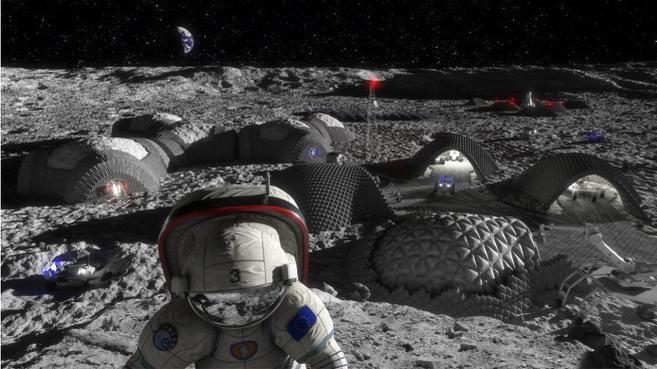


Image: Future moon base

21 November 2018



Credit: RegoLight, visualisation: Liquifer Systems Group, 2018

A vision of a future moon base that could be produced and maintained using 3-D printing.

Habitat modules are seen beside 'garages' for rovers, with an adjacent launch site. Note the robotic vehicles on the surface, proceeding with base construction.

A new ESA-led project is investigating the ways that 3-D printing could be used to create and run a habitat on the moon, reducing logistical dependency on Earth. Everything from [building materials](#) to [solar panels](#), equipment and tools to clothes, even nutrients and food ingredients can potentially be 3-D printed – as detailed in this new video.

Space agencies around the world are considering the concept of a lunar base as a possible next step in human space exploration – and 3-D printing represents a key technology for making it happen.

The aim would be to 'live off the land' as much as possible, by printing as many structures, items and spares out of [lunar regolith](#) as possible, or by using and reusing materials brought for the mission, rather than continuously relying on the long, expensive supply line from Earth.

Maximised 3-D printing would also allow on-demand production of items and spares with routine recycling of materials available within the base, making lunar settlement much more self-sufficient and sustainable.

"The selected print processes would allow available materials to be recycled for different purposes," explains Antonella Sgambati of OHB System AG, managing the project. "Another major benefit of 3-D printing – otherwise known as additive manufacturing – is the breadth of design options it allows. Components, products and the print process itself can be redesigned based on their intended final usage in the lunar base. Decisions can be made on how best to link available [materials](#) with the hardware to be printed."

Provided by European Space Agency

APA citation: Image: Future moon base (2018, November 21) retrieved 26 September 2020 from <https://phys.org/news/2018-11-image-future-moon-base.html>

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