

Phase II Proposal Briefing Chart

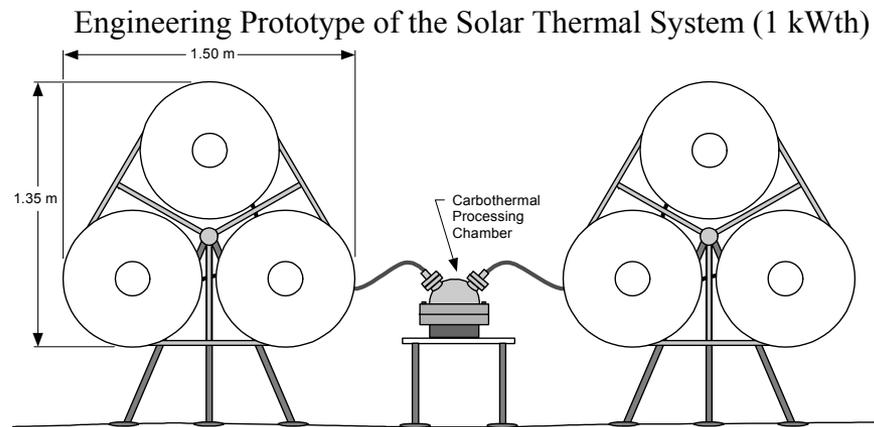
Multi-use Solar Thermal System for Oxygen Production from Lunar Regolith

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Identification and Significance of Innovation

- Solar radiation is collected by the concentrator array.
- Optical waveguide transmission line directs the solar thermal power to the oxygen production reactor.
- High intensity solar radiation provides thermal power at temperatures necessary for oxygen production processes.
- Scale-up can be implemented by increasing the number and size of the concentrators.



Technical Objectives and Work Plan

Objectives are to address issues associated with:

- power scale-up
- integration with oxygen production processes
- thermal-mechanical integrity of components
- compatibility with future space operation

Work Plan calls for:

Task 1: Develop an engineering prototype of the solar thermal system

Task 2: Conduct oxygen production tests with carbothermal process reactor

Task 3: Improve key components

NASA and Non-NASA Applications

- Production of oxygen and other useful materials on the lunar surface.
- Electric power generation using dynamic power generator, such as Stirling converter.
- Solar powered propulsion for satellite.
- Transportable solar heat source for industrial process heat, electric power generation using compact heat engine.

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