

Open vs Crossed Dragone

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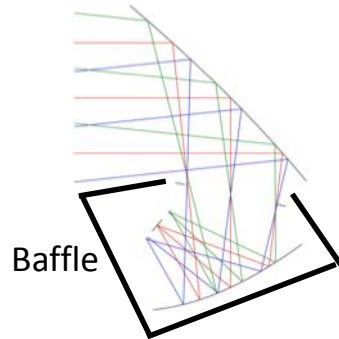
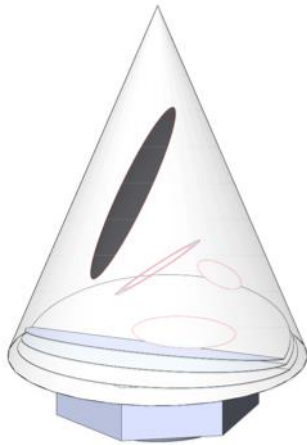
Optical Systems

Not to scale!

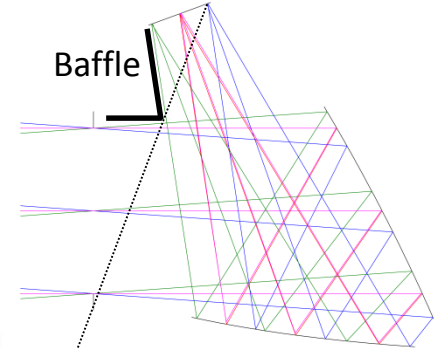
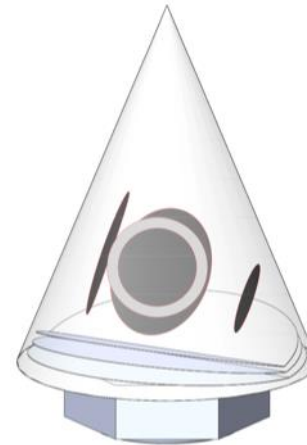
Open

Crossed

Large

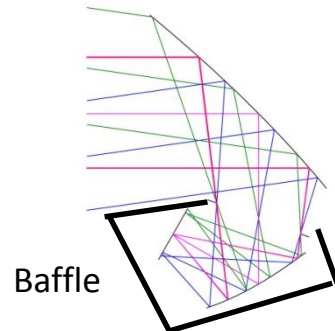
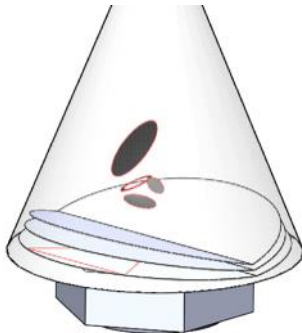


D = 1.4 m
Baffling works
Packs in envelope
Noise, weights calculated
Primary @ 30K, others @ 4K

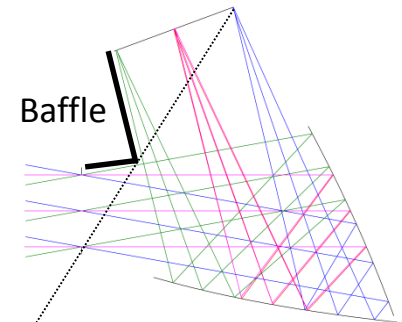
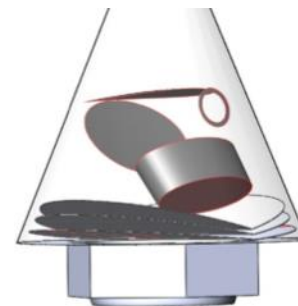


D = 1.2 m
Baffling works
Packs in envelope
Noise, weights calculated
All @ 30K

Small



D = 0.5 m
Baffling works
Packs in envelope
Noise, weights calculated
Completely 4K version
(30 K primary version)



D = 0.5 m
Baffling works
Packs in envelope
Noise, weights calculated
Completely 30K version
(Completely 4K version)

Mirror sizes

	1.4 m Open [cm]		1.2 m Cross [cm]	
PR	y	270	y	167
	x	190	x	180
SR	y	140	y	160
	x	140	x	176
FP	y	50	y	45
	x	55	x	90

Overall sizes

	1.4 m Open [cm]	1.2 m Cross [cm]
y	200	250
x	190	180
z	370	250

X direction goes into the page; last page shows YZ cross sections of the optics.³

Comparing Open and Crossed

- 1.4 m open optics V3D vs 1.2 m crossed
- 1.4 m, F number = 1.4
 - 10 dB at lowest pixel band, 7350 detectors
 - 10 dB at middle pixel band, 15030 detectors
- 1.2 m, F number = 2.5
 - 3354 detectors
 - 18 dB edge taper at lowest pixel band
 - 30 K stop requires lower spillover, so larger pixels
 - Large f/# causes larger pixels

