

TABLE III. Space telecommunications data of US and USSR satellites, lunar and space probes (1957 to May 1960)
(Sputnik I through Pioneer V, official statistics prepared by N.A.S.A., the remaining, unofficial statistics)

Name	Lifetime	Transmitters	Power supply	Transmitter lifetime	Perigee (miles)	Apogee (miles)
Sputnik I	Oct. 4, 1957—Jan. 4, 1958	(a) 20.005 Mc; (b) 40.002 Mc	Chemical batteries	(a) and (b) stopped Oct. 27, 1957	142	588
Sputnik II	Nov. 3, 1957—Apr. 14, 1958	(a) 20.005 Mc; (b) 40.002 Mc	do	(a) and (b) stopped Nov. 10, 1957	140	1038
Vanguard test vehicle No. 3	Dec. 6, 1957	(a) 108 Mc at 10 mW; (b) 108.03 Mc at 5 mW	(a) Mercury battery; (b) 6 groups of solar converters	0	0	0
Explorer I	Jan. 31, 1958	(a) 108 Mc at 10 mW; (b) 108.03 Mc at 60 mW	Mercury batteries	(a) May 23, 1958; (b) Feb. 11, 1958, then Feb. 24—28, 1958	224	1573
Vanguard Explorer II	Feb. 5, 1958, 57 sec. Mar. 5, 1958, 823 sec.	Same as test vehicle No. 3 (a) 108.03 Mc at 60 mW; (b) 108.00 Mc at 10 mW	Mercury batteries		(1) 0	(1) 0
Vanguard I	Mar. 17, 1958, estimated 200—1000 y.	(a) 108 Mc at 10 mW; (b) 108.03 Mc at 5 mW	(a) Mercury batteries; (b) 6 groups of solar converters	(a) Apr. 5, 1958; (b) indefinitely	409	2453
Explorer III	Mar. 26, 1958—June 27, 1958	(a) 108 Mc at 10 mW; (b) 108.03 Mc at 60 mW	Mercury batteries	(a) May 10, 1958, then May 15—June 16; (b) May 14 then May 22—June 5	121	1746
Vanguard TV No. 5	Apr. 28, 1958	(a) 108 Mc at 80 mW	(a) Mercury batteries	?	(2)	(2)
Sputnik III	May 15, 1958	20.005 Mc and 40.01 Mc as first harmonic	Chemical and solar batteries	?	135	1167
Vanguard satellite launching vehicle No. 1	May 27, 1958, 20 min.	(a) 108 Mc at 80 mW	(a) Mercury batteries	20 min	(3)	(3)
Vanguard satellite launching vehicle No. 2	June 26, 1958	do	do	0	0	0
Explorer IV	July 26, 1958—Oct. 22, 1959	(a) 108 Mc at 10 mW; (b) 108.03 Mc at 24 mW	Mercury batteries	Sept. 3, 1958, then intermittent until Oct. 6, 1958	163	1380
U.S. lunar probe	Aug. 17, 1958, 77 sec.	(a) 108.6 Mc at 300 mW; (b) 108.09 Mc at 1 W	do		(4)	(4)
Explorer V	Aug. 24, 1958, 659 sec.	(a) 108.3 Mc at 30 mW; (b) 108.00 Mc at 10 mW	do	659 sec	0	0
Vanguard satellite launching vehicle No. 3	Sept. 26, 1958	(a) 108.00 Mc at 10 mW; (b) 108.03 Mc at 1 W	do	?	(5)	(5)
Pioneer I	Oct. 11, 1958, Oct. 12, 1958, 43 h. 17½ min.	(a) 108.06 Mc at 300 mW; (b) 108.06 Mc at 1 W	do	Estimated 10 d	(6)	(6)
Beacon Pioneer II	Oct. 23, 1958 Nov. 8, 1958, 42.4 min.	None (a) 108.06 Mc at 300 mW; (b) 108.09 Mc at 100 mW	Mercury batteries	Estimated 10 d	(7) 0	(7) 0
Pioneer III	Dec. 6, 1958, 38 hours 6 min.	(a) 960.05 Mc at 180 mW	do	Estimated 90 h	(8)	(8)
Project Score	Dec. 18, 1958—Jan. 21, 1959	(a) 132.435 Mc; (b) 132.905 Mc minitrack; (c) 107.97 Mc; (d) 107.94 Mc	do	12 d (human voice transmission)	110	920
Lunik or Mechta	Jan. 2, 1959, in orbit around sun	(a) 19.997 and 19.995 Mc; (b) 19.993 and 183.6 Mc	?	?	(9)	(9)
Vanguard II	Feb. 17, 1959, est. 10 y.	(a) 108.00 Mc at 10 mW; (b) 108.03 Mc at 80 mW	Mercury batteries	(a) 23 d; (b) 27 d	347	2064
Discoverer I	Feb. 28, 1959—Mar. 5, 1959	Classified	Nickel-cadmium batteries	?	99	605
Pioneer IV	Mar. 3, 1959, in orbit around sun	960.05 Mc at 180 mW	Mercury batteries	90 h	(10)	(10)
Discoverer II	Apr. 13, 1959—Apr. 26, 1959	Classified	Nickel-cadmium batteries		142	220
Vanguard	Apr. 13, 1959, 500 sec	(a) 108 Mc at 10 mW; (b) 108.03 Mc at 80 mW	Silver-zinc batteries	?	0	0
Discoverer III	June 3, 1959	Classified	Nickel-cadmium batteries		0	0
Vanguard satellite launching vehicle No. 6	June 22, 1959	(a) 108.0 Mc at 10 mW; (b) 108.03 Mc at 100 mW	Mercury batteries		0	0
Discoverer IV	June 25, 1959	Classified			0	0
Explorer	July 16, 1959	(a) 20 Mc at 650 mW; (b) 108 Mc at 15 mW	(a) Solar converters (b) chemical batteries	(a) Cut off in 1 y; (b) 2 months	0	0
Explorer VI	Aug. 7, 1959, estimated 1 y.	(a) 108.06 Mc at 500 mW; (b) 108.09 Mc at 500 mW; (c) classified	Nickel-cadmium batteries rechargeable by 8000 solar cells on "paddlewheel" vanes	?	156	26 357
Discoverer V	Aug. 13, 1959—Sept. 16, 1959	Classified		?	136	450
Beacon Discoverer VI	Aug. 14, 1959, 11.07 min. Aug. 19, 1959—Oct. 20, 1959	108.03 Mc at 50 mW Classified	Mercury batteries	?	0 139	0 537
Lunik II	Sept. 12, 1959, 6 a.m., e. d. t. impacted on Moon 5:02:24 p.m. e. d. t., Sept. 13, 1959	(a) 183.6 Mc in probe; (b) 39.986 Mc in probe; (c) 19.993 Mc in probe; (d) 20.003 Mc in rocket; (e) 19.997 Mc in rocket		35 h.		236 875
Transit I	Sept. 17, 1959	(a) 54 Mc at 100 mW; (b) 162 Mc at 100 mW; (c) 216 Mc at 100 mW	2 silver zinc; 2 nickel-cadmium, rechargeable by solar cells	?	0	0
Vanguard III (satellite launching vehicle 7)	Sept. 18, 1959, estimated 30—40 y.	(a) 108.00 Mc at 30 mW; (b) 108.03 Mc at 80 mW	Chemical batteries	Programmed 35 h	319	2329
Lunik III	Oct. 4, 1959	(a) 183.6 Mc at 5—20 W; (b) 39.986	Chemical batteries and solar cells	?	24 840	292 000
Explorer VII	Oct. 13, 1959, estimated 20 y.	(a) 108 Mc at 10 mW; (b) 20 Mc at 600 mW; (c) 40 Mc at 15 mW; (d) 60 Mc at 5 mW	Solar cells and rechargeable nickel-cadmium batteries		342	680
Discoverer VII	Nov. 7, 1959	Classified			100	520
Discoverer VIII	Nov. 20, 1959	do			130	1035
Atlas-Able IV	Nov. 26, 1959	2—378 Mc at 5 W	Nickel-cadmium batteries, rechargeable by solar cells		0	0
Discoverer IX	Feb. 4, 1960	Classified			0	0
Discoverer X	Feb. 19, 1960	do			0	0
Midas	Feb. 26, 1960	do			0	0
Pioneer V	Mar. 11, 1960	2 at 378.21 Mc; (a) 5 W, which on command acts as amplifier for (b) at 150 W. (20 times more powerful than earlier space transmitters)	Nickel-cadmium batteries, rechargeable by 4800 solar cells	Indefinitely; on command. Successful reception from 1000 000 miles on Mar. 18, 1960	(11)	(11)
Tiros	Apr. 1, 1960—21st Cent.	108.03 Mc, 107.997 Mc, and ?	Nickel-cadmium and solar cells	Indefinite	436	462
Transit I-B	Apr. 13, 1960—unknown	?	Nickel-cadmium and solar cells	Indefinite	177	436
Discoverer XI	Apr. 15, 1960—unknown; capsule down Apr. 26, 1960	?	?	?	103	573
Echo	May 13, 1960 launched, not successful	none, reflecting, sphere	None	None	—	—
Sputnik IV	May 15, 1960—unknown	19.995 Mc, 183.6 Mc	?	?	194	236

(1) Altitude 20 000 feet.

(2) Impacted 1500 miles from launching site.

(3) Impacted 7500 miles from launching site.

(4) Altitude 40 000—70 000 feet.

(5) Estimated one complete orbit before impact.

(6) Single trajectory—altitude 70 000 miles.

(7) Altitude 963 miles.

(8) Altitude 63 580 miles.

(9) In orbit around sun on 15-month cycle.

(10) In orbit around sun, tracked to 407 000 miles.

(11) Planned to orbit around sun in 506 000 000-mile path.

NOTE.—Sputniks and Luniks are U.S.S.R., all the rest are U.S.