

Space: the last frontier. At least it was until humankind dived into the unknown and they started exploring it during the 1950s and 1960s. The final piece in a puzzle millions of years were Sojourns away from our home planet in the making and represented humankind's whole mastery over nature and its destiny.

Nothing was determined during those critical decades. Nobody was aware if space travel was actually possible; spaceflight technology just started then and there were thousands of challenges to fix. Thankfully, there was no lack of curious experts or serious funding. With the Cold War happening, the US and USSR were devoted to outdo each other in space firsts.

From early on, the Holy Grail for both superpowers was to send a person on the moon – however, in the late 1950s; this was a bit more than a pipe dream. However, as a result of ambition, determination and a fair share of luck, this dream would become a reality for the US in about just ten years.

The space race was a consequence of the Cold War.

On the 5th of 1957 in the morning, with the Cold War in full swing, America woke up to disturbing information. A 184-pound steel ball was successfully launched into orbit around Earth by the Soviets. It was named Sputnik 1 and it housed two main radio transmitters; it was the first-ever man-made satellite. The USSR had beaten its mortal enemy to space.

This appeared as a bad shock to the US, which had gotten used to its own technological superiority. Worse still, during its orbit Sputnik passed directly over the US seven times daily. The space race was a culture war, with each side attempting to show the superiority of its own belief; however, it was also a threat to national security.

About four weeks after a military missile-launch facility at Florida's Cape Canaveral, the Americans replied with their own attempted satellite launch. This was broadcasted live on TV and the launch of the 70-foot rocket only resulted in an explosion as millions of viewers watched it. The small satellite, suspended across the rocket, escaped the fireball and rolled into bushes.

The Americans were humbled and they'd have to get accustomed to the feeling of the USSR laying space records. Also, the US playing catch-up would turn out to be a regular subject of the early space race.

The following year on the 31st of January 1958, the Americans succeeded in launching their own satellite and it was called Explorer 1. However, it was instantly outshined by Sputnik 3 which the Soviet launched on the 5th of May 15. Sputnik 3 was a 2,926-pound satellite and was far larger and had a range of advanced research equipment.

The first 6 months of 1958 was categorized by different launches of satellites from American and Soviet satellite launches –maybe attempts anyway. The US failed at least five times while launching their satellites; however, there was only one failed attempt from the USSR side. Because the Kremlin never reported the failed attempts, no one was aware of these Soviet failures for decades. People on both sides of the Iron Curtain believed that the USSR's space program was disaster-proof.

At the end of 1958, it was becoming very obvious to both sides on what the next objective would be which is to send a human into space and make sure he returns safely. Any side that succeeds in this would get a huge propaganda victory.

Therefore, on the 17th of December 1958, the US declared a means that will do just that. And it was called project Mercury which would be run by the new civilian-led US space agency NASA, which was formed about eight weeks before.

A massive series of issues had to be sorted for Project Mercury.

All thanks to Wernher von Braun who is an ex-Nazi rocket scientist who was brought to the US at the end of WWII. The US already had a rocket booster known as the Mercury-Redstone. This rocket booster was strong enough to send a human into the suborbital flight which includes getting to the outer space but not finishing a full orbit around Earth.

However, at this point, the Soviets had a more powerful rocket called the Sputnik-PS. This enabled a spacecraft sitting atop the rocket to complete a full orbit around Earth. Also, on the 3rd of November 1957, the USSR attained another space first in which a stray dog called Laika became the first living animal to be sent into orbit.

Just like the Soviet method, the first Project Mercury missions were test flights involving animal crews. The effects of zero gravity on the human body were not known during that point. Some doctors assumed that gravity was necessary for specific body functions while others were concerned about the risks of space radiation no longer blocked by Earth's atmosphere anymore.

However, back to the timeline. NASA had a rocket that was capable of suborbital flight. However, the flight plan which is the detailed information on the launch, reentry, and recovery needed to be advanced.

This task was given to a NASA flight-research engineer called Christopher Columbus Kraft Jr. and his flight-operations division. This division would entirely control the spacecraft, check its progress and monitor the biomedical readings of its crew.

At that point, NASA's ground support involved a basic solid blockhouse close to the launchpad. Kraft came to the realization that this was inadequate for the hard Project Mercury missions, and the notion of a mission control center started to take place. The function of the flight director, who ordered the mission control and made all final decisions, was also established, with Kraft taking on the role.

Although NASA might've had the booster rocket, they still had to create a capsule to sit atop it.

Therefore, von Braun and his team worked alongside an aerospace engineer named Max Faget to design it. The biggest question was reentry which is how could they design a capsule that is capable of tolerating the extreme heat of about 3,500 degrees Fahrenheit – and pressure experienced upon reentry into Earth's atmosphere?

The first idea that was given was a pointed, aerodynamic shape. However, Faget's colleagues soon suggested that meteors with flat, rounded noses mostly withstood the furnace-like heat of the fall. Finally, they choose a blunt-nosed shape which slowed down the capsule and formed a shock wave around the craft, refracting a huge amount of heat.

Now they had to test it.

NASA's stern culture of safety and quality control was created during Project Mercury.

It's very difficult to understand the preparation that goes into spaceflight missions particularly those with a crew. For each moment spent in space, an indescribable number of hours are spent on the ground calculating, designing, building, creating, testing and simulating. Also, Mercury was the project on which these procedures started.

The design for the cone-shaped blunt-nosed Mercury capsule was completed after modeling on basic computers and uncountable heat, drop, spin-tunnel and wind-tunnel tests. It consisted of a light, however strong titanium outer layer, and a thick heat-resistant aluminum shield intended to burn away during reentry to Earth. At 21,000 feet it would use a parachute to calm its descent, and another at 10,000 feet to slow down for landing.

This obsession with scrupulousness extended to every part of the project and would become a vital feature of NASA's culture. Almost all the systems of the Mercury capsule, from its mechanics to electrics, had at least one backup. All unit of the craft and every system on the ground was tested several times more than strictly required by the mission.

Also, this meticulous eye for safety, strength, and reliability was revealed in the recruitment and training of Mercury's human crew which is the first astronauts. At first, it was hard to determine who they should hire as the job had never been done before. Therefore, there were no known job details or requirements. However, in December 1958, President Eisenhower ordered that just US test pilots could apply for the job.

This was reasonable for a lot of reasons. These men were the best pilots around and they were in charge of testing newly created aircraft for flaws. Also, they were already accustomed to stressful working settings and they could maintain their cool while operating complex cockpits. Most of all, though they were numb to death, the death rate for US test pilots was 25% in 1952.

Apart from test pilot credentials, Mercury's job requirements involved 1,500 hours of flying time, great physical condition, a bachelor's degree in engineering or equivalent and a height greater than 5 feet 11 inches in order to enable men to fit inside the tiny capsule. There were about 110 men in the country who met these requirements and seventy applied.

Through a tough selection process that comprised of long interviews, psychological examination, medical exams, and fitness tests, this number was reduced to seven future astronauts named the Mercury Seven. The people were Scott Carpenter, Gordon Cooper, John Glenn, Virgil Grissom, Walter Schirra, Alan Shepard, and Donald Slayton.

No one thought that all seven would survive Project Mercury.

Defeating the Americans again, the Soviets sent the first human into space.

Even with the recruitment of the Mercury Seven, humans were not used for the first tests, instead, animals were used.

Sam was the first primate to fly on a Mercury flight, on the 4th of December 1959, a rhesus macaque flew 53 miles up to test the capsule's emergency escape system. He was safely recovered from the Pacific Ocean. On the 29th of November 1961, the last nonhuman Mercury mission happened and a chimpanzee called Enos successfully spent three hours in space and he also survived.

The USSR had even accomplished something even more extraordinary by the time Enos's Mercury capsule landed into the ocean,

On the 12th of April 1961, Soviet air force lieutenant named Yuri Gagarin took off from the steppes of southern Kazakhstan. In his spacecraft named Vostok 1, Gagarin traveled past Earth's atmosphere and he orbited the planet for one full revolution which is a massive accomplishment, given that early Mercury missions were targeting suborbital spaceflight.

NASA was upset with the news, and this was another cultural victory for the USSR, approving its superior rank in the space race.

Despite that, Project Mercury continued working, and on the 5th of May 1961, Alan Shepard was disappointed that Gagarin had beaten him to it and he became the second human being to get to space. His mission was called Mercury-Redstone 7 (MR-7), it got to a height of 116 miles, which lasted for 15 minutes and it was a complete success. This was Broadcasted live on television to 45 million Americans, MR-7 kindled a public passion for space exploration and pacified damaged American egos.

There would be five more operated Mercury missions over the next two years all of which were successful, a testament to NASA's strict culture of safety and reliability. However, after MR-7 landed, NASA and the American nation instantly set their sights higher.

Three weeks after Alan Shepard's mission, then-President Kennedy declared to Congress that he believed the US should commit itself to send a man on the moon by the end of the decade. This was a huge work that required designing and development of more advanced rockets and spacecraft, new factories and transportation routes, and a group of new experts to overcome a laundry list of problems. However, this project was supported by both mass public and political support. Then, in 1962 Congress accepted a shocking \$1.62-billion-dollar budget for NASA.

However, NASA basically didn't have the knowledge, technology or expertise for a moon landing yet. A crucial bridging project would be needed in order to achieve this.

This was known as Project Gemini.

The most NASA's innovative and ambitious project yet was Project Gemini.

Even with the last few planned Mercury missions not finished yet, NASA started its new Gemini program – after all, they wanted to be on the same level as the Soviets! Far from being just an extension of Mercury, Gemini, with its massive alterations, became a fully different beast.

One of the biggest and clear developments in the Gemini project was the usage of the powerful Titan II rocket. Boasting 430,000 pounds of thrust, this booster would enable Gemini's astronauts to attain orbital spaceflight.

The Mercury missions firstly used von Braun's Redstone rocket and then changed to a modified version of the US Air Force's which are more powerful Atlas boosters. The Titan II rocket used Gemini missions and continued this trend, being modified from an Air Force intercontinental ballistic missile (ICBM). Meanwhile, von Braun and his team were busy with something else, they were working on a more powerful Saturn family of rockets, which would take humans to the moon.

The Gemini spacecraft was another huge change. It was designed by NASA and created by US aircraft manufacturer McDonnell Aircraft, this 18-foot-long, 10-foot-wide capsule has a weight between 7,100 and 8,350 pounds and it had space for two astronauts.

Compared to the Mercury spacecraft, almost all the features of Gemini's capsule had been developed. Also, New features were added like rocket thrusters which enabled an astronaut to maneuver the spacecraft and a modular design which meant that all parts could be individually tested and repaired.

Also, the Gemini spacecraft introduced a basic onboard computer, the Gemini Guidance Computer. It was designed by IBM and it weighed 58 pounds, the machine could save only 4,096 words and it was used mainly for guidance and navigation.

Project Gemini also received 22 new astronaut trainees. They came in two groups.

The first group known as the New Nine was declared on the 17th of September 1962, and it included Neil Armstrong, Tom Stafford, and Ed White. The next year on the 18th of October, NASA declared another group of fourteen trainees. Among them were Edwin "Buzz" Aldrin, Roger Chaffee and Michael Collins.

Gemini's training regime was far more intense than that of Mercury's.

Each of the trainees spent endless hours in Gemini simulators with operators throwing every possible malfunction at them. They were given lectures by industry experts in computer science,

navigation systems, rocket flight, reentry physics and even more. They were even sent for survival training in jungles and deserts in case reentry veered off course. Sometimes their workdays would extend to 12 hours, and after that, they'd go home to study a two-inch-thick flight manual.

All Gemini's mission was a success and it enabled humans to get to the moon.

Overall, there were about twelve Gemini missions which each one each specifically designed to test equipment and steadily increase the knowledge required to get human on the moon.

The first operated Gemini mission was called Gemini 3 and it took off on the 23rd of March 1963. Its aim was to test the new spacecraft's maneuverability, with the crew making use of rockets to change the ship's orbit. Also, that was the last mission to be controlled from Cape Canaveral Air Force Station; afterward the mission control was moved to Houston, Texas.

The next mission was named Gemini 4 and it involved the first American "walk" in space – though, to the Americans' disappointment, the Soviets had beaten them to this by three months. During this Gemini mission, Ed White depressurized the cabin and floated out into space for about twenty minutes, tied to the spacecraft with a long cord.

The next Gemini missions came in quick succession. Gemini 5 remained in orbit for about eight days which is the length of time required for a moon landing – and succeeding missions tried to practice rendezvous.

The key issue of lunar landings was moving the astronauts to and from the moon's surface safely. Clearly, they couldn't use the same approach used for reentering Earth's atmosphere as these were used for just single- landings. As an alternative, NASA decided to create a new procedure known as the lunar-orbit rendezvous.

This would comprise the astronauts placing the spacecraft into orbit around the moon, and using a smaller "bug" to vacate the mothership and transport them to the surface. The

astronauts would launch the bug into lunar orbit and rendezvous with the mothership upon leaving. Then they would have to dock their bug with the ship and transfer over to it.

This idea was a good one; however, it was entirely a new area. What are the problems and challenges they would encounter?

With this in mind, on the 15th of December 1965, Gemini 6-A was launched into orbit around Earth. Its aim was to rendezvous with Gemini 7 that was already in orbit. And for three orbits of the Earth, the two spacecraft succeeded to stay within 100 yards of each other. NASA had demonstrated that, with skillful piloting, a physical docking of a bug with a mothership was possible.

A few months after which was on the 16th of March 1966, this was accomplished, when Gemini 8 crewmembers Neil Armstrong and David Scott docked their spacecraft successfully with an unmanned Agena Target Vehicle.

These successes marked the beginning of the end of Soviet space dominance and it created the way for Apollo which is the program to send humans to the moon.

The Apollo program started with a disaster.

NASA had been working on the Apollo program during much of Gemini, they needed a very strong booster than Gemini's Titan II missile.

All thanks to von Braun's NASA team who had been working on this for several years. These new super-boosters would become the Saturn family of rockets. The most significant and the only rocket to take humans to the moon was Saturn V. This super heavy-lift rocket weighed 50 times more than the early Mercury boosters, with 7.9 million pounds of thrust and came in 60 feet taller than the Statue of Liberty. Up till now, it still remains the tallest, heaviest and most powerful rocket ever used.

Also, NASA had to develop a new spacecraft to sit atop the Saturn V – one that has the potential of landing on the moon. This Apollo spacecraft was designed to contain three

astronauts for over two weeks and it had a removable, four-legged Lunar Module that would transport two astronauts to the moon's surface.

However, the Apollo program started with a disaster.

With Apollo 1 scheduled to launch on the 21st of February 1967, a full takeoff practice had been planned four weeks before the initial launch. At 1:00 p.m. on the 27th of January, astronauts Virgil Grissom, Ed White, and Roger Chaffee were strapped into their seats. The spacecraft's hatches were closed, and the capsule was pressurized and filled with pure oxygen. They started running through the enormous preflight checklist, while ground crews labored to resolve few minor technical issues.

However, at 6:30 p.m., ground control saw a high voltage. It was heard from the radio when one of the astronauts shouted, "There is a fire in the cockpit!" There were screams of pain, and then everything went mute. The pressurized cabin and complicated hatch made it difficult to rescue them.

A later investigation revealed that a short circuit in a bundle of wires had caused a fire, which spread very fast inside the capsule's pure-oxygen atmosphere. Carbon monoxide and black smoke suffocated the crew.

The Mercury and Gemini missions didn't kill astronauts; however, simple practice for Apollo's first mission had killed three.

The fire affected NASA and the American nation extremely. With sixteen successful operated missions, complacency had set in at NASA, and the public had begun to trust that spaceflight wasn't risky. That changed after the deaths that occurred in Apollo 1. NASA improved its safety, reliability and quality control commitments, and formed a list of 8,000 potential safety problems that needed to be fixed. They made 1,300 alterations to the spacecraft alone.

The Apollo program was still on.

The crew of Apollo 11 experienced extraordinary levels of training for the moon landing.

After a break of about nine months, while the safety recommendations were being put in place, manned spaceflight began again.

Just like the Gemini missions, Apollo missions 4-10 became more ambitious gradually, and each of it was intended to test certain measures necessary for a moon landing.

The first manned Apollo mission was Apollo 7 and it tested the spacecraft's flight performance in Earth's orbit. Apollo 8 was the first manned flight to land on the moon, and while the astronauts didn't land, they orbited the moon for about 20 hours. Apollo 10 was a complete preparation for a manned moon landing and it tested the lunar module by sending it, unmanned to the lunar surface.

Next was Apollo 11 which was the first attempted human kind moon landing.

The men selected for Apollo 11 included Michael Collins, Buzz Aldrin, and Neil Armstrong. From the men, the quiet and well renowned Armstrong was selected to lead the mission and be the first earthling to set onto the lunar surface.

This is because NASA needed to make a gesture of neutrality toward the USSR by using Armstrong, a civilian and former test pilot to land on the moon first, instead of the career military man Aldrin. Although Aldrin had vigorously campaigned to be the first to land on the moon, Armstrong had never campaigned for such honor. There is actually nothing wrong with Aldrin's efforts on the campaign; nevertheless, it was all astronaut's dream to go to the moon. However, NASA believed that Armstrong was the kind of person with whom they wanted to make history with.

Secretly, Aldrin was upset. However, he stayed professional and he didn't allow his feelings to affect his training. This was a good move because there was no astronaut that had to prepare for any mission as carefully as Collins, Aldrin, and Armstrong did for Apollo 11 mission.

They trained for 14 hours daily which was six days in a week and they used numerous hours practicing every single move they'd make in every stage of the mission from launch to reentry. They learned hundreds of switches, toggles, gauges, dials, lights, and levers. They were ready for hundreds of likely challenges they might encounter and critical circumstances like fuel leak or dead engines. The two men chosen to land on the lunar surface were Aldrin and Armstrong also practiced redocking their lunar module with the Apollo spacecraft in full-sized copies hung from cables in an aircraft hangar.

By the day of launch which was on the 16th of July 1969, they were more than prepared.

At 4:15 a.m. Deke Slayton who was the Director of Flight Crew Operations, walked to the crew's quarters. He knocked on the doors of their bedroom and said, "It's a beautiful day, you're GO."

After a successful launch, Apollo 11 headed towards the moon.

After breakfast on the 16th of July, the astronauts went to the suit room. They fixed their urine-collection devices and they wore their oxygen supplies as well as spacesuits, putting their plastic bubble helmets in place.

After, they used an elevator up the massive launch tower and crossed a bridge into the Apollo spacecraft. The ground crew started buckling them in, and the astronauts spent a few hours getting ready for the capsule for launch.

The countdown went smoothly. At T minus nine seconds, the Saturn's massive first-stage engines ignited. At 9:32 a.m., the launch tower's arms disconnected from the rocket, and the 6.5-million-pound machine blasted off into the sky, with the Apollo spacecraft securely attached to it.

Almost three minutes into the flight at 40 miles up, the astronauts were jerked forward as the rocket's first-stage fuel capsule disconnected and fell back into the sea. Minutes later, the Saturn's second stage took charge with its smaller engines, carrying them 110 miles high before

removing itself. The third stage used smaller engines that carried them for the remaining few miles into orbit. The Saturn rocket was now gone.

The next stage is known as a translunar injection (TLI) which involved another engine accelerating the spacecraft to 24,258 miles per hour. This stage would carry them to the moon. After orbiting Earth twice, Apollo 11 was 100 miles above Australia and in the exact place for TLI. The crew perfectly fired the engine, and they were on their way to the moon.

In order to get there, the crew had to put their spacecraft in a “barbecue roll.” This is because the temperature on the sun-facing side of the craft was very higher than anywhere else; Collins used small thrusters to set it into a slow rotation like one revolution every 20 minutes. This balanced the temperatures across the craft, avoiding any technical issues.

The risk of launching was over; however, a lot of risk lies ahead upon arrival at the moon. Meanwhile, the crew members brought out their bulky spacesuits and began to prepare dinner, which was made of food packets rehydrated with hot water. Their first food was chicken salad, shrimp cocktail, and applesauce. With no gravity in space, eating like almost every other task was difficult.

The crew depended on their watches and their own body rhythms to know when to go to sleep since there was no sunset to show day and night. They would shut the window blinds, zip-up inside their sleeping bags and loosely tie themselves to the craft, sleepy in mid-air.

It would be three days until they arrived at the moon.

Landing at the moon, Aldrin and Armstrong steered the lunar module down to the surface.

At 5:21 p.m. on the 19th of July, Apollo 11 reached the moon.

Arriving at lunar orbit, Aldrin and Armstrong spent the next few hours inspecting the lunar module known as Eagle. Then they had dinner and rested for a while.

The next morning, around 9:30 a.m., Aldrin and Armstrong suited up, got inside Eagle and sealed the hatch. About an hour after, the radio announced with the crackly voice of mission control: "Apollo 11, Houston. We're embarking on undocking." Inside the mothership, Collins pressed a switch. The Eagle disconnected, and the two ships separated. Armstrong freed Eagle's landing gear, and he and Aldrin started running through a broad preparatory checklist.

They had to start the engines that would give power to their descent next. The engine burn had to be precisely 28.5 seconds and if it's more than that, it would send them dashing toward the moon at a dangerous speed.

However, it went smoothly and they reduced Eagle just enough for the moon's gravity to seize it and pull it down slowly. Since there was no atmosphere nor gravity in the moon, there was only 16% that of Earth's and they didn't have to bother about a hot and fast entry.

Five minutes into the descent, a lot of alarms started making sounds. The onboard computer displayed alarm code 1201. Armstrong and Aldrin looked at each other and none of them was aware of this alarm.

However, 30seconds after, the mission control told them it was safe to carry on. The alarms showed that the onboard computer was overloaded with tasks. After a restart, it would continue with just the most important calculations. They were still on for a moon landing.

Aldrin was reading out vital information such as the speed of descent and altitude, Armstrong took manual charge of the lunar module as planned and reduced the descent to 13 miles per hour. When they were about 60 feet from the surface, a cloud of dust kicked up, blurring their sight; Armstrong could hardly see where the ground was.

Neither astronaut felt the touchdown, however, they had unexpectedly stopped moving.

However, they didn't just suit up and go outside because there was work to do. The astronauts simulated countdown for the next day's liftoff and went through a series of other launch measures.

Afterward, the schedule told them to rest, because NASA thought that they'd be mentally and physically tired from the lunar descent. However, they weren't. They radioed Houston and asked for permission to go outside early. Houston accepted.

On the 20th of July 1969, humankind was on the moon.

Aldrin and Armstrong started getting ready for the moonwalk. It took them over three hours to suit up, prepare their equipment and depressurize the cabin, however, at 9:39 p.m. they opened the hatch.

Armstrong lowered himself down Grabbing the outside ladder. Halfway through, he started a TV camera and installed it on Eagle. These black-and-white images would be broadcast live on TV to over 530 million people.

He paused the camera on the last rung of the ladder. Then, at 9:56 p.m. on the 20th of July 1969, Neil Armstrong stepped carefully onto the moon. With the whole world listening, he famously said, "That's one small step for man...one huge leap for mankind."

He started walking close to Eagle, checking the ground and explaining the moon's surface as covered in a very fine powder. Aldrin joined him after 20 minutes, and the two of them admired the strange, barren landscape, with the horizon looking curiously close.

The two men raised an American flag after walking 30 feet away from Eagle. The flagpole had a telescopic crossbar which allowed the flag to be completely seen in a windless surrounding. However, the crossbar didn't extend totally and this gave the flag a wavy look.

The astronauts spent the rest of their moonwalk hour taking photographs, gathering rock samples and performing experiments, like a seismometer that would notice any moon tremors. Then it was back to Eagle to un suit and take some rest.

The lunar ascent was particularly risky, because, unlike nearly every other feature of Apollo 11, it didn't have a backup and if it failed, the two men would die.

However, when the mothership was overhead, the astronauts pressed the ignition button and Eagle's engines fired into life. The astronauts ascended for seven minutes, and they got the right altitude. They successfully docked with and then got into the Apollo along with their rock samples and cameras. After this, Collins disconnected Eagle from the mothership. The lunar module would circle the moon until its orbit finally decomposed and it crashed back onto the grey, dusty surface.

The astronauts orbited the moon until their spacecraft aligned with Earth. Then, firing the engines for about 2.5 minutes, they accelerated to 2,236 miles per hour. Soon, they were on their way back home.

The journey home was unexciting, except for a shared feeling of excitement among the crew member. Halfway to Earth, they adjusted their course a little and then they prepared for reentry.

On the 24th of July, Apollo 11's spacecraft arrived in Earth's atmosphere at the right angle and started falling to the ground. Their parachutes opened at the correct altitudes, and they floated down into the Pacific Ocean which was 13 miles from their main recovery ship.

The men who went to the moon were home, and they had made history.

Shoot for the Moon: The Space Race and the Extraordinary Voyage of Apollo 11 by James Donovan Book Review

Sparked by the USSR's launch of Sputnik 1 and categorized by early Soviet trailblazing, the space race was a significant time when humankind, for the first time in its history, succeeded to leave Earth and go into space. Encouraged by the USSR's record-setting, the US eventually caught up to and exceeded the Soviet space program with Project Gemini which is a sequence of determined missions that was done to create the way for a manned moon landing.

After Gemini, NASA concentrated on Project Apollo which was their lunar landing program, however, it started off terrible with the deaths of three astronauts in a fire on the Launchpad during a rehearsal test. The rest of Project Apollo went well, and it led to the successful Apollo 11 mission: on the 21st of July 1969, where Neil Armstrong and Buzz Aldrin became the first humans to step their foot onto the moon.

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