



Dr Amy Saunders

Editor

“ Welcome to the April issue of NewSpace International, the first issue of the New Year! In this issue, we've focused on sustainable off-world settlements, covering areas from eco-habitats, water resources, robotics and manufacturing, all of which will be essential for humankind to find its second home in space.

While ambitious plans for off-world settlements remain in the eyes of many as science fiction, space sector professionals the world over are exploring ways to make it reality. In our overview of recent developments on page 16, we consider the sustainability factor and the importance of microorganisms, as well as eco-habitats such as the Seed of Life project.

Meanwhile, space-based robotics are advancing as fast as their terrestrial counterparts, with China successfully landing its Chang'e 4 lander and Yutu 2 rover on the far side of the Moon, with Chang'e 5 due for launch later this year. In other news, the European Space Agency (ESA) has issued a call for proposals for spelunking Moon robots in the hopes of finding water and a sustainable underground base. In this article on page 24, we also review how space-based robotics are helping extend the lifetime of satellites, with Northrop Grumman's MEV-1 nearing its first docking stage.

On a related subject, off-world manufacturing, an essential for supporting human life beyond Earth, is coming on in leaps and bounds with experiments with cement on board the International Space Station (ISS), and 3D printing prototypes such as Made In Space's Additive Manufacturing Facility (AMF) and Firmamentum's Refabricator project on the ISS. You can read about my personal favourite experiment in off-world manufacturing, the production of 3D printed meat on board the ISS, on page 8.

In this issue, we also discuss orbital sustainability with Astroscale on page 20. ■



Sustaining life beyond Earth