

Remarks: Gemini spacecraft launched into orbit by modified Titan II booster (Gemini-Titan 4). Four-day, 62-revolution endurance mission to test crew and spacecraft in buildup to longer missions. Eleven scientific and engineering experiments, in addition to basic medical checks on 4 days of exposure to the space environment, measured radiation, electrostatic charge, proton-electron flow, and geomagnetic fields. Synoptic weather and terrain photography was accomplished, as well as two-color photographs of the earth's limb. Navigation measurements were conducted, in-flight phonocardiograms taken, and bone demineralization measurements made. Attempt to rendezvous with spent second stage was abandoned when spacecraft fuel consumption became excessive. White spent 22 minutes outside the spacecraft in extravehicular activity, propelling himself with an oxygen-jet gun. During spacewalk he was attached to the spacecraft with a 25-ft. tether-and-oxygen line; he carried emergency oxygen and camera. Spacecraft computer malfunction necessitated a ballistic reentry sequence. First mission controlled from new Mission Control Center at Manned Spacecraft Center, Houston, Tex. Duration, 97 hours, 56 minutes.

Launch date: August 21, 1965.

Designation: Gemini V.

Crew: L. Gordon Cooper, Jr., and Charles Conrad, Jr.

Remarks: Gemini spacecraft launched into orbit by modified Titan II booster (Gemini-Titan 5). Eight-day, 120-revolution endurance mission confirmed the physiological feasibility of Apollo lunar landing mission. Several major records set by United States: longest manned spaceflight in time and distance, total man-hours in space, and most manned flights. First flight of fuel cell electrical power system. During first orbit, perigee was raised to 106 miles from initial 100 miles. At beginning of second orbit a Radar Evaluation Pod was ejected; the Gemini V rendezvous radar furnished range and range rate data on this target for 40 minutes. On August 23 a simulated rendezvous was conducted with a series of four maneuvers through two orbits which raised the perigee to 124 miles and lowered the apogee to 192.6 miles. Sixteen of seventeen experiments were successfully conducted: five medical experiments measured physiological effects; extensive weather and terrain photography was conducted; visual observations of missile launches and ground patterns were made; and zodiacal light was photographed. Only experiment canceled was photography of the Radar Evaluation Pod. Voice communication was conducted with Sea Lab II under the Pacific Ocean. Duration, 190 hours, 55 minutes.

Launch date: December 4, 1965.

Designation: Gemini VII.

Crew: Frank Borman and James A. Lovell, Jr.

Remarks: Gemini spacecraft boosted into orbit by modified Titan II booster (Gemini-Titan 7). Fourteen-day, 206-revolution endurance mission, longest scheduled flight in Gemini program. Station-keeping conducted with booster second stage after separation; spacecraft maneuvered to raise apogee from original 100 miles to 138 miles to serve as rendezvous target for Gemini VI. On December 7 orbit