

USC ASTE-523 -- Spring, 2023
The Design of Low-Cost, Space Missions
A Near-Term, Income-Generating, Lunar Settlement

Homework Set #5 -- Due 2/23/23

Note: We want to give people time to both study for the mid-term and think more about their final report. This home-work assignment is only about half the normal assignment and is the last homework before the mid-term.

1. In order to reduce risk, there is a strong tendency to fly a “test mission” before flying a “real mission.” The test mission also increases cost and schedule dramatically. Explain why the test mission adds substantially to both cost and schedule. Explain how you might achieve the same results without flying a test mission.

2. One way that we haven’t discussed to generate income that we haven’t discussed is to sell the naming of some of the natural features or settlements, i.e. Mt. Sara Jones or the Ralph Roberts Settlement. The advantage, of course, is that this raises money. Identify and briefly discuss a major disadvantage?

3. We have seen on many occasions that Attitude and Personnel Issues (i.e., culture) are among the most important factors in reducing cost. Explain why this is true and why it so hard to make these issues work successfully in government agencies, such as NASA or DoD.

4. What do you believe would be the two most interesting sport on the Moon and why. (Golf and sports with guns are not allowed.)