

How Did Houston Become Space City?

Presentation at Christ the King Lutheran Church Adult Education, Sunday April 22, 2018

Houston's only official nickname is Space City. This presentation will explore how in the 1960's a city better known for its oil industry became nearly synonymous with the US Space Program. The influence of Lyndon B. Johnson in establishing the National Aeronautics and Space Administration (NASA) in 1958 as Senate Majority Leader, and then of bringing the Manned Spacecraft Center to Houston in 1961, will be described. Johnson's continuing support for the space program led to a successful Moon landing in 1969, during the height of the Cold War and competition with the Soviet Union, including "Houston" being the first word transmitted from another world. His contributions led to the MSC being renamed after him upon his death in 1973. But Johnson's influence and legacy on the space program continued for many years after his death.

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We Are Here



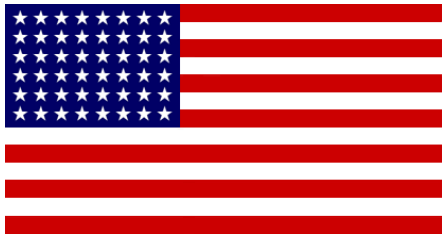
Christ the King



Origins of the Space Race



The Space Race became a technological battleground for prestige and influence between the two Cold War adversaries





Sputnik Launches the Space Race



On October 4, 1957, the Soviet Union launched Sputnik 1, beginning the Space Race



The initial Soviet announcement was terse and subdued



Reaction in the rest of the world was more enthusiastic and sometimes alarmist

Soviet Premier Khrushchev sensed a propaganda opportunity





Following Sputnik



On November 3, 1957, the Soviets launched Sputnik 2, with the dog Laika onboard – the first living organism in orbit
This was a “space spectacular” ordered by Khrushchev



The first US attempt to launch a satellite ended in disaster on December 6, 1957, when the Vanguard explodes mere seconds after liftoff



Press called it “Kaputnik”, “Flopnik”

The US finally successfully placed its first satellite Explorer 1 into orbit on January 31, 1958, using the Jupiter rocket

It discovered the VanAllen radiation belts





The Founding of NASA

American political reaction to Sputnik



Senate Majority Leader
Lyndon Johnson



Legislative Reference Service
national defense analyst
Eilene Galloway



NASA Administrator
T. Keith Glennan



STG and Project Mercury



- On November 3, 1958, NASA created the Space Task Group (STG), at the Langley Research Center in Virginia to plan for human space flights
- Project Mercury was an outgrowth of the STG
- In April 1959, seven men were selected as the Mercury astronauts
- By 1961, the STG had outgrown its facilities at Langley and was looking for a new home
- 23 sites around the country met the criteria for the new site, such as access to water transport, moderate climate, nearby jet service, supporting technical facilities and labor force, culturally attractive community with institution of higher education, strong utility support and at least 1000 acres of land
- Site selection would be a task for NASA's second Administrator, James Webb





“Poyekhali!”

On April 12, 1961, Soviet Air Force Senior Lieutenant Yury A. Gagarin became the first human in space

He landed 108 minutes later as a Major and entered the history books





“Let’s Light this Candle!”



On May 5, 1961, US Navy Captain Alan B. Shepard became the first American in space

He splashed down 15 minutes later after a suborbital flight





“Before this Decade is Out...”



On May 25, 1961, President John F. Kennedy, during an address to a joint session of Congress, committed the US to landing a man on the Moon before the end of the decade



President Kennedy reconfirmed the commitment in a speech at Rice University in Houston on September 12, 1962

“We choose to go to the Moon....”





Space and Vice President Johnson



- Kennedy's May 1961 Moon landing goal was based on LBJ's recommendation, in turn at JFK's request in April 20, 1961 memo
- LBJ was made head of the National Aeronautics and Space Council April 25, 1961, to advise the President on space issues
 - That position was previously held by President Eisenhower
- LBJ was instrumental in choosing the new site for the STG
 - Worked with Houston and Texas politicians and businessmen

Why Houston? 1960 pop < 1 mil; 7th largest city, smaller than Philly, Detroit and Baltimore and just above Cleveland; plus site selection visit happened right after Hurricane Carla; climate was actually a plus



JFK and LBJ visit NASA facilities in Houston in 1962



JFK and LBJ with Houston and Texas politicians



Manned Spacecraft Center



On September 19, 1961, NASA announced that the STG would be relocating to a new site to be built outside of Houston, officially named the Manned Spacecraft Center (MSC) on November 1



MSC SITE JANUARY 1962



Manned Spacecraft Center



While the site was under construction, the MSC employees worked in temporary buildings throughout Houston starting in September 1962



Site 14 VA Bldg



Site 9 Minneapolis Honeywell Bldg



Site 12 Peachy Bldg



Site 10



MSC Interim Headquarters



Site 5 Stahl & Myers



Site 13 Franklin Dev.



Site 7 Office City



Site 3 Rich Bldg



Manned Spacecraft Center



MSC officially opened for business on February 20, 1964, as construction at the site continued



FM 528 designated NASA Road 1 in 1965

Houston gets official nickname of Space City in 1967 and is the only official nickname

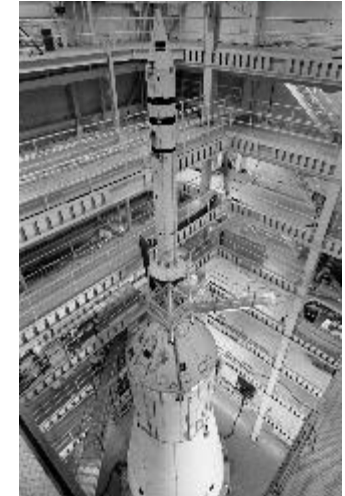


Manned Spacecraft Center



The MSC became an important center for NASA's journey to the Moon

- Mission Control – first flight controlled from MSC was Gemini-4 (June 1965)
- Facilities for testing of spacecraft
- Home office for NASA astronauts
- The Lunar Receiving Laboratory for curation of returning lunar samples and quarantine facility for returning crew



Vibration and Acoustic Test Facility



Space Environment Simulation Laboratory



Lunar Receiving Laboratory



Mission Control



Space and President Johnson



“I do not believe that this generation of Americans is willing to resign itself to going to bed each night by the light of a Communist moon.”

Following Kennedy’s assassination in November 1963, LBJ continued full support for Kennedy’s Moon landing effort

A week after the assassination, LBJ ordered Cape Canaveral and Apollo launch facilities in Florida to be renamed after Kennedy

However, competing priorities such as the Vietnam conflict and domestic programs began to erode away support for post-Moon landing space projects



LBJ with the Gemini-4 crew at the MSC in June 1965



LBJ visits the MSC in March 1968



Soviets stay ahead



Soviet space accomplishments 1959-1966

- January 1959 Luna 1 first probe to pass by the Moon, enter solar orbit
- September 1959 Luna 2 first probe to impact the Moon
- October 1959 Luna 3 first probe to photograph the Moon's farside
- August 1960 Sputnik 5 first animals (dogs) to be recovered from orbit
- April 1961 Vostok 1 first human space flight
- August 1961 Vostok 2 first day-long mission
- August 1962 Vostok 3 and 4 first group flight
- June 1963 Vostok 5 and 6 second group flight, 5-day record breaking mission and first woman in space
- October 1964 Voskhod 1 first three-person flight
- March 1965 Voskhod 2 first space walk (EVA)
- January 1966 Luna 9 first probe to soft land on the Moon and return pictures and data
- April 1966 Luna 10 first probe to orbit the Moon



America tries to keep up



American space accomplishments 1959-1964

- March 1959 Pioneer 4 first US probe to pass by the Moon, enter solar orbit
- January 1961 Mercury 2 first recovery of live animal (chimpanzee) after suborbital flight
- May 1961 Mercury 3 first US manned mission (suborbital)
- July 1961 Mercury 4 second suborbital flight
- November 1961 Mercury 5 first US recovery of animal (chimpanzee) from orbit
- February 1962 Mercury 6 first US astronaut to orbit the Earth
- April 1962 Ranger 4 first US probe to impact the Moon
- May 1962 Mercury 7 second orbital flight
- October 1962 Mercury 8 third orbital flight
- December 1962 Mariner 2 first successful fly-by of Venus
- May 1963 Mercury 9 first US day-long flight
- July 1964 Ranger 7 first probe to return close-up images of the Moon prior to impact



America pulls ahead

American space accomplishments 1965-1966

- March 1965 Gemini 3 first US 2-person flight and first orbital maneuvers
- June 1965 Gemini 4 first US space walk (EVA) and first flight to be controlled from Mission Control in Houston
- July 1965 Mariner 4 first successful fly-by of Mars, sent 22 photos
- August 1965 Gemini 5 8-day mission breaks Soviet record and first use of fuel cells
- December 1965 Gemini 7 and 6 first rendezvous in space and Gemini 7 sets 14-day endurance record
- March 1966 Gemini 8 first docking in space (and emergency return)
- May 1966 Surveyor 1 first US probe to soft land on the Moon
- June 1966 Gemini 9 rendezvous and EVA mission
- July 1966 Gemini 10 docking with two targets and EVAs
- August 1966 Lunar Orbiter 1 first US probe to orbit the Moon
- September 1966 Gemini 11 record altitude, docking and EVAs
- November 1966 Gemini 12 record altitude, docking and first truly successful EVAs



Tragedy Hits Both Sides

On January 27, 1967, during a rehearsal for their upcoming Apollo 1 mission, astronauts Gus Grissom, Ed White and Roger Chaffee are killed by a flash fire
US human space flight program halted for 18 months





Tragedy Hits Both Sides

On April 24, 1967, cosmonaut Vladimir Komarov is killed when his Soyuz 1 spacecraft crashes after a 1-day flight

The mission, to be part of a “space spectacular” after a 2-year hiatus in Soviet human space flights, was plagued with problems from the start

Soviet human space flight program halted for 16 months





Soviet pressure



How close were they really?

- Satellite imagery showed the N1 on the launch pad in September 1968
 - Turns out it was just a mockup
- Zond 5 completed an unmanned circumlunar flight in September 1968, recovered in the Indian Ocean
 - Turns out the guidance system failed and it made a high-g ballistic entry
- Zond 6 completed an unmanned circumlunar flight in November 1968, recovered in USSR
 - Turns out it depressurized and crashed
- Intelligence reports indicated a manned Zond would fly a circumlunar mission in December 1968
 - It made it as far as the launch pad, but managers cancelled it due to the problems on earlier flights and its rocket





US Closes in on the Moon



November 1967 Apollo 4 first flight of the Saturn 5 (unmanned)

January 1968 Apollo 5 first flight of the Lunar Module (unmanned)

April 1968 Apollo 6 second flight of the Saturn 5 (unmanned)



October 1968 Apollo 7 first manned Apollo flight



December 1968 Apollo 8 first manned flight to orbit the Moon



March 1969 Apollo 9 first test of the Lunar Module (in Earth orbit)



May 1969 Apollo 10 dress rehearsal of the Moon landing





Apollo 11



On July 16, 1969, Apollo 11 launched from the Kennedy Space Center



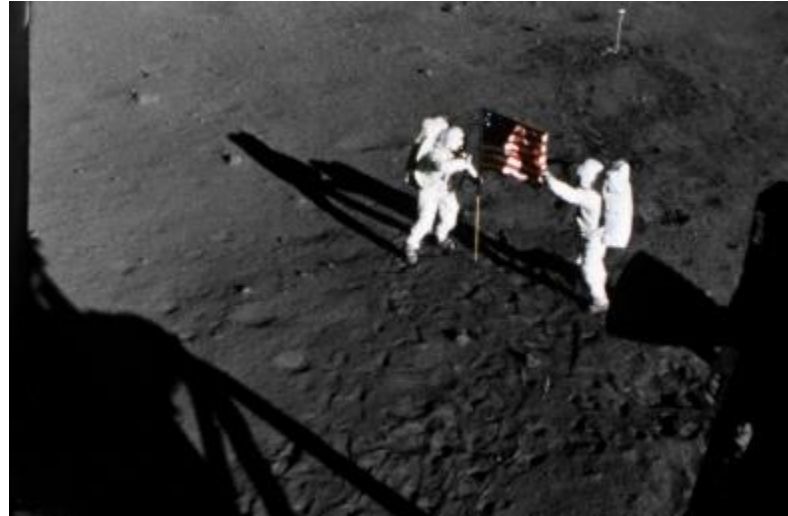
Former President Johnson watched the launch with Lady Bird and Vice President Agnew



Four days later, the Lunar Module *Eagle* landed on the Moon



One Giant Leap



The goal was met...

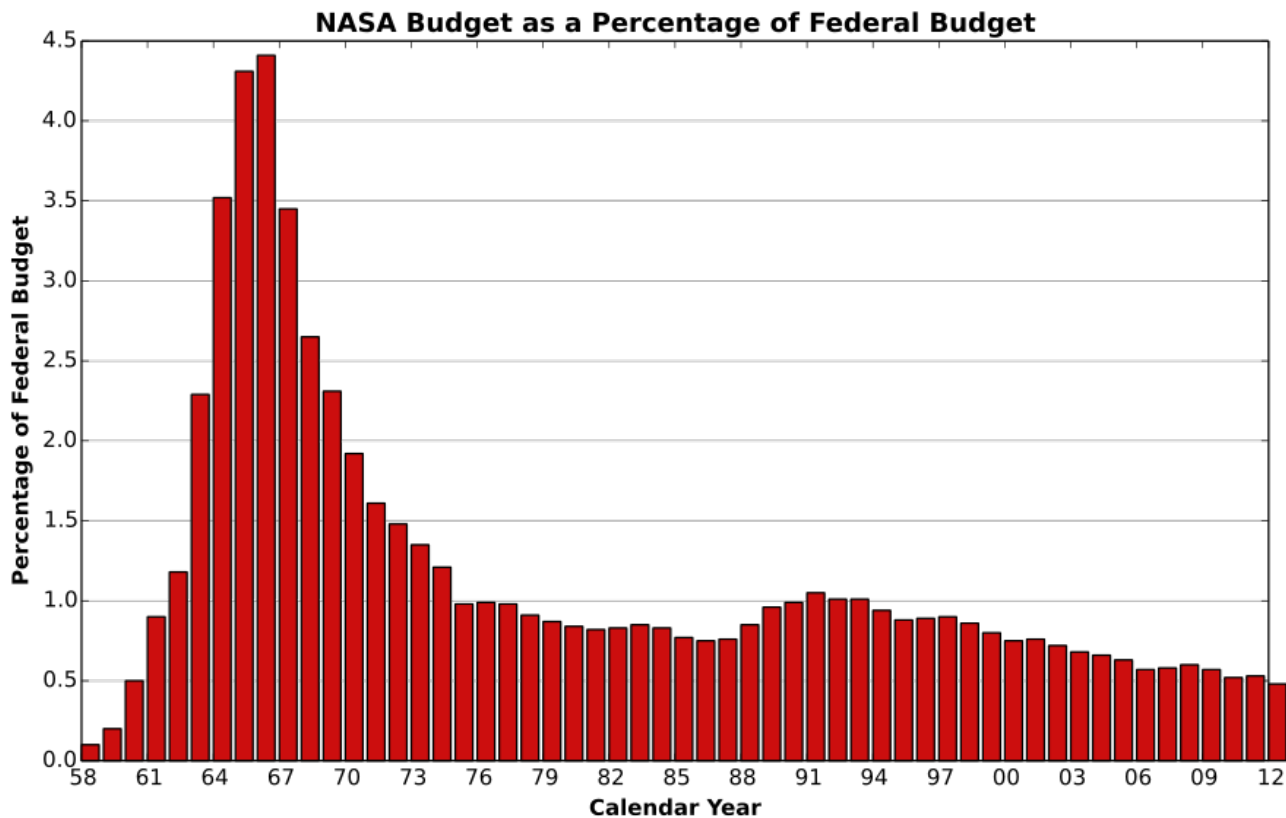
...and the race was won



And After Apollo?

NASA budget peaked in 1966, three years before Apollo 11

Despite strong pressure from the scientific community for a strong post-Apollo space program, once the Moon landing was accomplished there was limited support and too many competing priorities





MSC renamed JSC



LBJ passed away on January 22, 1973
By act of the US Senate, the MSC was
renamed the Lyndon B. Johnson Space
Center on February 17, 1973
Formal dedication ceremony was held
on August 27, 1973, attended by Lady
Bird Johnson and family





JSC Today





LBJ's lasting legacy

A student from South Carolina wanted to attend the US Naval Academy



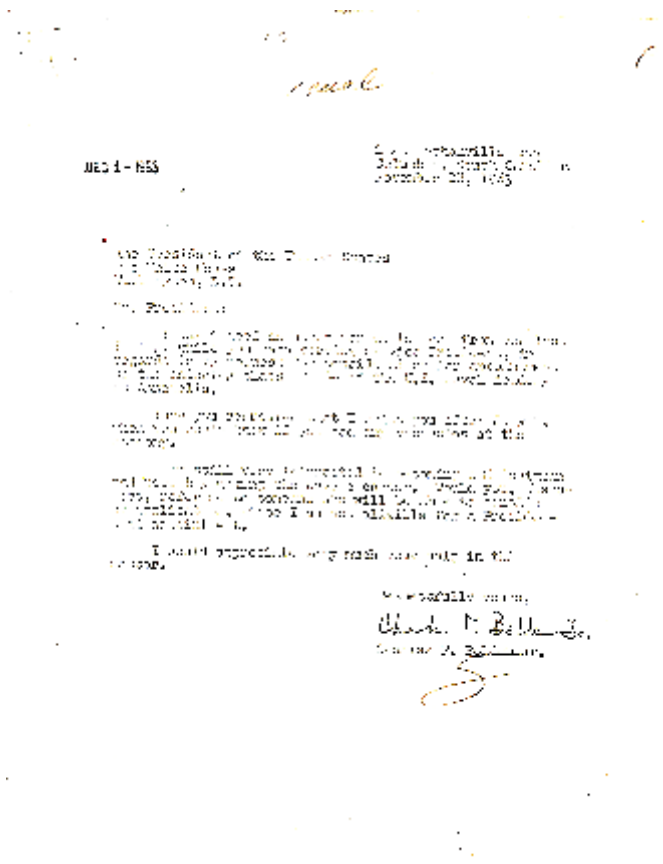
US Naval Academy
1964-1968



NASA
Astronaut
1980-1994



NASA's 12th
Administrator
2009-2017



Questions?

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