

# PROJECT TELSTAR





AT&T's Telstar project has two main parts: (1) the construction and launching of an experimental active communications satellite and (2) the construction of a complete sending and receiving radio ground station at Andover, Maine.

The American Telephone and Telegraph Company is constructing the satellite and ground station. Under a cooperative agreement, the National Aeronautics and Space Administration is providing the launching for AT&T with NASA being reimbursed by AT&T for all the costs involved.

**What we are doing now**

- Constructing 170-pound Telstar satellite
- Constructing tracking facilities
- Testing ground terminal station

**What is planned**

Launch by NASA with Delta rocket from Atlantic Missile Range in mid '62.  
Track the satellite to:

- make contact from ground station,
- improve our skills in acquisition of the satellite and prediction of orbit,
- study pointing performance and control of big antenna at ground station.

Measure the satellite functions and evaluate the environment of space.

Communicate between Andover and:

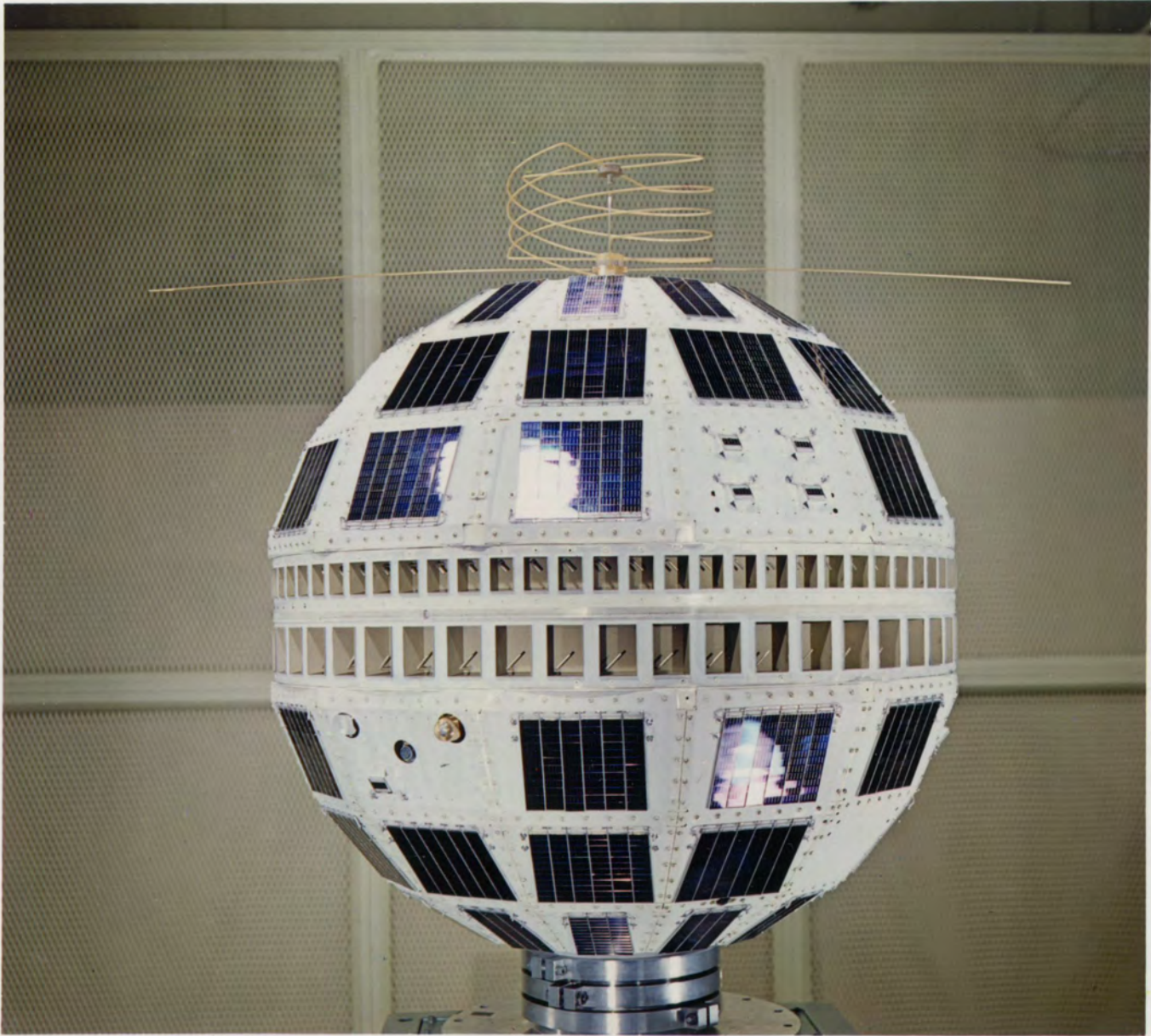
- Andover
- Holmdel, N. J.
- France
- Germany
- Great Britain
- Italy

Evaluate the transmission of:

- Microwave radio frequencies
- Television
- Telephone - 600 circuits one-way  
12 circuits two-way
- Data

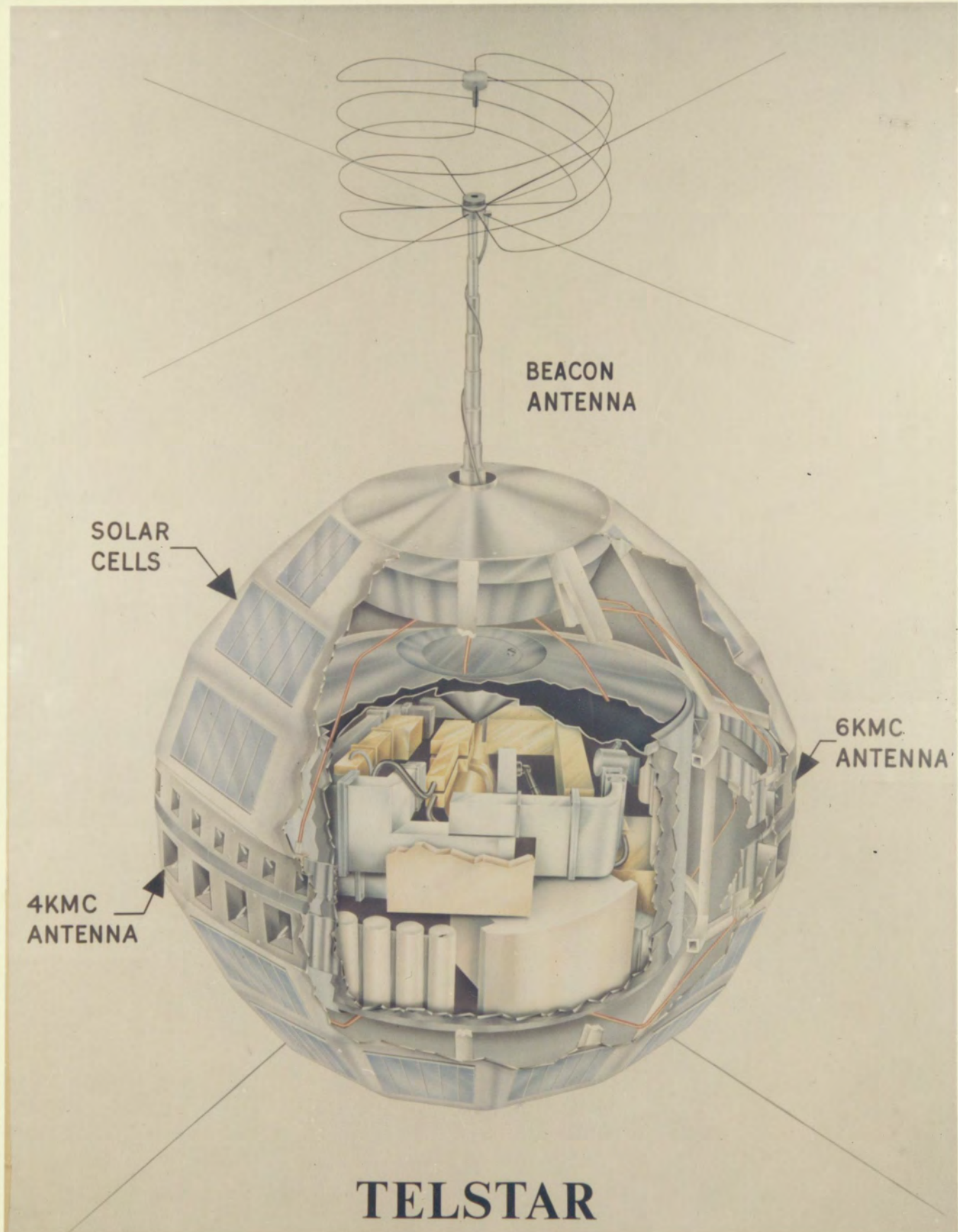
**What may be learned**

- More about the nature of the space environment.
- How space affects component performance and life.
- The effect of propagation irregularities, if any.
- The usefulness of several attitude stabilization techniques.



Telstar satellite – completely assembled.





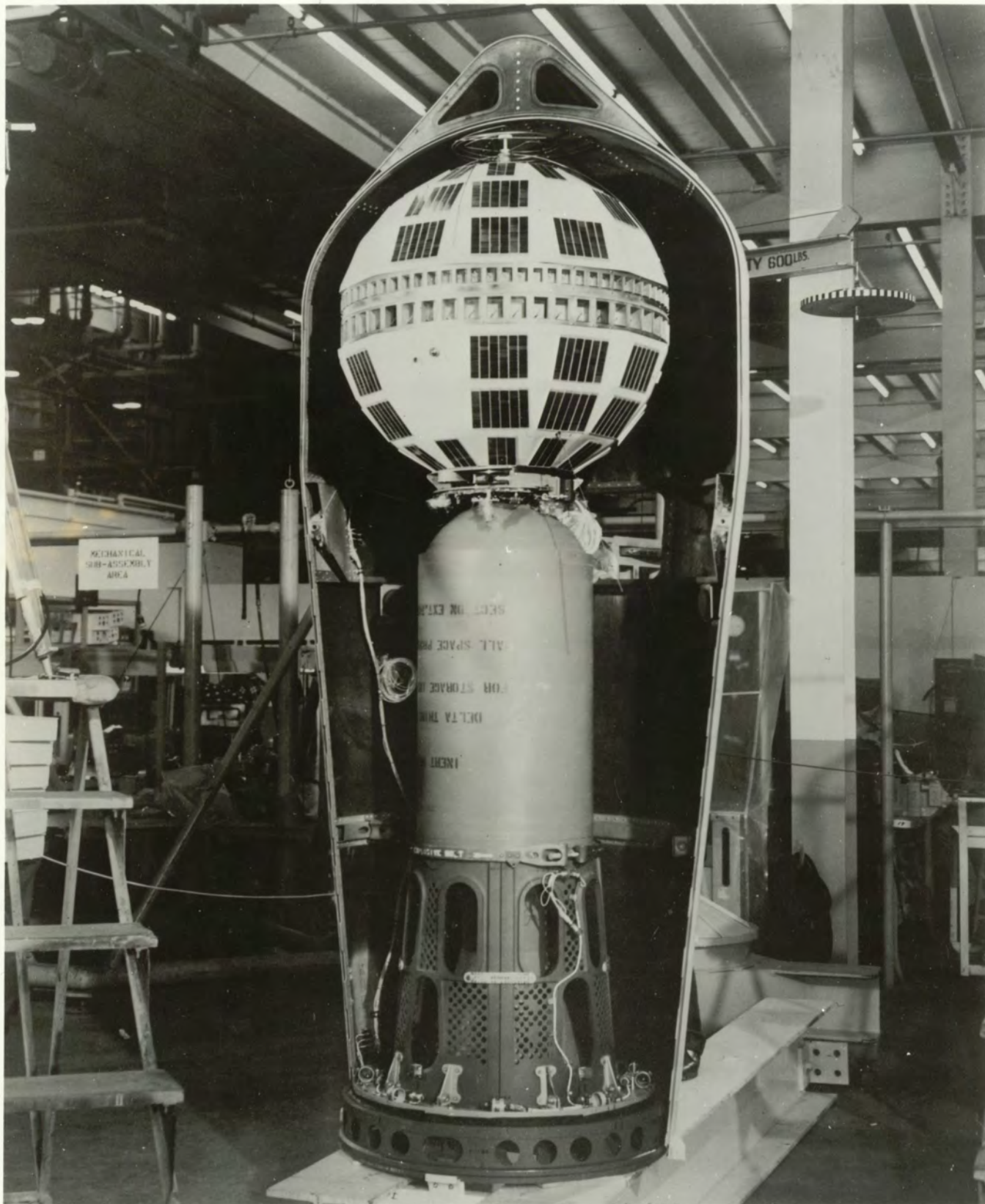
Artist's cut-away sketch of satellite.





Components in canister which is to be placed inside the satellite shell. Photographed during construction of one of the actual "fly" models.





Telstar test satellite mated to third stage of Delta launch vehicle.





Bell System station at Andover, Maine.





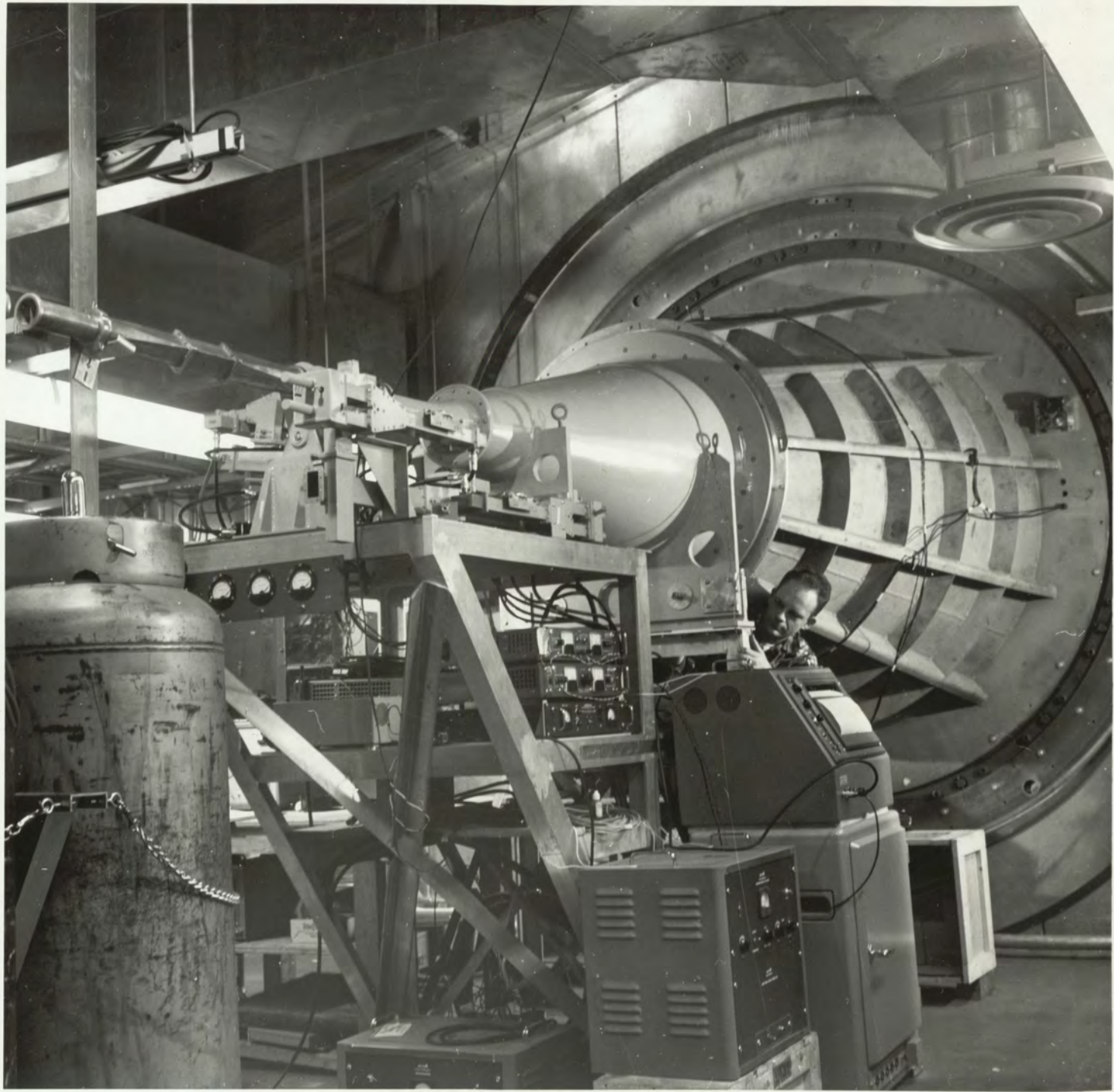
Aerial view of Andover station.





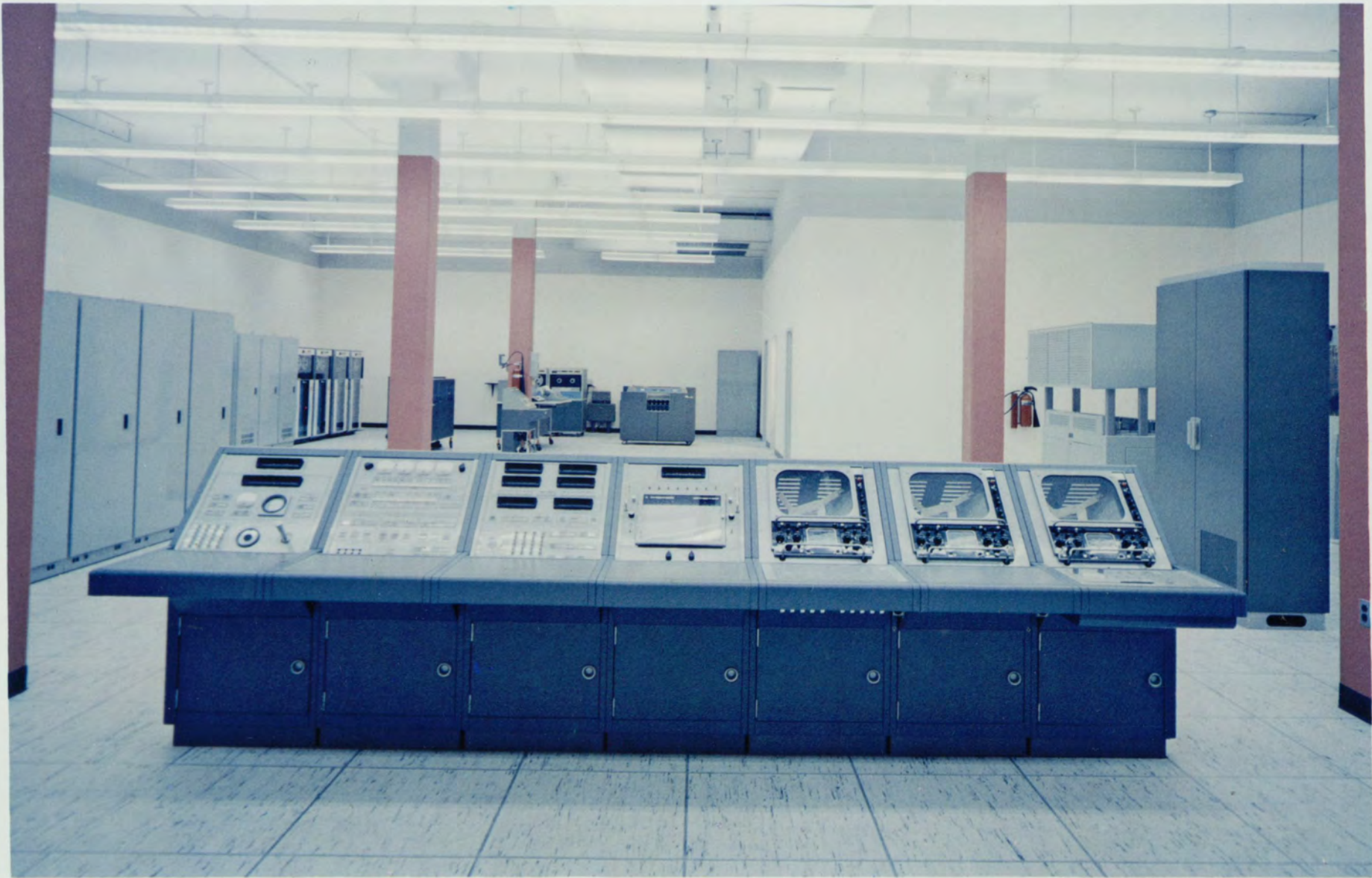
Giant 340-ton antenna inside radome. Housing at left holds maser and other gear enabling antenna to send signals up to satellite and receive faint signals sent back to earth.





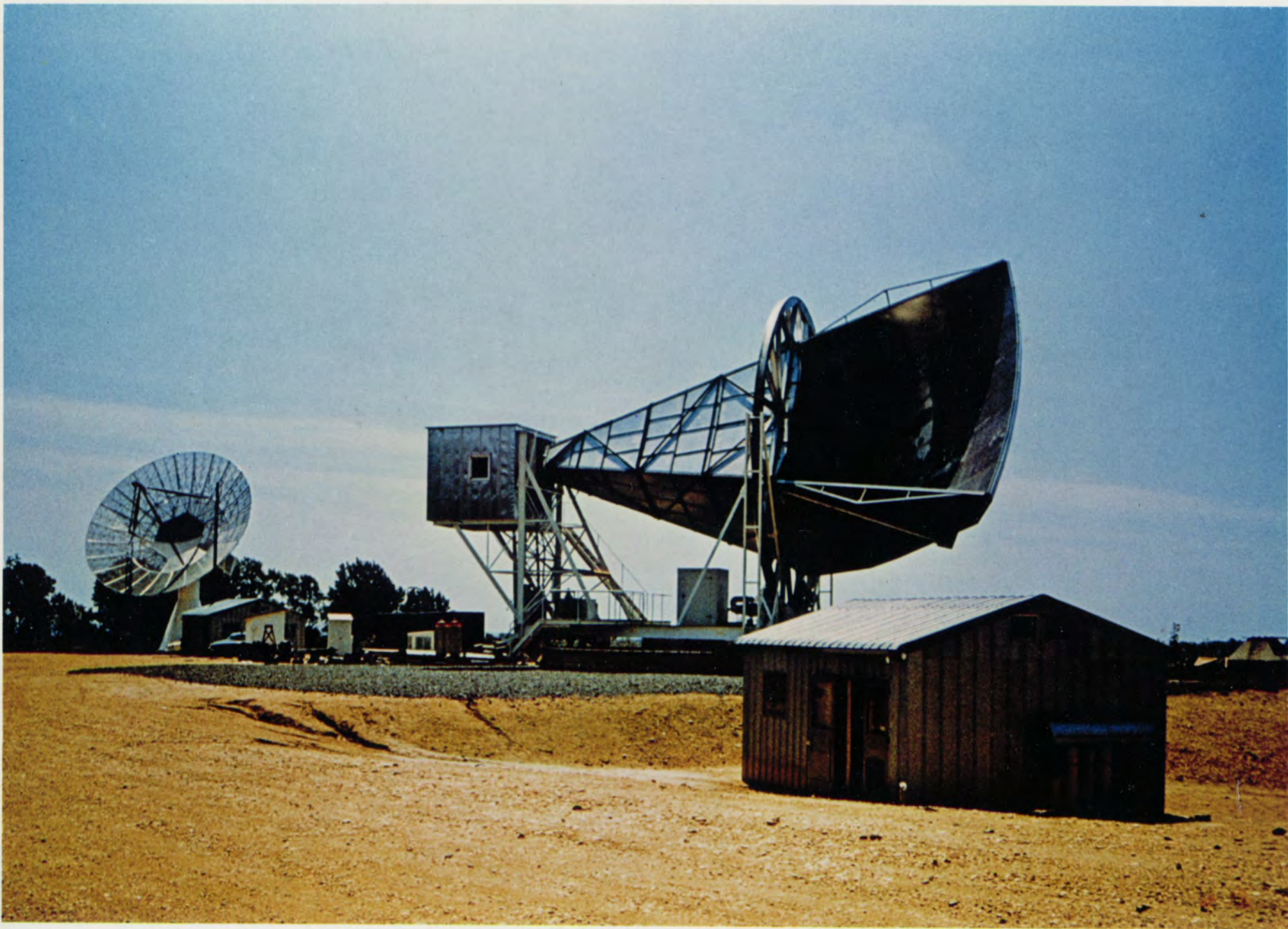
Maser equipment inside housing at small end of horn antenna.





Ground station console equipment at Andover.

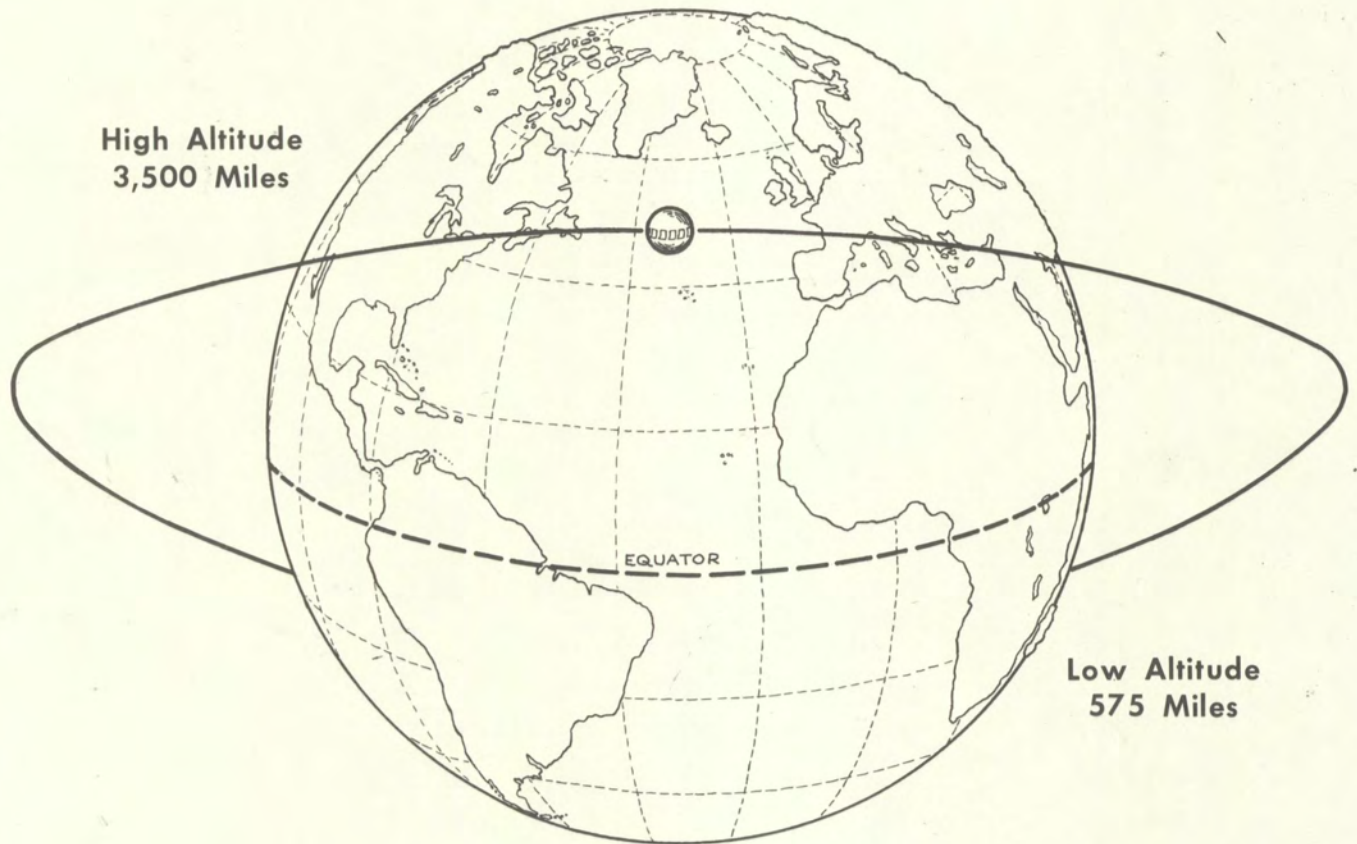




Holmdel, N. J. From this site the historic communications experiments with NASA's Echo satellite took place. The 177-foot antenna at Andover has evolved from the 50-foot horn at Holmdel.



# TELSTAR ORBIT



Orbit of Telstar when within range of  
Andover and English ground stations





How Telstar communication channels are connected to the nationwide network