Photo 2, Homework 4, Spring 2011

Use of I2G function to implement G2I function using the WV1 physical model, & using newton iteration.

assigned 4 Mar, due Friday Mar 11

(1) make matlab function $\begin{bmatrix} X \\ Y \\ Z \end{bmatrix} = \text{FI2G}(l, s, h)$
with global variable access to image support data.
call from a "main" program and show that it works for point 1014.

(2) make matlab function $\begin{bmatrix} \phi \\ \lambda \end{bmatrix} = \text{FI2G\_PL}(l, s, h)$
to return ϕ, λ in radians, show it works for point 1014.

(3) make matlab function

$$\begin{bmatrix} d\phi \\ d\lambda \end{bmatrix} \approx \begin{bmatrix} 0 \\ 0 \end{bmatrix} = \text{FI2G\_PL\_O}(l, s, h, \phi, \lambda)$$

$$\left[= \begin{bmatrix} \phi \\ \lambda \end{bmatrix} - \text{FI2G\_PL}(l, s, h) \right]$$

(4) using (3) and "psolver.m" or your own implementation of numerical jacobian, make a matlab function,

$$\begin{bmatrix} l \\ s \end{bmatrix} = \text{FG2I}(\phi, \lambda, h)$$

use $l^\circ, s^\circ = (0, 0)$, use global var. access to support data, show results for point 1014.