COBALT 27

Conducting Operations in Base Arrangements Labor & Technology

Scholars: Angelina T, Boryana K, Bella D, Ewan L, Jasmine S, Maya N, Conner E, Warren X, Barbara M, Travis B

Mentor: Karen Johnson

SR-AF: Clinton Stellfox

Areas of Focus

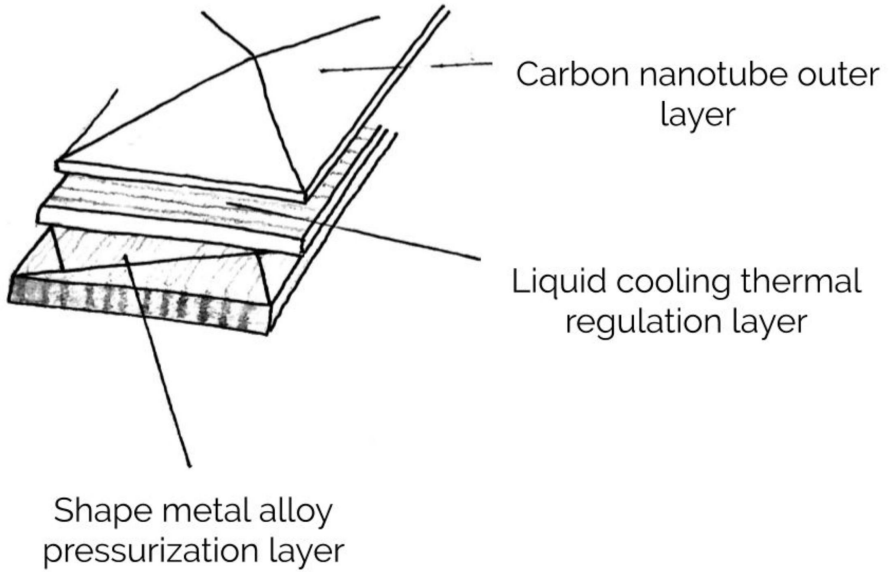
- Space Suit Design and Requirements
- Exploration and Research Focus
- Surface Mobility

Space Suit Design and Requirements

- Two kinds of suits
- Multi-layered materials
- Modular design

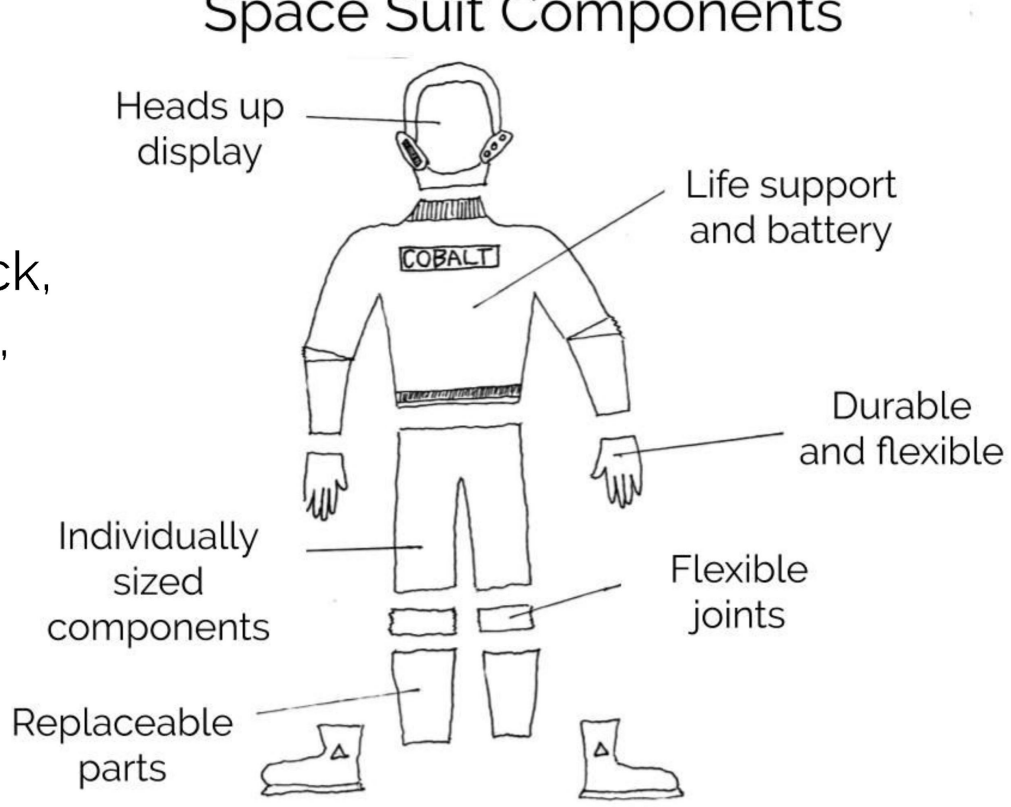
Layers

- Shape-memory alloy bio-suit compression layer
- Liquid temperature regulation system
- Carbon microtubes outer layer



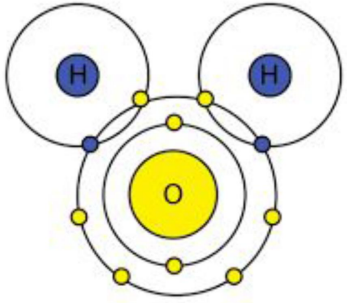
Modular Components

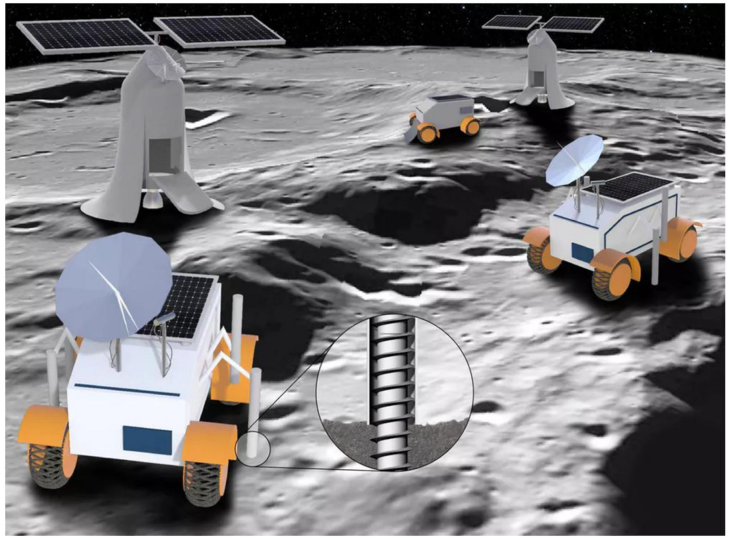
- Multiple sizes to better fit astronauts
- Arms, boots, gloves, jet pack, legs, life support backpack, torso, visor, waist
- Easily replaceable and repairable



Exploration and Research Focus

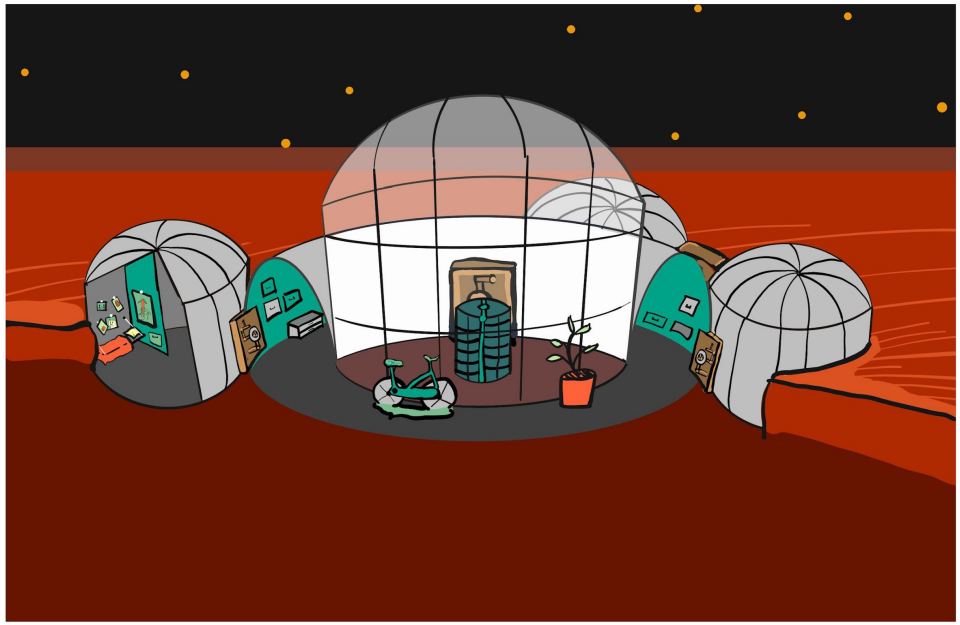
- On-site manufacturing
  - Self-sufficiency
- Water extraction
  - Fresh water
  - Oxygen
  - Hydrogen





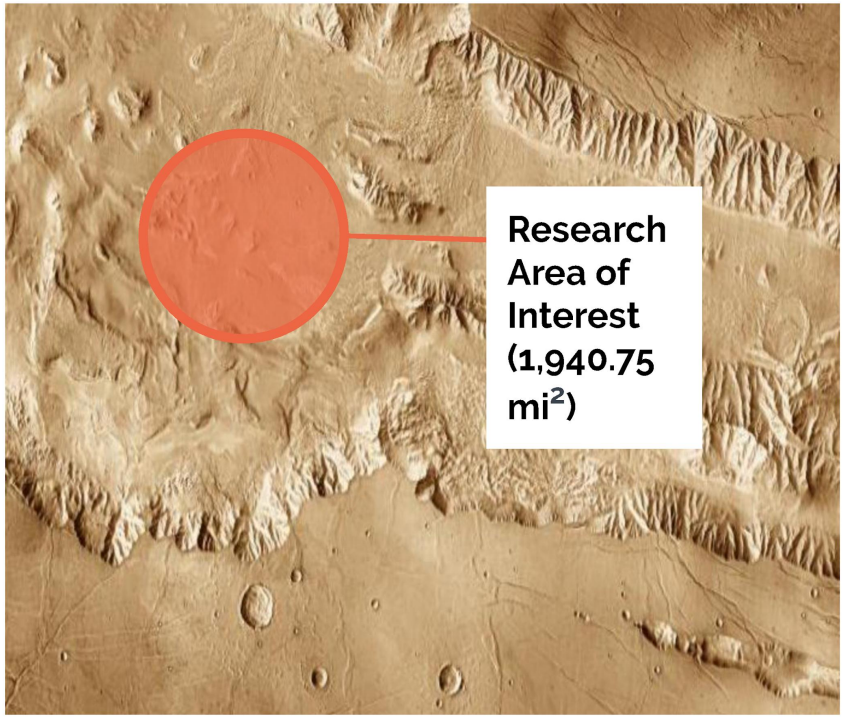
Manufacturing

- 3D Printing
- Handheld X-ray guns
- Handheld spectrum analyzers - science data collection
- Environmental chamber - pressure and thermal testing



Water Extraction

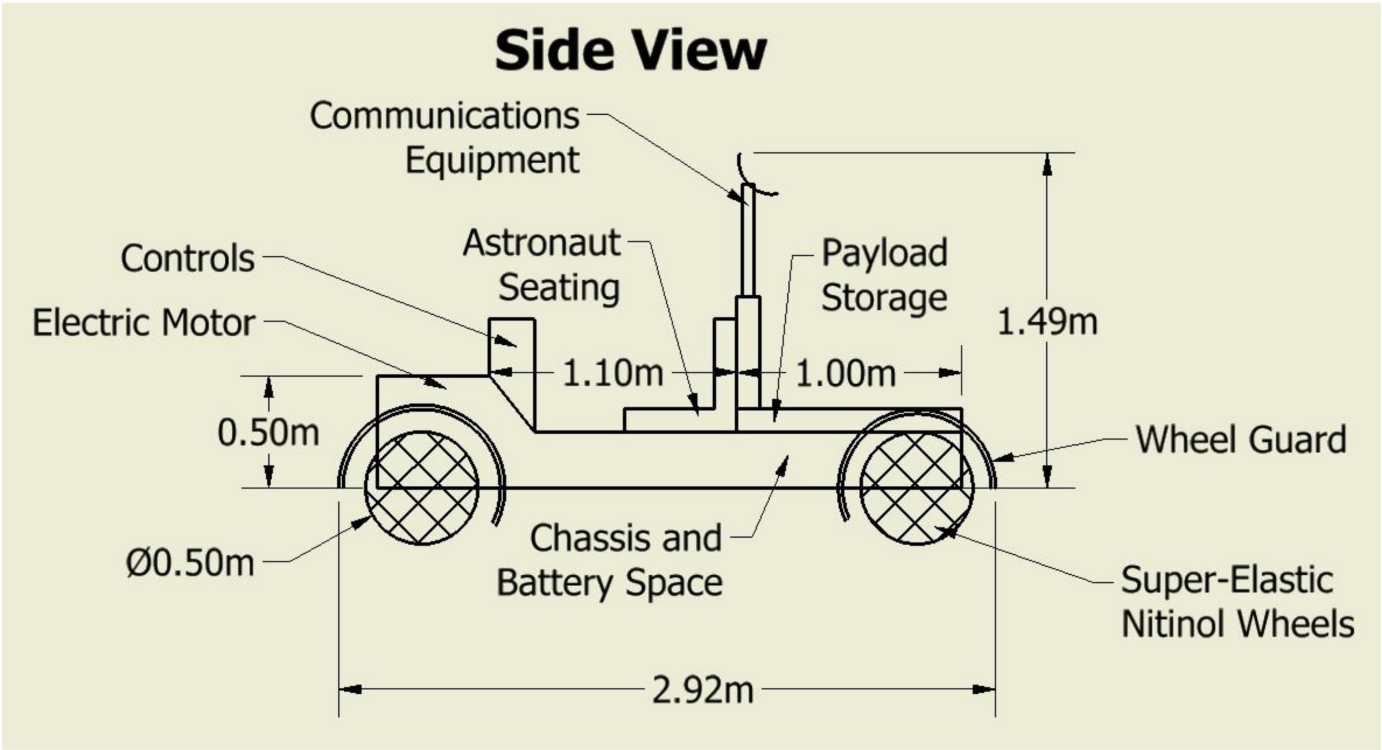
- 10-kilowatt microwave
- Heat subsurface poly hydrated sulfates
- Collect water vapor
- Producing 10 liters of water each work day



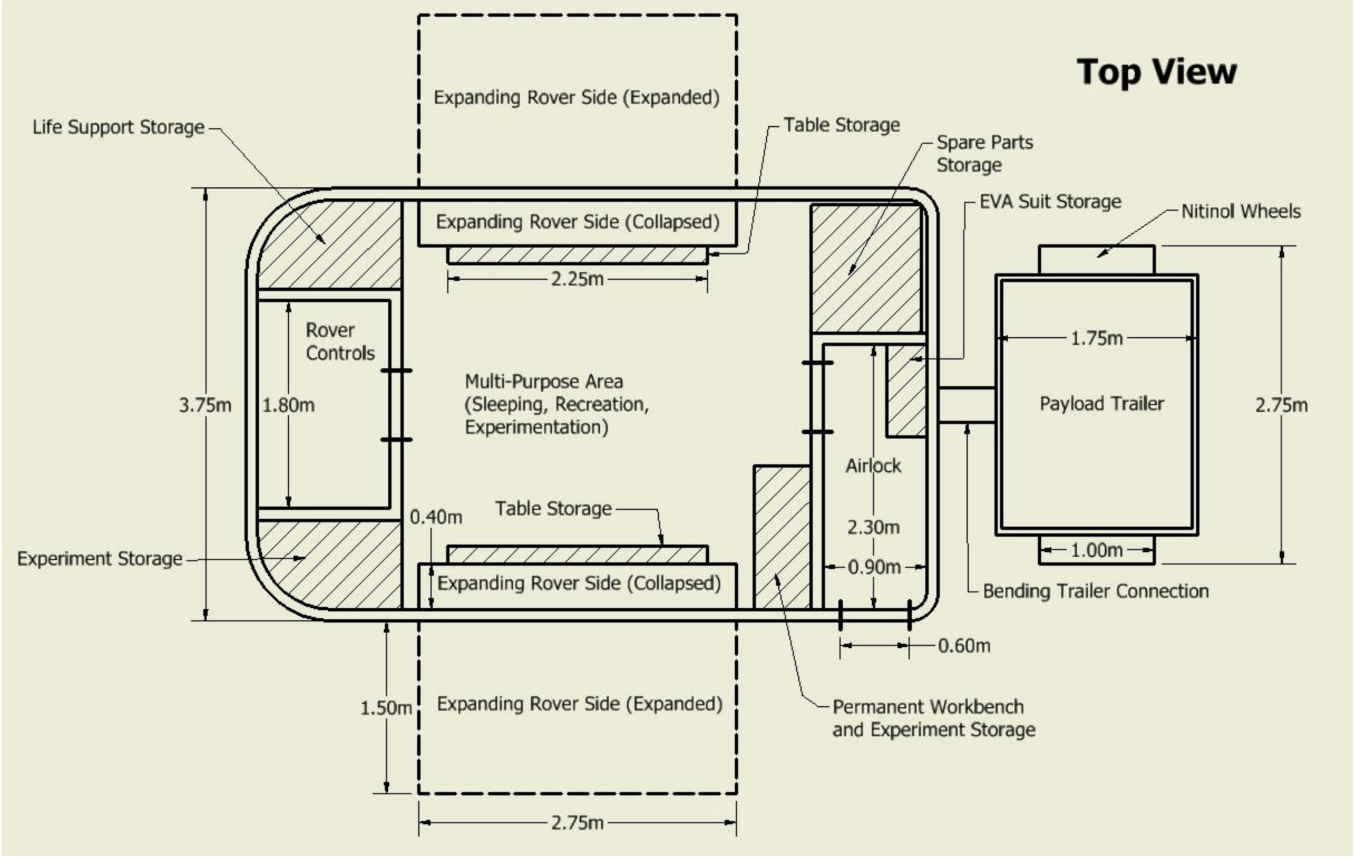
Surface Mobility

- Light Rover
- Expedition and Assembly Rover
- Quadruped Robots (Mules)

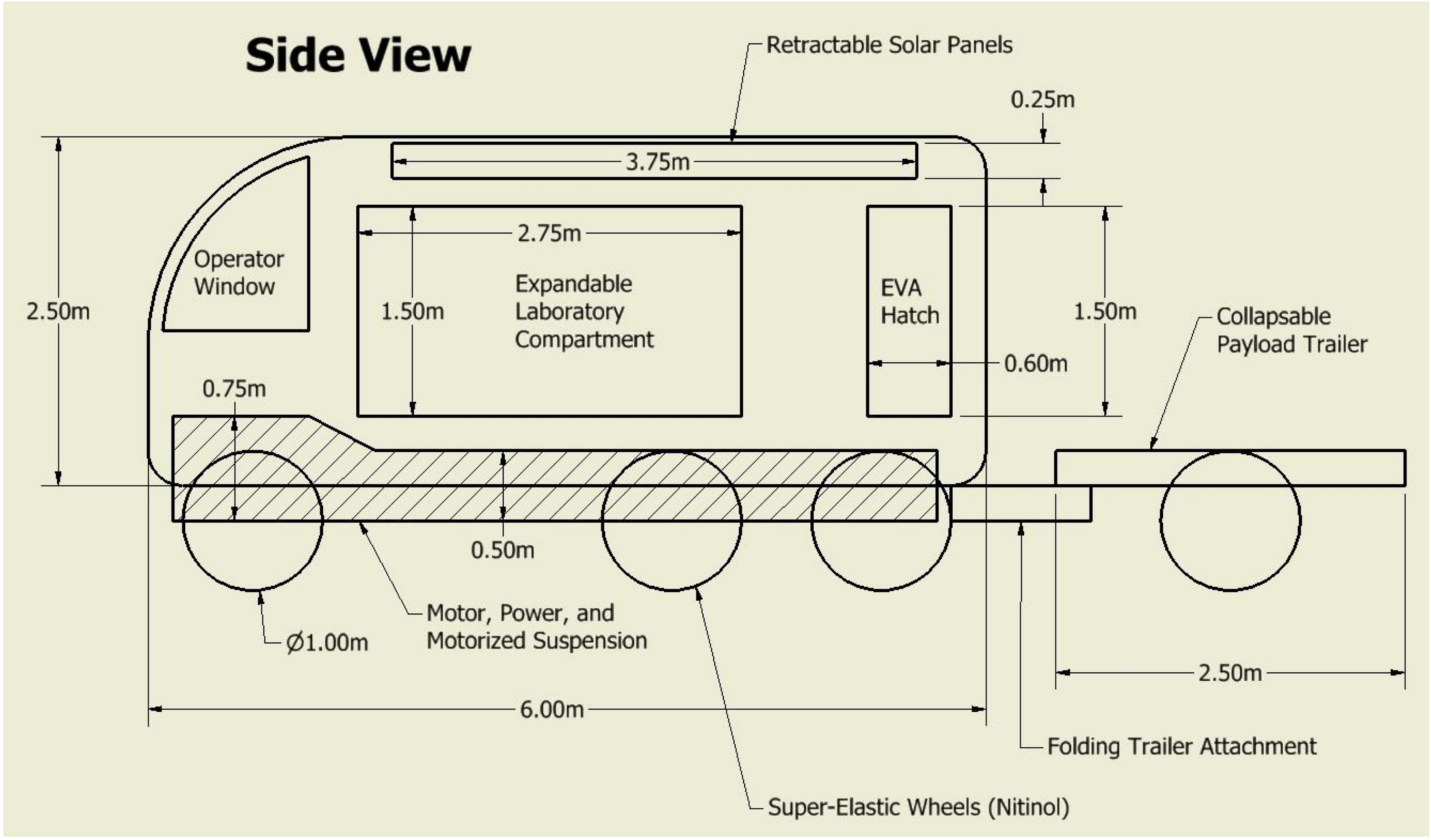
Light Rover


Side View
Communications Equipment
Controls
Astronaut Seating
Payload Storage
Electric Motor
1.49m
1.10m
1.00m
0.50m
Wheel Guard
Ø0.50m
Chassis and Battery Space
Super-Elastic Nitinol Wheels
2.92m

Expedition & Assembly Rover



Expedition & Assembly Rover



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Let's Go To Mars!

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