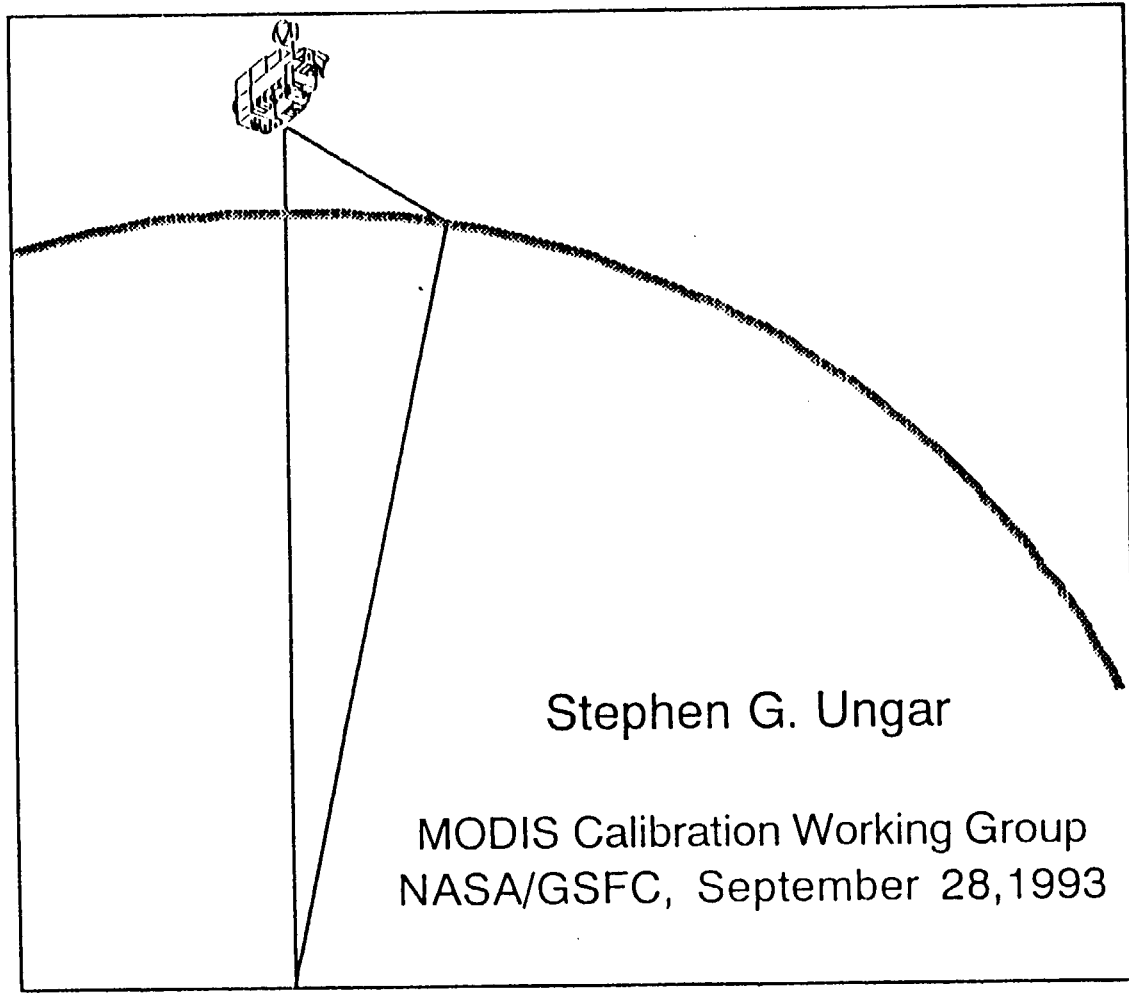
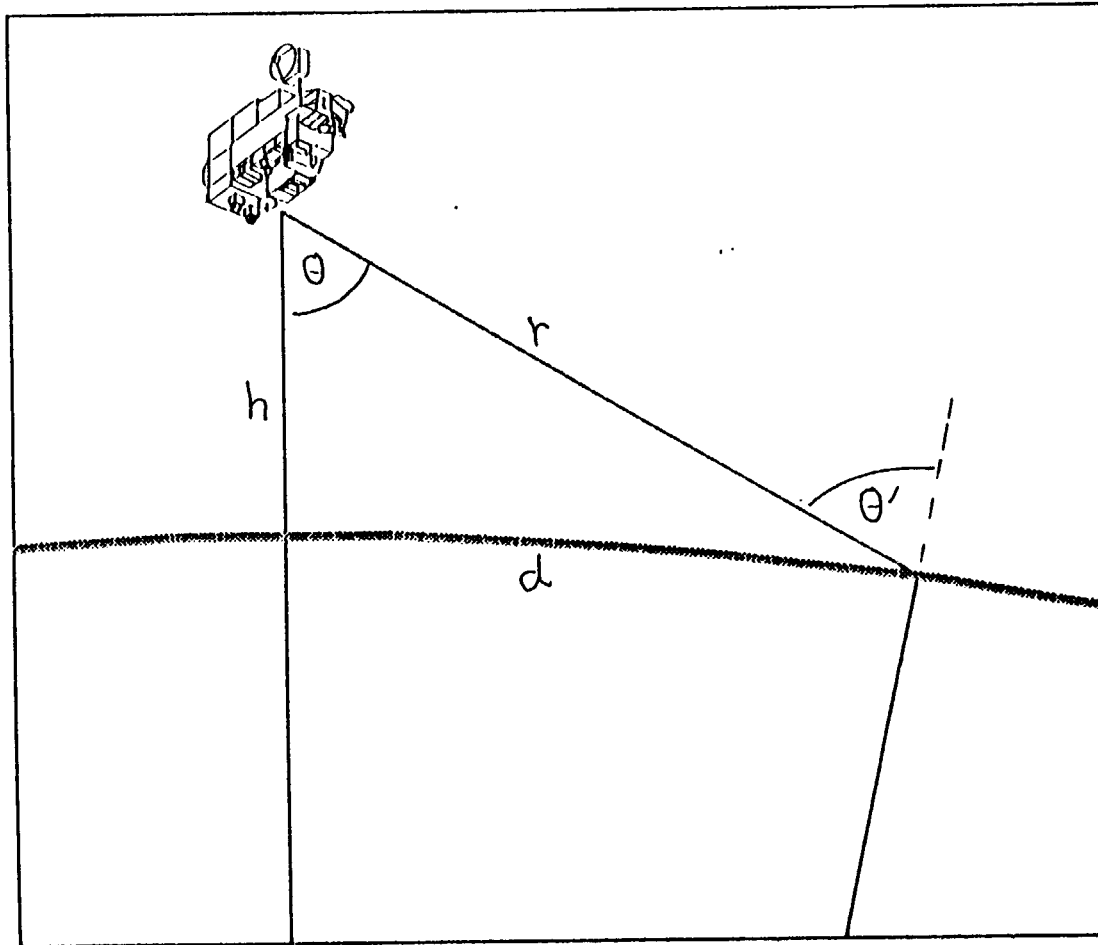


MODIS Scan Edge Geometry



MODIS Scan Edge Geometry



Parameters Influencing MODIS Scan Pattern

PARAMETER	SIMPLIFIED	RIGOROUS	UNITS
platform altitude:		705	kilometers
maximum scan-angle:		55	degrees
angular IFOV:		1.41844	millirad's
number of array elements:		10	
orbital period:		98.80299	minutes
subsattellite velocity:		6.760355	KM/sec
sweep scan period:		1.479241	seconds
swath width at nadir:	10	10.00017	kilometers
half swath distance:	1006.844	1164.77	kilometers
range to swath edge:	1229.13	1414.032	kilometers
range/height:		2.005719	
great circle arc:		10.46289	degrees
nadir x-pixel size:	1000	1000	meters
nadir y-pixel size:	1000	1000	meters

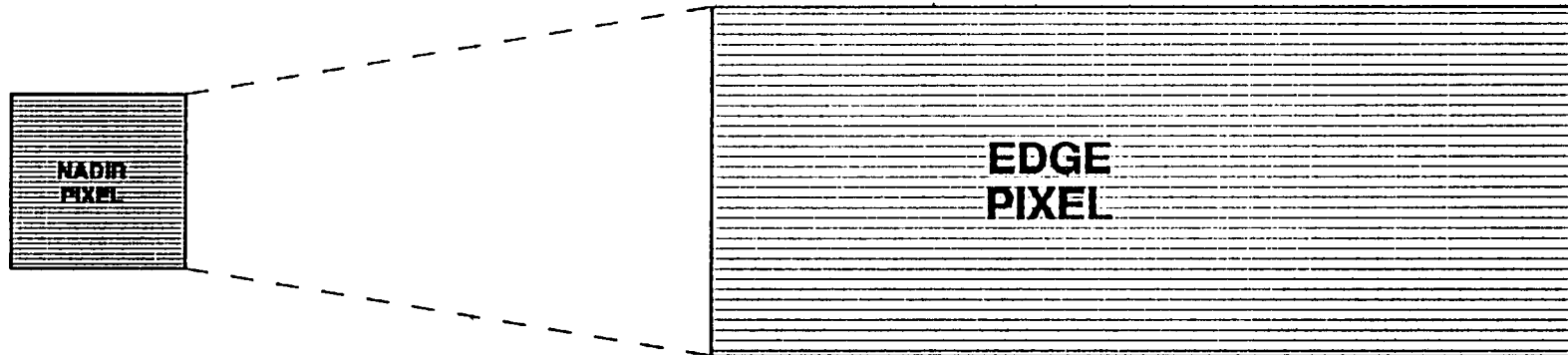
The following measurements refer to the edge pixel:

edge stretch:	4.829771		
look angle:	55	65.46289	degrees
x-pixel size:	4829.771	4829.783	meters
y-pixel size:		2005.719	meters
lead/trail ranges:	1411.839	1416.232	kilometers
trapazoidal distortion:		6.23182	meters
refractive distortion:		127.5133	arc-sec's
refractive distortion:		.6182019	millirad's

SIMPLIFIED refers to small angle and/or flat earth approximation
 x = along-scan direction y = along-track direction

MODIS Pixel Size Range

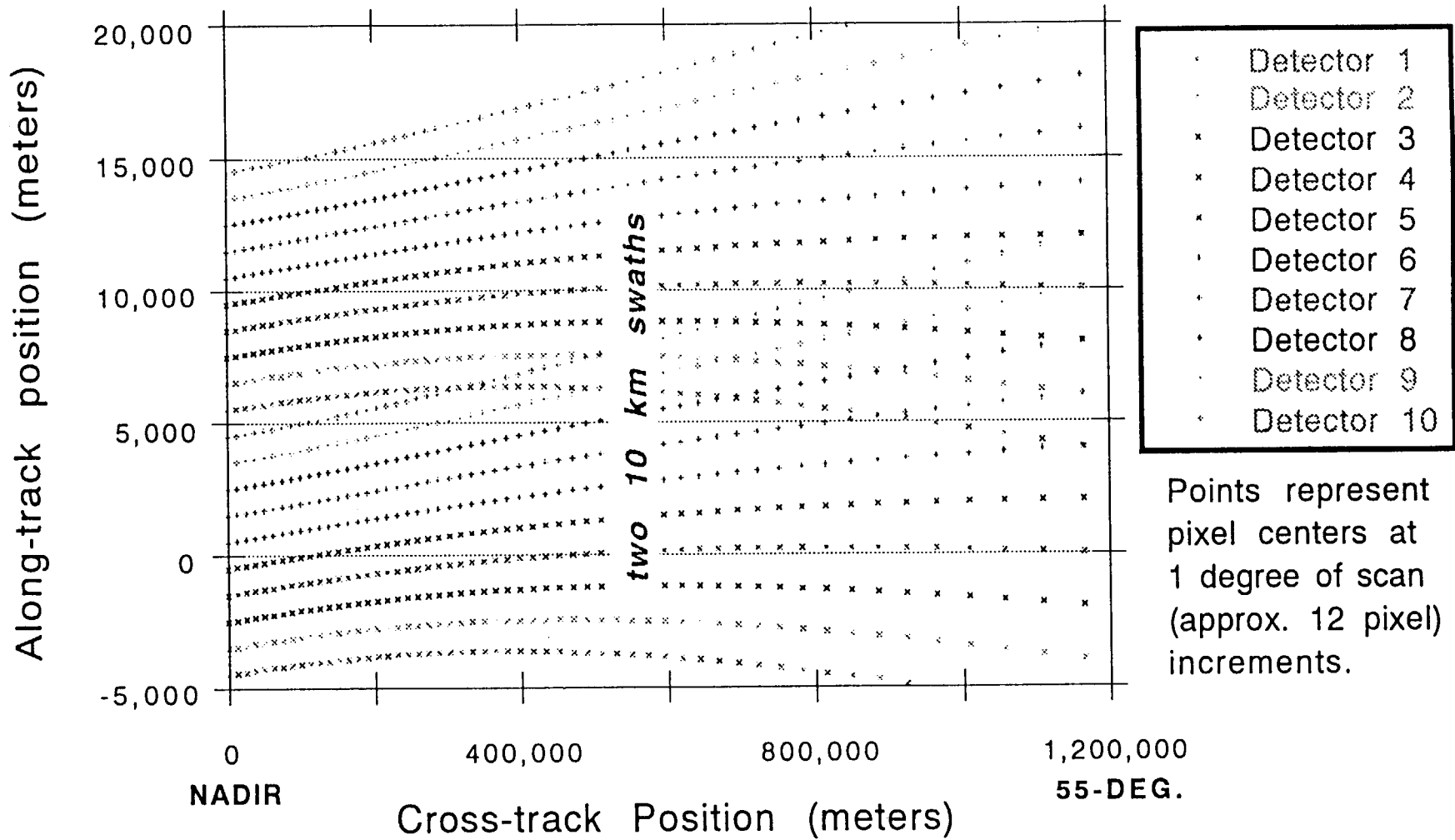
(drawn to the scale of 1" = 1 km)



Edge distortion in the along-track direction is due to doubling of the satellite distance from target at slant angle of 55 degrees. The along-scan distortion is further exaggerated by obliqueness of view and curvature of the earth.

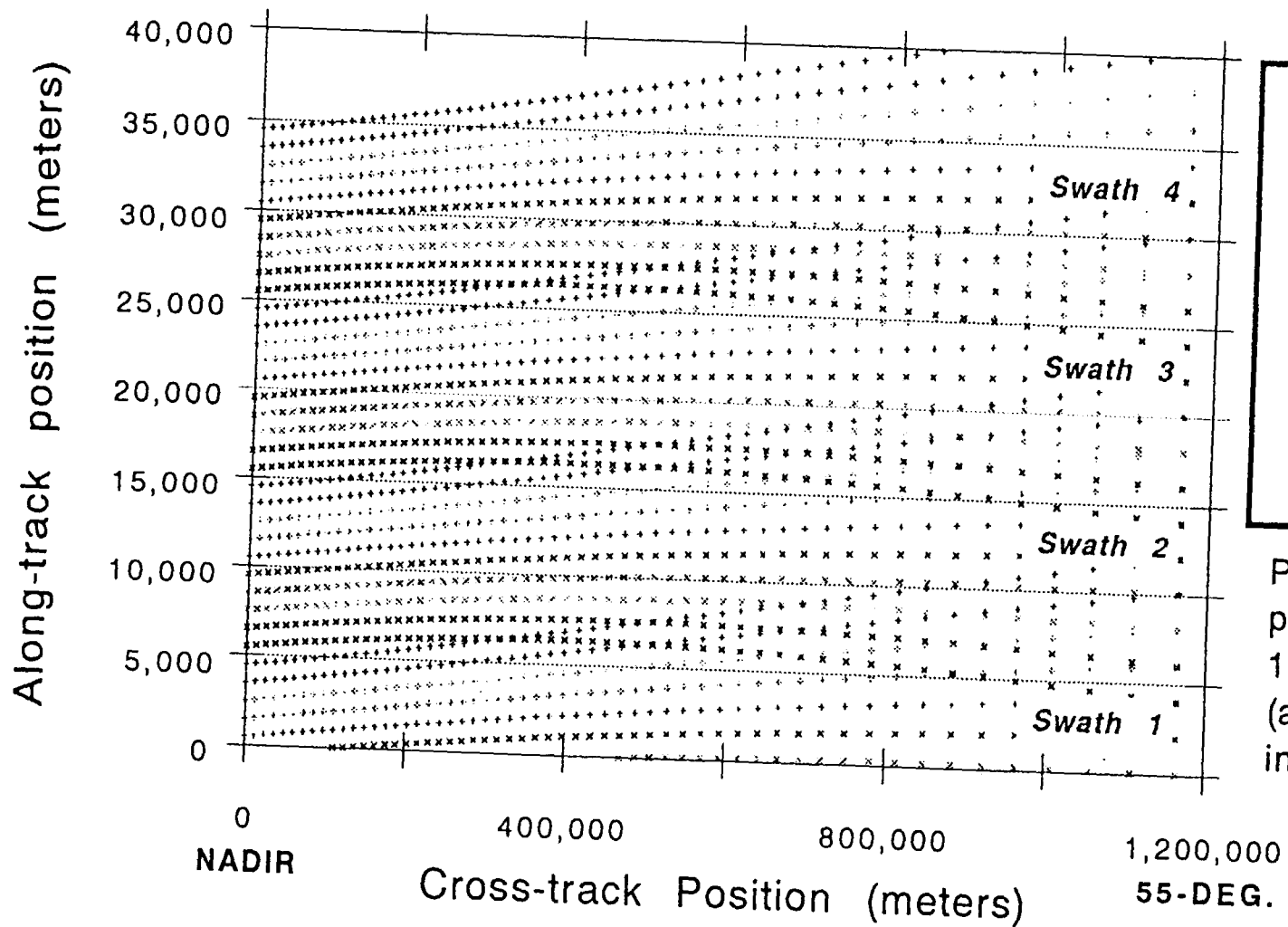
MODIS Scan Pattern

(10 element array, 1 km GFOV)



MODIS Scan Pattern

(10 element array, 1 km GFOV)



- * Detector 1
- * Detector 2
- * Detector 3
- * Detector 4
- * Detector 5
- * Detector 6
- * Detector 7
- * Detector 8
- * Detector 9
- * Detector 10

Points represent pixel centers at 1 degree of scan (approx. 12 pixel) increments.