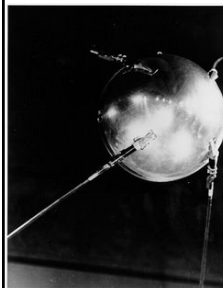


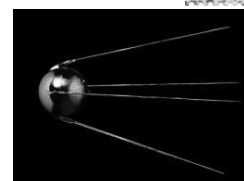
ASTR 4800: Space Science - Practice & Policy

- Today's Topic: The Birth of NASA
- Homework: McDougall, Part IV

USSR Sputnik 1 Satellite (launched October 4, 1957)

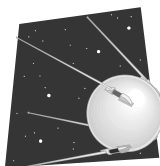


184 pounds.
58 cm diameter sphere.
2.5 meter long antennas.



How did the launch of Sputnik kick-start federal investment in science R&D?

- Public outcry & concern that U.S. had fallen behind in technology to Russians.
 - “defeat of the U.S.” according to *Life* magazine.
 - “Russians in control of outer space”
- Eisenhower named the 1st ever Presidential Science Advisor.
- But, Eisenhower was slow to react => wanted limited gov't.



Lyndon B. Johnson (1908-1973)



Running for the Senate in 1948



As 36th President

As Senate Majority Leader, Johnson began Senate hearings on satellite & missile programs

Vanguard Launch History

Embarrassing early failures but eventual success.

Explosion of Vanguard At Cape Canaveral On Dec. 6, 1957



The Vanguard rocket launched 3 satellites out of 11 launch attempts:

- Vanguard TV3 - December 6, 1957 - Failed to orbit 1.36 kg (3 lb) satellite
- Vanguard TV3 Backup - February 5, 1958 - Failed to orbit 1.36 kg (3 lb) satellite
- **Vanguard 1 - March 17, 1958 - Orbits 1.47 kg (3.25 lb) satellite**
- Vanguard TV5 - April 28, 1958 - Failed to orbit 9.98 kg (22 lb) satellite
- Vanguard SLV 1 - May 27, 1958 - Failed to orbit 9.98 kg (22 lb) satellite
- Vanguard SLV 2 - June 26, 1958 - Failed to orbit 9.98 kg (22 lb) satellite
- Vanguard SLV 3 - September 26, 1958 - Failed to orbit 9.98 kg (22 lb) satellite
- Vanguard SLV 5 - April 13, 1959 - Failed to orbit 10.3 kg (22 lb 11 oz) satellite
- **Vanguard 2 - February 17, 1959 - Orbits 9.8 kg (21 lb 10 oz) satellite**
- Vanguard SLV 6 - June 22, 1959 - Failed to orbit 10.3 kg (22 lb 11 oz) satellite
- **Vanguard 3 - September 18, 1959 - Orbits 22.7 kg (50 lb) satellite**

NASA Act of 1958

- Created NASA but conveyed all rights to U.S. government for inventions by NASA. Not changed until 1980 in Bayh-Dole Act.
- Resulting Eisenhower space policy after 1957:
 - Satellites for communications & spying. Flyovers?
 - Cover military uses with blanket of “space for peace”.
 - Who owns space and the Moon?
 - Stability, not disarmament.
 - Project Mercury born in 1959 (first U.S. manned program)



Mercury 7 Astronauts

Selected April, 1959

M. Scott Carpenter - Mercury-Atlas 7 (Boulder native)
L. Gordon Cooper - Mercury-Atlas 9, Gemini 5 (deceased)
John H. Glenn Jr. - Mercury-Atlas 6, STS-95
Virgil I. "Gus" Grissom - Mercury-Redstone 4, Gemini 3, Apollo 1
(deceased)
Walter M. Schirra - Mercury-Atlas 8, Gemini 6A, Apollo 7 (deceased)
Alan B. Shepard - Mercury-Redstone 3, Apollo 14 (deceased)
Donald K. "Deke" Slayton - Apollo-Soyuz Test Project (deceased)

Eisenhower's Farewell Address

January 17, 1961

- Need to maintain *balance* in & among national programs, public vs. private, cost & advantages, necessary vs. comfortable.
- Threats to the nation:
 - Guard against "unwarranted influence" by the "military-industrial complex".
 - Increasing share of research by federal gov't.
 - Danger of becoming "captive of the scientific-technological elite".