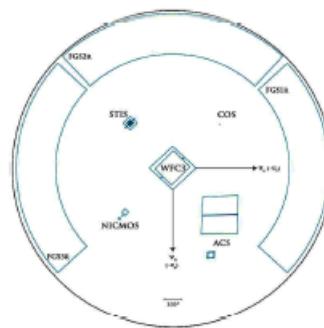# Wide field focal plane layout
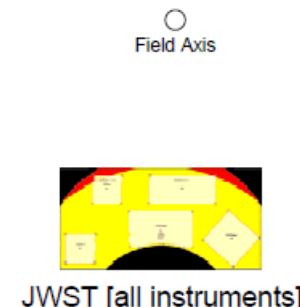
- **Using realistic H4RG package spacings**
  - 2.5mm in x
  - 8.564 mm in y
- **Sapphire window in front of focal plane assembly (FPA)**
  - Geo radiation environment
- **Ea. active area is 0.1249 degrees (4088 pixels)**
- **0.110″/pixel**

Channel field layout for AFTA-WFIRST wide field instrument

6x3 H4RG "packed" @ 0.11"/p, 0.281 sq.deg

0.427° high

0.788° wide

Field Axis

HST [all instruments]

JWST [all instruments]
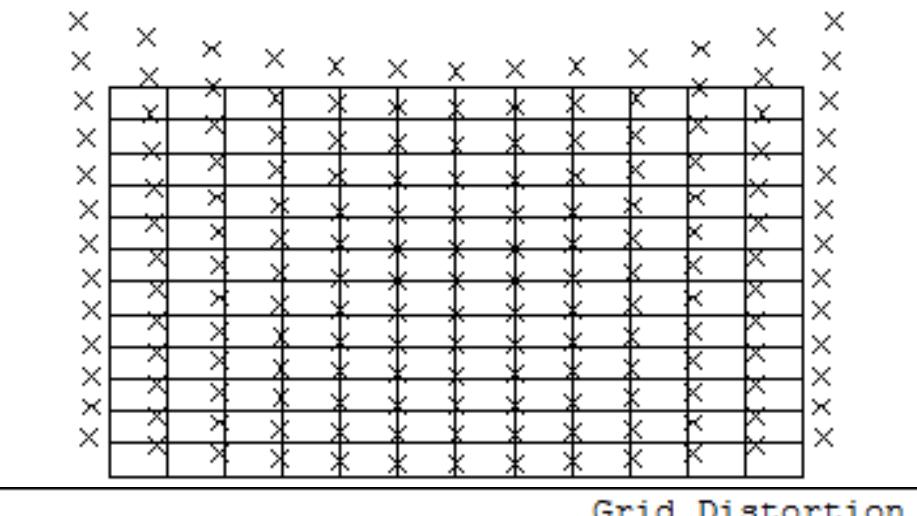
Moon (average size seen from Earth)

Wide Field layout table

packed & window		WideField
npix [1 side of SCA]		4088
pixel size	mm	0.010
x gap size	mm	2.500
y gap size	mm	8.564
pixel scale	"/p	**0.110**
nx		6
ny		3
total x	deg	**0.788**
total y	deg	**0.427**
active area	deg^2	0.281
focal length	m	18.75149
aperture	m	2.36
system f/#		7.946
obscured fraction		0.300
A	m^2	3.981
A - omega est.	m^{2}deg^2	1.118
Mpix		300.8
field size x	mm	257.78
field size y	mm	139.77
x gap angle	deg	0.0076
y gap angle	deg	0.0262
chip size	mm	40.88
chip angle	deg	0.1249

Grid distortion

- 1st order half-field sizes are
  - X: 0.394°
  - Y: 0.2135 °
- In practice these will need to be updated to reflect the distortion

Grid Distortion

1/17/2013
Field: 0.7880 w 0.4270 h Degrees
Image: 255.93 w 141.13 h Millimeters
Maximum distortion: 1.8315%
Scale: 10.000X, Wavelength: 1.2000 μm