Sat. Photogr. Homework 2 WV1 algorithm w/o sys. err. corr.

Find ground point & discrepancy corresponding to GCP1 from its image coordinates using the following steps:

1. Find the GCP description file in the notes, locate GCP1
2. Measure this point in image laf01 (full resolution!) l,s or r,c. Determine whether your meas. program has origin 0 or 1 (convert to 0).
3. Read in .eph and .att files using supplied code fragment (change the filenames to match your folder structure)
4. Determine time for the measured line (integer line number)
5. Find ephemeris and attitude points just before and just after this time (show index numbers)
6. Use linear interpolation to determine $X_s Y_s Z_s$ $q_i q_j q_k q_s$
7. Normalize (unitize) the q's and form rotation matrix.
8. Form image space view vector, rotate into object space
9. Using interpolated $X_s Y_s Z_s$, the view vector, and the given h_g, intersect to find X Y Z of the point (use ellipsoid intersection as in class)
10. Express X Y Z as e, n, u using the actual GCP coordinates as reference. The e & n will be the discrepancy. (Most of the
11. discrepancy will be due to missing corrections for atmos. refr. + vel. aberr.)

▷ show all intermediate results & label
▷ later this algorithm will go into a function.