Yes, we really did go there... July 2009 imagery of Fra Mauro base from Lunar Reconnaissance Orbiter.
Sergey Korolev's Program

At Podlipki, in the Moscow suburbs, Korolev's factory churns out rockets and satellites

- Sputnik
- Luna moon probes
- Vostok spaceships
- Mars and Venus probes
- Spy satellites
America's answer: the captured Nazi rocket team led by Dr. Wernher von Braun, based in Huntsville, Alabama.
America's answer: naturalized US citizen
Dr. Wernher von Braun, based in Huntsville, Alabama
October 1942: First into space

The A-4 (V-2) rocket reaches over 50 miles high – the first human artifact in space.

This German missile, ancestor of the Scud and the Shuttle, was designed to hit London and was later mass-produced by concentration camp labor – but the general in charge said at its first launch:

“Today the Space Age is born”. 
First Earth Satellite: Sputnik Oct 1957

First Living Being in Orbit: Laika, Nov 1957

First Probe to Solar orbit: Luna-1 Jan 1959

First Probe to hit Moon: Luna-2 Sep 1959

First intact return to Earth from orbit: Discoverer 13 Aug 1960

First human in space: Yuriy Gagarin in Vostok-1 Apr 1961

Is America losing the Space Race? Time to up the stakes dramatically....
I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the Moon and returning him safely to the Earth.

John F Kennedy, address to Congress, May 25, 1961
<table>
<thead>
<tr>
<th>USSR</th>
<th>USA</th>
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<tbody>
<tr>
<td><strong>SEP 1958:</strong> E-1 No. 1, <strong>LAUNCH FAILURE</strong></td>
<td><strong>AUG 1958:</strong> ABLE I PIONEER, <strong>LAUNCH FAILURE</strong></td>
</tr>
<tr>
<td><strong>OCT 1958:</strong> E-1 No. 2, <strong>LAUNCH FAILURE</strong></td>
<td><strong>OCT 1958:</strong> ABLE I PIONEER, <strong>ORBIT TOO LOW</strong></td>
</tr>
<tr>
<td><strong>DEC 1958:</strong> E-1 No. 3, <strong>LAUNCH FAILURE</strong></td>
<td><strong>NOV 1958:</strong> ABLE I PIONEER (PIONEER 2), <strong>LAUNCH FAILURE</strong></td>
</tr>
<tr>
<td><strong>JAN 1959:</strong> E-1 No. 4, LUNA-1, <strong>MISSED MOON, SOLAR ORBIT</strong></td>
<td><strong>DEC 1958:</strong> PIONEER 3, <strong>ORBIT TOO LOW</strong></td>
</tr>
<tr>
<td><strong>JUN 1959:</strong> E-1A No. 5, <strong>LAUNCH FAILURE</strong></td>
<td><strong>MAR 1959:</strong> PIONEER 4, <strong>MISSED MOON, SOLAR ORBIT</strong></td>
</tr>
<tr>
<td><strong>SEP 1959:</strong> E-1A No. 7, LUNA-2, <strong>HIT MOON</strong></td>
<td><strong>SEP 1959:</strong> ABLE IVA, <strong>BLEW UP ON PAD</strong></td>
</tr>
<tr>
<td><strong>OCT 1959:</strong> E-2A No. 1, LUNA-3, <strong>MAPPED LUNAR FARSIDE</strong></td>
<td><strong>NOV 1959:</strong> ABLE IVB, <strong>LAUNCH FAILURE</strong></td>
</tr>
<tr>
<td><strong>APR 1960:</strong> E-3 No. 1, <strong>ORBIT TOO LOW</strong></td>
<td><strong>SEP 1960:</strong> ABLE VA, <strong>LAUNCH FAILURE</strong></td>
</tr>
<tr>
<td><strong>APR 1960:</strong> E-3 No. 2, <strong>LAUNCH FAILURE</strong></td>
<td><strong>DEC 1960:</strong> ABLE VB, <strong>LAUNCH FAILURE</strong></td>
</tr>
</tbody>
</table>
JUNE 1962: Von Braun accepts John Houbolt's scheme for Lunar Orbit Rendezvous, so the enormous Nova rocket is not needed...
Voskhod 2
First Space Walk
March 1965
1965-66: Gemini rendezvous and docking
1965-66: Gemini spacewalks

Gemini IV: Ed White
Gemini XI: Dick Gordon

Gemini IX: Gene Cernan
Gemini XII: Buzz Aldrin

Gemini X: Mike Collins
1961-1968

Test launches of the Saturn rocket:
Saturn I Block I
Saturn I Block II
Saturn IB
Saturn V
1961-1966 MOON PROGRAM – USSR

JAN 1963: LUNA, STUCK IN EARTH ORBIT
FEB 1963: LUNA, ROCKET FAILED, CRASHED IN PACIFIC
APR 1963: LUNA-4, MISSED MOON
MAR 1964: LUNA, ROCKET FAILED, CRASHED IN PACIFIC
APR 1964: LUNA, ROCKET FAILED, CRASHED IN PACIFIC
MAR 1965: LUNA (K-60), STUCK IN EARTH ORBIT
APR 1965: LUNA, FAILED TO REACH EARTH ORBIT
MAY 1965: LUNA-5, CRASHED ON MOON
JUN 1965: LUNA 6, MISSED MOON
JUL 1965: PROTON TEST FLIGHT, PROTON-1
OCT 1965: LUNA 7, CRASHED ON MOON
NOV 1965, PROTON TEST FLIGHT, PROTON-2
DEC 1965, LUNA 8, CRASHED ON MOON
JAN 1966: LUNA-9, LANDED ON MOON
MAR 1966: LUNA-10, ORBITED MOON
MAR 1966: PROTON TEST FLIGHT, FAILED
JUL 1966: PROTON TEST FLIGHT, PROTON-3
AUG 1966: LUNA-11, ORBITED MOON BUT CONTROL LOST
OCT 1966: LUNA-12, ORBITED MOON
DEC 1966: LUNA-13, LANDED ON MOON

USA

AUG 1961: RANGER 1, FAILED
OCT 1961: SATURN SA-1 ROCKET TEST
NOV 1961: RANGER 2, FAILED
JAN 1962: RANGER 3, MISSED MOON
APR 1962: RANGER 4, HIT FARSIDE
APR 1962: SATURN SA-2 ROCKET TEST
OCT 1962: RANGER 5, MISSED MOON
NOV 1962: SATURN SA-3 ROCKET TEST
MAR 1963: SATURN SA-4 ROCKET TEST
JAN 1964: SATURN SA-5 ROCKET TEST
JAN 1964: RANGER 6: HIT MOON, CAMERA FAILED
APR 1964: FIRE 1, REENTRY TEST
MAY 1964: SATURN SA-6 ROCKET TEST
JUL 1964: RANGER 7: LUNAR IMPACT IMAGING
SEP 1964: SATURN SA-7 ROCKET TEST
DEC 1964: CENTAUR AC-4, PARKING ORBIT TEST
FEB 1965: SATURN SA-9 ROCKET TEST
FEB 1965: RANGER 8, LUNAR IMPACT IMAGING
MAR 1965: RANGER 9, LUNAR IMPACT IMAGING
MAY 1965: SATURN SA-8 ROCKET TEST
MAY 1965: FIRE 2, REENTRY TEST
JUL 1965: SATURN SA-10 ROCKET TEST
AUG 1965: CENTAUR AC-6, ROCKET TEST
FEB 1966: APOLLO-SATURN 201 TEST FLIGHT
APR 1966: CENTAUR AC-8, PARKING ORBIT TEST
MAY 1966: SURVEYOR 1, LANDED ON MOON
JUL 1966: EXPLORER 33, SCIENCE PROBE MISSED MOON
JUL 1966: APOLLO-SATURN 203 TEST FLIGHT
AUG 1966: LUNAR ORBITER 1, MAPPED MOON
AUG 1966: APOLLO-SATURN 202 TEST FLIGHT
SEP 1966: SURVEYOR 2, CRASHED ON MOON
OCT 1966: CENTAUR AC-9, PARKING ORBIT TEST
NOV 1966: LUNAR ORBITER 2, MAPPED MOON
The Apollo AS-204 Fire ("Apollo 1")

January 27, 1967

Gus Grissom, Ed White, Roger Chaffee
Soyuz-1
Apr 1967

New spaceship design
Designed for lunar flight
Earth orbit test by test pilot Vladimir Komarov
Solar panel failed to open, spacecraft tumbling
Emergency reentry and crash landing
First fatality during a space flight
1967 MOON PROGRAM – USSR

MARCH:
ZOND (KOSMOS-146): PROTON RESTART TEST, L-1 SPACESHIP REENTRY TEST

APRIL:
ZOND (KOSMOS-154): RESTART AND REENTRY TEST, FAILED TO RESTART
SOYUZ-1 TEST FLIGHT: FAILED ON ORBIT, PILOT KILLED ON LANDING

MAY:
LUNA E-6 (KOSMOS-159), HIGH EARTH ORBIT COMMUNICATIONS TEST, ORBIT LOW BUT OPERATED OK?

SEPTEMBER:
ZOND (PROTON) BLEW UP ON ASCENT

OCTOBER:
ROBOT DOCKING TEST, KOSMOS-186/188 FIRST AUTOMATIC RENDEZVOUS/DOCKING

NOVEMBER:
ZOND (PROTON) BLEW UP ON ASCENT

USA

JANUARY:
APOLLO 204 GROUND TRAINING TEST...
3 ASTRONAUTS DIE IN FIRE

FEBRUARY:
LUNAR ORBITER 3, MAPPED MOON

APRIL:
SURVEYOR 3, LANDED ON MOON

MAY:
LUNAR ORBITER 4, MAPPED MOON

JULY:
SURVEYOR 4 LUNAR PROBE, CRASHED
EXPLORER 35, LUNAR ORBIT SCIENCE PROBE - OPERATED FOR 6 YEARS

AUGUST
LUNAR ORBITER 5, MAPPED MOON

SEPTEMBER
SURVEYOR 5, LANDED ON MOON

OCTOBER:
APOLLO 7 – FIRST EARTH ORBIT TEST OF APOLLO CSM, FIRST ASTRONAUT CREW ON APOLLO - SUCCESS

NOVEMBER:
SURVEYOR 6, LANDED ON MOON
APOLLO 4: FIRST SATURN V TEST FLIGHT, APOLLO HIGH SPEED REENTRY - SUCCESS
The Flight of Zond-5  Sep 14-21, 1968
First Return To Earth From Lunar Vicinity
First Terrestrial Creatures in Interplanetary Flight

- Launch into Earth orbit
- TLI (Trans Lunar Injection) rocket burn towards the Moon
- Fly around lunar farside (but not into a closed lunar orbit)
- Pass 1200 mi (1950 km) from lunar surface
- Coast back down towards Earth
- Reentry at 25000 mph over South Pole
- Splashdown in Indian Ocean, recovered by Soviet Navy
Space Complex L-1
With Spaceship 7K-L1 (Zond) and Booster Stage “Block D”

Compare 7K-L1 (above) with Soyuz (left)
Apollo 8, Dec 1968:  
First humans to leave Earth's gravitational sphere of influence  
First humans to orbit the Moon
1968 MOON PROGRAM – USSR

FEBRUARY
LUNA E-6LS ORBITER – MOLNIYA ROCKET
FAILED TO REACH EARTH ORBIT

MARCH
ZOND-4: REENTRY TEST FROM LUNAR DISTANCE:
REENTRY FAILED

APRIL
LUNA-14: LUNA E-6LS ORBITER
ZOND: PROTON FAILED TO REACH ORBIT

JULY
ZOND: PROTON BLEW UP ON LAUNCH PAD

SEPTEMBER
ZOND 5 – SUCCESSFUL FLYBY/RETURN

NOVEMBER
ZOND 6 – SUCCESSFUL FLYBY, BUT
CRASHED ON LANDING

USA

JANUARY:
SURVEYOR 7: ROBOT LUNAR LANDING

APOLLO 5, EARTH ORBITAL TEST OF LUNAR MODULE,
SUCCESS

APRIL:
APOLLO 6 – TEST LAUNCH OF SATURN V, REENTRY TEST OF
APOLLO -
VIBRATION AND RESTART PROBLEMS,
BUT SUCCESSFUL APOLLO ORBIT AND REENTRY

OCTOBER:
APOLLO 7 – FIRST EARTH ORBIT TEST OF APOLLO CSM,
FIRST ASTRONAUT CREW ON APOLLO -
SUCCESS

DECEMBER
APOLLO 8 – FIRST HUMANS TO ORBIT THE MOON AND
RETURN TO EARTH
1969 MOON PROGRAM – USSR

USA

JANUARY
ZOND - PROTON FAILED TO REACH ORBIT

FEBRUARY
LUNOKHOD – PROTON BLEW UP DURING LAUNCH
N-1 MOON ROCKET - FAILED DURING TEST LAUNCH

JUNE
LUNA SAMPLE RETURN - PROTON FAILED TO REACH ORBIT

JULY
N-1 MOON ROCKET - BLEW UP ON LAUNCH PAD
LUNA SAMPLE RETURN - CRASHED ON MOON (LUNA 15)

AUGUST
ZOND 7 – SUCCESSFUL FLYBY/RETURN

SEPTEMBER
LUNA SAMPLE RETURN - STUCK IN EARTH ORBIT (K300)

OCTOBER
LUNA SAMPLE RETURN - STUCK IN EARTH ORBIT (K305)

NOVEMBER
HEAVY ZOND – PROTON FAILED TO REACH ORBIT

MARCH
APOLLO 9 – EARTH ORBITAL TEST FLIGHT OF CSM AND LM

MAY
APOLLO 10 – DRESS REHEARSAL FLIGHT FOR LANDING

JULY
APOLLO 11 – FIRST LUNAR LANDING BY HUMANS

NOVEMBER
APOLLO 12 – SECOND LUNAR LANDING
1969 – Soviet N-1 Moon Rocket
MAY 20, 1969: SATURN 506 ROLLS TO PAD 39A
SPACECRAFT APOLLO 11 IS ABOARD
Launch vehicle: SATURN V  serial number SA-506

First stage: S-IC-506 2280 t
Second stage: S-II-6 480 t
Third stage: S-IVB-506 120 t

Apollo Spacecraft: Apollo 11

SC Lunar Adapter: SLA-14 1.2 t
Lunar Module: LM 5 “Eagle” 5t
Lunar Module Descent Stage: LM-5 DS 10t
Command Module: CM-107 “Columbia” 5t
Service Module: SM-107 23t
Escape Tower: LES-107 4

Total – Apollo spacecraft 50 t
Total – Apollo/Saturn V 2902 t
Returned to Earth 5 t
SUNDAY JULY 13, 1969

STATE TEST RANGE No. 5
KAZAKH SOVIET
SOCIALIST REPUBLIC

LAUNCH OF ROCKET
8K82K No. 242-01

SPACE PROBE E-8-5 No.
401 ON TRANSLUNAR
TRAJECTORY

TASS ANNOUNCES
LAUNCH OF "LUNA-15"
WED, JUL 16, 1969, 1:32pm GMT: APOLLO 11 LAUNCHES FROM KENNEDY SPACE CENTER, FLORIDA
Wed. July 16, 4:22pm GMT      TLI: Translunar Injection
Apollo spacecraft and Saturn S-IVB third stage reach near-escape velocity
Orbit 262 x 565954 km
Wed, Jul 16, 1969, 4:47pm GMT – Transposition and Docking
Columbia separates from rocket, turns around, docks with Eagle
Lunar module still attached to Saturn rocket stage
Seen from approaching command module
Wed, Jul 16, 1969, 5:49pm GMT: Columbia and Eagle docked, Apollo 11 spaceship backs out from the Saturn S-IVB stage
On July 17, 1969 the Soviet automated probe Luna-15 was introduced into a near-moon orbit and thus became another artificial satellite of the Moon.

Pravda, July 18, 1969
Sat. Jul 19, 1969, 5:27pm: Apollo 11 in orbit around the Moon
111 x 311 km elliptical path adjusted at 9:43pm to 100 x 122 km
Luna-15

Sun July 20, 2:16 pm

Luna-15 lowers orbit to only 16 km from the surface
Luna-15

July 21, 3:47 pm

Luna-15 begins descent to lunar surface towards Mare Crisium ("the Sea of Crises")
Luna-15

July 21, 3:51 pm

TASS ANNOUNCEMENT: AUTOMATED PROBE LUNA-15 Completes Flight

“The probe left the orbit and reached the lunar surface at a predetermined place. The work of the probe was over at 1851 hours Moscow time.”

In England, Jodrell Bank radio observatory tracks the probe's signals, and deduces that Luna-15 landed on the Moon at a speed of 300 mph. The braking engines failed to operate...

The last-minute challenge to Apollo 11 is over!
WHAT NEARLY HAPPENED: LUNA-16, SEPTEMBER 1970
Sun. Jul 20, 5:45pm: Columbia undocks from Eagle Command and Service Module (CSM) and Lunar Module (LM) in separate lunar orbit.
Sun Jul 20, 1969:  8:05 pm: Powered Descent
15 km above the Moon
Sun Jul 20 1969, 8:17pm GMT: TOUCHDOWN

Houston: “30 seconds” [of fuel left]
Eagle: “Contact light.. OK, engine stop.....”
Houston: “We copy you down, Eagle”.
Eagle: “Houston, Tranquility Base here... the Eagle has landed.”
Monday July 21, 2:50am  Armstrong out the hatch and on the ladder

This photo actually from 3:12am, showing Aldrin coming down the ladder
“That's one small step for (a) man,
One giant leap for mankind”
Neil Armstrong aboard Eagle after the moonwalk
Buzz Aldrin aboard Eagle after the moonwalk
Mon Jul 21, 5:54pm: Eagle's Ascent Stage lifts off, using Descent Stage as launch pad.
Mon Jul 21, 9:17pm:
Rendezvous with Mike Collins in Columbia
Tue Jul 22, 04:58 am
En route to Earth
Thurs Jul 24, 4:50pm
Splashdown in the Pacific

Apollo 17 – Dec 1972
Command Module “Columbia”
Pacific Ocean, 13 N 169 W
July 24, 1969: “... and returning him safely to the Earth”.
APOLLO 12 AT SURVEYOR 3 – Nov 1969
APOLLO 13 – Apr 1970
APOLLO 14 AT FRA MAURO – Feb 1971

APOLLO 15 AT HADLEY – Jul 1971
APOLLO 16 AT DESCARTES – May 1972
APOLLO 17 AT TAURUS-LITTROW – Dec 1972
YES – WE REALLY WENT TO THE MOON.

- THE SATURN V EXISTS. THE VAB EXISTS. THE ROCKET FACTORIES EXIST.
- THE DOCUMENTATION EXISTS, IN DETAIL. WE KNEW HOW TO DO IT.
- THOUSANDS OF PEOPLE WORKED ON APOLLO.
- PEOPLE SAW THE ROCKETS GO UP! WHERE DID THEY GO?
  THEY WENT TO THE MOON! WE SAW THE SPACECRAFT IN TELESCOPES
  HALF WAY TO THE MOON.

APR 1970: Paul Maley
photo of water dump from Apollo 13 en route to the Moon

APR 1970: Apollo
13 reentry at 2500 mph
BOGUS IDEAS:

Van Allen Belt radiation and solar flares would have killed the astronauts.
BOGUS! Went through belts at 25000 mph, taking less than an hour – low total dose.
Solar flares monitored by NRL satellites, no big flares during Apollo flights.

Photos are faked because daytime Moon temperature is 250F and film would melt.
BOGUS! No air, temperature experienced by camera is not 250F, white paint reflects the heat, and special Kodak Estar film used doesn’t melt until 490F anyway.

Sky is dark but no stars are visible in photos, so must be faked.
BOGUS! Sky is dark, but Moon in sunlight, so exposure times v short to avoid glare.
Longer exposures would show stars but wash out detail on Moon and astronauts.

Shadows do not line up, and astronauts visible in shadow, so must be faked.
BOGUS! Shadow apparent directions are as expected given bumps in topography, and astronauts illuminated by reflected light from elsewhere on surface (as confirmed by experiments)

No rocket plume visible from Ascent Stage liftoff, so must be faked.
BOGUS! N2O4/Hydrazine propellants burn with transparent flame.

The Moon rocks were really returned by robotic spacecraft.
BOGUS! 3 Soviet Luna robot probes returned 0.3 kg in total. Apollo returned over 350 kg. To do this would need a robotic mission almost as massive and expensive as Apollo, and we’d have noticed it. Easier to send astros?

No blast crater underneath the LM despite big rocket engine, but: dust not blown away where astronaut footprints are.
BOGUS! LM descent engine throttled down low for landing, blew away dust but only directly under LM (since no air to spread the blast) and did not damage underlying rock.