ECE 6390 Homework 3: GPS

Summer 2015

Watch Lectures 21 and 22 online and consult the "Late for Dinner" competition on the Radio Location Scavenger Hunt page on the class website.

Below are the satellite subpoint coordinates and psuedo-ranges for the 4 GPS satellites whose signals are received by a positioning radio:

	Sat 1	Sat 2	Sat 3	Sat 4
Lon	-85.2234°	-62.3256°	-75.2009°	-95.0234°
Lat	35.5521°	43.2345°	29.0510°	40.7777°
PR/c	0.000000000 s	0.001588238 s	0.000341042 s	0.000493039 s

Note that all pseudo-ranges are given relative to the first satellite position (absolute time delay, of course, is unknown). Calculate the longitude, latitude, and altitude for the GPS receiver based on this data. Use 6380.20 km as the mean earth radius, 20,200.00 km as the GPS satellite altitude, and $c = 299860.00$ km/s in your calculations.