

hw2_intermed_listing

```
main1
measured line =
    6859
measured sample =
    7692
h =
    209.17
vec0 =
    0.5551
    140.71193
    7949.165
vec_img =
    0
    -61.536
    0
vSensor =
    0.5551
    79.17593
    7949.165
unitized vSensor =
    6.98277700524121e-05
    0.00995978856733179
    0.999950397637691
reverse scan
num_intvl =
    580.1614833333333
nintvl =
    580
frac =
    0.161483333333194
idx1 =
    581
idx2 =
    582
interpolated Xs =
    291489.191479716
interpolated Ys =
    -4999112.82889089
interpolated Zs =
    4699572.45525561
interpolated intqi =
    -0.729799431724664
interpolated intqj =
    0.672056166834426
interpolated intqk =
    0.100396692264932
interpolated intqs =
    0.0751917232280404
note: interpolation does not preserve length
len1 =
    1.00221009876449
len2 =
    1.00221200650803
interpolated len =
    0.99999996492783
conclusion: unitize before forming matrix elements

m =
    0.0765220191264821    -0.996030424867821    -0.0454727756623092
    -0.965834423464831    -0.0853734203400442    0.244694187813687
    -0.2476050222414    0.0251946787451341    -0.968533417659796

object space vEcf =
    -0.0553854291815733
    0.243764307124041
    -0.968251732147539

show convergence in ellipsoid intersection
dh =
    -0.000287387594568145
dh =
    8.5682927419839e-10
dh =
    -7.44933004170889e-11
dh =
    -7.44933004170889e-11
dh =
    -7.44933004170889e-11
scale factor k =
```

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601050.81586547

Xg = 258199.734083072
Yg = -4852598.0932151
Zg = 4117603.96168518
XYZ = 258199.734083072
-4852598.0932151
4117603.96168518

computed lat, long, h
complat = 0.706260794484323
complon = -1.51763790015727
comph = 209.169999999925

reference point (GCP)
phi = 0.70626004842923
lam = -1.51763703286812
h = 209.17

misclosure without atmref & velab
enu = -4.21455910157544
4.74680548199151
-3.16099215247334e-06
diary off