

# GRAD 590F Spring 2008 HW #5

assigned Tue, 15 Apr, due Fri, 25 Apr

## Rectification

- Rectify the Quickbird image using the vendor supplied RPCs (in dg.rpb) at a GSD of 10m. Use the 16x pyramid level, use nearest neighbor interpolation. Submit as \*.jpg. Use flow chart on 24-3
- Use a fixed  $H=200\text{m}$ , use  $h=H+N$ , where local  $N=-33.67$ . Base the rectified image on UTM, zone 16, with  $\text{min}X=501400\text{m}$ ,  $\text{max}X=518800$ ,  $\text{min}Y=4464300$ ,  $\text{max}Y=4482500$ . Find useful utilities in the accompanying .zip file: `ftmgeo.m` and `fgeotm.m`. Also find examples of geometric image resampling from Fall-07: `rectify.m` and `rotim.m`.
- Make an ESRI world file \*.jgw, an ascii text file with 6 numbers: +GSD, 0, 0, -GSD, UL-X, UL-Y, base of filename same as image file.
- I will also make available RPCs from our class resection work, you may use either set, designate which was used.

I will check the result by importing into ArcGIS and checking coordinates of a few features (you may do the same to verify that it is ok !)

Fill in with gray if outside input image limits. Remember to normalize P,L,H as in the NITF/RPC specification before applying coefficients, then remember to un-normalize the line and sample before using & downsampling

Useful code snippets: (see 2 sample programs for more)

```
A=imread('filename.jpg');
```

```
iminfo('filename.jpg');
```

```
imwrite(A,'filename.jpg','JPEG');
```

```
B=zeros(2000,2000,'uint8'); % it's monochrome, no RGB
```