

MAD SCIENCE SHOW
VOYAGERS GOLDEN RECORD

by Nick Clowes

<http://naukabezgranic.pl/podcasty/mad-science/>

In 1977, in response to a fortuitous alignment of the outer planets of our solar system, NASA launched space probes Voyager 1 and 2 to tour the outer planets and transmit photographs back to Earth. In that capacity, the Voyagers were spectacularly successful, sending tens of thousands of images of planets and moons back to Earth via radio. Both probes passed beyond the orbit of Pluto in the late 1980s, and they continue on toward interstellar space traveling at approximately almost 60,000 kph. They continue to transmit data back to Earth, and are expected to do so until around 2025, when their radioisotope thermoelectric generators will be exhausted, and unable to power any instruments.

In 40,000 years or so, Voyager 1 will pass within 1.6 light-years of the star Gliese 445, and at around the same time Voyager 2 will be within 1.7 light-years of the star Ross 248. If either of these systems happen to be home to an advanced alien civilization, there's a chance they will detect and retrieve one of our plucky nuclear space robots.

In anticipation of the possibility of such proxy contact, NASA mission designers affixed a message from humanity to the side of each probe in the form of a phonograph record. These gold-plated copper records each contain an identical compilation of sounds and music from all over the Earth, as well as analogue-encoded images. In the event that one of the probes is ever discovered by an intelligent alien species, the included instructions will hopefully allow them to decode the sounds and sights of our civilization.

For the approximately two hours of sounds, the committee selected vocal greetings in 55 Earth languages; sounds such as thunder and machinery; and music from around the world.

The first image is a "calibration circle," intended to verify to the decoders that they have succeeded in translating the analogue data into an image.

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Following this are 121 images featuring mathematical definitions, diagrams and photos of our solar system, human anatomy, scenes from Earth, and written messages from humans associated with the project.

Each record is enclosed in a protective, gold-plated aluminium jacket, together with a cartridge and a needle. Symbols etched into the protective cover attempt to convey where the spacecraft came from, and how to decode the contents of the record. This cover also contains an ultra-pure source of Uranium-238 that an alien civilization could use as a radioactive clock to deduce the age of the craft, by measuring the remaining Uranium-238 and calculating based on its half-life.

Given the vast, huge, mind-boggling size of outer space, it is unlikely that any alien civilization will ever discover our small, cold probes floating past their stellar neighborhoods, nor our gilded greetings thereon. But on a long timeline, in a large universe, “unlikely” isn’t as hopeless as it might sound. Furthermore, having made the effort to send the message is in some ways its own reward.

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