Brown Bag Lecture

Tuesday, November 6
12:30pm
Room E4

Using Quasars to Measure the Earth

Dr. Bill Petrachenko from NRCan is a Canadian expert on very long baseline (radio) interferometry (VLBI)

Very Long Baseline Interferometry (VLBI) is a geodetic technique based on radio astronomical observations. It was initially pioneered by Canadians. Unlike satellite based geodetic systems, VLBI uses the far distant (meaning billions of light years away) quasars as reference objects. The nearly pointlike and fixed nature of these objects make them ideal for geodetic applications that require either knowledge of the earth's orientation in space or long term stability of scale. As a result of the latter characteristic, VLBI produced, in the 1980's, the first definitive real time measurements of plate tectonics. I will discuss briefly VLBI's current role among other space geodetic techniques, the principles behind how VLBI works, the systems required to make its measurements, and the error sources that limit their precision.