



On July 20, 1969, Neil Armstrong placed humanity's first off-world footprint in the jagged and sharp dust that covers the surface of Earth's moon. It was an achievement unparalleled in history, and one built on the backs of centuries of science and engineering pioneers from all corners of the world. It was also a step made for all (hu)mankind, accompanied by messages of peace from the leaders of 74 nations. Six Apollo missions followed this pioneering feat, five more landed on the Moon. These crewed landing sites, as well as the robotic landing sites that preceded and followed Apollo are the ultimate example of universal human heritage; a true memorial to human ingenuity and accomplishment. They are also an archaeologist's dream. They mark humankind's greatest technological achievement to date and are the first archaeological sites with human activity that are not on Earth. And they are frozen in time, preserved by the vacuum of space – and by the fact that no human, and only a handful of rovers, has returned to the Moon since 1972.

That's about to change. A number of countries and private companies plan to send robots to the Moon in 2019 and humans by 2030. While it is not to be suggested that any of them would intentionally damage any of the historic sites on the Moon, we cannot afford to ignore the fact that no enforceable laws exist to prevent defilement or vandalism. Even the most well-intended visitors may be unaware of the damage they are doing while roaming near a site. What's worse are those who would take a "piece of history" for themselves. And worse still, those who would plunder simply for profit. We must seize this opportunity to protect these sites, and all our heritage in outer space, not only for history, but also because they will likely yield scientific information valuable to humanity's future moon, Mars and deep space missions.

Unfortunately, the path to preservation is complicated. The space treaties are silent. While some detailed technical guidelines were promulgated by the United States National Aeronautics and Space Administration, these are voluntary and pertain only to US sites.

Pursuant to Article VIII of the Outer Space Treaty, items left in space remain under the ownership and control of the nation that put them there. Article IX of that treaty requires all activities in outer space be conducted with "due regard" to other States, which suggests that States should not interfere with or otherwise despoil the objects of another. And Article V of the Return and Rescue Agreement, is clear that any object removed from the Moon, must be returned to the State of origin. But the research value of the landing sites requires that the objects within their bounds be observed and scrutinized *in situ*. Which raises a whole different slew of issues. Leaving the objects *in situ* essentially results in perpetual occupation of the surface upon which they rest. This runs afoul of the principle of non-appropriation encapsulated in Article II of the Outer Space Treaty. Thus, leaving the lunar landing sites untouched gives rise to the appearance that those sites belong to the United States, Russia, China or India, as the case may be.

They do not. They are the common heritage of all humankind and should be celebrated and preserved accordingly. We challenge the international community to work with us to address the void left by current space law in respect of human heritage in space and develop reasonable and practical protocols for preservation selection, management and scientific study. Only by protecting our first steps in space and properly garnering the invaluable lessons of our forebears, will we be able to help our spacefaring descendants continue our migration into space with purpose, peace, cooperation and humanity.