

# LUNIUS

LUXURY OUT OF THIS WORLD



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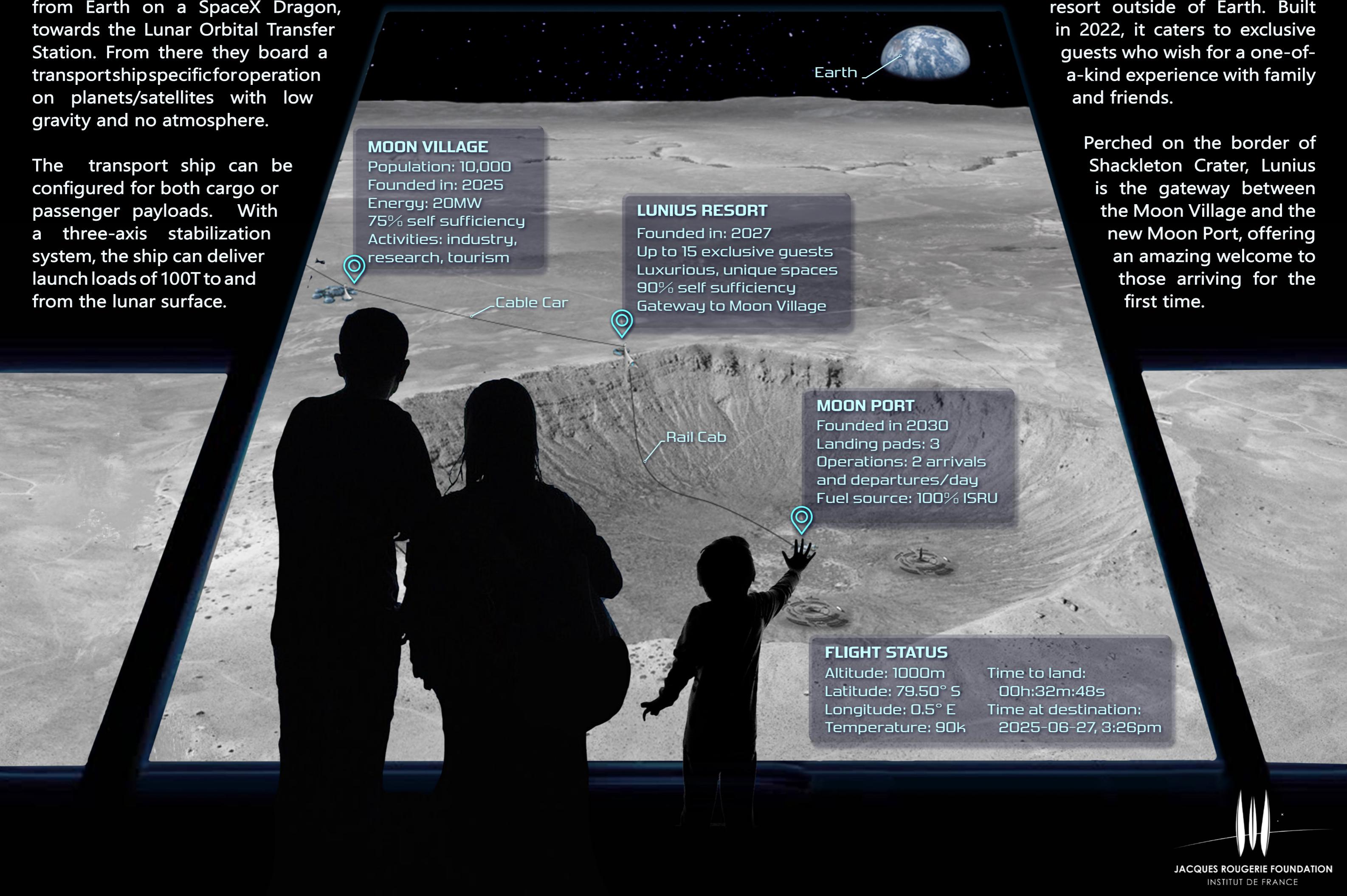
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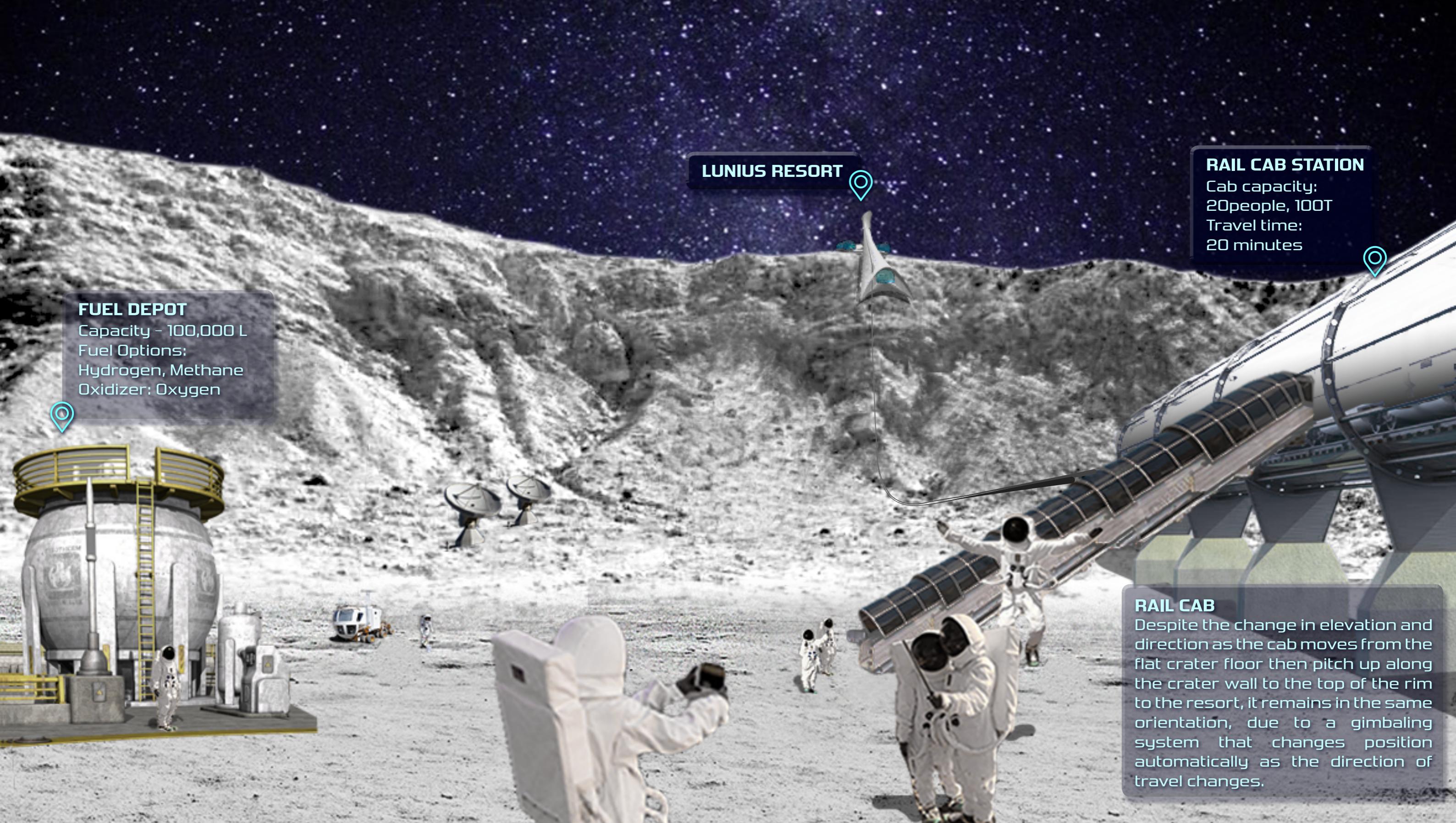
Guests of the Lunius Resort depart from Earth on a SpaceX Dragon, towards the Lunar Orbital Transfer Station. From there they board a transport ship specific for operation on planets/satellites with low gravity and no atmosphere.

The transport ship can be configured for both cargo or passenger payloads. With a three-axis stabilization system, the ship can deliver launch loads of 100T to and from the lunar surface.

Lunius Resort is the first luxury resort outside of Earth. Built in 2022, it caters to exclusive guests who wish for a one-of-a-kind experience with family and friends.

Perched on the border of Shackleton Crater, Lunius is the gateway between the Moon Village and the new Moon Port, offering an amazing welcome to those arriving for the first time.





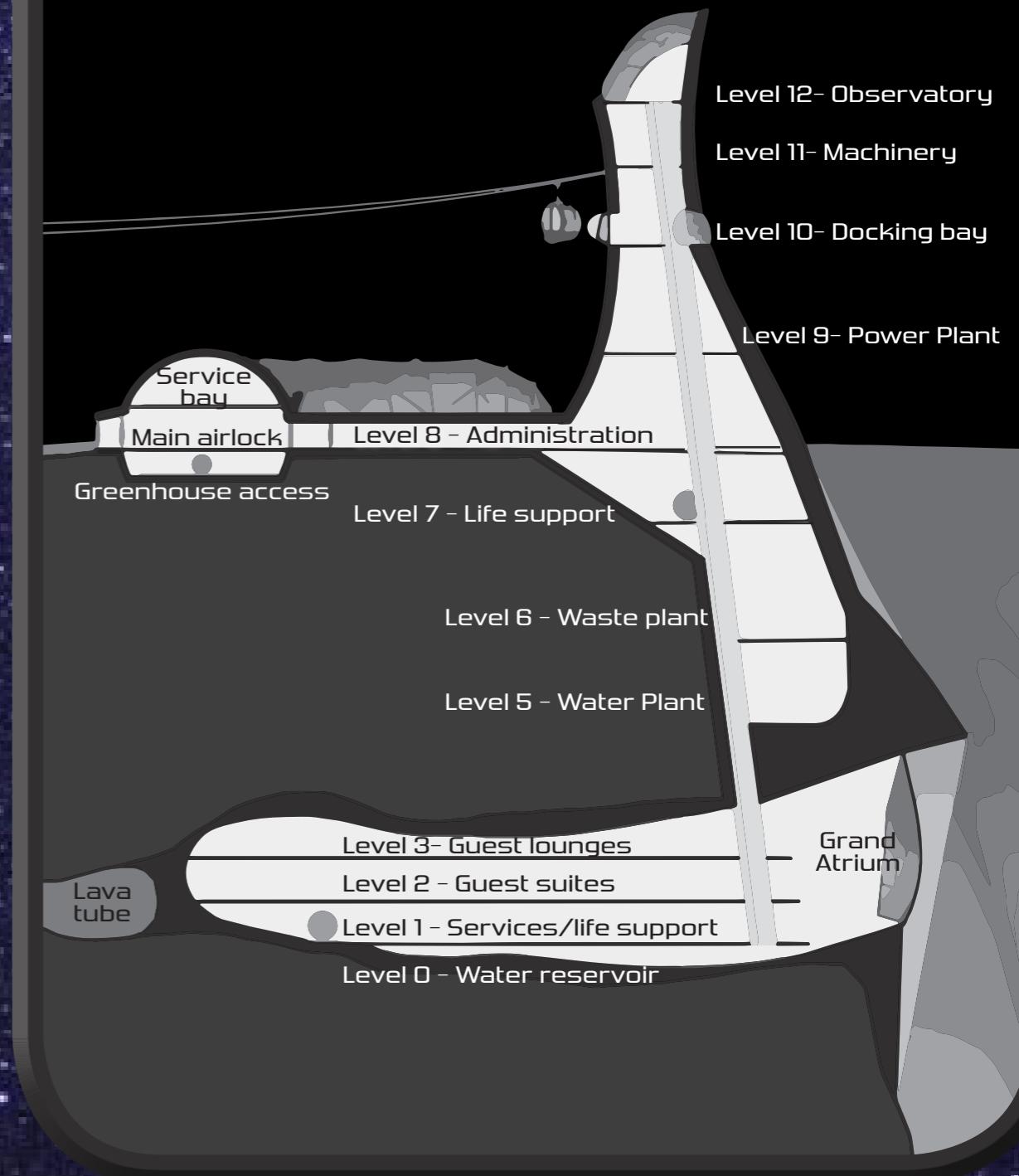
Upon touching down on the moon at one of three landing pads, you egress to the crater floor for a short, 100-foot EVA where you can enjoy your first steps on the lunar surface. Once you board the Rail Cab, your lunar excursion suit will stay on, in the unlikely case of an emergency, but your helmet can be removed. While the image of the Apollo dune buggy rovers is in your mind, there was a lot to be desired in that bumpy, dusty trip. The Cab for the resort was designed to bring comfort and safety to a traveler's ride to the site, and as you glide along the rail, the distractions of a trundling, pitching surface rover just aren't there. You can truly enjoy the view, and drink in the fact that you are really seeing Buzz Aldrin's "magnificent desolation".





## LUNIUS RESORT

Schematic section



During the 20 minute Rail Cab ride to the resort you can enjoy the amazing views of the crater and the approaching structure. However, if you wish to find out more about the resort itself, the on-board tablet let's you explore all there is to know about Lunius and how it was constructed in and around a lava tube close to the rim of the crater.





## GRAND ATRIUM

2000m<sup>3</sup> of free space  
for experiencing the  
thrills of lunar gravity

Largest viewing window  
outside of Earth looking  
over the crater

As you approach the resort, you enter a warmly-lit docking bay, and after passing through the entry bulkhead, you can see that a large airlock door closes behind you. Gently, your Cab pulls to a floor-level platform, and after a few minutes of re-pressurization of the docking bay, a large green light blooms over the exit hatchway, where the concierge awaits to give you a tour. A large window gives a majestic view out onto the edge of the ridge on which the resort is located. With a knowing smile and a certain sense of his own fascination, your guide explains that the view before you will change every solar day that you are there.



## 100% LUXURY

Lunius features seven spacious living quarters in the lava tubes and exclusive contemplation areas in the Grand Atrium.

## SPA

The SPA is surrounded by plants especially selected to purify and perfume the interior atmosphere. The water in the SPA is constantly being cycled through the Purifying Gardens, and is not mixed with the consumable water of the resort. This process of natural filtering through plants keeps the water mineralized and fresh, and maintains the humidity levels inside the Grand Atrium.



For you, every day will be a new Moon. On the early Lunar morning, the sun lies low on the horizon, the shadows casting a sharp relief to certain features. As the sun progresses across the sky, those details of light and shade will change, too. You can enjoy a relaxing, low gravity bath in our premium spa overlooking the atrium and the crater, or enjoy some private contemplation time in the exclusive viewing area in the Grand Atrium.

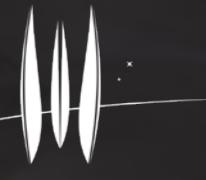


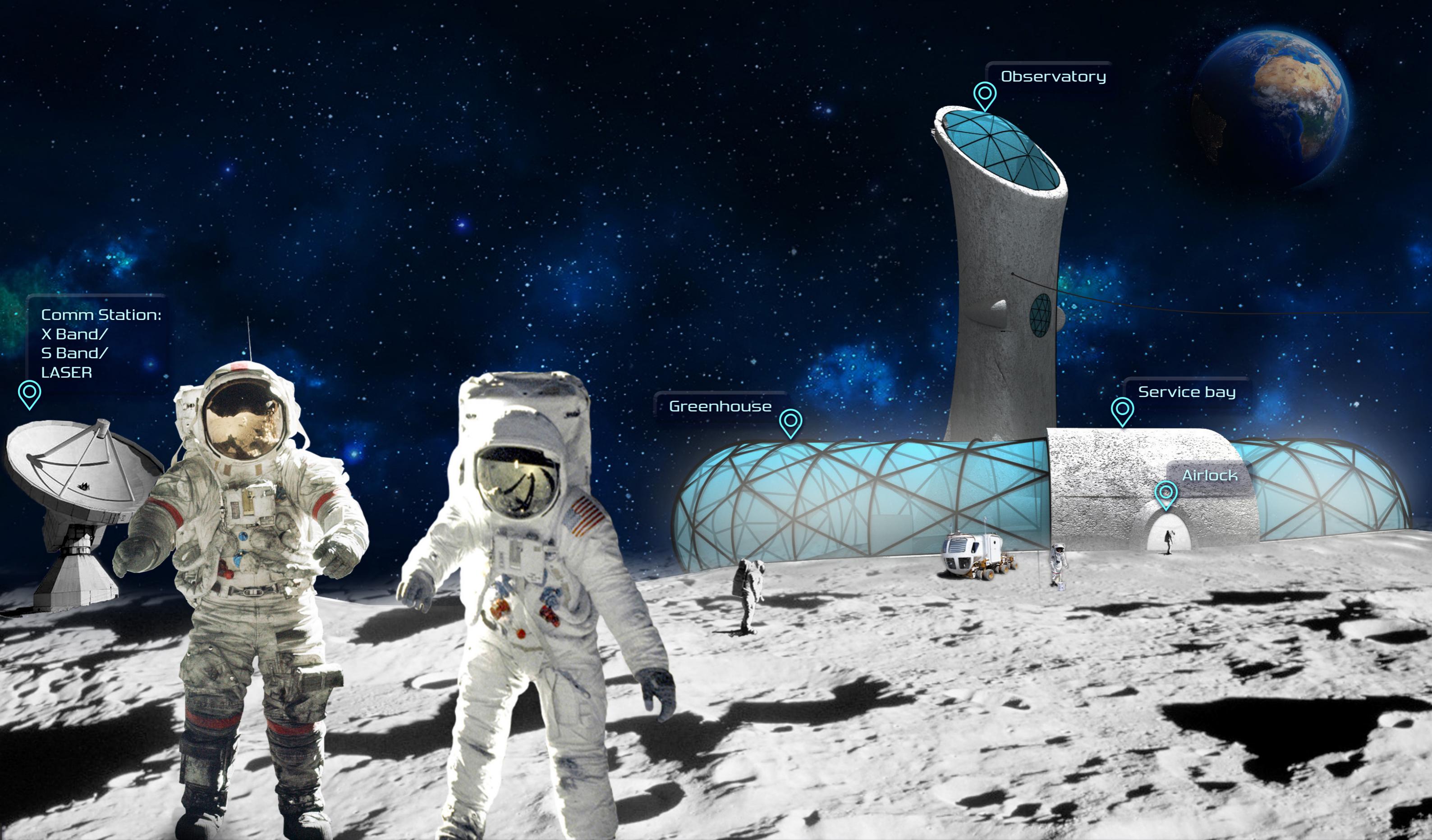


During your visit to Lunius you will enjoy fascinating activities every day. Dining in front of the crater while watching the daily launches, taking a Cable Car ride to visit the Moon Village, cuddling up in a romantic stargazing experience and taking a 3-day rover trip to visit some of the Apollo sites are only a few examples of the extraordinary times you'll have on the moon.



The Greenhouse, a u-shaped dome of 3D printed glass fiber structure with radiation protected glass, flanks the resort tower on both sides. The dome is completely made up of clear panels, designed to let in the light from the Lunar day. Along the pathway are ornamental plants with deep green leaves and very impressive flowers, lending a particular splash of color to the gray lunar landscape. Other pathways branch off to a large assortment of fruits and vegetables, where all the produce served in Lunius comes from. All plants in the greenhouse and the Atrium help scrub the CO<sub>2</sub> exhalation of the humans in the resort and provide in return a significant amount of oxygen. However, a life support system is still required for the bulk of atmospheric maintenance.





The moon is tidally locked to the Earth. Therefore, the Earth will always be in the same position of the lunar sky, varying only in phase. The lunar day lasts for ~28 earth days; which implies 14 days of sunlight and 14 days of darkness. However, due to Lunius' location on the Shackleton crater, the lunar day lasts about 21 days. In that one week of darkness, Lunius opens its doors to the scientific community. During such periods you can join real science expeditions and go EVA with the scientists in search of interesting rocks and artifacts from the lunar surface.



## Technical References:

- <https://www.space.com/27388-nasa-moon-mining-missions-water.html>
- <https://www.space.com/21713-mining-moon-resources.html>
- [https://oceanservice.noaa.gov/education/kits/tides/media/supp\\_tide05.html](https://oceanservice.noaa.gov/education/kits/tides/media/supp_tide05.html)
- Building components for an outpost on the Lunar soil by means of a novel 3D printing technology, Cesaretti G, et al., 2014
- Additive manufacturing for a Moon village, Labeage-

Martinez N, et al. , 2017

- Lunar Concrete: Prospects and Challenges, Khitab A, et al., 2016.
- NASA Systems Engineering Handbook, Steven R. Hirshorn, NASA, 2017
- The Peaks of Eternal Light- a Near-term Property Issue on the Moon, Martin Elvis, Tony Milligan, Alanna Krolikowskic, 2016
- Connecting to grow the space economy, AIAA Aviation Week, 2016



Photo montages were composed using stock photos available on the internet. Space images were courtesy of NASA.