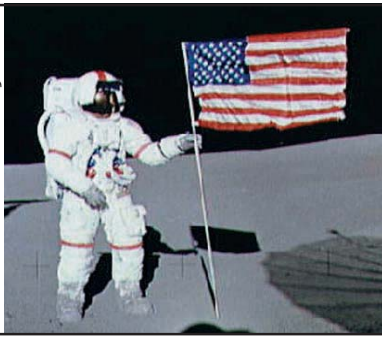


If there is no air on the moon, why does it appear that flags are fluttering in the wind?

fake theory



explanation

Photographs show astronauts holding flags. It is the astronauts who are responsible for the fluttering of the flags.

Why do the cross hairs that are etched onto the camera lens appear to be behind objects in the photos?

fake theory



explanation

The intense light reflected from white objects obscures the fine cross hairs on camera lenses.

Why did the powerful engines on Lunar Modules not produce a crater during moon landings?

fake theory



explanation

Layers of dust about two inches deep cover the surface of the moon. Beneath this the moon rock is hard and compact. Photos of the lunar surface do show signs that the layer of dust was disturbed by lunar modules and even astronauts' boots.

The only source of light on the moon is the sun. Why do some of the shadows cast by Astronauts appear to be created by two different light sources?

fake theory



explanation

The Moon has a very rough and uneven surface, with lots of slopes, rises and potholes. As a result, many of the shadows appear to be non-parallel. If there were more than one light source the Astronauts would have more than one shadow.

Why are there no stars visible in the background of the pictures?

fake theory

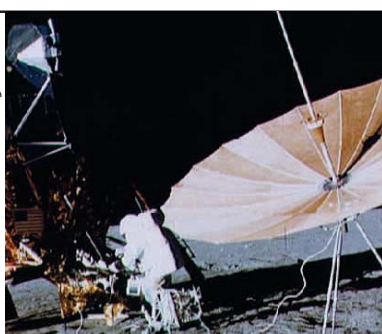


explanation

Background light sources like stars require a longer exposure time than brightly lit foreground objects such as astronauts. The stars in the moon photographs are invisible because they are underexposed.

The temperature on the moon is 140°C. How did the film inside astronauts' cameras survive this temperature?

fake theory



explanation

Although the moon is very hot, it has no air. In the absence of air, heat cannot be transmitted by convection or conduction. Cameras and films were protected from radiative heat by their light reflective casings.

Four reasons to believe

REASON 1:

Moon rocks

Apollo astronauts didn't return empty-handed. They brought nearly 400 Kg of the Moon back with them ranging in size from sand and pebbles to small boulders. Moon rocks are completely different from rocks native to Earth. Their mineral content is unique and they show distinctive signs of exposure to the solar wind, cosmic rays and meteoroid impacts. To a trained geologist there's no mistaking a Moon rock.



REASON 2:

the Apollo team

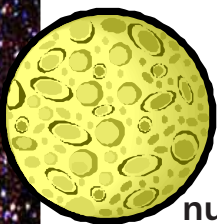
The most famous participants in the Apollo programme were the twelve astronauts who walked on the Moon. Nine of them are still alive today. They can provide first hand accounts of their experiences on the Moon. As well as the Apollo astronauts some 360,000 scientists, engineers, civil servants and contractors also worked on the Apollo programme. These people can also testify that the Apollo programme was real.



REASON 3:

written evidence

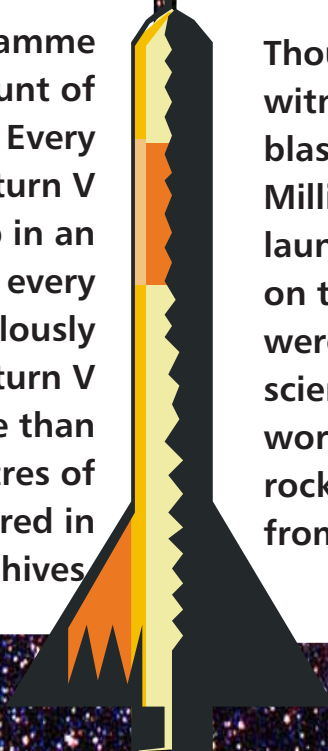
The Apollo programme left a vast amount of written evidence. Every nut and bolt on a Saturn V rocket, every clasp in an astronaut's space suit, every pressure valve was meticulously documented. For the Saturn V rocket alone there is more than 600 linear metres of documentation stored in America's National Archives.



REASON 4:

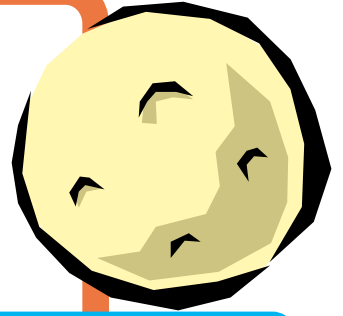
witnesses

Thousands of people witnessed the Apollo rockets blast off for the Moon. Millions more watched launches and Moon landings on television. The rockets were even visible in space to scientists all around the world. Many photos of Apollo rockets in space were taken from Earth.



Did man really walk on the Moon?

Some people believe that photographs of man on the Moon are fake. They say that the American government faked these photos because:



One of the reasons why people have said that the photographs are fake is:

Another reason why people have said that the photographs are fake is:

An explanation of this objection is:

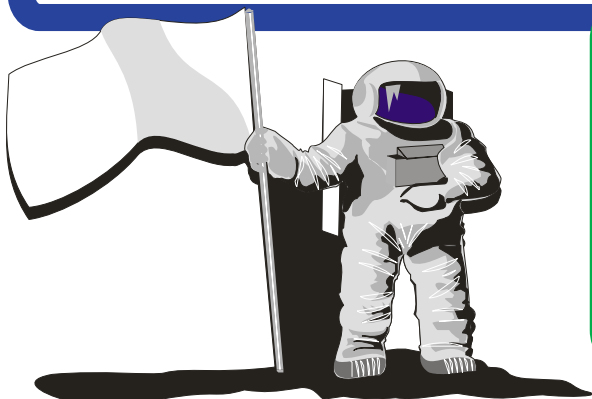
An explanation of this objection is:



I think the most convincing evidence that man did land on the Moon is:

In addition to photographic evidence that man landed on the Moon, we can look at:

Having looked at all the evidence I think:



GENIUS



Your space programme is benefiting from the talented individuals in your team
Gain two cards

CHANCE



Your space programme is being held up by unforeseen problems
Lose one card

RISK TAKING



You have taken risks with the safety of your team
Throw even score to gain two cards
Throw odd score to gain two cards

COMPETITION

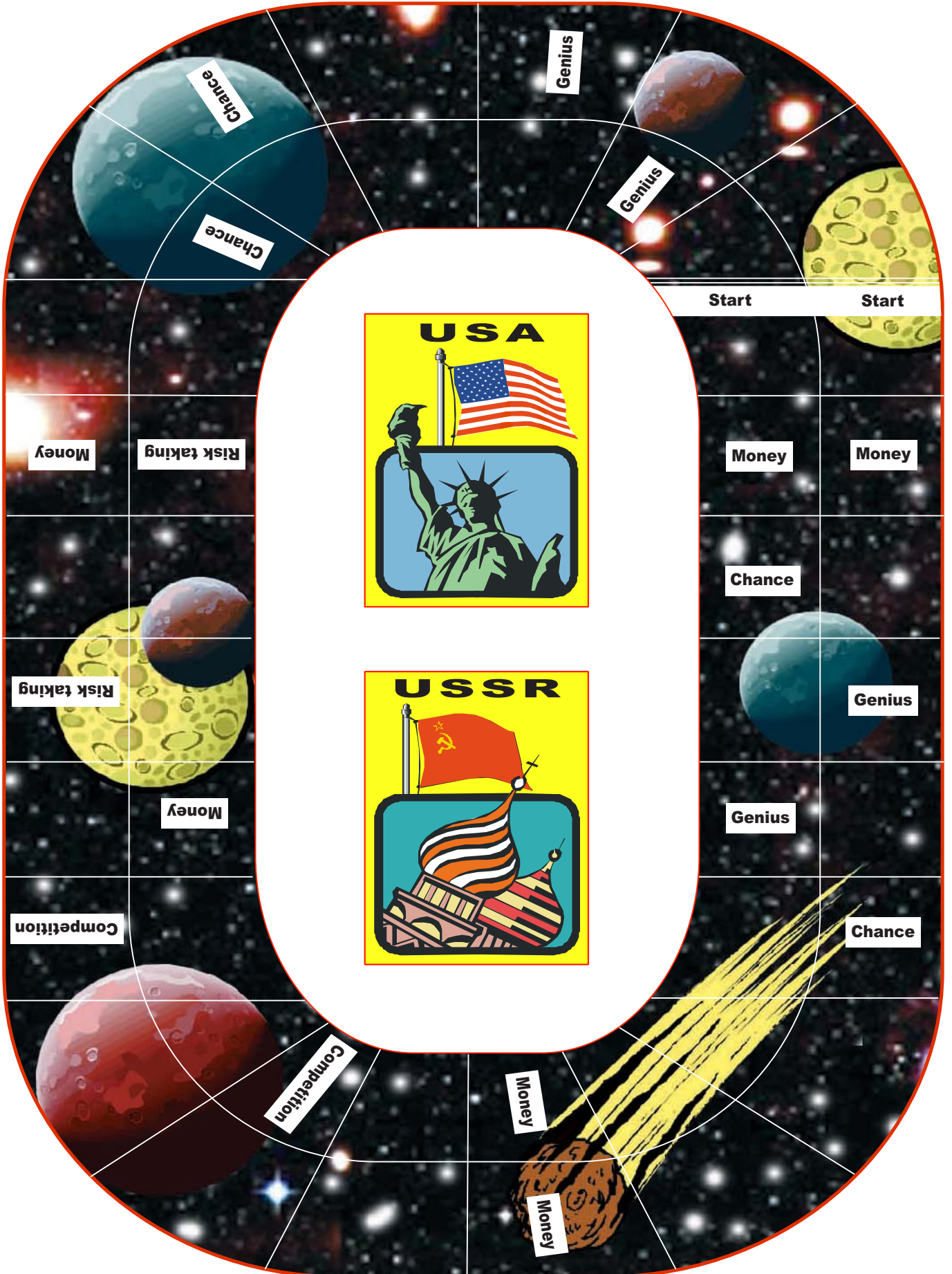


Your team is determined to win the Space Race so they work really hard
Gain two cards














MONEY



Your government cannot afford to fund your space programme
Miss one turn



Who won the **space race**?

USA		USSR	
1945	German rocket scientists led by Verner von Braun surrender to the US army, rather than be captured by the Soviets. 	1945	The work of German rocket scientist Verner von Braun is studied in depth by Soviet scientists. The remains of a German V2 rocket are sent to Moscow for evaluation.
October 1947	American pilot, Charles Yager, first to travel faster than the speed of sound on board the X1 plane.	October 1947	Soviet scientists successfully launch a German V2 rocket. 
July 1950	Verner von Braun successfully launches the first multi-stage rocket. It consists of a German V2 rocket with an additional "bumper" stage added. 	April 26 1950	Soviet scientists begin to explore the possibility of launching a satellite into orbit using a multi-stage rocket.
September 1955	The US government announces a plan to launch a satellite into orbit using a rocket known as Vanguard. The launch is planned for 1957 to mark the International Geophysical Year. 	January 1956	Soviet Government approves plans for the development of a satellite programme. They also state their intention to explore manned space flight and lunar exploration. 
Dec 1957	US Vanguard rocket fails two seconds after launch. First American satellite mission is a failure. 	October 1957	Soviets launch the world's first satellite. Sputnik 1 orbits the earth emitting a small radio beep which can be received around the world.
January 1 1958	Explorer 1, the first US satellite, reaches orbit. 	November 1957	Soviets launch Sputnik 2, carrying a dog named Laika into Space. After ten days Laika dies of suffocation. There was never a plan to bring Laika back to earth. 
January 31 1961	US scientists launch Redstone rocket carrying a chimpanzee, Ham. The chimp completes a sub-orbital flight and returns to earth safely.	January 1 1959	Soviets launch Luna 1, the first spacecraft to escape Earth's orbit. Later that year, Luna 2 is the first man-made object to reach the Moon. 
May 5 1961	US pilot Alan Shepherd completes a sub-orbital flight on board Mercury Spacecraft.	1960	Soviets launch Sputnik 5, carrying two dogs, Belka and Strelka. The dogs survive an orbital flight and are safely recovered a day later.
April 12 1961	Gus Grisson completes a sub-orbital flight.	April 12 1961	Soviet cosmonaut, Yuri Gagarin completes world's first manned spaceflight onboard Vostok spacecraft.
Dec 14 1962	Mariner 2 completes the first Venus flyby. 	June 16 1963	Soviet cosmonaut, Valentina Tereshkova, becomes the world's first woman in space.
Dec 24 1968	Apollo 8 with the crew of three completes world's first orbiting of the Moon.	March 18 1965	Alexei Leonov conducts world's first spacewalk. 
July 20 1969	Apollo 8 astronauts land and walk on the surface of the Moon. 	Feb 3 1966	Luna-9 (an un-manned craft) conducts soft-landing and scientific research on the surface of the Moon.
			

Vengeance weapons

In 1942 the German army began to develop weapons capable of attacking Britain from launch sites in continental Europe. These were known as Vergeltungswaffe or Vengeance Weapons.



The V1

The first Vengeance Weapon, known to the British as the V1, was a 25 foot flying bomb with a wing-span of 16 feet and a maximum range of 250 miles. V1s were launched against London from ramps in Holland. They had a maximum speed of 350 mph and an on board guidance system which kept them flying in a straight line. When the fuel ran out the engines of the V1 stopped and the rocket fell to the ground. V1s were first used against London in June 1944.

They were commonly called "Doodlebugs" because of their engine noise. When Londoners heard the distinctive sound of a V1 flying over, their greatest fear was that the engine would stop. G D Knott described the fear which the V1 created:

“Most adults seemed to be jumpy and constantly listening for bombs. It was hard at times to tell the difference, at a distance, between a V1, a car or motorcycle. London seemed quite empty, so many had left.”

SOURCE 1



The V2

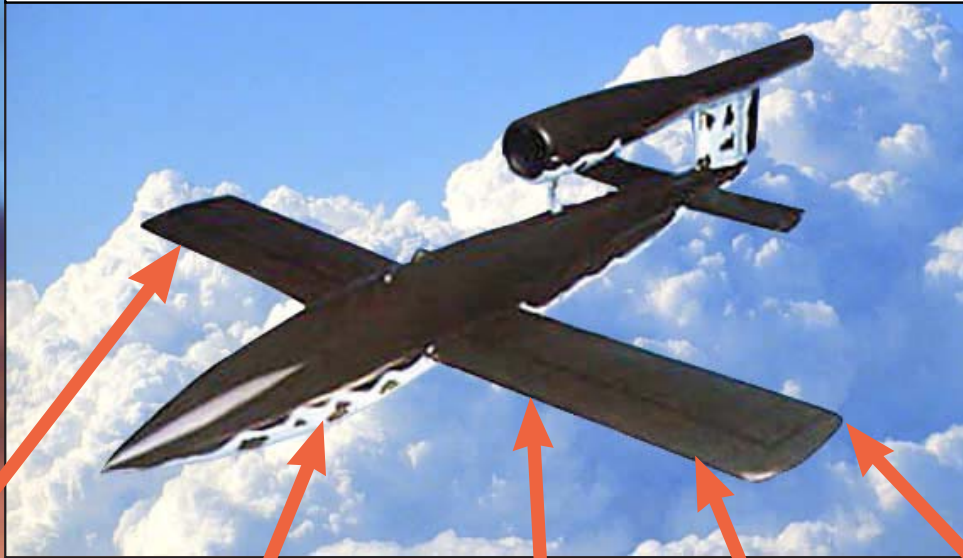
On the evening of September 8th 1944, a strange explosion was heard in London. It began with a tremendous bang and was followed by a roaring, rushing sound; then another loud bang. Moments before the blast a white flash of light was seen in the sky. Similar explosions continued through the autumn of 1944. By November four to six were being reported each day.

These were the sounds of a new vengeance weapon. The V2 rocket was 45 feet long and weighed 14 tons. It was launched vertically from special bunkers or mobile launch sites. Travelling well in excess of the speed of sound, the V2 could carry a one ton warhead to an altitude of 50 miles, with a maximum range of 200 miles. Because the V2 travelled faster than the speed of sound, its explosion was sometimes heard before the roar of its engines. Over 1200 V2 rockets landed in the south of England, causing some 2700 deaths.



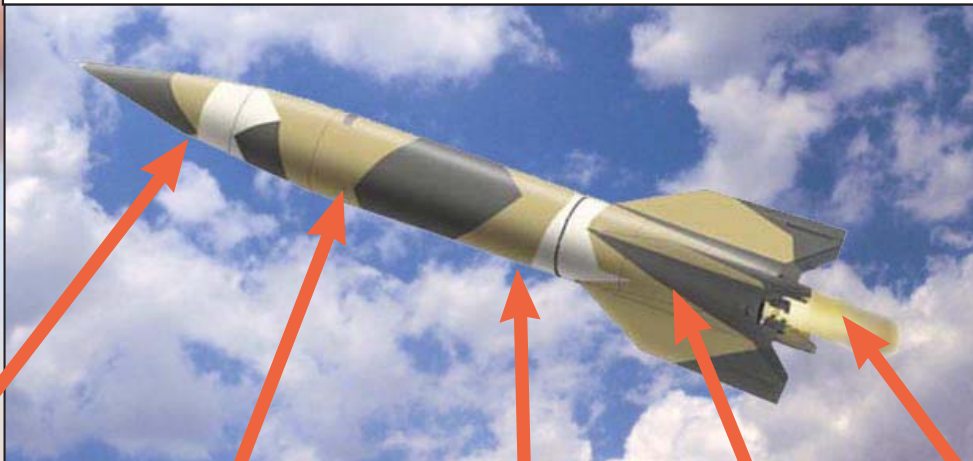
Vengeance weapons

V1



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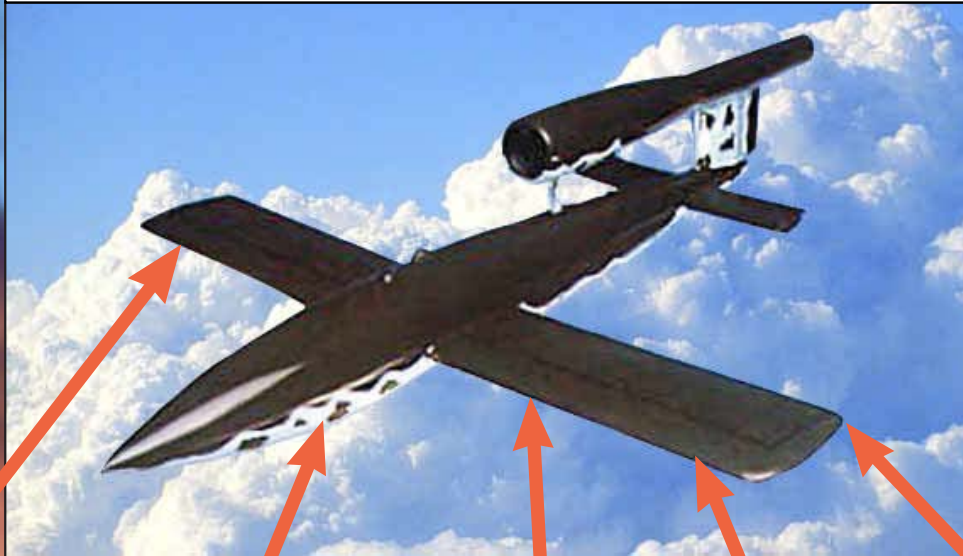
V2



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Vengeance weapons

V1



Sounds like a motorbike

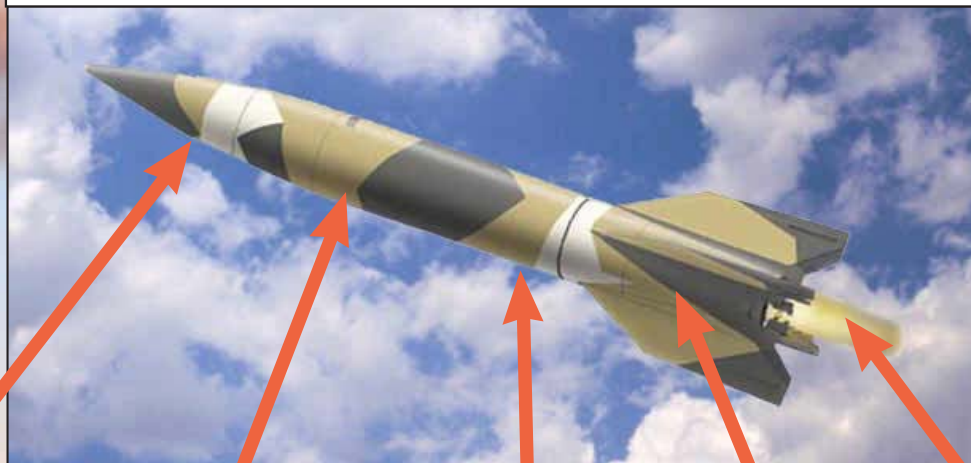
Launched from angled ramp

Max range 250 miles

25ft long

Max speed 350 mph

V2



Rocket engines

Launched vertically from vehicle or silo

14 ton

45ft long

Supersonic speed



Who was responsible for the **V2**?

The V2 was designed by a German rocket scientist, Vernher von Braun. In an interview he gave to a journalist in October 1950, he spoke about his work for the German Army on rocket technology:

“ In 1932, the idea of war seemed absurd. The Nazis weren't even in power. We felt no moral scruples about the possible future abuse of our brain child. We were interested solely in exploring outer space... When war began I hated it and the misery it spread all over the world. But I felt it was my duty to work for my country. ”

SOURCE 2

The work of Vernher von Braun was closely watched by leading Nazis who seemed to share his excitement. After watching the test launch of a V2 rocket Albert Speer, the Nazi Armaments Minister wrote:

After the successful launch Speer rushed to inform Adolf Hitler. Hitler agreed with Speer that this would be an important new weapon:

“ The V2 is a measure that can decide the war. And what encouragement to the home front when we attack the English with it. This is the decisive weapon of the war. ”

SOURCE 4

“ The rocket rose slowly from its pad, seemed to stand upon its jet of flame for a fraction of a second, then vanished with a howl into the low clouds. Wernher von Braun was beaming. For my part, I was thunderstruck at this technical miracle, the way it seemed to abolish the laws of gravity. ”

SOURCE 3

Although a number of German rocket scientists did not like their ideas being used to make weapons, they accepted that they should compromise for their country during the war. In 1942 the director of the German rocket programme spoke to scientists working on the V-2 Rocket. He said:

“ This is the first of a new era in transportation, that of space travel. So long as the war lasts, our most urgent task can only be the rapid perfection of the rocket as a weapon. The development of its true potential will be a peacetime task. ”

SOURCE 5



What part did the Nazis play in the development of rocket technology?

During the Second World War the Nazi leaders of Germany developed new types of weapon. These were known as:

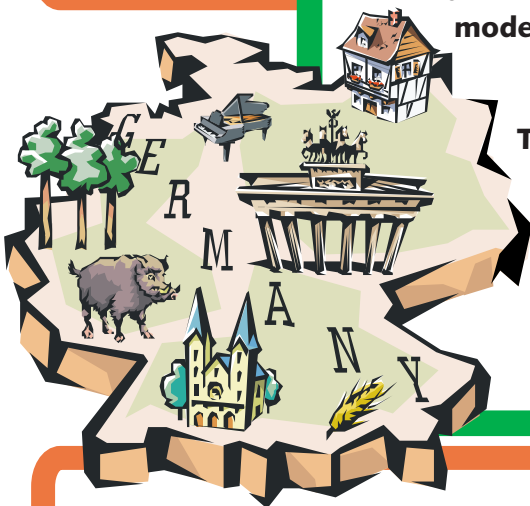
The purpose of these weapons was to:



We know that scientists who developed V weapons for the Nazis were interested in space travel because:

The V1 was not particularly similar to modern space rockets because:

The V1 was more like a:



The V2 rocket was similar to a modern space rocket because:

Although German scientists said they did not like making weapons, they did it because:

Adolf Hitler thought that V weapons could:



So, did the Nazis invent space travel? What other evidence do I need to answer this question?: