

Project Bi- Weekly Progress

Date: 2-4-14

Project Title: Solar Powered Arc Jet Thruster

Students Names: Chris Brolin, Cory Gainus, Gerard Melanson, Tara Newton Griffin Valentich, Shane Warner

Mentors/ Coordinator/ Sponsor: Dr. Guo, Dr. Kwan, Dr. Andrei, Kurt Polzin, NASA

1. Project Title: Solar Powered Arc Jet Thruster

2. Project Objectives/tasks Breakdown:

Design, build, and test a direct drive arc jet thruster for purposes of providing propulsion under vacuum.

Design and execute a test plan to systematically quantify the range of operating conditions over which gas ionization can be achieved.

Perform tests to see if a continuous discharge at these power/current levels can be sustained, and quantify if possible

3. What was accomplished the last two weeks on individual tasks- representative supporting data/ documents

Further progress has been made in the manufacture of the prototype thruster. The necessary fittings and hoses have been specified and will be ordered within the next week. Test stand design was finalized – Cory. Vacuum switch was fixed, now have an operation vacuum pump – Griffin.

4. Summary of problems encountered and actions taken (and by whom)

Shop manufacturing questions were fielded by Griffin, Cory, Chris, and Tara. Determination of proper vacuum hoses was investigated by Griffin, Shane, and Gerry. Switch was fixed by Griffin.

5. Attached Gantt chart modifications and analysis if project is behind schedule and summarize actions planned to overcome the problems)

Project is on Schedule

6. Work planned for the next period and the person(s) responsible:

During the next work period we will build and test circuit in atmosphere. Determine if we are able to use the test stand Dr. Weatherspoon has. Submit test stand drawing to machine shop. Check in with Dr. Polzin, Dr. Guo, and new sponsors on our progress. Develop Test plan. Talk to Dr. Shih on possibility of borrowing Ar gas through AME or how to go about procuring it. Work on Presentation on 2-11-14. Hopefully we will have prototype available for display.

7. Open comments/suggestions (Please feel free to include your private comments):

Coordinator/ Instructor assessment report and corrective action