

Historian's approach to the Moon landings

by Martyn Bennett

With six percent of US citizens - roughly 12 million people - convinced that the Apollo missions of 1968-1972 did not land a single man on the Moon (at least in the way we are supposed to think it happened), the notion of a 'Moon landings hoax' was ideal subject matter for a section of the 'Breaking the Code' first-year module in Nottingham Trent University's history degree programme. It sits alongside the 'da Vinci Code' legacy of the 'Blood of Christ' and 'Tomb of God' nonsense or the Jack the Ripper fantasies. The web of intrigue posing as evidence woven around the idea of faked Moon landings appeared a natural subject for the module.

I am not a scientist and, although I am an historian, professionally I work on the late sixteenth and seventeenth centuries, rather than on the history of science. Nevertheless, I have lectured on late medieval astronomy and for pleasure I read extensively on the 'history' of the space race and I am a member of BIS.

It is this which leads to the way in which I deal with the issue of the supposed hoax and I hope that this approach may prove useful to BIS members when confronted by challenges to their knowledge of the Moon landings.

I guide students through the way historical, primary source evidence and, because of my own background, to a lesser extent scientific evidence, can be used to firstly disprove the notion of a hoax and then categorically prove that the Moon landings did really happen.

Obviously no one in the lecture room has first hand evidence of their own, and we have to reconstruct the process and the evidence trail. Indeed, apart from me, there is often no one in the room who was alive in 1969.

My audience mirrors the age ranges of those most impressed by the notion of a hoax - hoax-believers tend to be younger people who were not around when the Apollo programme was ongoing.

The lecture is framed around the groups of evidence that are supposedly amassed by the 'enlightened few' to rouse the credulous.

We firstly have to deal with the fact that there appears to be such a lot of this 'evidence' about. A quick internet Google for 'Moon landings hoax' gets over a 100,000 hits, 'Moon landings faked' renders over 200,000 and 'Moon landings fraud' reveals about half a million listed sites.

The first point to make to students is that there is a great degree of replication within this number of sites, leading back to just a few original sites. A few of these sites do seek to expose the hoax theorists arguments as fallacious, for instance, that of Philip Plat, author of *Bad Astronomy*.

Moon-landing evidence and the way it is used and misused by 'hoax theorists' can be grouped into categories for convenience. There is a plethora of what historians term primary sources - including oral testimony, printed and published material, non-written evidence (photography and film), and also Moon rock samples and pieces of actual spacecraft.

The hoax theorists claim that within each of these groups there is clear evidence of fraud and a cover-up. But using historical methodology each of these groups of material and the hoax-theorist case can be exposed to critical examination.

Oral evidence, for example, is very interesting. There is a great deal of testimony supporting the case that Moon landings did happen. By contrast, importantly, no one at the heart of the Apollo programme ever said



something along the lines of 'let's fake it all in a film studio' and no contrary oral evidence that contradicts that recorded and transcribed speech that supports the motion that Moon landings, being a historical event, has ever come to light.

Whilst absence of evidence is not conclusively taken as evidence of absence it is suggestive. Take, for example, Bill Kaysing. Unusually he is an instance of oral evidence. People are impressed that he worked for Rocketdyne so it seems, at first glance, that firsthand evidence from within confronts us.

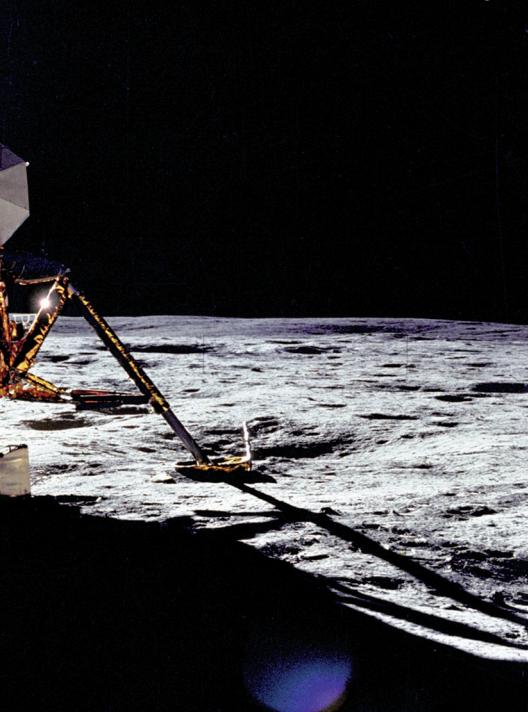
But Kaysing was a librarian from the late 1950s until 1963 and his evidence is about discussions in contemporary journal articles regarding the lunar surface and its temperatures. This was evidence which suggested to him and others at the time that a Moon landing may prove impossible. Students need to be reminded that this was before any craft had landed on the Moon. Once unmanned landings had been made by the USSR and the USA, evidence about the Moon began to change somewhat; but this was a period in which Kaysing was not at Rocketdyne and on which he offers no comment.

Paper or written primary source evidence abounds. The transcripts of flight communications are all in published format and thus easily accessed. There are numerous

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The Apollo 14 lunar module pictured on the surface of the Moon in February 1971.
NASA



press publications and briefing sheets available, all clearly sourced and verifiable. Moreover, details of the nature of transmissions and the receipt of transmission by the receiving stations on Earth are all recorded in print as well as on tape, etc.

These paper and audio records neatly dovetail with the visual material. For instance, NASA's film archive (a good deal of which is commercially available in DVD format). All these sources support and enhance each other.

Students can see and hear transmissions and consult the written record simultaneously. The oral and text evidence again works in tandem with the physical evidence, surviving and displayed Moon suits, rock samples, and so on which can be seen in film being referred to orally and visually and be seen first hand on Earth in university and museum collections.

The mutually supportive nature of oral and visual evidence brings students to the photographic evidence, some of the most used and captivating material that supposedly show the landings as a hoax.

The authors of *Dark Moon* saw this as the most valuable opener for the book. Numerous explanations of the photographs (and to an equal extent this would be true of the moving images, but they are less overtly used to this end) are given to demonstrate the 'hoax'.

For instance, the shadows are 'shown' to be divergent because photographs supposedly show evidence of back lighting and other artificial lighting effects, whereas there was no artificial lighting used on the Moon surface.

It is also suggested that images are suspiciously perfect despite being taken on the Moon with cameras wrapped in insulated covers operated by non-professional photographers using chest-mounted cameras with top-mounted view finders.

At first glance this looks tempting. However, here the audience is exploited more unscrupulously than anywhere. Hoax theorists build on general lack of familiarity/unfamiliarity with photography, lighting effects, the albedo effect of Moon's surface luminosity, and so on.

The first issue to be recognised is the hoax theorists' evidence base is very limited. Their point about these being excellent photographs is soon negated by the fact that the ones they use are invariably ones in the public domain, the survivors of an editing process. That process excluded all the images which showed the difficulties of changing focal length and aperture in clumsy gloves, but which can be accessed by a researcher.

The photographic issues lead on to the principle rules followed by a historian when looking at evidence - context. If context is ignored, presumptions are made on limited knowledge supported by misconstruction, the latter sometimes deliberate.

So, when sceptics raise the issue of the apparent lack of visible blast marks under the lunar module (they often talk as if there was only Apollo 11), or raise the point about there being no visible stars in the photographs that include shots of space; they ignore other material that would provide solutions to these apparent problems.

Both these points are raised as startling revelations. Yet by using the aural, visual and textual evidence it becomes clear that these things were issues raised even by the astronauts themselves.

Armstrong and Aldrin referred back to the lack of stars in the photographs and, on the surface of the Moon, the lack of blast marks are mentioned by them.

Apart from the fact that both apparent anomalies are easily explicable - by the shutter speed of the camera in the case of the stars, and the effective downward pressure of the engine blast along with the micro-structure of the lunar surface and lack of atmosphere on the Moon which limited the movement of surface particles caught up in engine blast.

It would have been foolish in the extreme of the astronauts to draw observers' attention to

these supposed failings of a studio photographed fake Moon landing on tape, in transcription evidence and in debriefings.

Inconsistencies in hoax theorist approach and argument lead the student into discussion presentation of the evidence as well as interpretation. The context is really important because it impinges on the engineering aspects of the hoax theorists' case.

There is not enough of what historians call 'historiography' and background reading; simply put, the hoax theorists simply do not know enough.

This is important to inculcate into students who will, towards the end of their degrees, write an original piece of historical research.

Hoax theorists argue that failures in American technology meant that a Moon landing in 1969 by the USA acting alone was impossible. The authors of *Dark Moon* complicate matters by suggesting that the US and USSR together could have staged a landing.

This apparent conjunction is at the point where the book goes into complete fantasy mode, from previously having been just completely wrong. Here the age-range of the student becomes critical for, as I said at the outset, they fall into the same age category as many of those who question the truth of the Moon landings.

Every aspect of the hoax theorists' arguments can be critically assessed using a historian's methodology, and the lecture - which has to contain a brief history of the Moon race and the technological developments of space hardware on both sides of the iron curtain - concludes with a proposal for how students can approach the Moon landings using methods that will avoid the pitfalls encountered and offered by those generating 'hoax theories', from either genuine sceptical approaches or the malign.

Students can then opt to continue studying the Moon landings and their value as a means of using historian's methodology for their coursework. Using these techniques of evidential scrutiny every element of the hoax theorists' case can be exposed as wrong, irrational, mischievous or even malign.

The true picture of what happened in the Apollo and related programmes is enhanced by the reading of the memoirs of those involved, the broad range of scientific and engineering histories of the Apollo missions and, of course, the still emerging histories coming from post-USSR Russia.