

Optics and Focal Plane Status

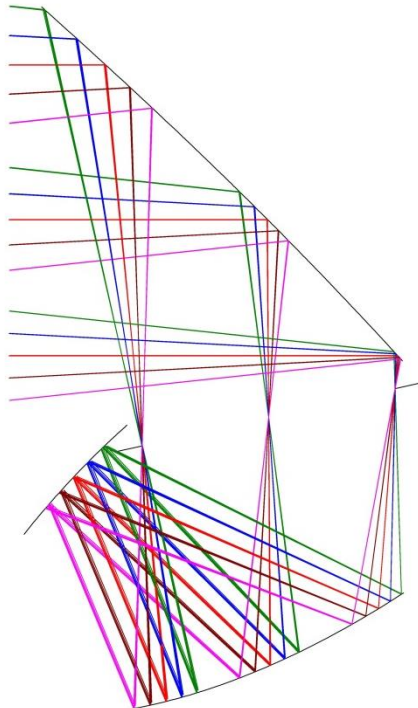
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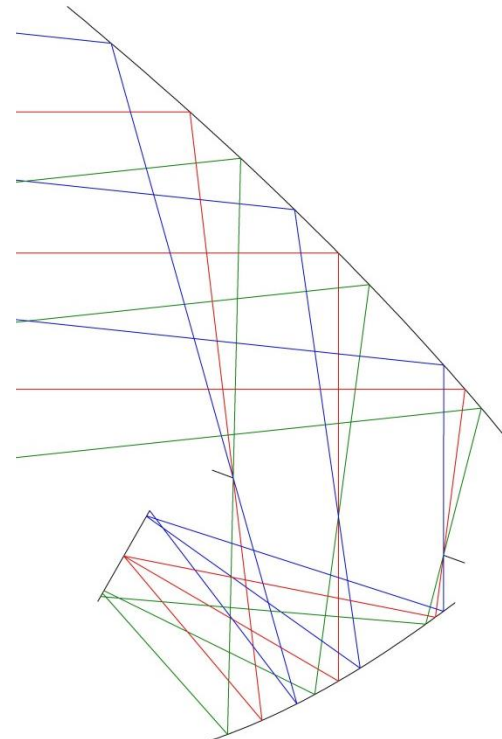
Optics

- Jim McGuire at JPL made adjustments to the optics as part of TeamX study
- New system:
 - Uses Zernike polynomials to define the mirrors
 - Has a concave focal plane with radius of curvature 4.5 m.
 - Optimized farther from the classical Open Dragone. Angles between mirrors have been changed as well as curvatures.
 - Is more compact and has improved optical quality (as assessed by Jim)
- To do:
 - Check if spacing between focal plane and incoming rays is an issue
 - Calculate Strehl > 0.8 areas for placing detectors on focal plane.

New



Old



Focal Plane

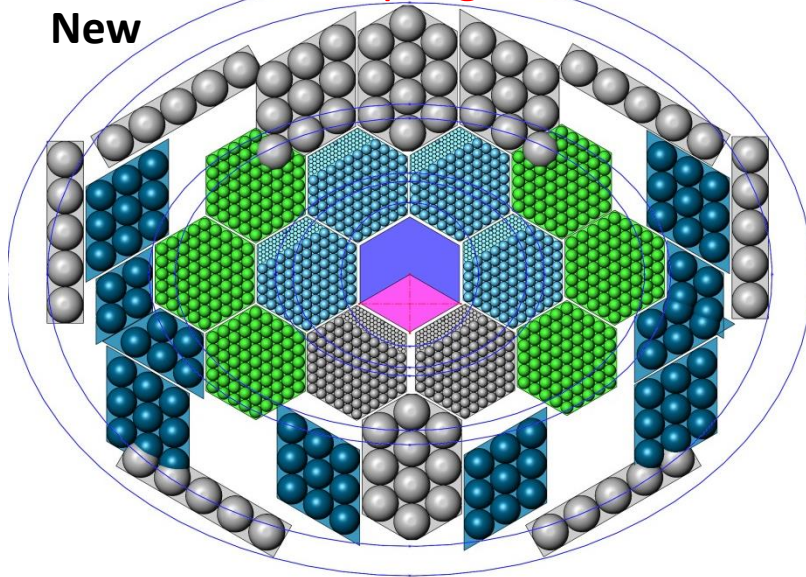
- Focal plane being updated to make it simpler and more compact.
- Old version had 12356 bolometers, 2298 pixels.
 - I expect this to be the same within a few percent for the new version
 - The number of F, G,H,I pixels may increase.
- 17.5 x 12 deg, 60 x 47 cm.
- Strehl contours need to be checked with new optics

Numbers Outdated

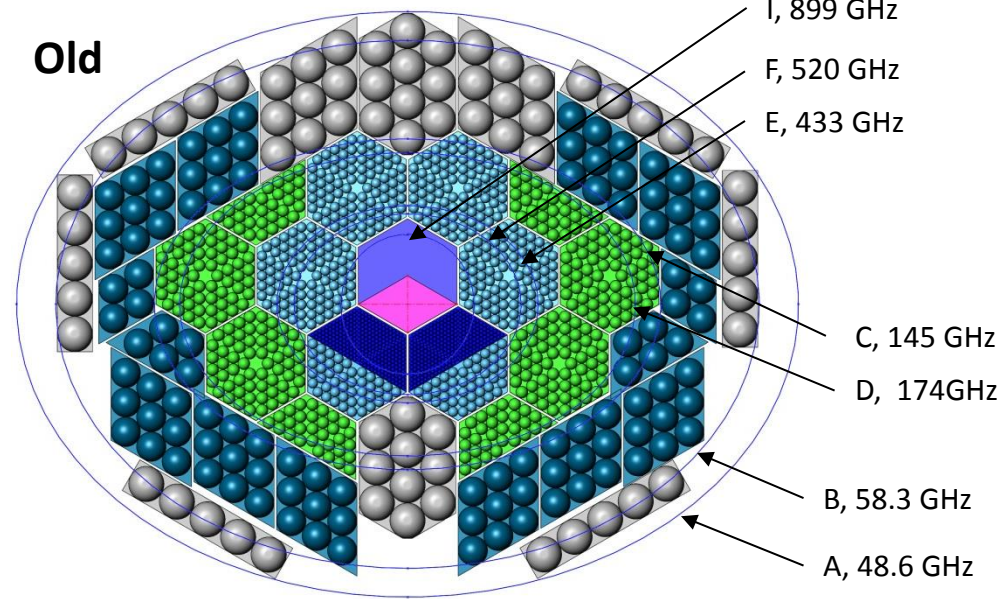
Pixel	Highest Frequency (GHz)	Number
A	48.6	68
B	58.3	108
C	145	360
D	174	450
E	433	546
F	520	408
G	624	135
H	749	132
I	899	91

Work in progress!

New



Old



- Still to do:
 - Adjust relative number of D and E pixels (cyan wafers).
 - Place A and B wafers. Use 1 type of wafer for these pixels.
 - Calculate number of high frequency pixels to fill central wafer. I had too few pixels on this wafer in the 1st version