

SPACECRAFT SCOREBOARD 1961

Following on from the two previous lists in *Flight of August 28, 1959* and *August 5, 1960*, the period covered on these pages is from *July 29, 1960* to *August 11, 1961*. The "Orbit" column gives the initial perigee and apogee, and the period quoted is the initial period of the satellite. The weight quoted is normally total weight, with scientific payload in parentheses where known.

Spacecraft	Launch vehicle	Date and place	Shape	Weight (lb)	Incln (deg)	Orbit (miles)	Period (min)	Purpose	Radio (Mc/s)	Remarks
Discoverer 13 (1960 Theta)	Thor-Agena	Aug. 10, 1960 Vandenberg AFB	cylinder 19.2ft x 5ft dia	1,700 (300)	82.85	161-436	94.1	obtain data on propulsion, communications, orbital performance, recovery techniques and advanced engineering tests (USAF)	not disclosed	capsule ejected and recovered from sea, August 11
Echo 1 (1960 Iota)	Thor-Delta	Aug. 12, 1960 Cape Canaveral	inflatable sphere 100ft dia	240 (132)	47.2	945-1,049	118.3	use inflatable sphere as reflector in passive communications satellite test (NASA)	108.06 107.94	voice transmissions successfully reflected
Discoverer 14 (1960 Kappa)	Thor-Agena	Aug. 18, 1960 Vandenberg AFB	cylinder 19.2ft x 5ft dia	1,700 (300)	79.6	116-502	94.5	obtain data on propulsion, communications, orbital performance, recovery techniques and advanced engineering tests (USAF)	not disclosed	capsule ejected and recovered in mid-air, August 19
Sputnik 5 (1960 Lambda)	multi-stage rocket	Aug. 19, 1960	cylinder?	10,120	64.57	190-211	90.72	test safety of capsule and recovery system for ultimate development of manned spaceflight system (USSR)	19.995	capsule and carrier recovered August 20 on 18th orbit; carried two dogs, rats, mice, flies, plants, fungi, microscopic water plants and seeds: reported to have landed less than 10 km from planned point
Discoverer 15 (1960 Mu)	Thor-Agena	Sept. 13, 1960 Vandenberg AFB	cylinder 19.2ft x 5ft dia	1,700 (300)	80.93	130-472	94.24	systems test including launch technique, propulsion, communications, orbital performance, advanced engineering tests and recovery techniques (USAF)	not disclosed	capsule ejected and sighted in sea; recovery prevented by rough seas
Courier 1B (1960 Nu)	Thor-AbleStar	Oct. 4, 1960 Cape Canaveral	sphere 51in dia	500	28.3	501-658	107	test feasibility of global military communications network using delayed repeater satellites (US Army)	not disclosed	messages successfully relayed: capacity 68,000 words per min
Explorer 8 (1960 Xi)	Juno 2	Nov. 3, 1960 Cape Canaveral	double cone 30in x 30in dia	90.14	49.9	258-1,423	112.7	investigate ionosphere by direct measurement of positive ion and electron composition; study frequency, momentum and energy of micro-meteorite impacts (NASA)	108	instrumentation functioned, data telemetered and analysed
Discoverer 17 (1960 Omicron)	Thor-Agena B	Nov. 12, 1960 Vandenberg AFB	cylinder 25ft x 5ft dia	2,100 (300)	81.8	116-616	96.45	systems test of Agena B satellite including launch techniques, propulsion, communications, orbital performance, recovery techniques and advanced engineering tests (USAF)	not disclosed	carried radiation counter, emulsion packs to study lower Van Allen radiation; micro-organisms, plant spore and microscopic, artificially grown human cells; high-intensity light beacon for optical tracking; capsule ejected and recovered in mid-air, November 14
Tiros 2 (1960 Pi)	Thor-Delta	Nov. 23, 1960 Cape Canaveral	pillbox 19in x 42in dia	280	48.5	387-453	98.2	test experimental television techniques and infra-red equipment leading to eventual worldwide meteorological information system (NASA)	235 237.8 108 108.03	narrow-angle camera and infra-red instrumentation transmitted good data: wide-angle photograph quality not good
Sputnik 6 (1960 Rho)	multi-stage rocket	Dec. 1, 1960	cylinder?	10,060	65	112-155	88.6	test equipment for eventual manned spaceflight (USSR)	19.995	carried two dogs and other animal and plant life: craft descended on unplanned trajectory when signalled to re-enter, and burned up in dense atmosphere
Discoverer 18 (1960 Sigma)	Thor-Agena B	Dec. 8, 1960 Vandenberg AFB	cylinder 25ft x 5ft dia	2,100 (300)	80.9	154-459	94.1	systems test of Agena B satellite including launch techniques, propulsion, communications, orbital performance, recovery techniques and advanced engineering tests (USAF)	not disclosed	carried algae, bone marrow, eyelid membrane, gamma globulin, spores, gold foil, analine powder and other material for medical and technical experiments; and light beacon for tracking experiment: capsule ejected and recovered in mid-air, December 10
Discoverer 19 (1960 Tau)	Thor-Agena B	Dec. 20, 1960 Vandenberg AFB	cylinder 25ft x 5ft dia	2,100	83.4	128-323	92	systems test of Agena B satellite; collect data on atmospheric phenomena and infra-red radiation in Earth's atmosphere in support of programmes such as Midas (USAF)	not disclosed	instrumentation included scanner, preset for specific wavelength, to measure intensity of infra-red radiation, and instruments to measure heat intensity of certain microwave bands. Transmissions ceased December 25
Samos 2 (1961 Alpha)	Atlas-Agena A	Jan. 31, 1961 Point Arguello	cylinder 22ft x 5ft dia	4,100	approx. polar	approx. 300-350	approx. 95	determine capabilities for making observations of space, the atmosphere and the nature of the globe from satellites (USAF)	not disclosed	carried photographic and related test equipment, also telemetry, tracking and command equipment
Sputnik 7 (1961 Beta)	multi-stage rocket	Feb. 4, 1961	not disclosed	14,292	65	139-204	89.8	develop and place heavy spacecraft in precise orbit (USSR)	not disclosed	equipment functioned normally: instrumentation included telemetry system for structural parameters and "equipment for trajectory measurements"
Sputnik 8 (1961 Gamma 3)	multi-stage rocket	Feb. 12, 1961	not disclosed	assumed similar to Sputnik 7	65	138-174	89.6	test orbital launch technique for space probe (USSR)	not disclosed	Venus probe successfully launched
Venus probe (1961 Gamma 1)	single-stage rocket	Feb. 12, 1961 launched from Sputnik 8	complex	1,419	0.3 to ecliptic	66.7m to 94.6m from Sun	300 days	reach vicinity of Venus, test long-range communications, provide measurements of solar system, make physical observations of outer space (USSR)	922.8	radio contact lost on attempt to re-establish contact from Jodrell Bank: inconclusive
Explorer 9 (1961 Delta)	Scout	Feb. 16, 1961 Wallops Island	inflatable sphere 12ft dia	80	38.63	395-1,605	118.3	(1) study performance, structural integrity and environmental conditions of Scout research vehicle and guidance-control system; (2) determine atmospheric density by orbit of	136	transmitter on balloon failed to function, requiring optical tracking: first satellite launch by all-solid rocket: first from Wallops Station