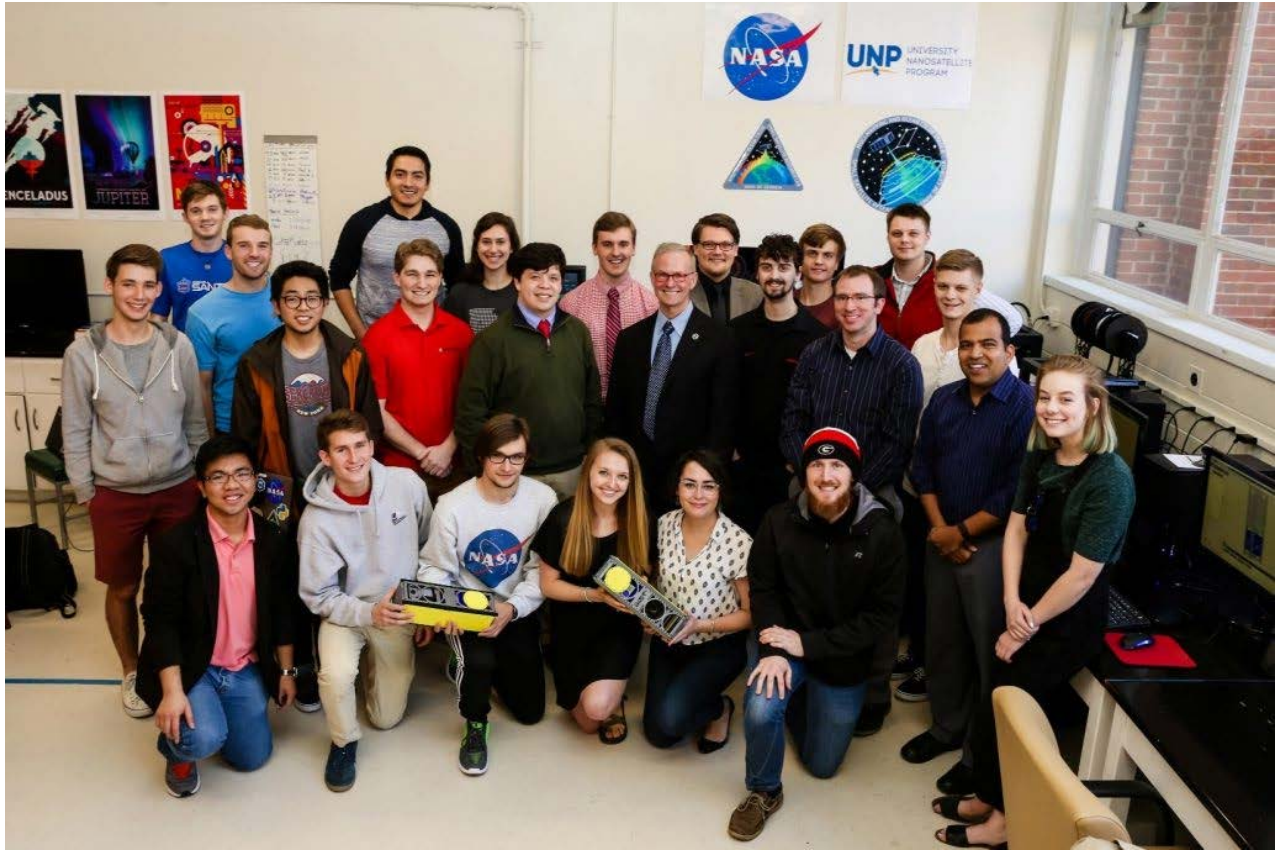
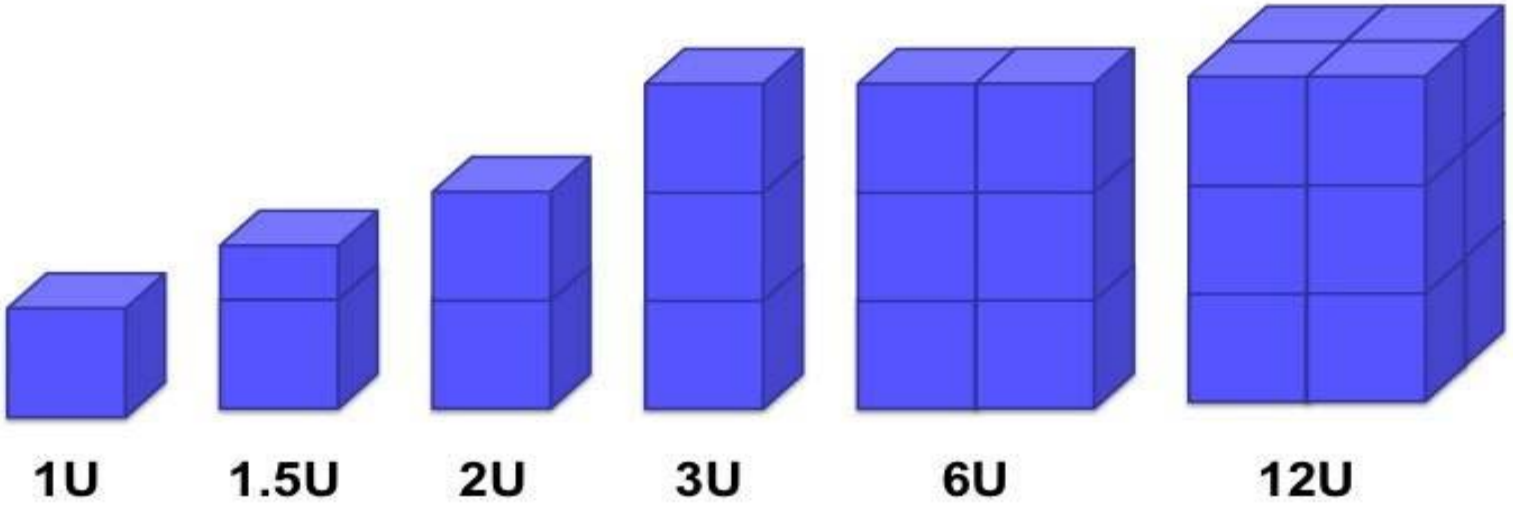
# UGA's Leap to Space: Small Satellite Research Lab Testing

By Niklas Endler

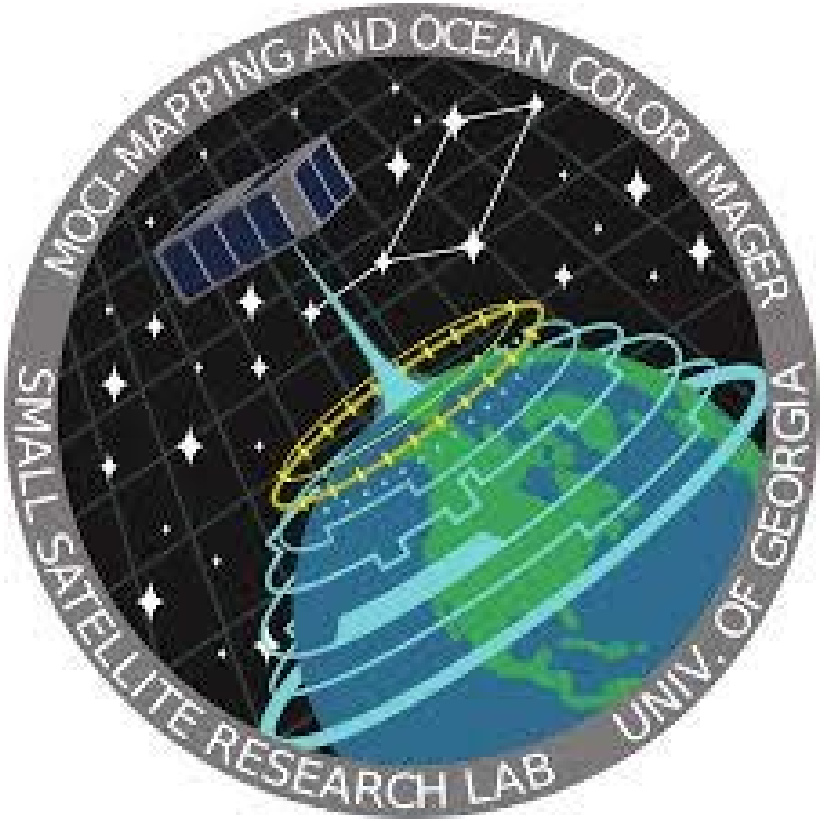
# The Team



# Small Satellites



# SPOC and MOCI


^(Multiview Onboard Computational Imager)

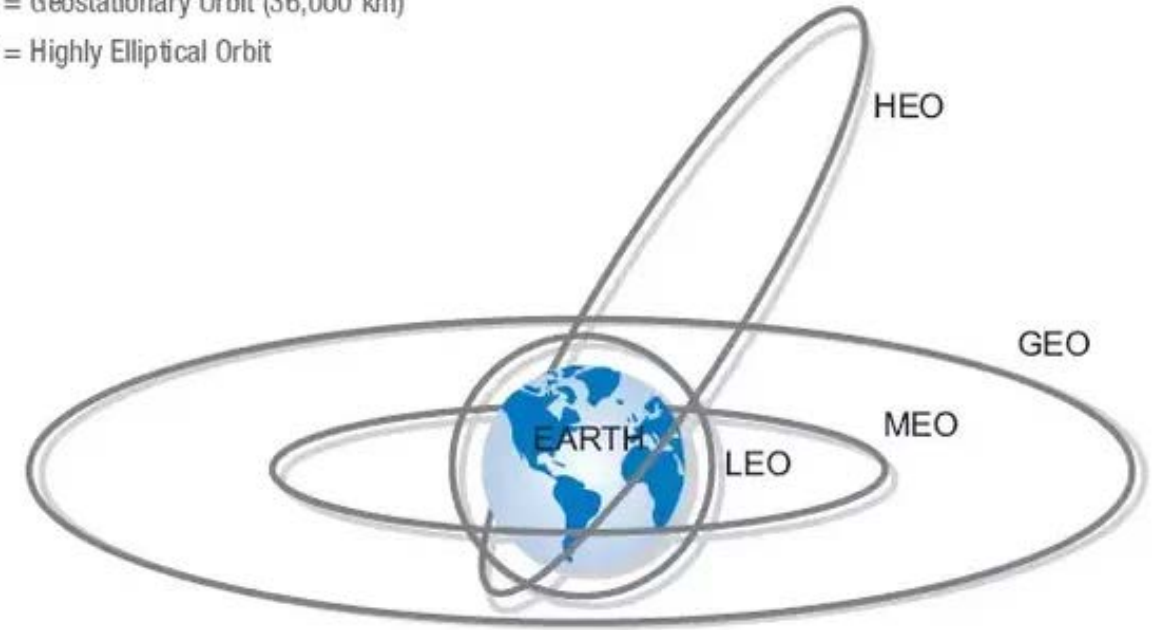
# Low Earth Orbit - LEO

LEO = Low Earth Orbit (100-1,500 km)

MEO = Medium Earth Orbit (5,000-10,000 km)

GEO = Geostationary Orbit (36,000 km)

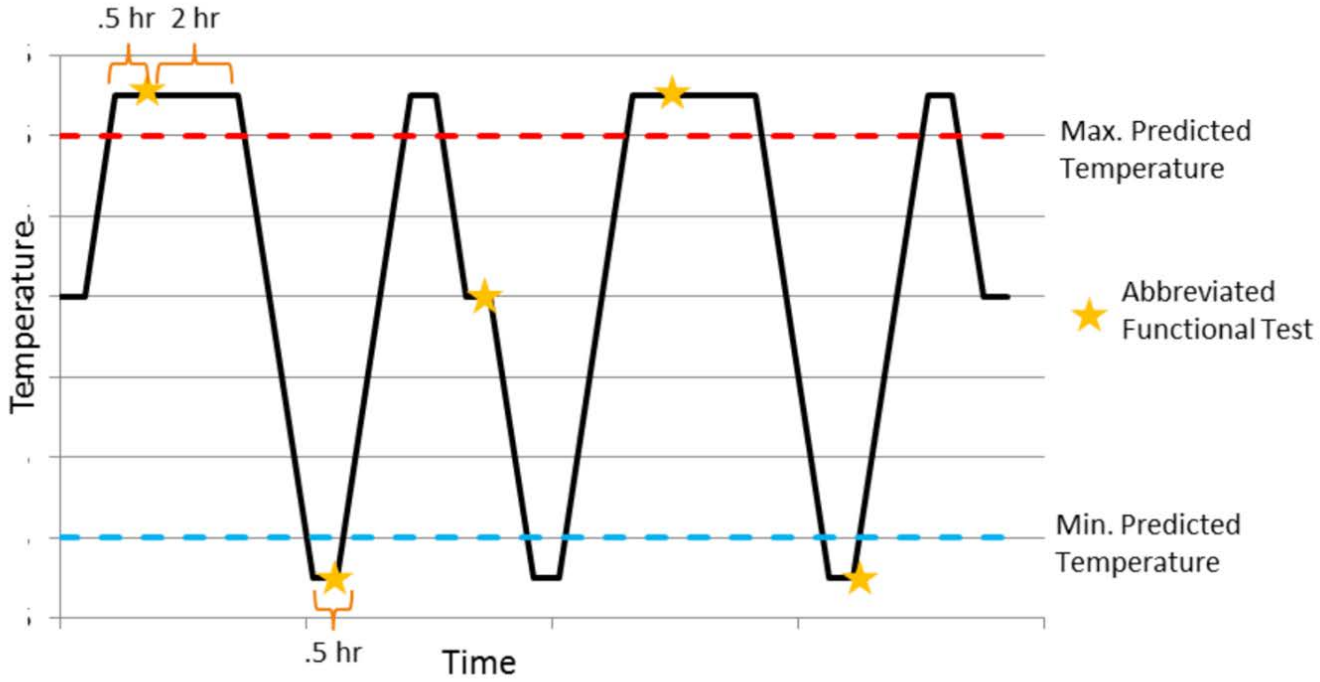
HEO = Highly Elliptical Orbit



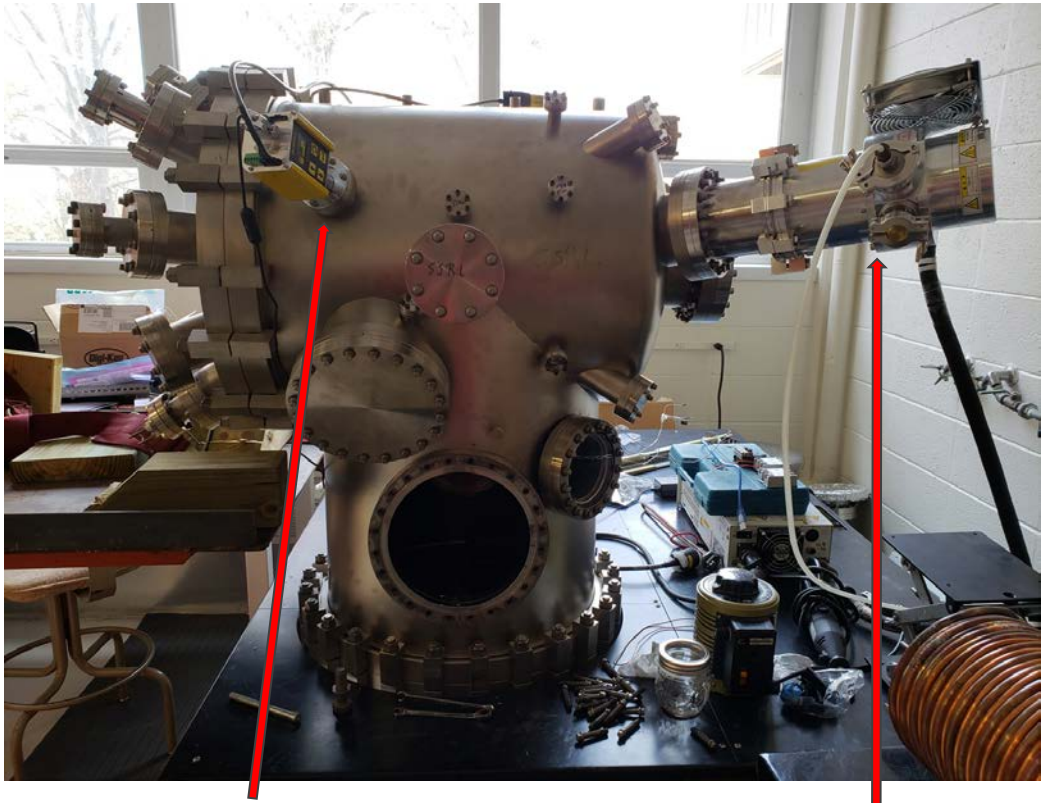
# Environmental Factors

- vacuum
- radiation
- intense and rapid temperature change
- etc

# UNP - Testing Standards

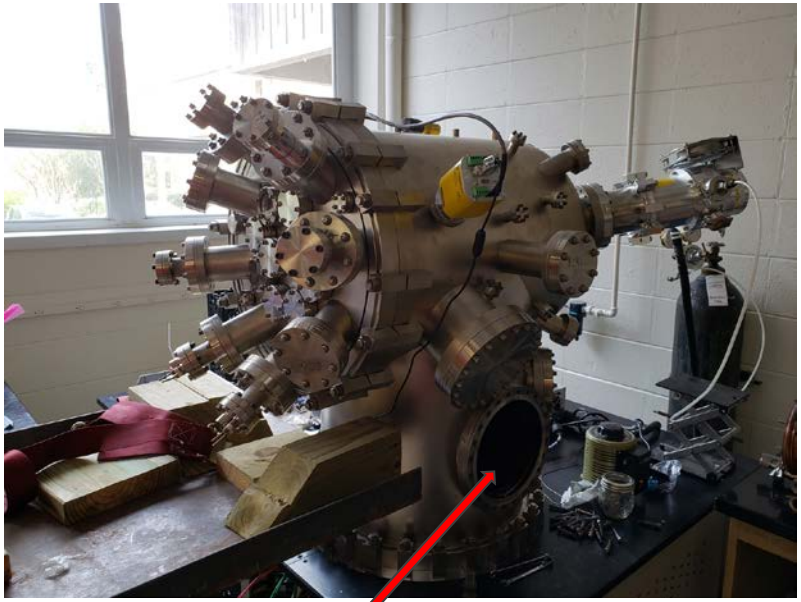


# The Chamber



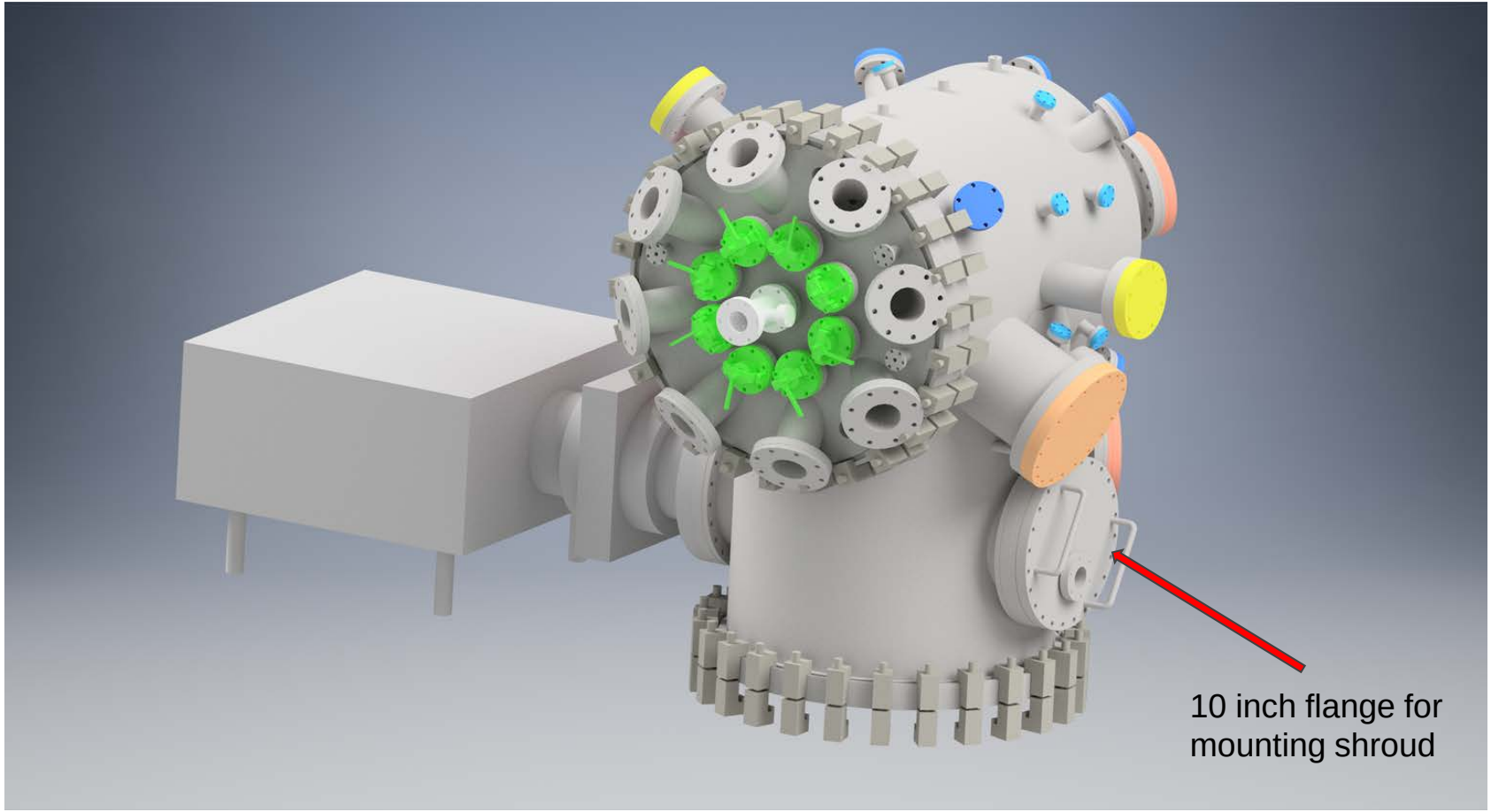
Pressure Gauge

Turbo Pump

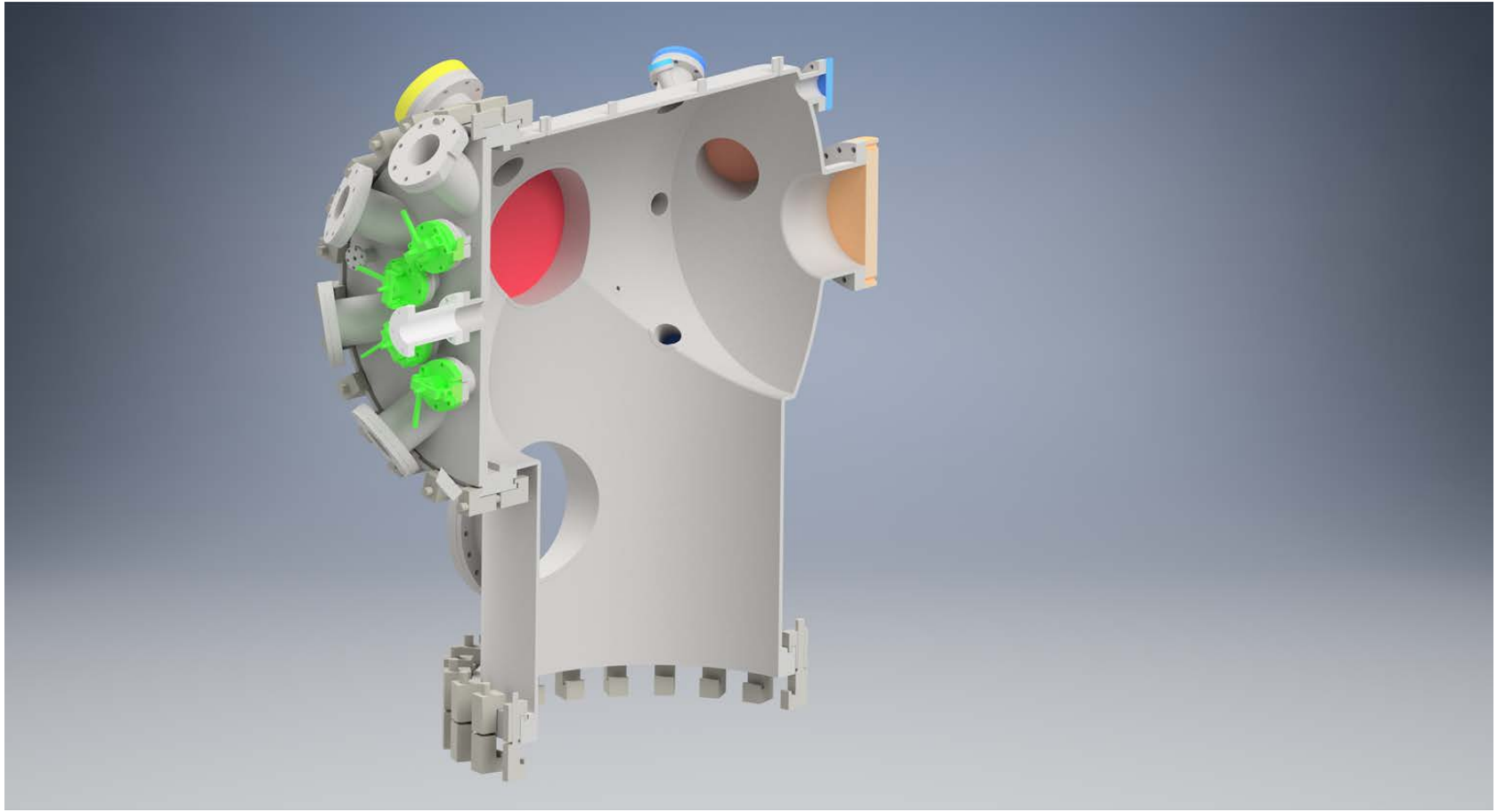


10 inch flange for mounting shroud

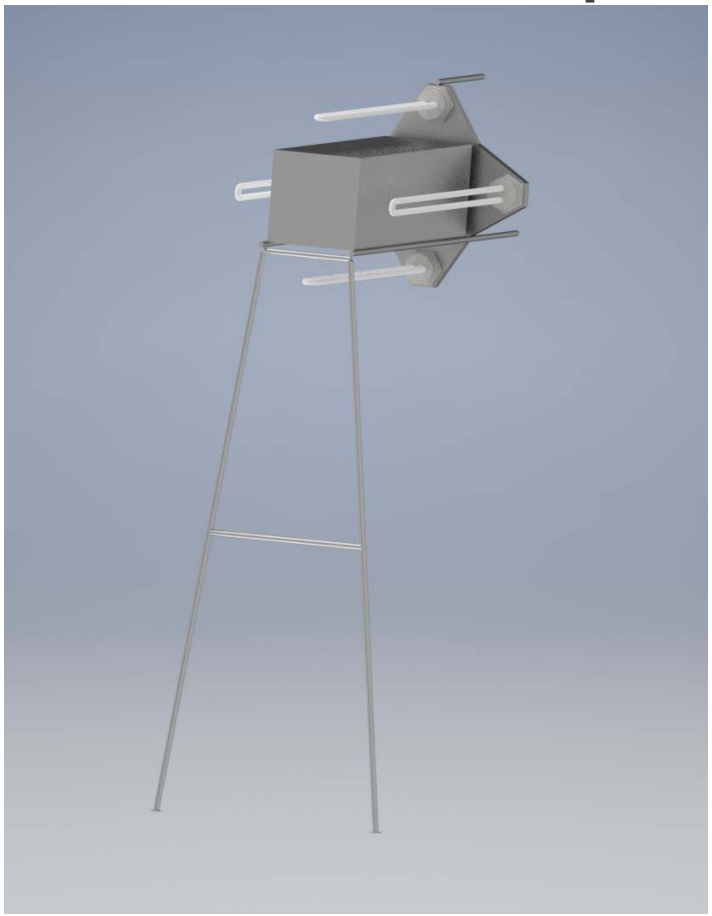
# The Chamber CAD - Full



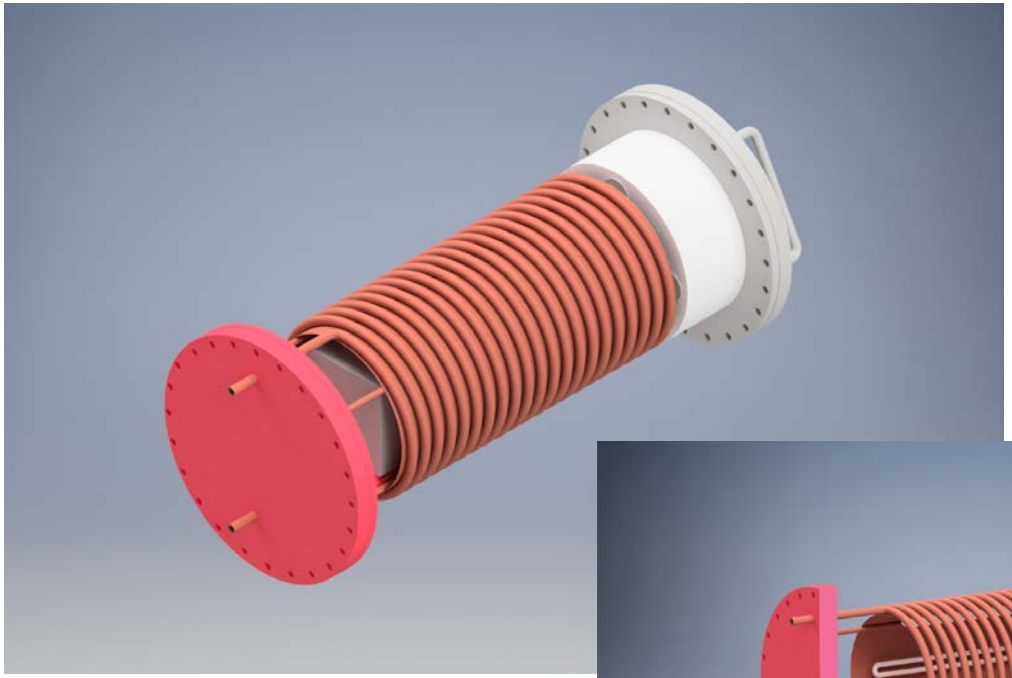
# The Chamber CAD - Section

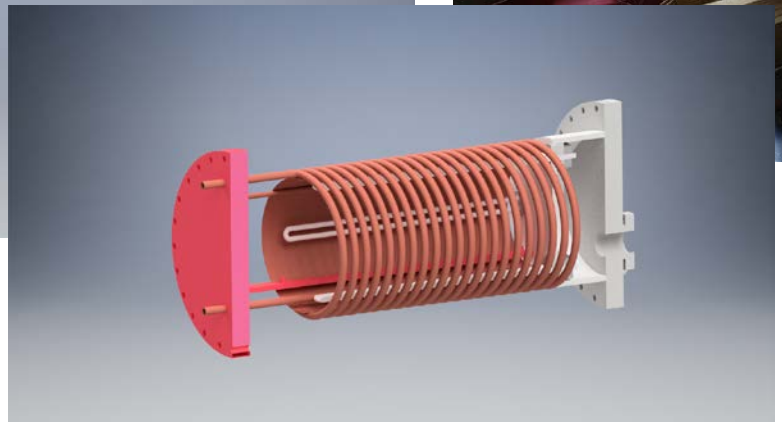


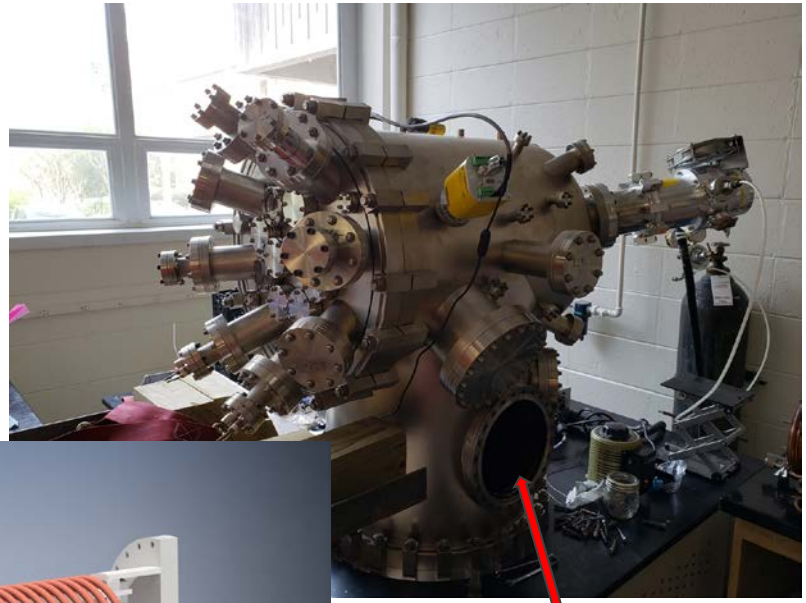
# Old Concept Designs



# Final Shroud Design

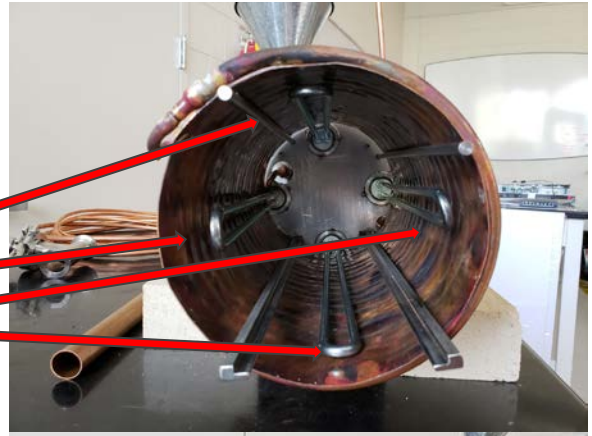




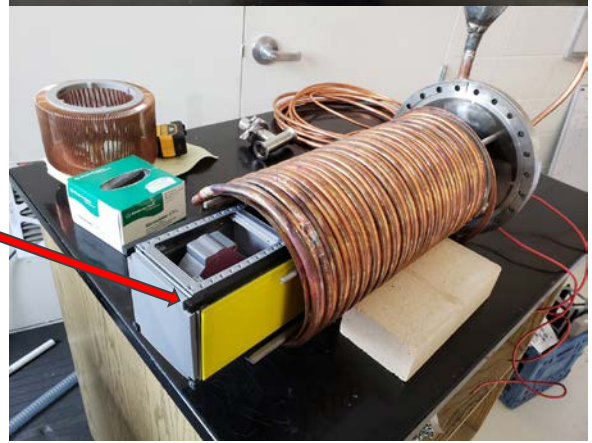


10 inch flange for mounting shroud

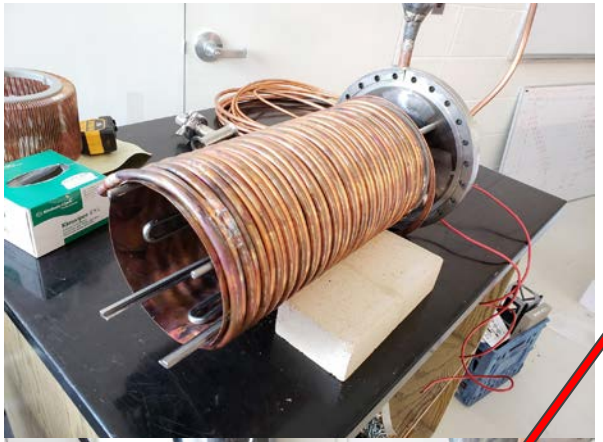
# Final Result



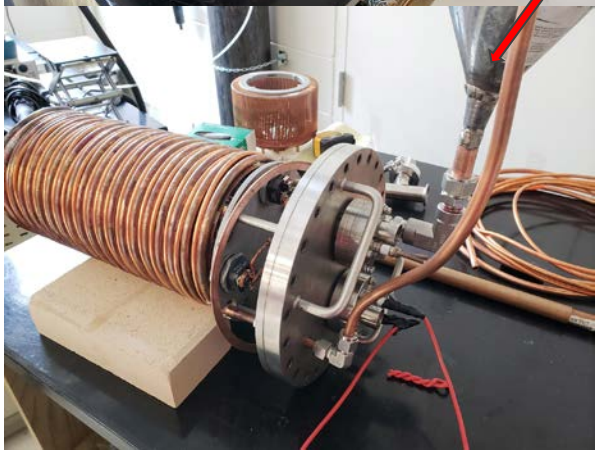
Heating Elements



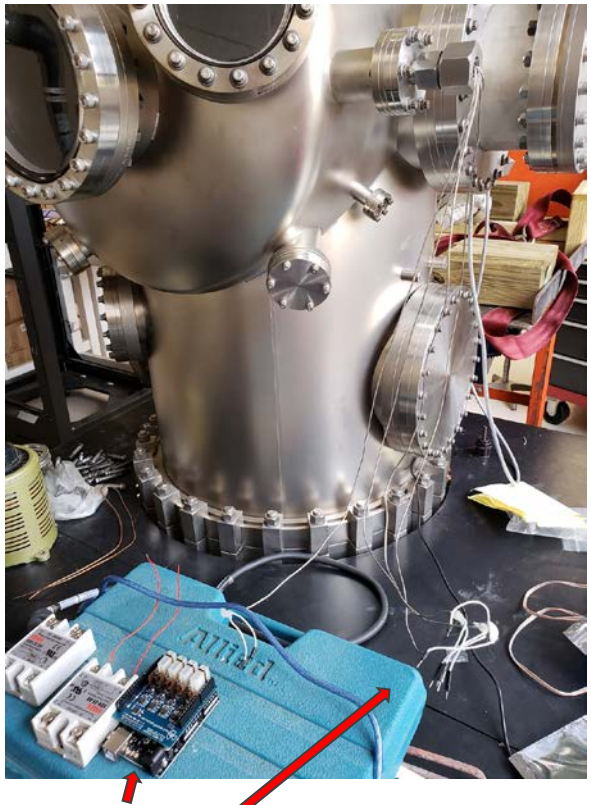
3D Printed Satellite



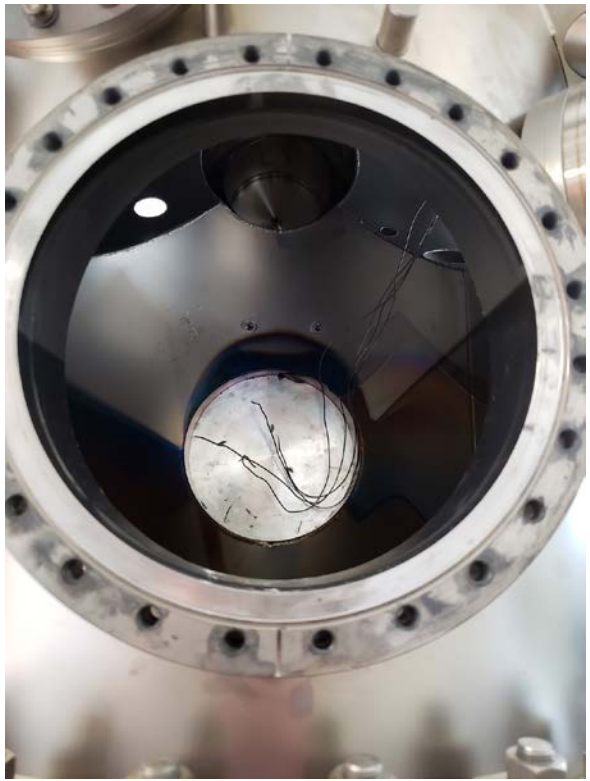
Funnel



# Thermocouples



Arduino
- 6 wires



^looking through the 10 inch flange

# Next Steps

- Pressure tight vacuum chamber
- Mounted thermocouples
- Run and test thermal shroud performance in nitrogen and vacuum environments
- ^ with satellite