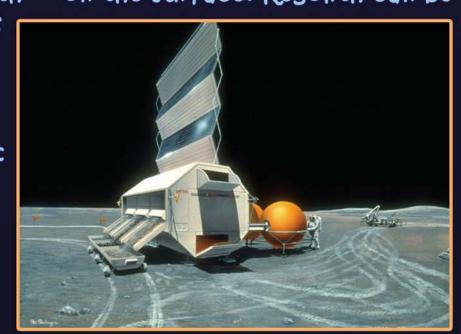


"Soil" Solutions

Countless impactors have pulverized the Moon's rock and created a layer of lunar "soil" — regolith — on the surface. Regolith can be

outposts. What resources does the Moon offer and how will we use them?

a useful resource! Astronauts may extract oxygen from regolith to make breathable air. They may cover lunar habitats in regolith to protect themselves from dangerous solar and space radiation. Heating regolith fuses its particles; future outposts may have roads and building bricks made of fused regolith. Future processing plants on the Moon's surface



will extract oxygen from the lunar regolith.

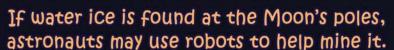
Solar Energy — A Renewable Resource

With daylight lasting 14 Earth days, sunlight can be collected, stored, and used to power the outpost, providing energy for lighting, instruments, and life support. Crater rims at the Moon's polar regions receive sunlight for even longer periods.



Solar panels will collect valuable energy for future outposts.

Water at the Poles? Data from spacecraft missions suggest that water ice may exist at the Moon's poles. Because the poles are not tilted toward the Sun, sunlight

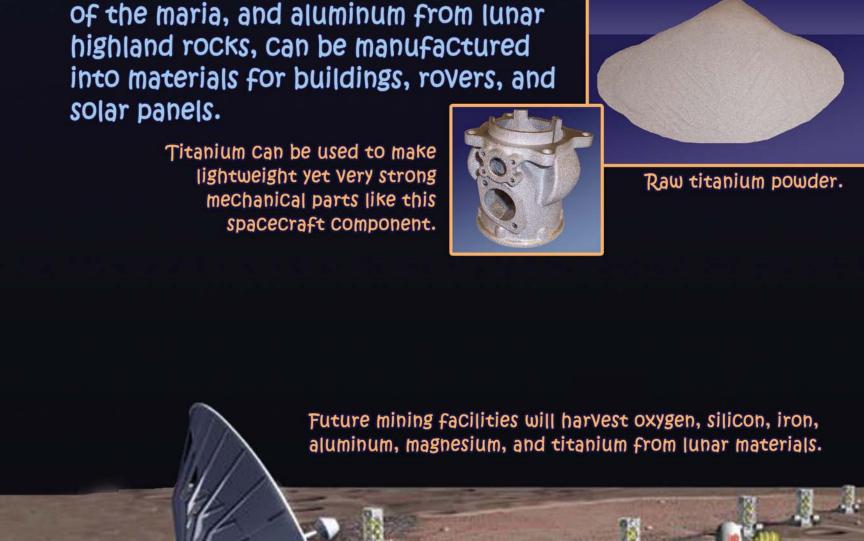


never reaches the bottom of deep craters. They are permanently dark and very, very cold. Water ice, perhaps delivered by comets, may be trapped in the Craters. Water is an important resource for future outposts not only for drinking, but also because hydrogen and oxygen, the elements that make up water, can be separated and used to make spacecraft fuel. The oxygen Can also be used to make breathable air.





Astronauts need to use their resources carefully. Shipping materials from the Earth to the Moon will be expensive, costing more than \$10,000 per pound! Existing and new technologies such as water recycling, robotic activities, and the use of fuel cells to produce electricity will help conserve resources.



etals from the Moon

Iron and titanium harvested from basalts





