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IMMEDIATE

Press Kit

Project INTELSAT V

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Contents

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FIRST INTELSAT V LAUNCH SCHEDULED

Intelsat V, the first of a new generation of international telecommunications satellites sponsored by the 105-nation International Telecommunications Satellite Organization (INTELSAT), is scheduled for launch on board an Atlas Centaur launch vehicle by the NASA Kennedy Space Center from Cape Canaveral, Fla., no earlier than Dec. 4, 1980.

The satellite, which weighs 1,928 kilograms (4,251 pounds) at launch, has almost double the communications capability of early satellites in the Intelsat series. It will be positioned in geosynchronous orbit over the Atlantic Ocean to provide communications between North America and Europe.

Intelsat V satellite is built by the Ford Aerospace and Communications Corp., Palo Alto, Calif., using system components developed by firms in France, the United Kingdom, the Federal Republic of Germany, Japan and Italy. It has a capacity of 12,000 voice circuits plus two television channels.

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The International Telecommunications Satellite Organization is headquartered in Washington, D.C. NASA is reimbursed for all costs of the Atlas Centaur and launch services under the provisions of a launch services agreement signed in May of this year.

The Atlas Centaur (AC-54) launch vehicle will place the Intelsat V into a highly elliptical orbit from 166 by 35,788 kilometers (104 by 22,240 miles). It is from this orbit at apogee that a solid propellant rocket motor attached to the satellite will be fired to circularize the orbit at geosynchronous altitudes over the equator. At that altitude, because the speed of the satellite in orbit matches the rotational speed of the Earth, the satellite remains in position over one spot.

NASA's Lewis Research Center in Cleveland has management responsibility for Atlas Centaur development and operation. NASA's Kennedy Space Center, Fla., is assigned vehicle checkout and launch responsibility once the Atlas Centaur reaches Cape Canaveral. Overall direction of the program is vested in the Office of Space Transportation Operations at NASA Headquarters.

This Intelsat V launch costs approximately $76.6 million -- including $34 million for the satellite and $42 million for the Atlas Centaur and related launch services.

(END OF GENERAL RELEASE; BACKGROUND INFORMATION FOLLOWS.)

ATLAS CENTAUR LAUNCH VEHICLE

The Atlas Centaur is NASA's standard launch vehicle for intermediate weight payloads. It is used for the launch of Earth orbital, Earth synchronous and interplanetary missions.

Centaur was the nation's first high energy, liquid hydrogen/liquid oxygen propelled rocket. Developed and launched under the direction of NASA's Lewis Research Center, it became operational in 1966 with the launch of Surveyor 1, the first U.S. spacecraft to soft-land on the Moon's surface.

Since that time, both the Atlas booster and Centaur second stage have undergone many improvements. At present, the vehicle combination can place 4,536 kilograms (10,000 pounds) in low Earth orbit, 1,928 kg (4,250 lb.) in a geosynchronous transfer orbit and 907 kg (2,000 lb.) on an interplanetary trajectory.

The Atlas Centaur, standing approximately 39.9 meters (131 feet) high, consists of an Atlas SLV-3D booster and Centaur D-1AR second stage. The Atlas booster develops 1,920 kilonewtons (431,300 lb.) of thrust at liftoff using two 822,920-newton (185,000-lb.) thrust booster engines, one 266,890-N (60,000-lb.) thrust sustainer engine and two vernier engines developing 2,890 N (650 lb.) thrust each. The two RL-10 engines on Centaur produce a total of 133,450 N (30,000 lb.) thrust. Both the Atlas and the Centaur are 3 m (10 ft.) in diameter.

Until early 1974, Centaur was used exclusive in combination with the Atlas booster. It was subsequently used with a Titan III booster to launch heavier payloads into Earth orbit and interplanetary trajectories.

The Atlas and the Centaur vehicles have been updated over the years. Thrust of the Atlas engines has been increased about 222,400 N(50,000 lb.) since their first use in the space program in the early 1960s.

The Centaur has an integrated electronic system that performs a major role in checking itself and other vehicle systems before launch and also maintains control of major events after liftoff. The system handles navigation and guidance tasks, controls, pressurization and venting, propellant management, telemetry formats and transmission and initiates vehicle events.

The Atlas and Centaur stages of Atlas Centaur 54 arrived at Cape Canaveral Air Force Station Aug. 6, 1980. The Atlas was erected on Pad B of Launch Complex 36 on Aug. 12; the Centaur was erected on Aug. 14. A Terminal Countdown Demonstration test was conducted Oct. 3 to verify the integrity of the vehicle-to-ground systems in an environment duplicating launch conditions.

The Intelsat spacecraft arrived Oct. 21 and received its initial checkout in Hangar AO at Cape Canaveral. It was moved Nov. 7 to the Explosive Safe Facility for final servicing and capsulation. There the spacecraft's attitude control system was fueled with hydrazine, the apogee kick motor was installed and the protective payload shroud was put in place.

The spacecraft and launch vehicle were to be mated on Pad B Nov. 24. A Combined Readiness Test was scheduled for Nov. 25. The final countdown begins three days before launch.

All launch vehicle and pad operations during the launch countdown are conducted from the blockhouse at Complex 36 by a Kennedy Space Center contractor team.

LAUNCH VEHICLE CHARACTERISTICS

Liftoff weight including spacecraft: 148,173 kg (326,665 lb.)

Liftoff height: 39.9 m (131 ft.)

Launch Complex: 36A

	Atlas Booster	Centaur Stage
Weight (with propellants)	129,397 kg (285,272 lb.)	18,826 kg (41,504 lb.)
Height	21.3 m (70 ft.)	18.6 m (61 ft.) with payload fairing
Thrust	1,920 kN (431,300 lb.) at sea level	133,447 N (30,000 lb.) in vacuum
Propellants	Liquid oxygen and RP-1	Liquid oxygen and liquid hydrogen
Propulsion	MA-5 system, two 822,920-N (185,000-lb.) thrust booster engines, one 266,890-N (60,000-lb.) thrust sustainer engine, two 2,890-N (650-lb.) thrust vernier engines.	Two 66,723-N (15,000-lb.) thrust RL-10 engines, 12 small hydrogen peroxide thrusters.
Velocity	8,642 km/hr (5,370 mph) at booster engine cutoff (BECO), 12,971 km/hr (8,060 mph) at sustainer engine cutoff (SECO).	35,021 km/hr (21,761 mph) at spacecraft separation.
Guidance	Preprogrammed profile through BECO. Switch to inertial guidance for sustainer phase.	Inertial guidance.

LAUNCH SEQUENCE FOR INTELSAT V-A

Flight Events	Time (seconds)	Velocity (km/hr)	Velocity (mph)	Range (km)	Range (mi.)	Altitude (km)	Altitude (mi.)
Liftoff	0.0	0	0	0.0	0.0	0.0	0.0
BECO	139.6	8,722	5,420	80.5	50.0	56.3	35.0
Booster Pack Jettison	142.7	8,814	5,477	87.5	54.4	59.3	36.8
Insulation Pack Jettison	184.6	10,031	6,233	190.2	118.2	95.6	59.4
Nose Fairing Jettison	212.6	11,076	6,882	268.6	166.9	115.8	72.0
SECO	254.9	13,158	8,176	405.8	252.1	141.9	88.2
Atlas/Centaur Separation	256.9	13,162	8,170	412.8	256.5	143.0	88.9
MES-1	263.4	13,137	8,163	435.8	270.8	146.5	91.0
MECO-1	575.1	26,788	16,645	2,017.9	1,253.9	164.1	102.0
MES-2	1,422.3	26,833	16,673	8,185.3	5,086.1	159.6	99.2
MECO-2	1,516.1	35,367	21,976	8,961.4	5,568.4	176.3	109.5
Spacecraft Separation	1,651.1	35,010	21,754	10,229.2	6,356.2	286.5	178.0
Reorient Centaur	1,656.1						
Start Blowdown	1,831.1						
End Blowdown	2,081.1						

THE NASA INTELSAT TEAM

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