Satellite Navigation Techniques and Applications
Assignment #3 Satellite Orbits

1) General Questions

a) What are the 6 basic Keplarian elements used to describe an orbit? Describe each one briefly.

Note: The above information is available on Wikipedia and the lecture slides.

2) Programming Exercises

Complete the tasks below using the scripts provided in class as examples.

a) Write a Octave/Matlab script to simulate the NORAD two-line elements below for 100 minutes starting at time: January 18th 2012, Midnight.

AAU CUBESAT (Aalborg University)
1 27846U 03031G   12013.00100966 .00000212 00000-0 11743-3 0 1843
2 27846 98.6960 24.2001 0008665 295.4793 64.5490 14.21225585442823

- Plot the ground location on a map as a function of time.

Hint: Use the template provided and fill in the necessary functions.

b) Add the satellite orbit into your simulation from assignment 2.