

FOR ARCTIC DEM 100-m

$$X_0 = -4\,000\,000$$

$$Y_0 = 4\,100\,000$$

$$X_{\text{CEL}} = X_0 + (m + \frac{1}{2})(100)$$

$$Y_{\text{CEL}} = Y_0 - (n + \frac{1}{2})(100)$$

$$X - X_0 = (m + \frac{1}{2})(100)$$

$$m = \frac{X - X_0}{100} - \frac{1}{2}$$

$$Y - Y_0 = - (n + \frac{1}{2})(100)$$

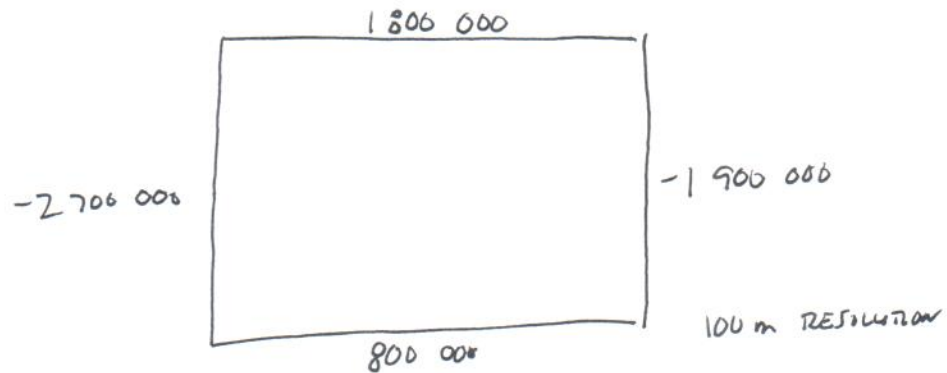
$$- (n + \frac{1}{2}) = \frac{Y - Y_0}{100}$$

$$n + \frac{1}{2} = \frac{Y_0 - Y}{100}$$

$$n = \frac{Y_0 - Y}{100} - \frac{1}{2}$$

REMA Peninsula 100-m

10000 rows
8000 columns



$$X_0 = -2700\ 000$$

$$Y_0 = 1800\ 000$$

$$X_{\text{CELL}} = X_0 + (m + \frac{1}{2})(100)$$

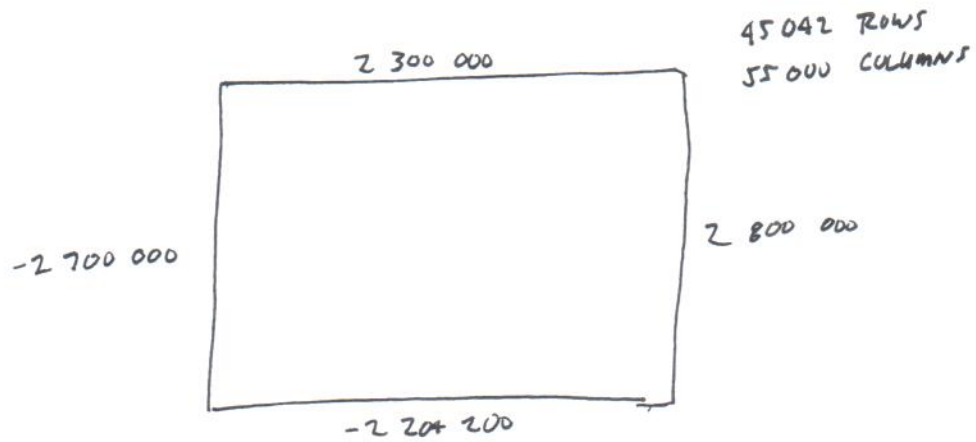
$$Y_{\text{CELL}} = Y_0 - (n + \frac{1}{2})(100)$$

$$X - X_0 = (m + \frac{1}{2})(100) \Rightarrow m = \frac{X - X_0}{100} - \frac{1}{2}$$

$$Y - Y_0 = -(n + \frac{1}{2})(100) \Rightarrow n = \frac{Y_0 - Y}{100} - \frac{1}{2}$$

REMA

100-m



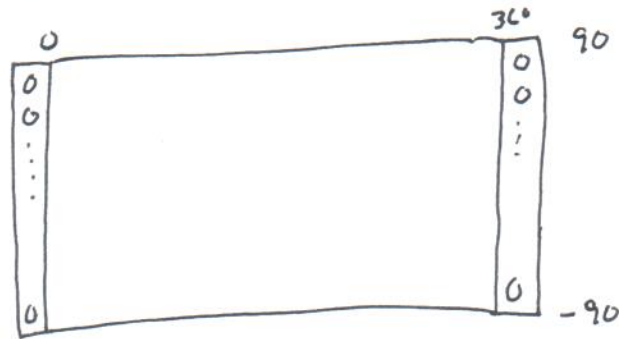
$$X_0 = -2\,700\,000$$

$$Y_0 = 2\,300\,000$$

$$X_{cal} = X_0 + (m + \frac{1}{2})(100) \Rightarrow m = \frac{X - X_0}{100} - \frac{1}{2}$$

$$Y_{cal} = Y_0 - (n + \frac{1}{2})(100) \Rightarrow n = \frac{Y_0 - Y}{100} - \frac{1}{2}$$

EGM 2008 1' x 1' GRID



GRID HAS 1 COLUMN OF ZEROS
AT EACH END. NO IDEA WHY.

$$\Delta \text{LAT} = \frac{1}{60} \text{ DEG} = \Delta \text{LON}$$

$$\# \text{ ROWS} = (90 - (-90)) * 60 + 1 = 10801$$

$$\# \text{ COLUMNS} = (360 - 0) * 60 + 2 = 21602$$

ENTRIES ARE FLOAT * 4

$$X_0 = 0 \quad 0 \leq m < 21602$$

$$Y_0 = +90 \quad 0 \leq n < 10801$$

$$X_{\text{cell}} = X_0 + m \left(\frac{1}{60} \right) \Rightarrow m = 60 (X_{\text{cell}} - X_0)$$

$$Y_{\text{cell}} = Y_0 - n \left(\frac{1}{60} \right) \Rightarrow n = 60 (Y_0 - Y_{\text{cell}})$$