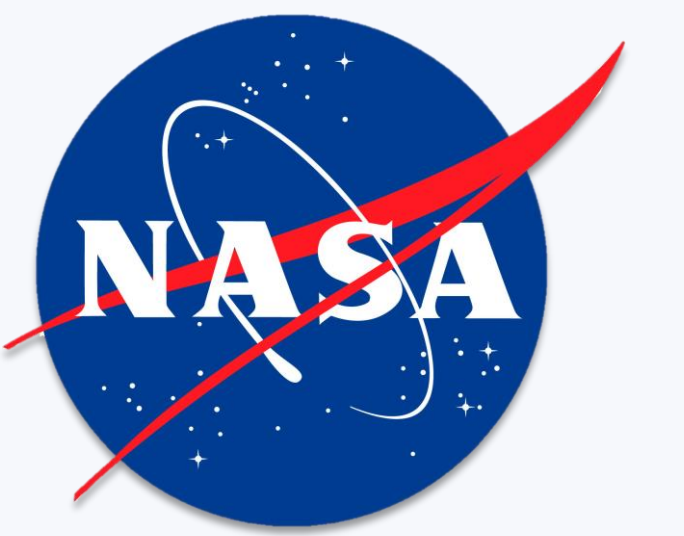


# Passive Charge Dissipating Work Function Matching Coating for Reducing Adhesion of Lunar Dust



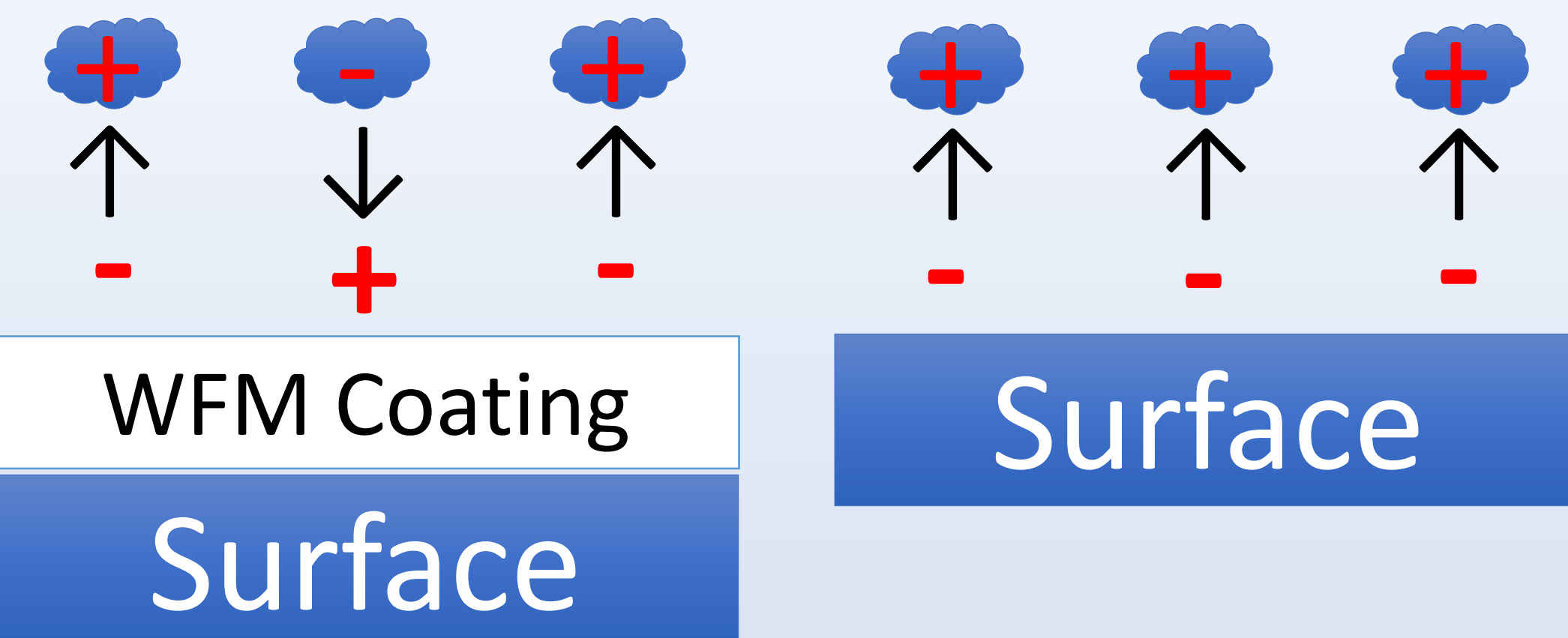
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## Project Vision

A simple, transparent, conductive coating capable of reducing lunar dust adhesion to surfaces and dissipating surface charge, enabling safer and more efficient exploration of the moon

## Work Function Matching Coating



Coating minimizes electrostatic attraction forces between dust and surface to reduce adhesion by matching the work function of lunar dust



Lunar dust mitigation is **critical** for return to the moon

## Technology need

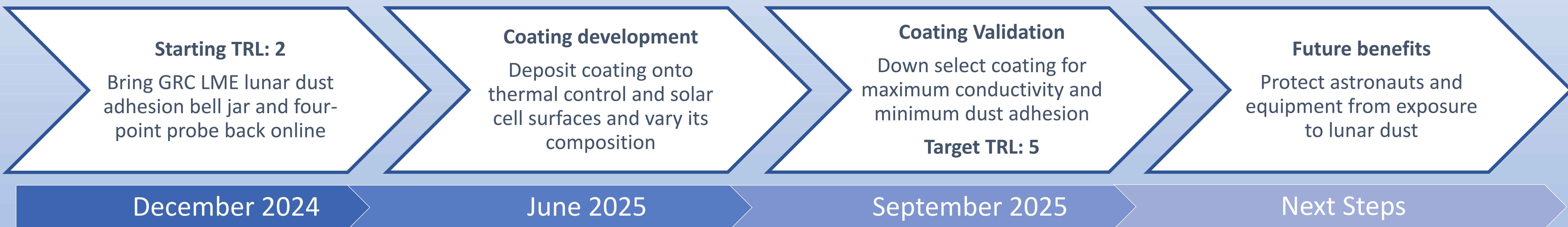
- Limited mature technology solutions for passive dust mitigation
- Compatibility with lunar technologies
  - Coating will be compatible with solar cell surfaces and thermal control surfaces

## Future Benefits: Reduce Lunar Dust Adhesion

- Combine with active dust mitigation strategies
  - E.g. Electrodynamic dust shields, vibration, etc.
- Apply to solar cell, thermal control, and other surfaces
- Improve efficiency and performance of solar cells, thermal control surfaces, and other lunar technologies by mitigating dust adhesion

## Future work

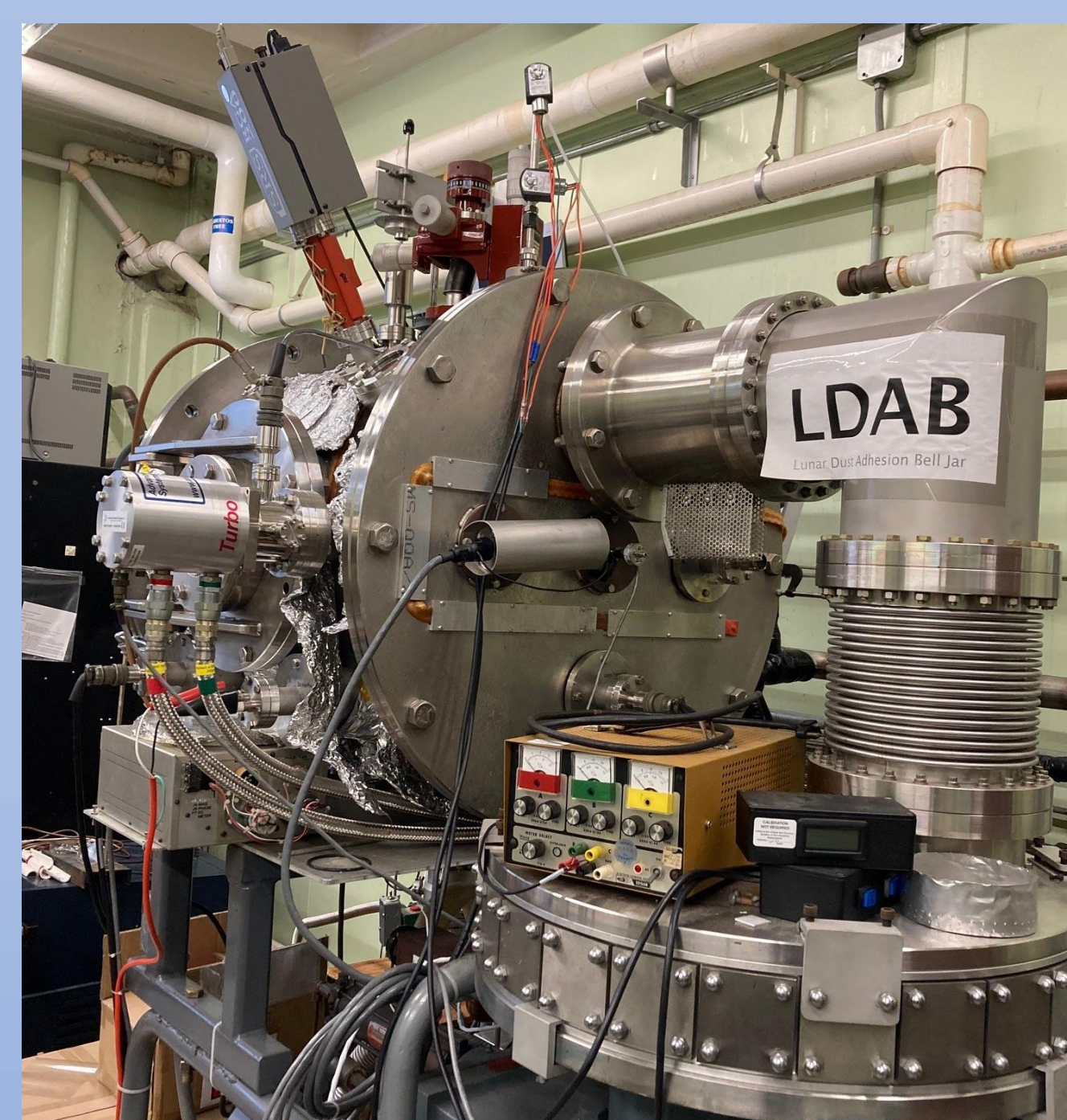
We hope to further develop this coating to serve as a technology solution for lunar missions. This may include wear testing, tuning for expanded applications, component ground testing and flight testing



Astronaut Gene Cernan covered in lunar dust [NASA Apollo 17 image library]



GRC LME Dual Ion Beam Deposition System



GRC LME Lunar Dust Adhesion Belljar (LDAB)



Vertical Solar Array on the Moon [NASA Image]