

## News from space

### Quarantines can help a society protect itself from dangerous infections

By JIM OBERG

The word comes from the French, for the 40 days of isolation once faced by new arrivals who may have been infected. After the quarantine has passed, they were either certified to be disease-free or dead.

Quarantining an entire planet against potentially harmful extraterrestrial dis-

eases becomes more difficult.

Though the odds are minuscule, what's needed to prevent something with global consequences? What protections are reasonable?

The launch of Stardust to retrieve a milligram of dust from the Wild-2 comet is the first human attempt to bring

back extraterrestrial samples in almost three decades.

NASA would like to bring back samples from Mars in less than 10 years. Other comet missions are also on tap, and the Russians dream of retrieving samples from the Martian moons Phobos and Deimos.

### Life on the Moon, Maybe

It's commonly thought that on at least one occasion, infectious germs were brought back from the moon.

This occurred on the Apollo 12 mission in November 1969, when the crew retrieved pieces of the Surveyor 3 robot that had been on the moon for two years. Subsequent culturing of swabs from various locations gave one positive result of viable *Streptococcus mitis* spores were picked up from a swab rubbed inside the Surveyor's camera case.

Microbiologists weren't all that startled by the finding, since the temperatures inside the hardware on the lunar surface had stayed well within the range that microbial spores were known to tolerate, even if it had also been in a vacuum (and viable spores have been retrieved from spacecraft brought back after months or even years in Earth orbit).

Unfortunately, the technician collecting the lunar swabs back in 1969 was seen to violate isolation pro-

cedure by laying the new swabs down on a non-sterilized table surface. So the positive results could have been caused by somebody sneezing in the room the previous day.

Even though it's intriguing that the one positive was the sample taken from the most sheltered interior location of the hardware, the finding must be chalked up as interesting if true, and left to dangle in perpetual ambiguity.

### Space Spores

There's also the renewed debate over natural transport, via meteorites and space dust.

A century ago, scientists used the term "panspermia" to describe the possibility that spores could naturally pass from planet to planet. Today, space experts have asked themselves if the quarantine issue isn't already moot, since new evidence

and computer simulations suggest there never has been biological isolation between planets.

Asteroid impacts on Earth, the moon and Mars have flung rocks off each world, circling the sun until they slam into a nearby world.

One extreme view is that life on Earth is the result of contamination from Mars.

That smaller planet cooled earlier than Earth, and seems to have had oceans for hundreds of millions of years while Earth's surface was still molten.

Martian rocks bearing spores could have rained upon Earth until our oceans formed and provided a hospitable environment for a few lucky survivors.

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