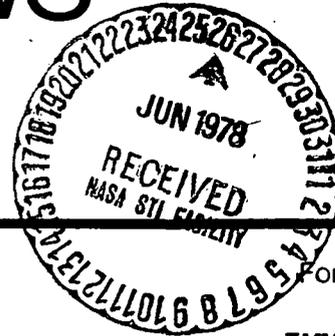


NASA News

P78-10084

National Aeronautics and
Space Administration

Washington, D.C. 20546
AC 202 755-8370



For Release:

Donald Zylstra
Headquarters, Washington, D.C.
(Phone: 202/755-8370)

IMMEDIATE

Linda Peterson
Lewis Research Center, Cleveland, Ohio
(Phone: 216/433-4000 Ext. 438)

RELEASE NO: 78-86

NASA TO LAUNCH COMSAT GENERAL'S COMSTAR D-3 SATELLITE

NASA's launch of the COMSTAR D-3 high capacity satellite for United States domestic telephone communications is scheduled for Thursday, June 29 by the Kennedy Space Center, Fla. The launch vehicle will be an Atlas Centaur, with liftoff planned at 5:51 p.m. EDT from Launch Complex 36 at Cape Canaveral.

The June 29 launch window extends from 5:51 p.m. to 6:34 p.m. EDT. NASA will be reimbursed for the launch by the COMSAT General Corp., Washington, D.C.

-more-

(NASA-News-Release-78-86) NASA TO LAUNCH
COMSAT GENERAL'S COMSTAR D-3 SATELLITE
(National Aeronautics and Space
Administration) 9 p

Mailed:
June 21, 1978
N78-76266

Unclas
00/15 22364

NASA's launch team is responsible for placing COMSTAR D-3 in a highly elliptical transfer orbit with an apogee of 35,788 kilometers (22,240 miles) and a perigee of 547 km (341 mi.). Tracking and commands to the spacecraft remain NASA's responsibility until a transfer orbit is successfully achieved.

At this point in the mission, the COMSAT General System Control Center, Washington, D.C., will assume control and tracking functions and issue the command firing the COMSTAR D-3 apogee kick motor, circularizing its orbit at 35,788 km (22,240 mi.), moving at a speed synchronous with the Earth's rotation and in the plane of the equator. Apogee kick motor firing is planned for the fifth apogee about 48 hours after launch.

COMSAT General has applied to the Federal Communications Commission for authority to position the third COMSTAR at 131.8 degrees West longitude, or, alternatively, at 87 degrees W. longitude. (The first COMSTAR is at 128 degrees W. longitude, the second at 95 degrees W. longitude.)

The COMSTAR spacecraft has a design life of seven years. Height of the spacecraft is 610 centimeters (20 feet); diameter, 244 cm (8 ft.); weight before liftoff, 1,518 kilograms (3,347 pounds); weight in orbit 792 kg (1,746 lb.).

NASA's Lewis Research Center, Cleveland, Ohio, has management responsibility for the Atlas Centaur development and operation. NASA's Kennedy Space Center, Fla., is assigned vehicle checkout and launch responsibility once the vehicle reaches Cape Canaveral.

This COMSTAR D-3 launch costs approximately \$47 million -- \$21 million for the satellite and \$25 million for the Atlas Centaur launch vehicle and related services.

(END OF GENERAL RELEASE. BACKGROUND INFORMATION FOLLOWS.)

ATLAS CENTAUR LAUNCH VEHICLE STATISTICS

The COMSTAR spacecraft will be launched by the Atlas Centaur. The launch vehicle has the following general characteristics:

Height: 40.8 meters (134 feet) including nose fairing
Diameter: 3.05 m (10 ft.)
Total Liftoff Weight: 147,926 kilograms (326,120 pounds)
(including spacecraft)
Liftoff Thrust: 1,917,088 newtons (431,000 lb.)
(sea level)

Atlas Stage

The Atlas stage consists of the booster section (one-half stage) and the sustainer/vernier section (first stage). The Atlas is manufactured by General Dynamics Convair using the MA-5 engine system supplied by Rocketdyne Division of Rockwell International. The MA-5 system consists of two booster engines, one sustainer engine and two vernier engines. The Atlas stage has the following characteristics:

Height: 21.2 m (69.5 ft.)
Diameter: 3.05 m (10 ft.)
Propellants: RP-1 kerosene for fuel and liquid oxygen
(LOX) as the oxidizer
Thrust: Total Booster: 1,645,760 N (370,000 lb.)
(sea level)
Sustainer: 266,880 N (60,000 lb.)
Total Vernier: 4,448 N (1,000 lb.)
Total Liftoff Thrust: 1,917,088 N (431,000 lb.)

Centaur Stage

The Centaur (second stage) is manufactured by General Dynamics Convair using the RL-10 engines supplied by Pratt and Whitney Aircraft Group. This stage has the following characteristics:

Height: 9.1 m (30 ft.)

Diameter: 3.05 m (10 ft.)

Propellants: Liquid hydrogen for fuel and liquid oxygen for the oxidizer

Thrust: 133,440 N (30,000 lb.)
(vacuum)

TYPICAL LAUNCH SEQUENCE FOR COMSTAR D-3

<u>Flight Events</u>	<u>Time Min/Sec</u>	<u>Altitude</u>		<u>Earth Relative</u>	<u>Velocity</u>
		<u>Kilometers</u>	<u>Miles</u>	<u>Km/Hr</u>	<u>Mph</u>
Liftoff	0	0	0	0	0
BECO	2:20.4	57.8	35.9	9,202	5,718
Booster Jettison	2:23.5	60.9	37.8	9,303	5,781
Insulation Panel Jettison	3:05.4	98.7	61.4	10,439	6,487
SECO/VECO	4:07.4	144.9	90.1	13,051	8,109
Centaur Separation	4:09.4	146.3	90.9	13,049	8,108
Centaur MES (1)	4:18.9	152.3	94.7	12,987	8,070
Nose Fairing Jettison	4:30.9	159.2	99.0	13,194	8,198
Centaur MECO (1)	10:20.3	189.2	117.5	28,029	17,416
Centaur MES (2)	24:53.2	559.0	347.3	26,538	16,490
Centaur MECO (2)	26:19.1	627.5	389.9	33,862	21,041
Spacecraft Separation	28:34.1	807.0	501.4	33,329	20,710

-more-

LAUNCH OPERATIONS

A NASA-contractor team under the direction of Kennedy Space Center's Expendable Directorate is responsible for the preparation and launch of unmanned space vehicles from Cape Canaveral Air Force Station.

The Atlas (5021 D) and Centaur (AC-41) arrived at Kennedy Space Center April 12. Atlas Centaur-41 with COMSTAR D-3 will be launched from Pad B, southernmost of the two pads at Launch Complex 36.

AC-41 was erected on Pad B April 19-20. The COMSTAR spacecraft was delivered to the Cape April 24 and underwent initial processing in Hangar AM. The spacecraft was moved to Spacecraft Assembly and Encapsulation Facility-2 (SAEF-2) in the Kennedy Space Center Industrial Area June 13 where it was encapsulated within its payload shroud June 20.

The spacecraft was moved to Pad B and mated with AC-41 June 21. A series of electrical and functional checks have been performed which are designed to clear AC-41 and COMSTAR D-3 for planned launch June 29.

-more-

ATLAS CENTAUR/COMSTAR D-3 TEAM

NASA Headquarters

John F. Yardley	Associate Administrator for Space Flight
Joseph B. Mahon	Director of Launch Vehicle and Propulsion Programs
F. R. Schmidt	Manager, Atlas Centaur

Lewis Research Center

Dr. Bernard Lubarsky	Acting Director
Dr. Seymour C. Himmel	Associate Director
Lawrence J. Ross	Director of Launch Vehicles
Richard E. Orezekowski	Intelsat Mission Project Engineer

Kennedy Space Center

Lee R. Scherer	Director
Gerald D. Griffin	Deputy Director
Dr. Walter J. Kapryan	Director, Space Vehicles Operations
George F. Page	Director, Expendable Vehicles
John D. Gossett	Chief, Centaur Operations
Creighton A. Terhune	Chief Engineer, Atlas Centaur
Floyd Curington	Spacecraft Coordinator
J. W. Meyers	Centaur Test Controller

COMSAT GENERAL/COMSTAR

Dr. Joseph V. Charyk	President, COMSAT
Dr. John L. McLucas	President, COMSAT General Corp.
John L. Martin, Jr.	COMSAT General Vice President, Systems Engineering and Development
Eugene T. Jilg	Assistant Vice President, Engineering
Allan M. McCaskill	Manager, Launch Vehicles
<u>Hughes Aircraft Co.</u>	
A. T. Owens	COMSTAR D-3 Project Manager

CONTRACTORS

General Dynamics/Convair San Diego, Calif.	Atlas Centaur launch vehicle
Honeywell Aerospace Division St. Petersburg, Fla.	Centaur guidance inertial measurement group
Pratt and Whitney West Palm Beach, Fla.	Centaur RL-10 engines
Teledyne Industries, Inc. Northridge, Calif.	Digital computer unit/PCM telemetry
Rocketdyne Division Rockwell International Corp. Canoga Park, Calif.	MA-5 propulsion systems