

# NASA Before Apollo

INST 154

Apollo at 50

# Topics

- Notetaking
- Lecture
  - The birth of NASA
  - Project Mercury
- Discussion groups
- Activities
  - Tweeting 1969
  - Case study selections

# Notetaking

- Personal notes
  - Look ahead to the term paper
  - Take notes that help you do that well
- Discussion group notes
  - Participate in the discussion
  - Capture the sense of what was discussed
  - Upload same day

"All the News  
That's Fit to Print"

# The New York Times.

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FIVE CENTS

## SOVIET FIRES EARTH SATELLITE INTO SPACE; IT IS CIRCLING THE GLOBE AT 18,000 M. P. H.; SPHERE TRACKED IN 4 CROSSINGS OVER U. S.

### HOFFA IS ELECTED TEAMSTERS' HEAD; WARNS OF BATTLE

Defeats Tom Fork 3 to 1  
—Says Union Will Fight  
"With Every Gun"

Text of the radio address  
is printed on Page 3.

By A. H. BARRON  
Special to The New York Times  
WILSON, MISSOURI, Oct. 4—The  
annual meeting of the International  
Brotherhood of Teamsters elect-  
ed James H. Hoffa as its presi-  
dent today.

He won by a margin of nearly  
3 to 1 over the combined vote  
of two rivals who campaigned  
as opponents to elect the ex-  
tinct's biggest union.

Several months' investigations  
and raids ended in the  
union hall and the immediate  
spiral started to strip the ex-  
posed Hoffa membership from  
about 100 of the nation's  
city.



ON TORCH OF VICTORY: James Hoffa, entering hall of the Teamsters Union, raises  
hand of James H. Hoffa upon his election as union's president. At right is Tom Fork.

### COURSE RECORDED

#### Navy Picks Up Radio Signals—4 Report Sighting Device

By WALTER WINSTON  
Special to The New York Times  
WASHINGTON, Oct. 4—The  
Navy today reported that it had  
recorded four crossings of the  
Soviet earth satellite over the  
United States.

It said that the last crossing  
was Washington. The crossings  
were made by the use of the  
Navy's new radio-sighting device  
and were made available immediately.

It added that tracking would  
be continued in an attempt to  
pin down the orbit sufficiently  
to obtain scientific information  
of the type sought by the Inter-  
national Geophysical Year.

Other radio sightings, one of  
which was in conjunction with  
a radio contact, were reported  
by early morning hearing. The  
sightings were made at  
Columbus, Ohio, and one each  
from Texas Beach, Ind., and  
Wichita, Kan.



The first two crossings of the satellite were made by the use of the Navy's new radio-sighting device. The rotation of the earth will bring the United States under the orbit of the satellite.

### Device Is 8 Times Heavier Than One Planned by U.S.

### 560 MILES HIGH

#### Visible With Simple Binoculars, Moscow Statement Says

Text of the announcement  
is printed on Page 3.

By WALTER WINSTON  
Special to The New York Times  
MOSCOW, Saturday, Oct. 4—  
The Soviet Union announced  
today that it had launched a  
man-made earth satellite into space  
yesterday.

The statement indicated the  
satellite's orbit as a maximum  
of 560 miles above the earth  
and its speed at 28,000 miles an  
hour.

The official Soviet news  
agency Tass said the satellite  
weighed 835 pounds and was  
launched by a rocket of  
about 100 tons and a weight  
of 100 pounds, was moving the  
earth into orbit and  
described the satellite as  
being 100 miles in diameter.  
The satellite was launched  
from the Baikonur space  
station on September 4.

# Chronology

- [First Soviet Satellite: Sputnik 1](#) (October 1957)
- [Vanguard 1 Launch Failure](#) (December 1957)
- First American Satellite: Explorer 1 (January 1958)
- Senate Committee on Space and Aeronautics (February 1958)
- Space Act (July 1958)
- NASA established (October 1958)

# Space Act of 1958

The Congress declares that the general welfare and security of the United States require that adequate provision be made for aeronautical and space activities. The Congress further declares that **such activities shall be the responsibility of, and shall be directed by, a civilian agency exercising control over aeronautical and space activities sponsored by the United States, except that activities peculiar to or primarily associated with the development of weapons systems, military operations, or the defense of the United States ... shall be the responsibility of, and shall be directed by, the Department of Defense ...**

# Space Act of 1958

**The aeronautical and space activities of the United States shall be conducted so as to contribute materially to one or more of the following objectives:**

- (1) The expansion of human knowledge of phenomena in the atmosphere and space;
- (2) The improvement of the usefulness, performance, speed, safety, and efficiency of aeronautical and space vehicles;
- (3) The development and operation of vehicles capable of carrying instruments, equipment, supplies and living organisms through space;**
- (4) The establishment of long-range studies of the potential benefits to be gained from, the opportunities for, and the problems involved in the utilization of aeronautical and space activities for peaceful and scientific purposes.
- (5) The preservation of the role of the United States as a leader in aeronautical and space science and technology and in the application thereof to the conduct of peaceful activities within and outside the atmosphere.
- (6) The making available to agencies directly concerned with national defenses of discoveries that have military value or significance, and the furnishing by such agencies, to the civilian agency established to direct and control nonmilitary aeronautical and space activities, of information as to discoveries which have value or significance to that agency;
- (7) Cooperation by the United States with other nations and groups of nations in work done pursuant to this Act and in the peaceful application of the results, thereof; and
- (8) The most effective utilization of the scientific and engineering resources of the United States, with close cooperation among all interested agencies of the United States in order to avoid unnecessary duplication of effort, facilities, and equipment.

# Space Act of 1958

**... the President, for a period of four years after the date of enactment of this Act, may transfer to the Administration any functions ... of any other department or agency of the United States, or of any officer or organizational entity thereof, which relate primarily to the functions, powers, and duties of the Administration ...**



# Major NASA Facilities



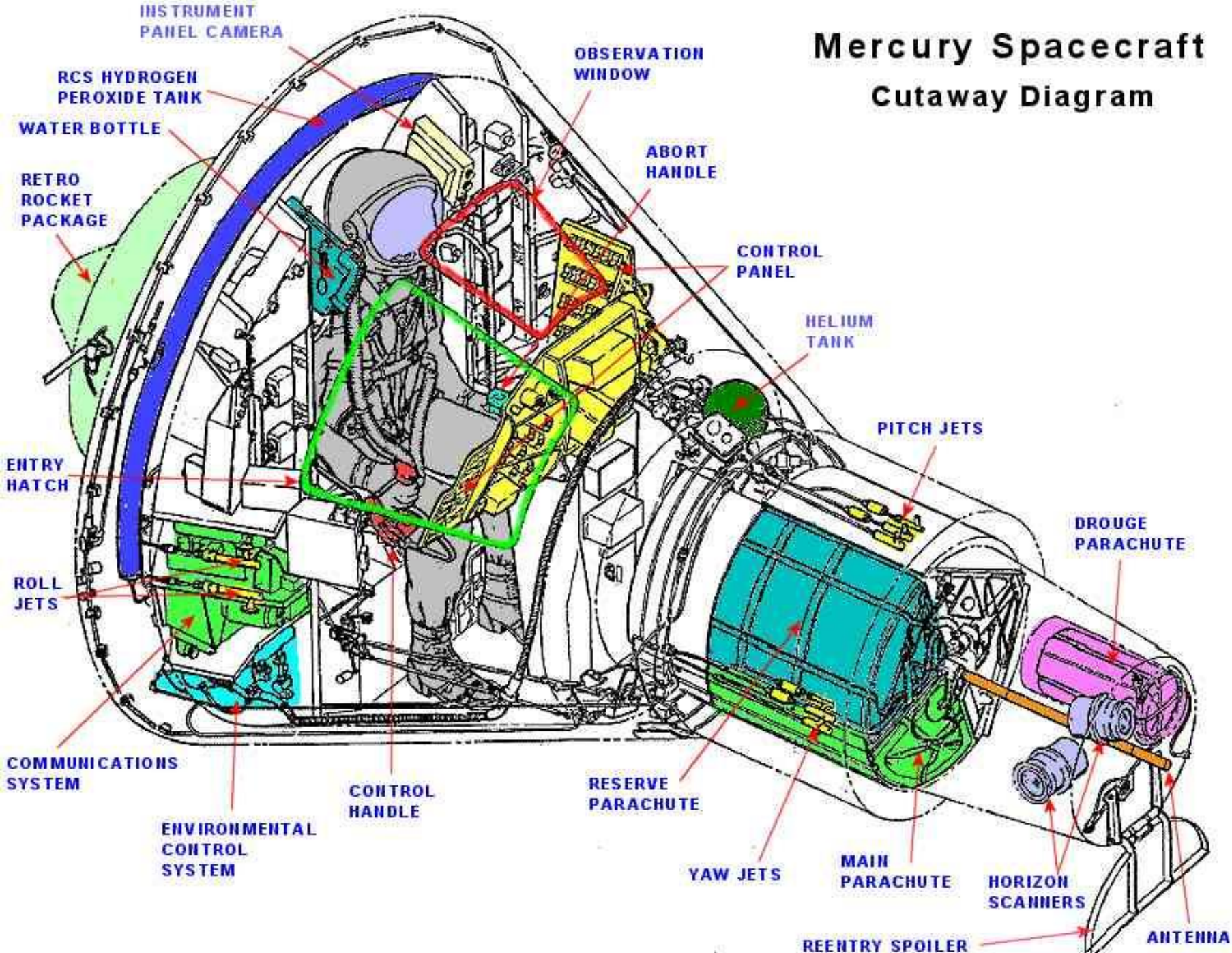
# Operational Missions of NASA

- Earth satellites
  - Communication, weather, scientific, ...
  - DoD: Reconnaissance
- Human spaceflight
  - Mercury, Gemini, Apollo ...
  - DoD: Dyna-Soar, Manned Orbiting Laboratory
- Planetary exploration
  - Moon, Venus, Mars, ...
- Aeronautics research

# Project Mercury Chronology

- Mercury spacecraft contract award (January 1959)
- First Mercury Little Joe test (August 1959)
- First Mercury Atlas test (September 1959)
- First Mercury Redstone test (November 1960)
- First manned Soviet orbital flight (April 1961)
- First manned suborbital Mercury flight (May 1961)
- 25.3-hour Soviet orbital flight (August 1961)
- First manned orbital Mercury flight (February 1962)
- Fourth (and last) manned orbital Mercury flight (May 1963)

# Mercury Spacecraft Cutaway Diagram



# McDonnell Aircraft, St. Louis, MO



# Mercury Redstone 1



# Mercury Atlas 1

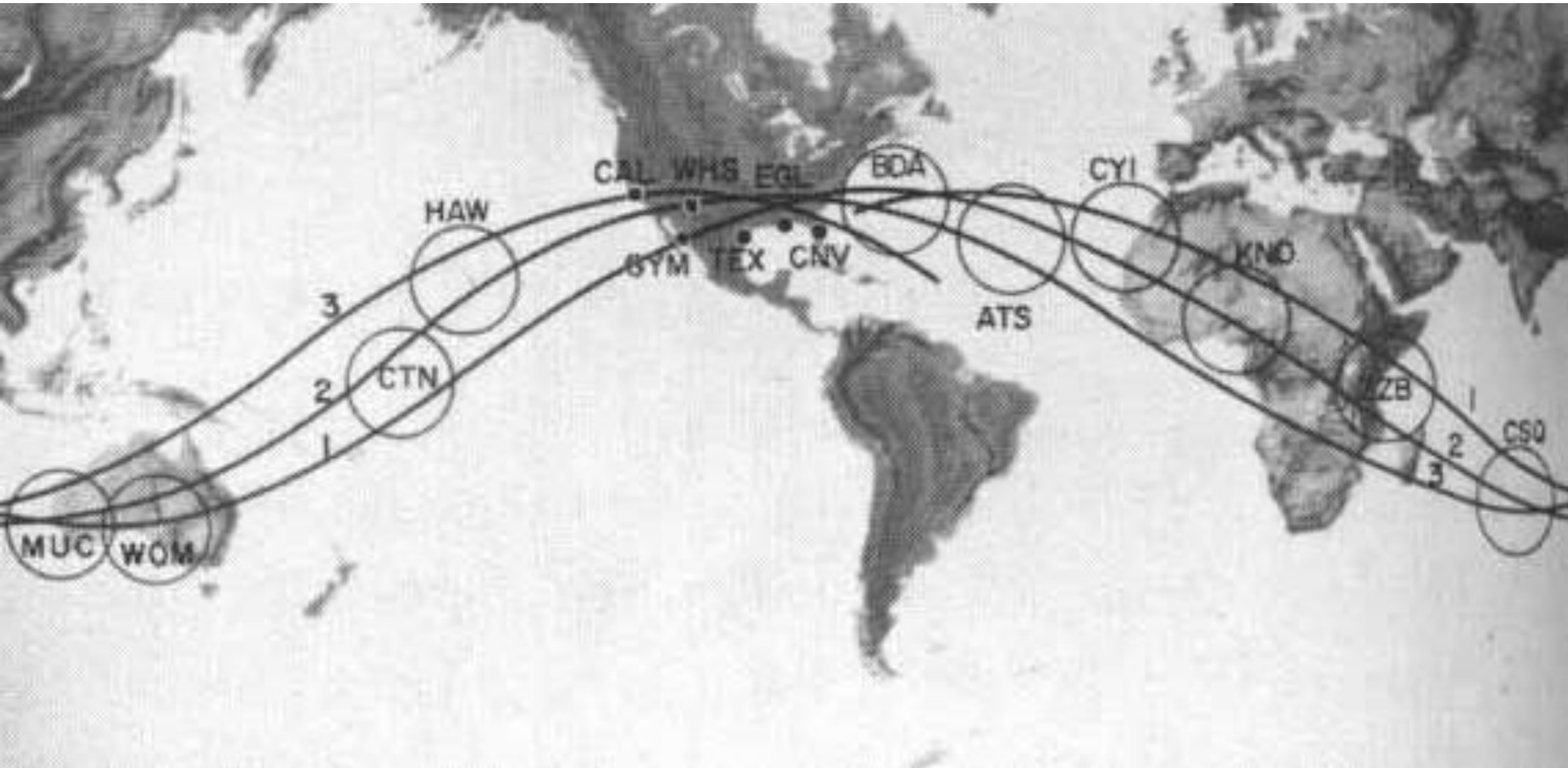


# Mercury-Redstone 4 (Gus Grissom)





# Mercury Manned Spaceflight Network





GREENWICH MEAN TIME  
17:42:31.00

COUNTDOWN  
00

ELAPSED TIME  
00:00:44

TIME TO REENTRY  
17:44:31



A large display board with multiple rows of data. The board is divided into several columns and rows, each containing text or numerical data. The data appears to be related to the shuttle's mission, such as flight parameters, status indicators, and possibly communication logs. The board is located in the control room, providing a comprehensive overview of the mission's progress.



# Mercury-Atlas 6 (John Glenn)



# Discussion Groups

- McDougall Chapter 7 (“The Birth of NASA”)
  - “Inside baseball” from the American political system
- Cox Chapter 1 (“The Famous Space Task Group is akin to the Mayflower”)
  - A vivid picture of the beginning of human space flight at NASA
- Swenson Chapter 5 (“Specifications for a Manned Satellite”)
  - Describes the process of selecting the Mercury prime contractor
- The Right Stuff (motion picture)
  - An interpretation of the test pilot culture at the founding of NASA

# Tweeting 1969

- What was happening? Where?
- Who was making these decisions?
- How was all this being coordinated?

# Case Study Selections

- <http://users.umiacs.umd.edu/~oard/teaching/154/fall19/hw/E2/>