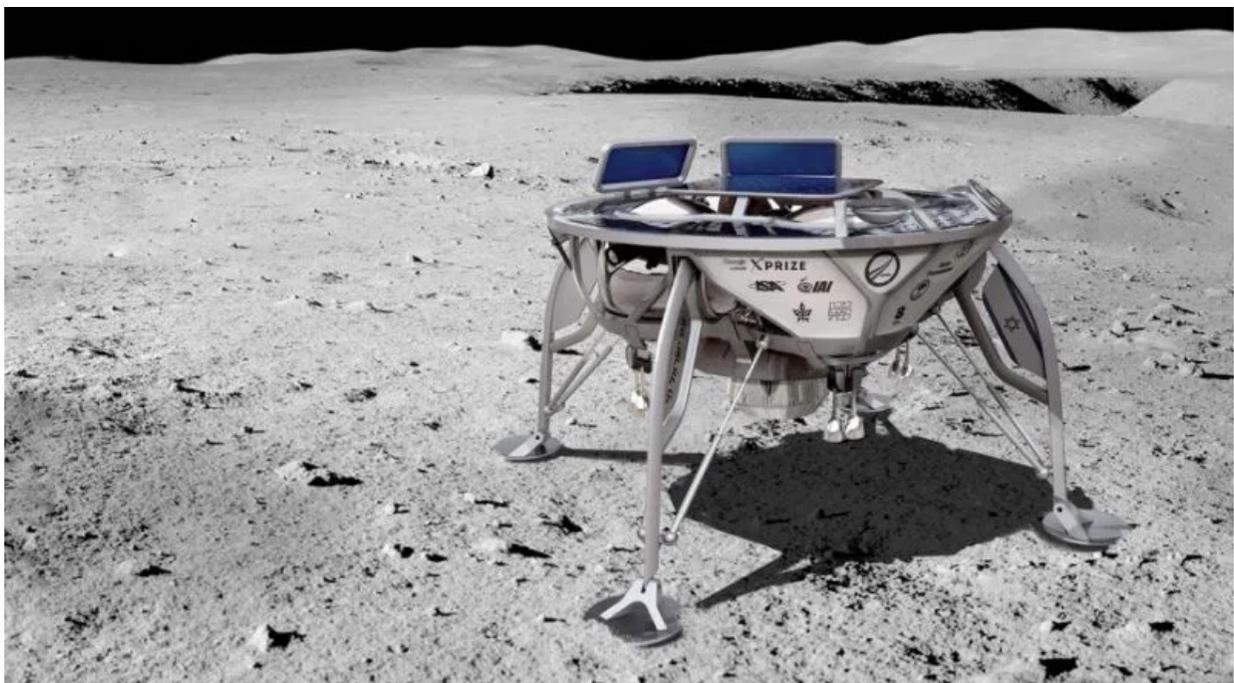


GIZMODO

A 30-Million-Page Archive of Humanity's Achievements (and Failures) Is Headed to the Moon



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Artist's depiction of Beresheet lunar lander.

Image: Spacell

Israel's privately built Beresheet lunar lander is currently en route to the Moon—and tucked away on it is a small disk that's crammed with 30 million pages of documents offering a primer on human knowledge. The collection of images, text, and symbols is the first step in a project to build a "Lunar Library" and part of a larger initiative to create a galactic archive of Earth.

The arctic home of the Doomsday Vault containing a selection of the world's seeds is under threat of thawing as climate change becomes a more urgent reality. And nuclear annihilation still looms in the background as an ever-present reminder that Earth might not be the secure location to store all of the records of human knowledge and progress. For those reasons and more, the Arch Mission Foundation (AMF) is working on a multi-pronged approach to shrink down "the records of our civilization" into a sustainable format and fling them around the galaxy. On Thursday, the first disc in the Lunar Library initiative, placed on the Beresheet lander, was launched by a SpaceX Falcon 9 rocket and could reach the Moon as soon as April 11.

The DVD-sized archive composed of 25 nickel film discs was custom-manufactured by NanoArchival for the AMF to store a dizzying amount of information in analog and digital formats. While we don't have a reliable way to say for certain that the device can withstand extreme temperatures and radiation blasts for billions of years, that's the dream.

According to the AMF, the first four layers of the 120-millimeter disc contain tiny analog etchings that can be seen with a low-powered microscope. In all, they contain 60,000 images of documents, photographs, books, and illustrations. The first layer can be viewed at 100x magnification and the next three layers contains etchings that are 10 times smaller. Among the contents of these layers is a copy of the Long Now Foundation's Wearable Rosetta disc. It contains a guide to the linguistics of more than 1,000 human languages and the foundation has a helpful interactive demonstration of what it's like to zoom in on the disc's surface. The analog layers also contain a primer on more than one million concepts with photographs and corresponding words in various "major" languages.

The analog layers also include technical instructions for accessing the digital layers of the device, including the necessary scientific and engineering knowledge that would be needed for decoding the file formats. The digital contents decompress to about 200GB of information and include a complete copy of the English-language Wikipedia as well as the Long Now Foundation's PanLex datasets which cover translations for 5,700 languages.

The idea is to continue sending more discs to the Moon with further documentation of humanity. Another mission is already planned in partnership with Astrobotic in 2020. And more modest archives have already been launched into low-Earth orbit as well as aboard the red Tesla Roadster that Elon Musk sent hurtling towards Mars last year.

This isn't just about saving documents on the off chance that aliens find Earth as a dilapidated husk of a planet destroyed by humans. AMF founder Nova Spivack told CNET that "the interplanetary network of backup locations we have started may even help to enable an interplanetary Internet." Because it takes a long time to transmit information over limited bandwidth between Earth and missions in outer space, the AMF hopes to set up these sorts of libraries at various outposts for teams to decode and access.

While the goal of preserving human progress is admirable and the storage technology that the AMF is employing seems useful for space travel, most of us probably just want to know what's being selected to represent humanity. Unfortunately, that's not being completely revealed at the moment. When Gizmodo contacted the AMF for more info, a spokesperson sent us an 84-page PDF that is little more than a table of contents, still a work in progress, and not ready for public release.

Even if we were given a complete copy of all 30 million pages contained on the disc, we wouldn't have the time to comb through all of it. We can confirm that selections from the Internet Archive and a copy of The World Factbook are stored on the device. A list of included subjects features expected categories like "aerospace," and "mathematics," alongside more surprising topics like "women's studies," "criminology," and "humor." Unfortunately, we don't have a list of the AMF's musical choices to critique.

When we asked the AMF why the full list of contents isn't being released at the moment, a spokesperson told us:

We're only announcing some of the content in the library right now because of the various partnerships we have. Much more content will be revealed, but there is obviously a great deal and it would be overwhelming to announce it all at once. Our goal is to be as comprehensive as possible. Rather than rely on problematic curations of material, we want to include the full breadth and diversity of recorded human knowledge and culture and a record of the life and civilization of planet Earth.

Indeed, of the ten chapters of information found on the digital layers, one is simply labeled, "Private Collections." The AMF is working with major non-profit organizations like Project Gutenberg and the Wikimedia Foundation but it's also taking private funding in exchange for the opportunity to choose some included content. Last year, Spivack told Live Science that he hopes in the future this kind of offer can be affordable and available to everyone. He wants the price to be around \$20 to \$100 for the right to include "some fragment of data" in one of the archives. He also said the AMF won't be making censorship decisions. "We'll include everything, including the bad stuff because the bad stuff is also important," he said at the time.

Has some rich donor already sent the world's first dick pic to land on the Moon? Possibly. Is there a Rick Roll included in that private archive? I'd say there's a nonzero chance that the answer is yes. Without stupid choices like that, the archive wouldn't even be telling a small fraction of our glorious story—and it wouldn't be giving any alien species a fair warning before they make first contact.

[Arch Mission Foundation, CNET]

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