

The Moon Landing “Hoax”

Doubts and conspiracy theories abound about many historical events, such as the JFK assassination, the dingo that took Azaria Chamberlain, Area 51, 9/11 and Jack the Ripper. Very few people have direct experience of any event, and even then they mostly have only eyewitness testimony. Only 12 people have stood on the Moon.

Possibly due to the movie *Capricorn One* and the improvement in special effects in movies, but also due to the arrogance of some scientists and public desire to see such people humiliated, some people doubt that the Moon landings ever took place. At best we only saw it on TV, and you'd have to be well over 40 now to remember it.

The Moon-landing deniers point to some apparent anomalies in the Apollo photos and movies. When you see these, you cannot deny the visual basis for the major claims. The most egregious claims are that there are no stars in the background, the US Flag flutters but is supposed to be in a vacuum, shadows fall in different directions, and there was no flame from the departing module and no blast crater under it. There are lots more of increasing triviality and desperation: if you look hard enough (too hard, actually) then film-studio apparatus starts to appear in the background etc.

All these claims and more are tackled head-on and scientifically refuted by various web sites, notably www.clavius.org and www.badastronomy.com. The quality of these sites contrasts with the denier sites. Maybe it's because the CIA provides money and resources for those sites whoops, now I'll have to kill you. The short answers to the above claims are:

- there were no stars for the same reason that none are visible on Earth in daylight;
- the fluttering flag was due to continued vibration from planting or touching the flag, the persistence of which actually confirms that it *is* in a vacuum;
- shadow directions are also seen on Earth due to sloping ground;
- there was no flame because there was no air, and not all rockets make a cartoon-style flame;
- for the blast crater, do the physics and work out the pressure; and
- for the film artefacts issue see below or search “moontruth” on youtube.com (or, preferably, don't).

Even the conspiracy nutters have to admit that the way the dust falls, the walking gait of the astronauts and other bizarre effects were either really done in a vacuum under reduced gravity or were special film effects. The only way to get reduced gravity on Earth is in a large aeroplane in free-fall – maybe it could also be evacuated – but you've only got 30 seconds of free fall before the planet starts to get in the way. This aeroplane is nick-



named the “vomit comet”, indicating yet another problem with forging movies in it.

As to special film effects, Stanley Kubrick was unproductive for a while after completing *2001: A Space Odyssey* (actually, he was trying to make a film about Napoleon). Maybe such a talented and fussy director could have made the Apollo movies? Well, it turns out that *2001* is full of goofs, but there is ten times as much Apollo footage without a single scientific mistake. Even a vastly increased budget would not have helped – the contemporaneous *Silent Running*, which cost much less money to make, had far fewer blunders.

But apart from all the technology arguments, movie effects and goof-tracking, there are two devastating arguments that confirm the Moon landings as genuine.

The Apollo rockets' telemetry signals and the transmissions from the lunar surface were eagerly studied by the Russians. They were pretty keen in this field, after all, and studying other peoples' rocketry is cheaper than doing your own. So a *much* bigger conspiracy would be needed for the Russians not to copy and study those signals. Even if all the Apollo footage had been cooked up in Hollywood, the novel technical phenomena associated with Moon-based radio signals cannot be forged. The Russians would have printed headlines in *Pravda* like “Dastardly Capitalist Deception Exposed by Glorious Toil of Technically Superior Marxist Proletariat”. Instead they sent a congratulatory telegram. Then again, maybe they were in on the secret and the whole Cold War was a conspiracy...

The other reason will appeal to modern thinking. In 1969, when computers had 16 kb of memory and filled the room, it would have been cheaper to go to the Moon to make the film than to make it all up on Earth. Not to mention the cost of making up 380 kg of Moon rock with consistent un-Earthly isotopes, and sending signals from the Moon just so that the dish at Parkes could pick them up from the right direction. Q.E.D.

And finally – like building the Pyramids – it may have been hard but they did it anyway. Humanity's glorious achievements should be celebrated. Maybe someone will become inspired to do yet more.

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