Days (around the sun)	Impacted on moon	Approx. 16 days (around the earth).	Not yet determinable.
Perigee (st. mi.)			Approx. 30,000	Not yet determinable.
Apogee (st. mi.)			Approx. 290,000	Not yet determinable.
Inclination to Equator (degrees).			Approx. 75	0.55 to the ecliptic.
Contents	Large variety of research instruments, chemical batteries, transmitters.	Instruments for measuring magnetic field of earth and moon, cosmic rays, meteorites, density of matter in space, radiation around earth and moon.	Equipment for temperature, gravitation, radiation, and photography experiments.	Equipment for measuring micrometeoroid impacts, nature of space matter, cosmic radiation, magnetic fields. [e]
Radio Frequencies Used, MCS.	183.6 19.993 19.995 19.997	183.6 19.993 19.997 20.003 39.986 71 76	183.6 39.986 71 76	922.8.
Date of Last Signal Intercept.	Soviets reported 62 hours reception.	38.4 hours of reception	Soviet: Unknown. US: Possibly 18 October 1959.	22 February 1961.
Date of Satellite Demise	Indefinite around sun	2102:24Z–13 September 1959.	Unknown	Indefinite around the sun.

[a] Most of these data are based on Soviet Announcements or displays. In a few cases telemetry or other information confirms experiments or data.

[b] The West's capability to intercept transmissions from a Soviet lunar probe, especially in the lower frequencies, is very limited. Additionally, the Soviets probably trigger the transmitters while over Soviet territory, and pass only limited position data to the West.

[c] The earth satellite designation assigned Lunik III.

[d] Launched from a 14,300 lb. earth satellite vehicle.

[e] A primary purpose of this event was vehicle R & D, i.e., to check injection systems, propulsion and guidance, and radio communications over long distances.

Table 4

SUMMARY OF SOVIET-ANNOUNCED SCIENTIFIC INSTRUMENTATION *

For Soviet Earth Satellites and Space Probes

Instrumentation (Soviet Terminology)	SPUTNIK I	SPUTNIK II	SPUTNIK III	LUNIK I	LUNIK II	LUNIK III	SPUTNIK V	VENUS PROBE	VERTICAL ROCKETS
Internal Temperature	X	X	X	X	..	..	..	..	X
Internal Pressure	X	X	X	X	..	..	..	..	X
Magnetometer	..	..	X	X	X	..	..	X	X
Solar Radiation:									
Corpuscular (sic)	..	X	X	X	..	..	..	..	X
Ultraviolet	..	..	..	..	..	..	X	..	..
X-Radiation	..	..	..	..	X	..	X	..	..
Cosmic Rays:									
Heavy nuclei	..	..	X	X	..	..	X	..	X
Light nuclei	..	..	..	..	..	..	X	..	..
Multicharged Particles	..	..	..	..	..	..	X	..	..
Photon Showers	..	..	X	X	..	..	X	..	X
Primary (composition)	..	X	X	X	X	..	X	X	X
Magnetic Manometer	..	..	X	..	..	..	..	..	X
Ionization Manometer	..	..	X	..	..	..	..	..	X
Ion Traps	..	..	X	..	..	..	..	..	X
Electrostatic Fluxmeter	..	..	X	..	..	..	..	..	X
Mass Spectrometer	..	..	X	..	..	..	X	X	X
Micrometeor Detector	..	..	X	X	X	..	..	..	X
Automatic Monitoring of condition or state of Micro-organisms.	..	..	..	..	..	..	X	..	..
Spacematter Density	..	..	..	..	X	..	..	X	..
Radiation Around Earth	..	..	..	..	X	..	..	..	..
Radiation Around Moon	..	..	..	..	X	..	..	..	..
Temperatures (Space)	..	..	..	..	..	X	..	..	..
Radiation (sic)	..	..	..	..	..	X	..	..	..
Lunar Photography	..	..	..	..	..	X	..	..	..
Sodium Cloud Experimentation	..	..	..	..	X	..	..	..	..
Lunar-Magnetic Field	..	..	..	X	X	..	..	..	..

* No specific information as to instrumentation was released by the USSR on Sputniks IV, VI, VII, VIII, IX, X, or XI. In addition to instrumentation, Sputnik II carried a dog, Sputniks V and VI each carried two dogs plus other biological specimens, Sputnik IX carried a dog and other biological specimens, and Sputnik XI carried a man.