

The Great Moon Hoax



The Great Moon Hoax

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The Great Moon Hoax

Why a hoax?

President Kennedy couldn't deliver on the promise

How many believe it?

6% of all Americans have doubts

At what stage in the Apollo programme did it start?

Man in Earth orbit — yes. Man on the Moon — no.

What is the “evidence”?

Scientific scrutiny makes a good science lesson

...and hopefully an interesting talk.

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Why a Hoax?

Kennedy made a promise...

Impressive... Important... Difficult... Expensive...

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The Evidence

- Computing power just wasn't up to the task
- Radiation in space would kill the astronauts
- Video anomalies :
 - filmed on Earth, just slowed down
 - flags wave in the breeze
 - dust doesn't fall at the right rate
 - hammer and feather experiment
 - rocket exhaust not visible from LM
- Image anomalies : *many anomalies are quoted...*

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So Many Image Anomalies...

- Shadow angles are **inconsistent** with illumination by Sun
- Shadow lengths are **inconsistent** with illumination by Sun
- Shadows are filled in by **another** light source
- **No** stars appear in the sky
- **No** blast crater underneath the Lunar Module engine
- **Same** background appears in images of **different** regions

... and dozens more

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So Many Image Anomalies...

Concerning the Hasselblad cameras used...

- Astronauts couldn't operate the cameras with gloves
- Fiducial cross marks appear **behind** objects
- Images are **perfectly** framed even though **no viewfinder**

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Look at the Evidence

Let's look at the evidence, piece by piece, and see how much of it stands up to scientific scrutiny.

Computers

Radiation

Video clips

Still images

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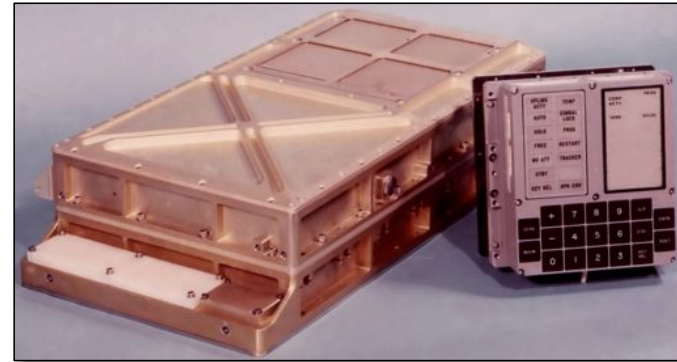
Computers Too Big



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Apollo Guidance Computer



Was this sufficient computing power to put a man on the Moon?

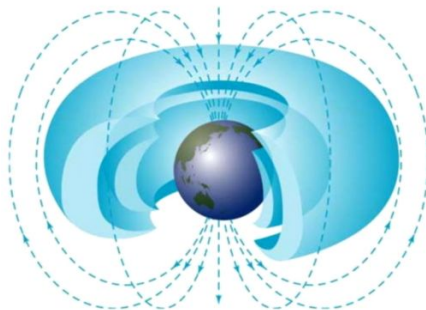
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Radiation

Energetic protons and electrons from the Sun get trapped in the Van Allen belts encircling the Earth.

Astronauts travelling to the Moon would receive a "lethal" dose of radiation.



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Blowin' in the Wind



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Apollo 11 Flag



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Rocket Engines on the Moon

Why is there no rocket engine exhaust plume?



It must be a studio model on wires.

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Rocket Engines in Earth Orbit



Engine exhaust plumes are not visible in a vacuum

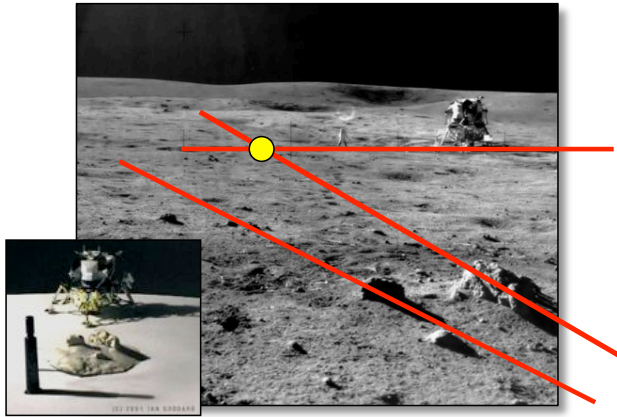
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Impossible Shadows



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Where's the Light Source?

If the Sun is the only light source, why is Aldrin visible when in shadow?



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Where Are the Stars?

Why are there no stars in the sky?

NASA didn't want to get it wrong!

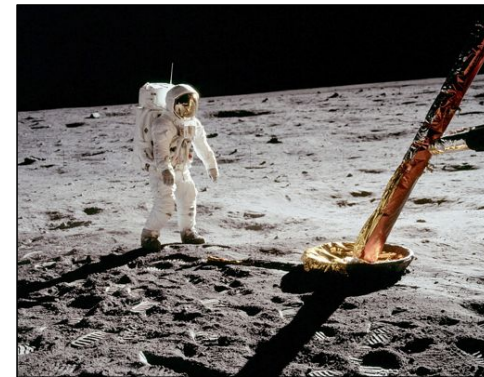


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Why Footprints?

Why did the astronauts leave footprints, but the footpads on the Lunar Module did not sink into the soil?



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Sinking in the Soil

Why did the footpads on the Lunar Module not sink into the soil?

Sometimes they *did*.

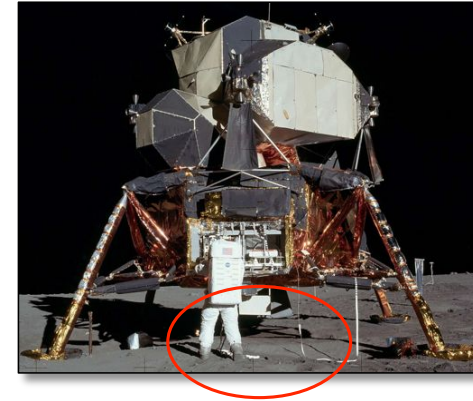


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Sinking in the Soil

Why is there no 'blast' crater visible below the descent engine?

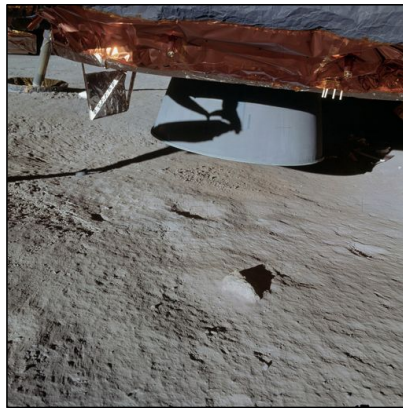


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Sinking in the Soil

Sometimes there *is* a small blast crater — it is simply rather shallow.



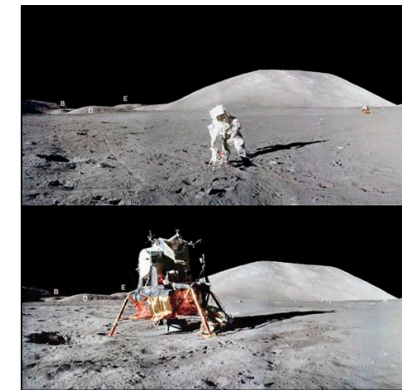
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Studio Set

Two views taken from different locations have "identical" backgrounds.

Is this proof that the same studio set "backdrop" was used twice?

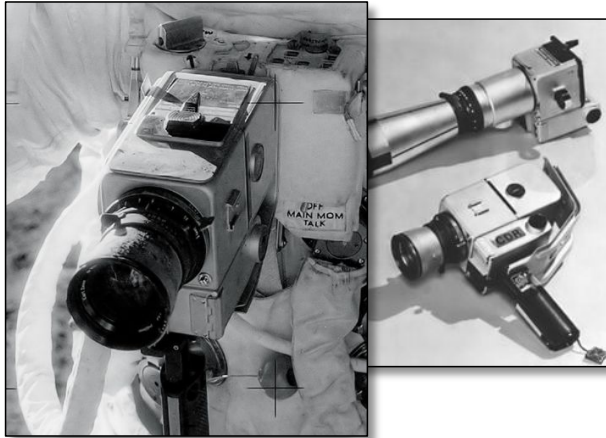


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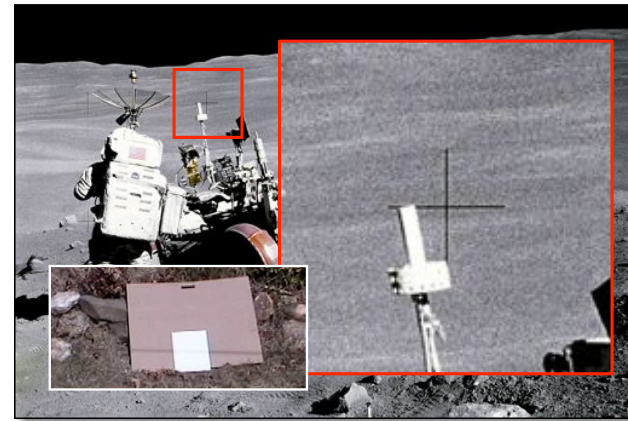
Hasselblad Cameras



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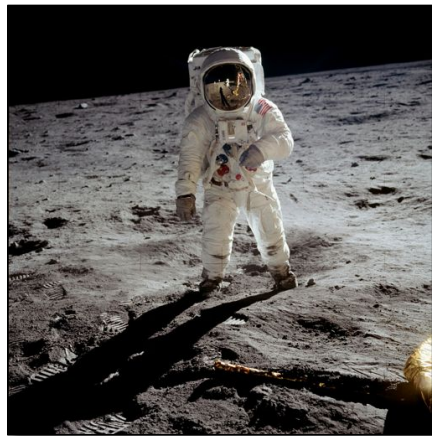
Impossible Images



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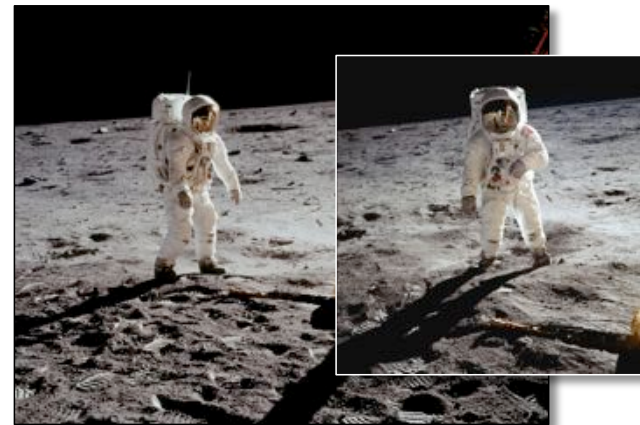
How Did They Get Perfect Framing?



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Spot the Difference



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Proof

So the question remains...

Is there *any* evidence that can prove, beyond any reasonable doubt, that the moonlandings *did* take place?

That depends on your definition of 'reasonable'.

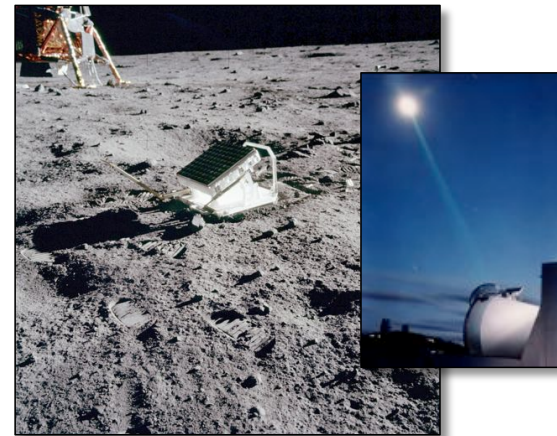
Hammer and Feather



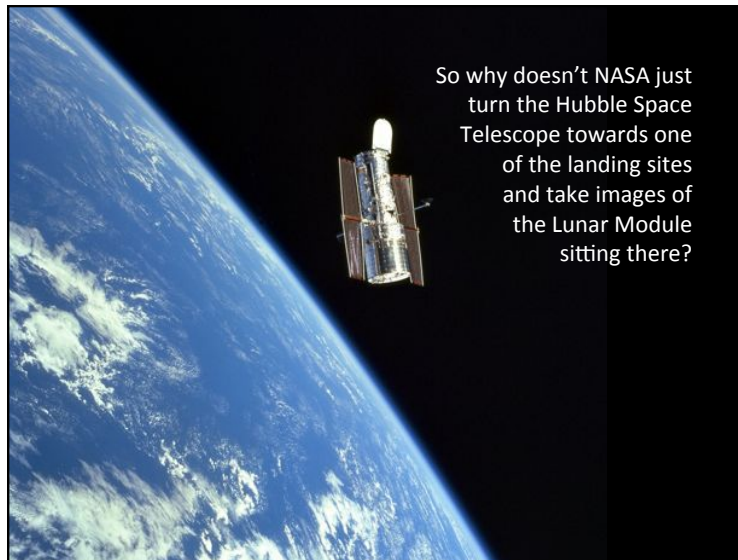
Kicking Up Some Dust



Reflectors



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Can Hubble See Apollo?

Despite what some Moon Hoax advocates believe, we still have to obey the laws of physics.

Resolution of the HST $\sim \lambda / D \sim 0.2 \mu\text{radians}$

~ 10 millionths of a degree

~ 0.05 arc seconds.

To see an object a few metres across at a distance of 400,000 km would need a resolution of

$\sim 0.01 \mu\text{radians}$

~ 0.002 arc seconds.

The Lunar Module is **too small** by a factor of ~ 30 .

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What's the Point?

Why are there **so many** Moon Hoaxers?

Do they **really** believe their "scientific evidence"?

Most arguments can be countered with some basic physics...
...so analysis of the "evidence" makes a good science lesson.

Thinking about why things (might) behave differently on the Moon can help teach "Physics on Earth".

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