UNITED STATES DEPARTMENT OF
COMMERCE
NEWS
WASHINGTON, D.C. 20230

NATIONAL
OCEANIC AND
ATMOSPHERIC
ADMINISTRATION

NOAA 93-63

Contact: Patricia Viets
NOAA/NESDIS
(301) 763-2560
Carla Adams
EOSAT
(301) 552-0549

FOR IMMEDIATE RELEASE
10/7/93

CONTROLLERS UNABLE TO CONTACT LANDSAT 6

Satellite controllers have been unable to establish contact with Landsat 6, an earth-resources satellite launched Oct. 5, the Commerce Department's National Oceanic and Atmospheric Administration said today.

The satellite was launched aboard a Titan II space launch vehicle from Vandenberg AFB, Calif., at 10:56 a.m. PDT. After launch, controllers did not receive signals from the satellite when it was expected to pass over a ground station at Kiruna, Sweden. It is undetermined whether the spacecraft has achieved orbit, NOAA said.

An intensive analysis of this problem is underway by NOAA and the satellite's commercial operator, Earth Observation Satellite Company (EOSAT), and its contractors.

EOSAT was responsible for development of the Landsat 6 spacecraft and ground system under a Commerce Department contract. Martin Marietta Astro Space designed and built the satellite. An on-board sensor, known as the Enhanced Thematic Mapper, was designed and built by Santa Barbara Research Center, a unit of GM Hughes Electronics.

NOAA is convening a formal review board to investigate the problem.

###

UNITED STATES DEPARTMENT OF
COMMERCE
NEWS
WASHINGTON, D.C. 20230

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NOAA 93-65

Contact: Tim Tomastik
(202) 482-6090

FOR IMMEDIATE RELEASE
10/15/93

NOAA HAS CONCLUDED THAT LANDSAT 6 FAILED TO REACH ORBIT

Program managers have concluded that Landsat 6, an earth-resources satellite launched Oct. 5, did not achieve orbit, the Commerce Department's National Oceanic and Atmospheric Administration said today. NOAA has exhausted all efforts to communicate with and locate the satellite.

Preliminary review of data from the Titan II space launch vehicle indicates that the spacecraft separated from the booster at the appropriate time and location. No subsequent contact has been made with the spacecraft.

NOAA has convened a panel to review evidence and determine the most probable cause of the failure. This panel of experts will work with an internal investigation board convened by Martin Marietta Corporation, builder of the satellite.

Landsat 5 continues transmitting data as part of the Landsat series providing regular observations of the Earth's surface for 20 years, monitoring renewable and non-renewable resources. Landsat data applications support programs such as global change research, coastal zone monitoring, timber management, regional planning and environmental monitoring.

The Earth Observation Satellite Company, or EOSAT, was responsible for development of the Landsat 6 spacecraft and ground system under a Commerce Department contract. Martin Marietta Astro Space designed and built the satellite. An on-board sensor, the Enhanced Thematic Mapper, was designed and built by Santa Barbara Research Center, a unit of GM Hughes Electronics.

###

news release

FOR IMMEDIATE RELEASE

93-14

More Information, Contact:
EOSAT Public Information Office
Phone: (301)552-0549
Fax: (301)794-4243

EOSAT: AFTER LANDSAT 6

Lanham, Maryland, October 11 – "The loss of Landsat 6 is disappointing, but we have alternate plans," announced Dr. Arturo Silvestrini, EOSAT President and CEO. "Over the past two years we have been evolving into an international supplier of remote sensing information. Our company has bee in discussions with existing and potential operators of other satellite data sources and is confident these suppliers will satisfy the burgeoning market," Silvestrini stated.

Silvestrini said that the company will continue to operate Landsats 4 and 5, providing excellent response to its users. Since October 1992, EOSAT has bee operating the two satellites at no cost to the U.S. taxpayer.

EOSAT is the world's primary source of satellite imagery of the Earth, with over 3 million archived images dating back to 1972. This vast library of information, in conjunction with new data, provides users the tools to monitor the earth's resources. Increasingly, this data is of great assistance to farming, mineral mining, oil and gas exploration, timberland management and regional planning. And now a number of businesses depend upon remote sensing for their livelihood.

EOSAT has expanded the domestic and international remote sensing user market significantly and has increased the number of data distributors. Private enterprise has built on this foundation with an expanded array of products and programs to support the growing remote sensing market.

EOSAT intends to expedite its efforts to provide for the data and information needs of businesses worldwide. "We have been planning for the future, analyzing the needs of the domestic and international markets and networking data sources to service our present and future users," said Silvestrini.

Both U.S. industry and non-U.S. companies currently have plans for a number of advanced remote sensing products which will be accelerated and brought to the market, Silvestrini indicated.

Earth Observation Satellite Company • 4300 Forbes Boulevard • Lanham, Maryland 20706-9954

"Our industry is one of the true success stories where the U.S. Government initiative started a program, spun it off to private industry and it worked. This latest event will move us more rapidly into other initiatives. EOSAT looks forward to a successful future and will continue to provide outstanding service to the marketplace," Silvestrini concluded.

#

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

RECEIVED
93 OCT 22 AM 9:18

October 19, 1993

Dear Mr. Goldin:

I was greatly disappointed to hear of the apparent failure of the Landsat 6 mission. This important satellite would have provided data continuity that was critical to earth and environmental scientists. This satellite would have also made essential contributions to national security and to the commercial remote sensing industry.

In light of the apparent failure of Landsat 6, and the advanced age of Landsats 4 and 5, I believe that it is essential that we act quickly to evaluate how to respond to this new situation. As a first step in this process, I would like to ask NASA, DOD, and NOAA to participate in an OSTP-led ad hoc working group on Landsat. I would like the group to prepare a background paper by November 1 which will serve as the basis for discussion and review of available options.

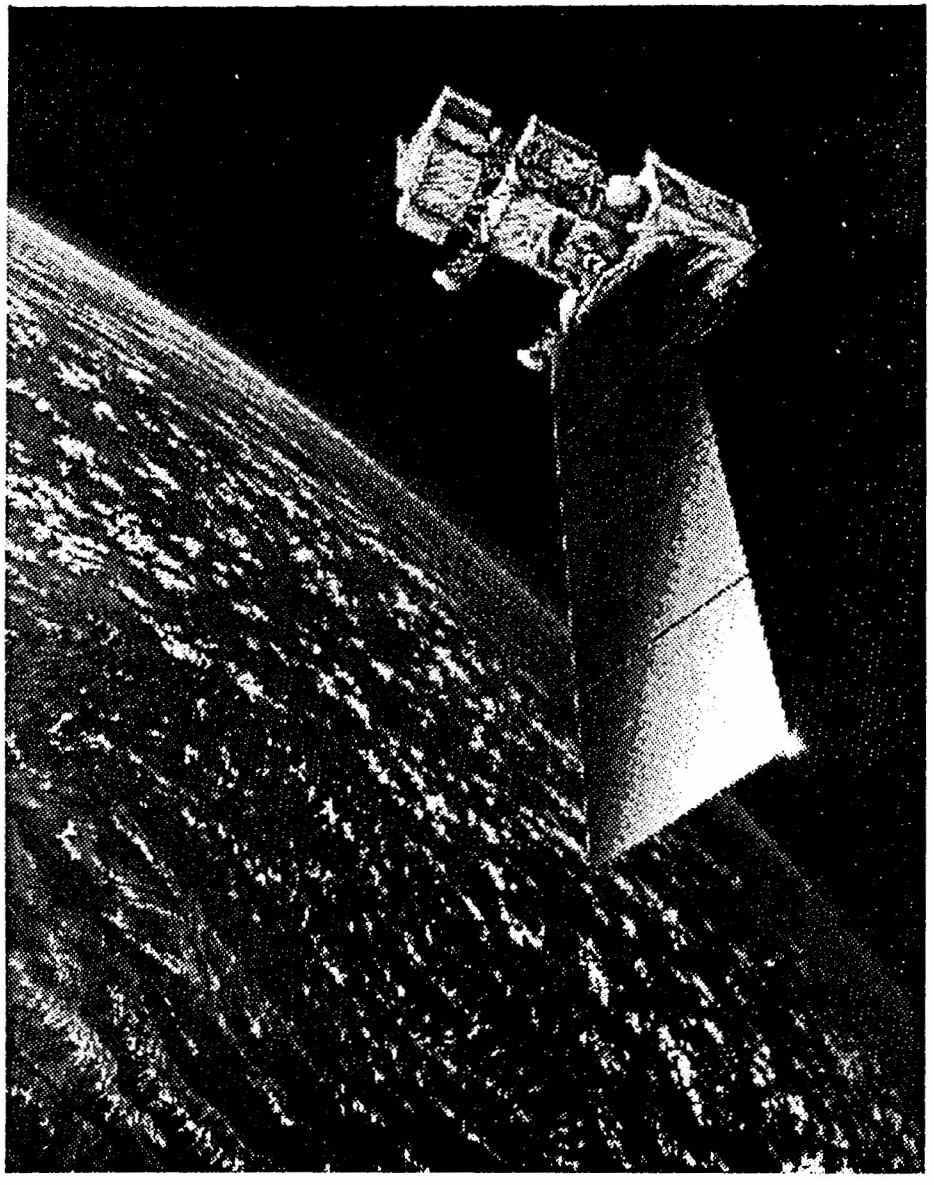
I look forward to your support in this important effort. Please have the appropriate person on your staff contact Richard DalBello, Assistant Director for Aeronautics and Space at (202) 395-6175.

Sincerely,

John H. Gibbons
Assistant to the President
for Science and Technology

The Honorable Daniel S. Goldin
Administrator
National Aeronautics and Space Administration
Washington, D.C. 20546

A93-02051



LANDSAT 4, 5, AND 6 STATUS

PRESENTED BY: MICHAEL MIGNOGNO
OCTOBER 1993

LANDSAT 4/5 OPERATIONS

- Landsat 4 - Launched July 16, 1982
  - Effective July 23, 1993, EOSAT temporarily suspended TDRSS acquisitions to: 1) Rest Ku-band communications subsystems, and 2) to minimize conflicts during Landsat 6 pre-launch, launch, and early orbit operations
  - Ku-band communications system tested unsuccessfully on October 15
- Landsat 5 - Launched March 1, 1984
  - Provides MSS and TM data to foreign ground stations via direct X- and S-band links
- MSS data reception via TDRSS or direct downlink in CONUS discontinued

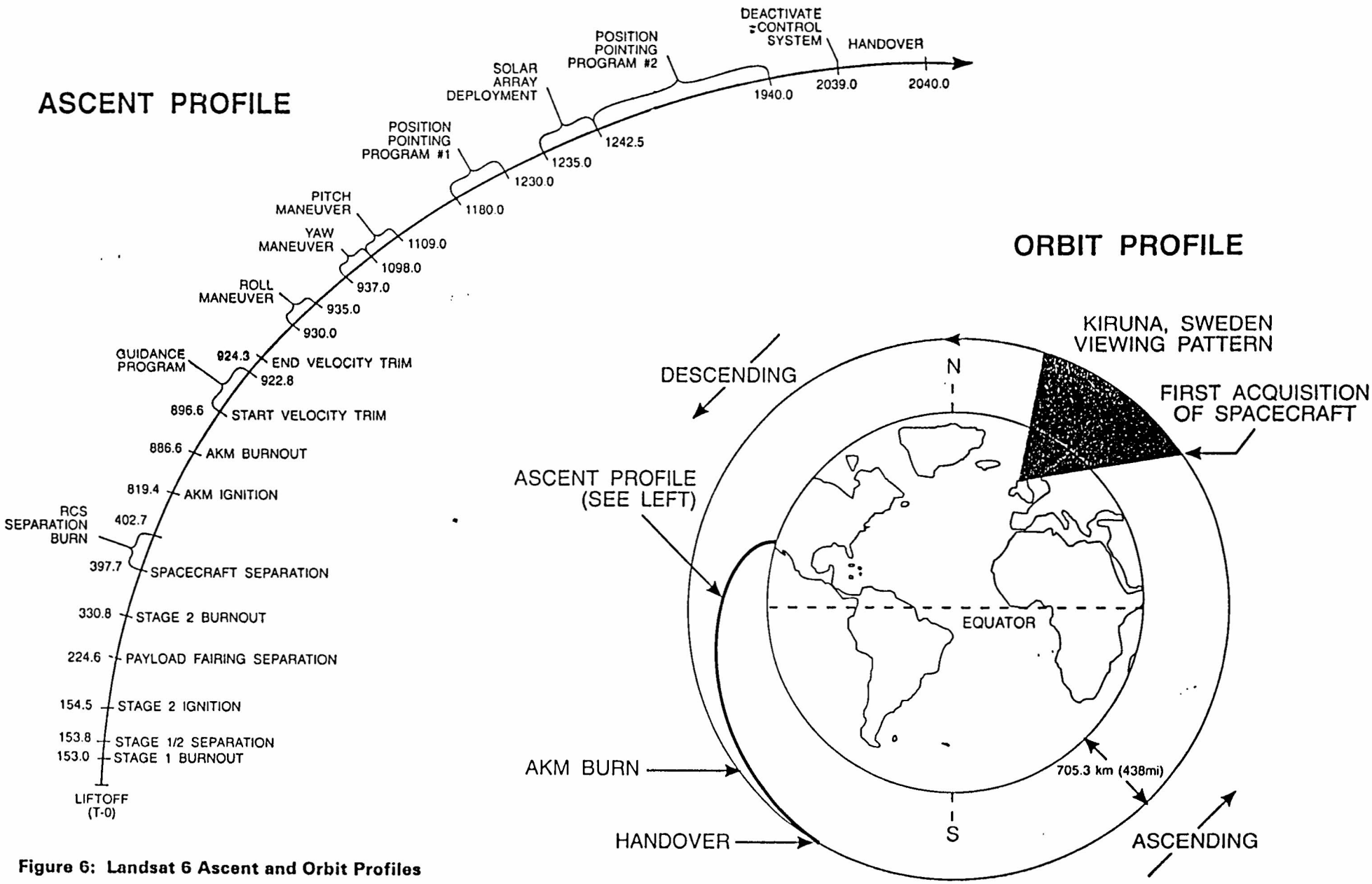


Figure 6: Landsat 6 Ascent and Orbit Profiles

LANDSAT 6 LAUNCH EVENTS

- Lift-off occurred on October 5, at 10:56:29 a.m. PDT, as planned
- First pass over Kiruna, Sweden, was expected at 12:12 p.m. PDT, but no contact was made
- NORAD indicated sighting of an object which was thought to be Landsat 6. NORAD later concluded it had no acquisition of the Landsat 6 spacecraft
- Booster telemetry indicates a nominal flight for the Titan II launch vehicle.
- Spacecraft events such as pyro firing and clamp band release were sensed by booster accelerometers and appear in booster telemetry.
- Booster telemetry indicates a slight decrease in Stage 2 velocity at the time the spacecraft should have separated from the booster.

LANDSAT 6 LAUNCH EVENTS

- Booster telemetry shows the Stage 2 Collision Avoidance Maneuver velocity in cross track direction, and the yaw rates prior to the maneuver were as predicted
- All data reviewed to date indicates that the spacecraft separated from the Titan II second stage but did not achieve orbit

NOAA ACTIONS

- NOAA convened Landsat 6 Failure Review Board; met for the first time on Friday, October 22
- Tom McGunigal, NOAA's GOES Program Manager, will chair the Board; Mike Mignogno, NOAA's Landsat Commercialization Division Chief, will act as Executive Secretary. Other organizations represented include EOSAT, NASA, DOD, Lincoln Labs, and Aerospace Corporation
- Board charter is to determine most probable cause of failure and recommend actions to minimize or preclude possibility of similar failures in the future
- NOAA's Board will work in close cooperation with an internal investigation conducted by Martin Marietta Corporation, builder of Landsat 6 spacecraft
- The NOAA review should last 10 to 12 weeks

GROUND SYSTEM STATUS

- Landsat 6 image processing systems currently used for Landsat 4/5 operations
- Landsat 4/5 now controlled from the EOSAT ground station at Norman,Oklahoma. TDRSS no longer required except for emergencies
- All ground system components were in place and ready to support the Landsat 6 launch
- NOAA now must conduct Landsat 6 ground system acceptance without use of the on-orbit Landsat 6. Details are TBD