KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
DEPARTMENT OF ELECTRICAL ENGINEERING

EE 418 INTRODUCTION TO SATELLITE COMMUNICATIONS

HOME WORK # 3

1. The Virginia Tech earth station is located at 80.438° W longitude and 37.229° N latitude. Calculate its look angles and range to a geostationary satellite whose sub-satellite point is located at 121° W longitude.

2. Calculate the look angles from an earth station located at latitude 35° N and longitude 65° E to a geostationary satellite located at 19° E.

3. Find the look angles from the earth stations listed below to each of the geo-synchronous satellites listed. If a satellite is not visible from the earth station, then indicate so.

Earth stations:

a. Andover, Maine	44 deg 48 min 59 s North 70 deg 42 min 52 s West
b. Carnarvon, Australia	24 deg 52 min 13 s South 113 deg 42 min 13 s East

Satellites:

a. COMSTAR D-3 (U.S. domestic)	87° West
b. COMSTAR D-4 (U.S. domestic)	127.5° West
c. BSE-2 (Japan)	110° East