PROJECT GEMINI

The second U.S. manned space program was announced in January 1962. Its two-man crew gave it its name, Gemini, for the third constellation of the Zodiac and its twin stars, Castor and Pollux. Gemini involved 12 flights, including two unmanned flight tests of the equipment.

Like Mercury's, its major objectives were clear-cut:

* To subject man and equipment to space flight up to two weeks in duration;

* To rendezvous and dock with orbiting vehicles and to maneuver the docked combination by using the target vehicle's propulsion system;

* To perfect methods of entering the atmosphere and landing at a pre-selected point on land. Its goals were also met, with the exception of a land landing, which was cancelled in 1964.

** The land landing was replaced with the goal to have the astronaut leave the vehicle while in orbit (EVA) and perform tasks
THE MANNED FLIGHTS

Gemini III, “THE UNSINKABLE” MOLLY BROWN
March 23, 1965
Virgil I. Grissom, John W. Young

04 hours, 52 minutes 31 seconds
First manned Gemini flight, three orbits.

Gemini IV
June 03-07, 1965
James A. McDivitt, Edward H. White II

4 days 1 hour 56 min 12 seconds
Included first extravehicular activity (EVA) by an American; White's "space walk" was a 22 minute EVA exercise.

Gemini V
August 21-29, 1965
L. Gordon Cooper, Jr., Charles Conrad, Jr.

7 days 22 hours 55 min 14 seconds
First use of fuel cells for electrical power; evaluated guidance and navigation system for future rendezvous missions. Completed 120 orbits.

Gemini VII
December 04-18, 1965
Frank Borman, James A. Lovell, Jr.

13 days, 18 hours, 35 minutes 1 seconds
When the Gemini VI mission was scrubbed because its Agena target for rendezvous and docking failed, Gemini VII was used for the rendezvous instead. Primary objective was to determine whether humans could live in space for 14 days.

Gemini VI
December 15-16, 1965
Walter M. Schirra, Jr., Thomas P. Stafford

1 Day 1 hour 51 min 24 seconds
First space rendezvous accomplished with Gemini VII, station-keeping for over five hours at distances from 0.3 to 90 m (1 to 295 ft).

Gemini VIII
March 16, 1966
Neil A. Armstrong, David R. Scott

10 hours, 41 minutes 26 seconds
Accomplished first docking with another space vehicle, an unmanned Agena stage. A malfunction caused uncontrollable spinning of the craft; the crew undocked and effected the first emergency landing of a manned U.S. space mission.

Gemini IX
June 03-06, 1966
Thomas P. Stafford, Eugene A. Cernan

3 days, 21 hours
Rescheduled from May to rendezvous and dock with augmented target docking adapter (ATDA) after original Agena target vehicle failed to orbit. ATDA shroud did not completely separate, making docking impossible. Three different types of rendezvous, two hours of EVA, and 44 orbits were completed.
Gemini X  
July 18-21, 1966  
John W. Young, Michael Collins

2 days 22 hours 46 min 39 seconds  
First use of Agena target vehicle’s propulsion systems. Spacecraft also rendezvoused with Gemini VIII target vehicle. Collins had 49 minutes of EVA standing in the hatch and 39 minutes of EVA to retrieve experiment from Agena stage. 43 orbits completed.

Gemini XI  
September 12-15, 1966  
Charles Conrad, Jr., Richard F. Gordon, Jr.

2 days 23 hours 17 min 8 seconds  
Gemini record altitude, 1,189.3 km (739.2 mi) reached using Agena propulsion system after first orbit rendezvous and docking. Gordon made 33-minute EVA and two-hour standup EVA. 44 orbits.

Gemini XII  
November 11-15, 1966  
James A. Lovell, Jr., Edwin E. Aldrin, Jr.

3 days, 22 hours, 34 minutes 31 seconds  
Final Gemini flight. Rendezvoused and docked with its target Agena and kept station with it during EVA. Aldrin set an EVA record of 5 hours, 30 minutes for one space walk and two stand-up exercises.
GEMINI EQUIPMENT ARRANGEMENT
from Press Reference Book for
Gemini Spacecraft Number 11
REVISION 20 AUGUST 1966

PROPELLANT TANKS
COMMUNICATIONS
EQUIPMENT
COOLANT
RADIATORS
RETOGRADE
ROCKETS
EJECTION
SEATS
REENTRY ATTITUDE
CONTROL SYSTEM
PARACHUTE
LANDING
SYSTEM
HORIZON
SENSORS
RENDEZVOUS
RADAR
MANEUVER
THRUSTERS
(TYPICAL)
INERTIAL GUIDANCE
SYSTEM
ELECTRICAL
EQUIPMENT
ORBIT
ATTITUDE
CONTROL
THRUSTERS
(TYPICAL)
COOLANT
PUMPS
CRYOGENIC
OXYGEN TANK
ELECTRICAL
POWER SYSTEM
INSTRUMENTATION
EQUIPMENT
DRINKING WATER
PROJECT MERCURY
PROJECT GEMINI
Agena Target Spacecraft

“Angry Alligator”
Gemini IX

Gemini+Agena docked
Astronaut's View
Aldrin’s EVA; Gemini 12