eng-411 grading questions

General Questions

- Q How big is a scanning tile (scanning one per day)?

- Q Do you need a charging mode independent from the safe mode?

- Q You mentioned that the lunar corridor is illuminated depending on the angle with the sun... how long is the corridor unobservable for a satellite? What does the satellite do during its downtime?

Trajectory Analysis

- Q Is the delV for the L4 insertion and the L5 insertion the same?

Configuration

- Q Why 16 bit quantization? How does this affect the minimum brightness we can detect?

- Q What is the minimum sunlight incidence angle that you accommodate?

Structures and Mechanisms

- Q You mention not a lot of debris is in your orbits and therefore does not need to be accounted for. But have you looked at the dust/particle density models for a L4/L5 lagrange point? How will the satellite respond to a collision with a micro-dust particle?

- Q Is the shutter not required for any charging mode?

Propulsion

- Q please explain the "power consumption metric". Is this electric only?

- Why 2 thrusters? Are the thrusters directional?

AOCS

- You have plots showing the torque necessary to obtain a certain spin about a given axis, but does this account for the redundant reaction wheel failure (i.e., if h1 fails, how efficient is h4 to accommodate?)

CDHS

- Q Sorry, it was not clear to me what specifically is being communicated via x-band for payload downlink. How much data is generated for a single day/scanning segment?

- Q What ground commitment is required from Earth to support the payload x-band communications?

Power

- Q What is the satellite doing if the sun is opposite to the lunar corridor? It can still be useful.

- Q What is the mass of one battery? What is the mass of the whole satellite?

Thermal

- Q How much heat is the payload generating? How does this compare to the sunlight?

Sustainability

- Q 100/100 score for EoL is surprising to me. I understand that extra Hydrazine is poor for LCA and therefore a heliocentric orbit is expensive. But a crash on the moon can potentially affect regions we have not yet touched. Was this factor included in the sustainability score?