1) What are the design constraints one must consider when designing for space, especially for a vehicle expected to be in service for many years?

1. Not repairable. Has to work at all times. Like building a factory in space that has to work flawlessly the first time and has to last for fifteen years. No air therefore no cooling. Gets baked by the sun on one side, and -270 C space on the other side.

2) Satellite imagery is relatively common these days, but that was not always the case. What are the benefits of satellite imagery to the scientific community and how can Landsat or other satellites help us advance scientific research?

1. Landsat was and continues to be instrumental in weather prediction, untold economic benefit, storm preparation, hurricane prediction, etc.
2. These days we’re using smaller satellites, commuincations, etc. are much cheaper and lighter. But generally only do visual range, not hyper spectral ranges.

3) What did you use, if any, as design references for Oresat? Are the designs of other satellites available to the public?

1. These days the internet allows amateurs to publish information.
2. Seminal books: Spacecraft mission analysis and design.

4) Like Landsat, Oresat has a variety of cameras. What are some of the hurdles you have run into regarding how to implement those imaging systems?

1. Startracker is easiest and mostly done.
2. Oresat live, need high resolution -> how to fit large optics into small frame.
3. CFC: SWIR camera needs to be kept at -20 deg. C.

5) What do you expect for the future of satellite observation?

1. Expects constellations of satellites to take over for large satellites.
2. Smaller timescales give us better weather prediction, climate crisis, Australia fires.
3. Expect resolution to get better.
4. Pros and Cons to omnipresent spy satellites