LSIC Poster Session

MilliWatt Radioisotope Thermoelectric Generator

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Overview

This internally funded project aims to develop a compact,100mW, tritium radioisotope thermoelectric generators (RTG) as an alternative to plutonium RTGs.

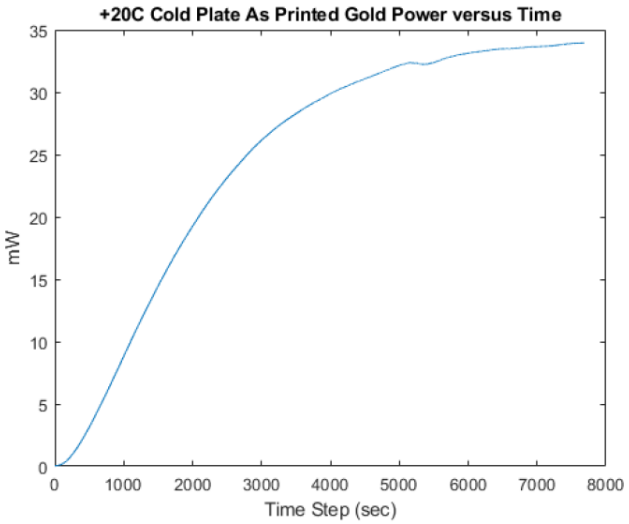
- Tritium is a preferable heat source because it can be commercially owned and the only decay products are He3 and low energy beta (no bremsstrahlung x-rays like e.g. Sr90)
- Proof-of-concept testing complete

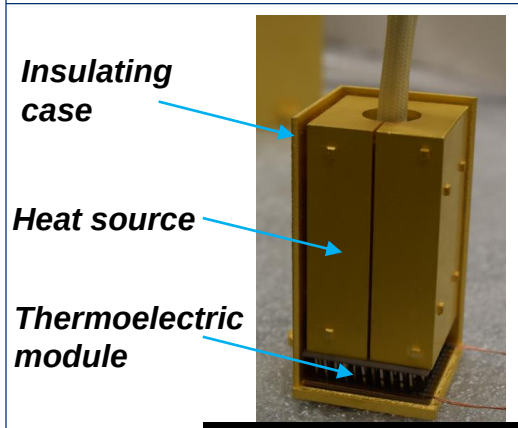
Applications

- Heat to survive the lunar night and power to trickle charge a small battery
- Exploring lunar areas in permanently shadowed regions with miniature rovers. I.e., craters, pits and lava tubes
- Ride along SmallSats for outer planet Decadal Survey missions

Investigation specifics

- Mass: ~ 110g
- Electrical Power Generation: 100 mW at 3.2-4.2 volts
- Thermal Power Generation: 2W heat source
- Envelope: 2.5 x 2.5 x 5cm
- Current TRL: 4





Cutaway view

Electrically heated unit under test