

by Margaret Wertheim

technological rubbish. Is waste really the inspirational pinnacle of our society? Have we nothing more poetic to chisel in stone?

And exactly how should this uplifting pinnacle be presented? According to Frank Drake, one of the teams' experts and an astronomer who helped design the message for extra-terrestrials which the Pioneer and Voyager probes carried into space, the key word is redundancy. The message has to be delivered in many ways.

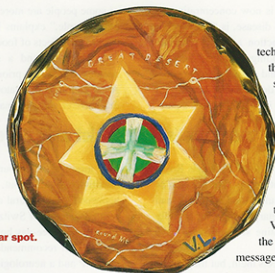
Bearing this in mind, both advisory teams came up with the same basic design: a field of monoliths inscribed with warnings in different languages, and using scientific symbols and cartoon-like images showing people digging up the waste, getting sick and dying.

Drake points out that, although most languages are "unrecognisable after 500 years", there are scholars who do understand ancient Egyptian,

and the teams agreed that we have every reason to think that in the future there will be scholars in "ancient" English. Still, they recommended playing it safe. As it is known that languages used in religious texts often have a longer lifetime, they suggested that, as well as being written in contemporary languages, the messages might also be written in Hebrew and in the Arabic of the *Koran*.

As to the monoliths themselves, there was considerable discussion about what they should look like. In particular, there was the issue of whether they should be beautiful or ugly. It was decided that ugliness was definitely the way to go. After all, there's nothing to celebrate. But even something ugly is bound to look interesting if it's built on this scale, and is therefore going to attract attention in the future, just as Stonehenge attracts us today. Drake says that the teams pondered the unpalatable possibility of the site becoming a tourist attraction in some far distant future, but the only alternative to an "interesting" site seemed to be to have none at all. In fact, they did consider whether the best thing might be not to mark it in any way, but they concluded that "this was unethical and immoral".

So, one day, when the designated area is filled to the brim with toxic garbage, the DOE will seal it over and erect its message: "Poison. Danger. Sickness. Death." Love and kisses from the twentieth century. ●



Danger, danger: X marks the nuclear spot.

## this mortal toil

On behalf of the people of the future, today's astronomers, linguists and scientists are devising a warning symbol for our nuclear waste sites

hands up all those who can read ancient Sumerian. Egyptian? Babylonian? The almost universally negative response to this innocent query highlights just how difficult a task the US Department of Energy (DOE) has set itself. That erstwhile body has decided to transmit a message into the future, and it must last for at least 10,000 years, if not 100,000. The message is simple: "Radioactive waste buried here. Keep away." But if the content is easy, communicating it across millennia is not, as your own grasp of Sumerian should prove to you.

There are very few messages which need to be transmitted for tens of thousands of years, but with the advent of nuclear waste sites we've discovered one that must be. The DOE is currently planning its first permanent site in the New Mexico desert and it has decided to do the right thing and declare it buried "treasure" to future generations and civilisations. But how do you go about talking to people thousands of years in the future? The DOE, which is not generally known for its intermillennial communication skills, recently put together two teams of "experts" to advise it on this tricky issue. They included astronomers, anthropologists, archaeologists, linguists, artists and materials specialists (well, someone had to advise on the medium to be used, and we're not talking about paper here).

The medium they used was rock. The experts agreed it would be no problem to build something out of stone that would last 10,000 years: after all, the great pyramid of Cheops is almost 5,000 years old and should last another 5,000. And no-one doubts that Stonehenge will survive a few more millennia. So, the idea is to build this vast stone monument to signal nuclear waste. I have to say that this seems like a giant step down the civilising scale. I mean, the Egyptians were making the burial site a living god. We're marking the site of our