AE 470 – Orbital Mechanics

Project #4 – STK Mission Simulation

Plan a satellite "mission" and implement it in STK.

Requirements:

1. Model at least one artificial satellite orbiting a central body in STK.
2. Satellite must have an objective to photograph, communicate with, or view (in some way interact with) a location on the central body or perhaps another orbiting object.
3. Using STK, create an "access" schedule for the objective.
4. Using STK, create at least one video for presentation in the STK viewer in class.
5. Present your mission in class the last week of the semester, April 23 or 25. Include:
    a. Overview of the mission,
    b. Mission objective,
    c. How you implemented the mission in STK,
    d. Mission video.
6. Submit a short (1-3 pages) description of the mission (items 5a-d above) and the mission VDF file to Moodle.

Examples:

1. Model ISS showing access to amateur radio antennas around the world over several orbits. Show sky plots (azimuth, elevation) for each site.
2. Model several GPS satellites. Create an animation showing satellites that are visible from Potsdam, NY for a 2-hour observing session. In the animation show the range line from the satellite to the ground receiver when the satellite is visible.
3. Model the Landsat 8 earth observing satellite. It is in a sun-synchronous orbit. In 3-D, animate the ground track showing the sensor footprint on the surface of the earth.