



low-cost commercial launchers developed, to carry tens to hundreds of kilograms of payload, in contrast to the 5 tonnes typical of launchers designed for communications satellites. Freeman says that such smaller rockets could carry perhaps a few dozen 5-kg CubeSats to low-Earth orbit, or be adapted to include an upper stage that could take a single CubeSat to deep space. He hopes to use a similar method to send a free-flying probe to Venus, where it would skim through the planet's acidic atmosphere. CubeSats aimed for the Moon might get

an easier ride. NASA's Space Launch System, a heavy-lift rocket designed to send people beyond Earth's orbit, will carry 13 CubeSats and an uncrewed Orion capsule on its maiden launch in 2018. The cargo will include Lunar Flashlight, which will use a reflected beam of light to look for icy deposits in the Moon's dark craters, and Near-Earth Asteroid (NEA) Scout, designed to explore a nearby asteroid.

ESA is developing a separate lunar approach. Together with Surrey Satellite Technology Ltd (SSTL) in Guildford, UK, and the Goonhilly

Earth Station in Helston, UK, it is developing a system that could solve two problems: a commercial mothership that would provide transport to the Moon and a data relay for dozens of CubeSats, for a fee of around £5 million (US\$6.6 million) per craft. Eventually, such a model could expand, says the SSTL's Christopher Saunders. "Essentially, we want to build a Solar-System internet," he told the Interplanetary CubeSat workshop in Oxford in late May.

According to Freeman, CubeSats will soon be able to carry instruments that would have seemed off-limits only a few years ago, such as high-resolution imagers and radar altimeters. And a recent investigation by the US National Academies of Sciences, Engineering and Medicine of CubeSats' potential concluded that the probes are capable of doing "fantastic science", Thomas Zurbuchen, a space scientist at the University of Michigan in Ann Arbor, said at the meeting. "Much of it has yet to be imagined." ■

#### CLARIFICATION

In the News Feature 'Mystery in the heavens' (*Nature* **534**, 610–612; 2016), the discussion of the initial radio burst meant to say that over the course of just a few milliseconds, the source's output matched that of 500 million Suns in the same time period.