

## IT'S ONLY A MATTER OF TIME

In December 2018 the Voyager 2 spacecraft finally left our solar system and headed out into the vast emptiness of space. Its journey so far has taken 41 years, and it is now some 11 billion miles from earth, at such a distance now that radio signals from it take some 16.5 hours to reach us.

When it was launched from Cape Canaveral in August 1977 the world was a rather different place. Jimmy Carter was President of the US, James Callaghan was Prime Minister, and "God save the Queen" by the Sex Pistols was Top of the Pops. There was no broadband, no internet, no e-mails, no cyber crime, no Amazon, no Facebook, no Twitter, no zombies staring at their smart phones. Such bliss!

Voyager 2 will now continue ever farther into space, travelling at a speed of around 55,000 km per hour. It is expected to send back messages until at least 2025 when its power supply will probably be exhausted. It is not aimed at any particular part of the universe, but in about 300,000 years, (don't wait up!), it should pass quite close to the bright star Sirius. Should it stumble upon another solar system supporting intelligent life, it brings a message from Earth. On Voyager 2 there is a gold-plated audio-visual disc containing images of the Earth and its life forms, greetings from the US President and the UN, music by Mozart and eastern composers and a child's greetings in English.

Of course, by the time anyone gets to read these messages, life on Earth will have long been extinct, destroyed either by a man-made nuclear Armageddon, or by the total exhaustion of Earth's resources. Professor Stephen Hawking had warned against this possibility, urging mankind to consider colonising other planets in our galaxy to ensure our survival. But it is difficult to see how this could be achieved, given the vast distances that would have to be travelled to reach these planets. A trip to our nearest neighbour in the galaxy, 4.5 light years away, might take more than 30,000 years. Science fiction writers get round this rather inconvenient fact by talking glibly of time warps, or similar, when a space ship and its crew can be magically swished from one end of the universe to the other in a twinkling of an eye. But the detailed physics of how this might happen is sadly lacking.

In the meantime Voyager 2 has travelled another 50,000 km as I have been writing. Tempus, as always, fugit. Bon voyage!