

Deployable Extension Shields & “Add-on” Undeployable Shields

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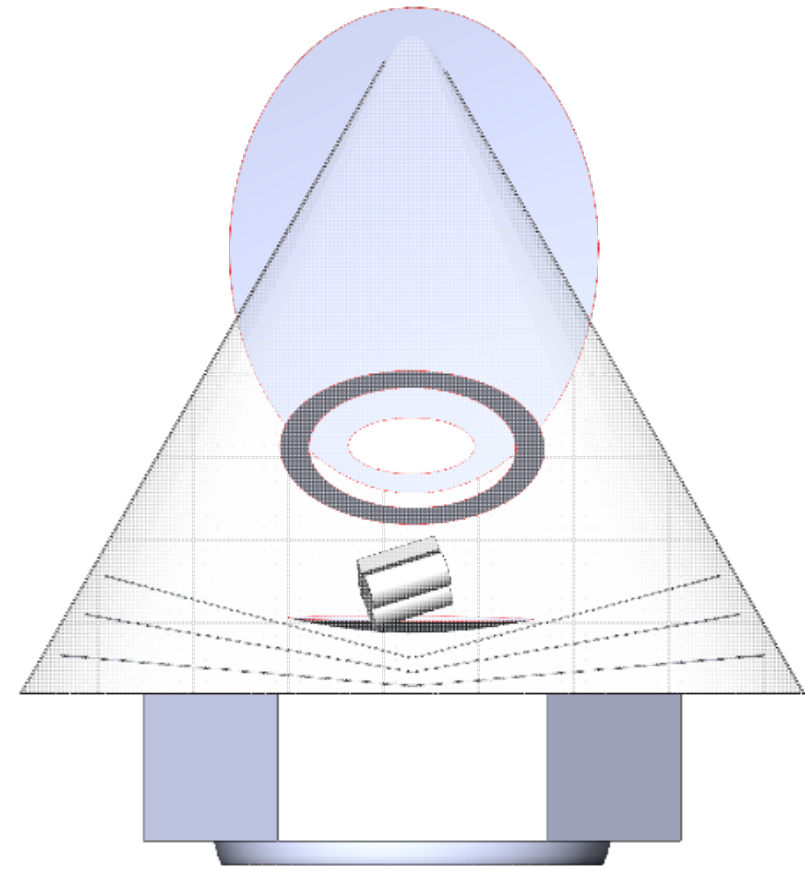
Nov 28, 2017

Deployable Extension Shields

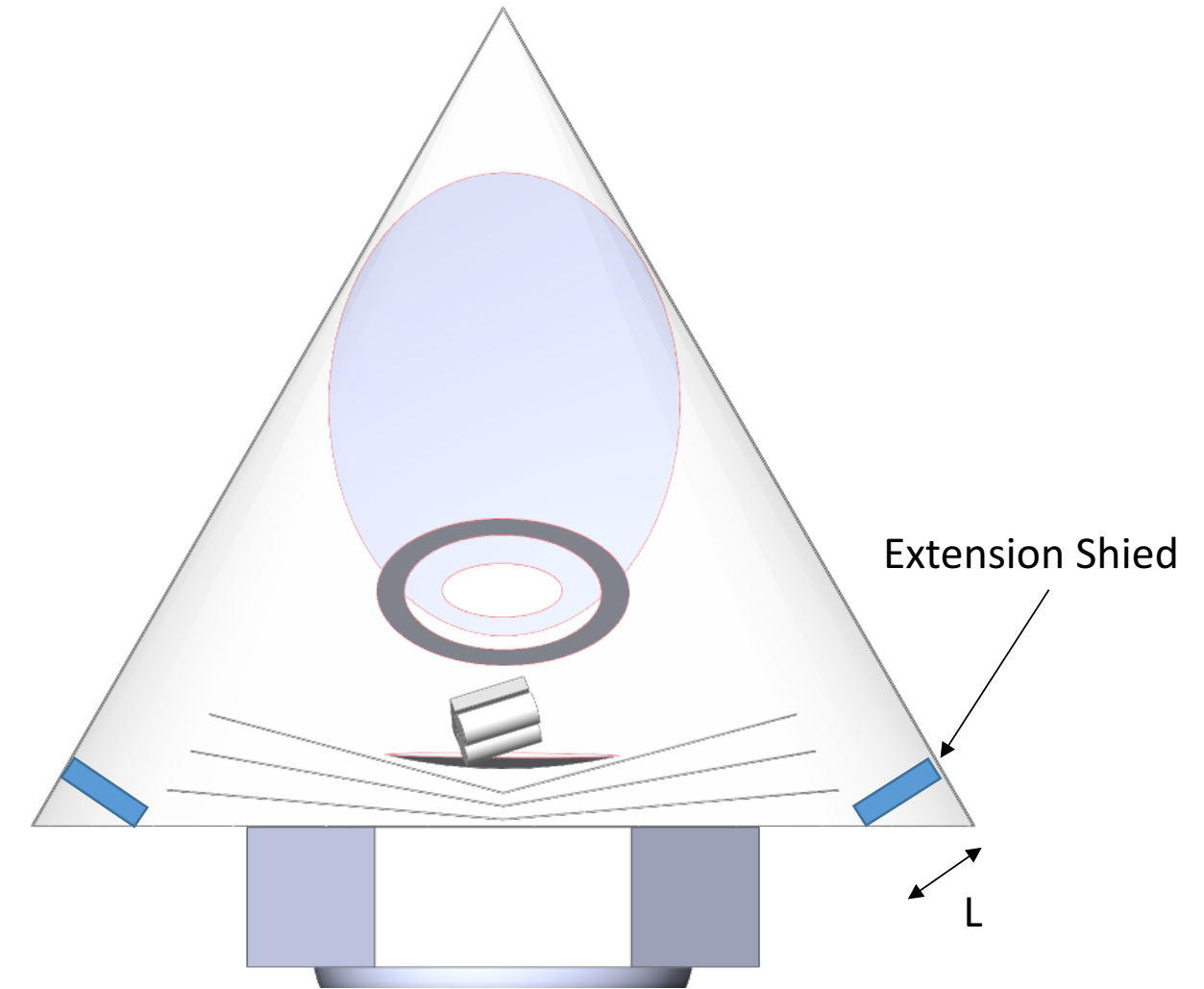
- Without any extension shield, precession angle $\alpha = 22$ deg, not optimal for scanning.
- Study what precession angle that can be achieved, if there is possibility having deployable extension shield.
- $\alpha = 22 - 50$ deg have been investigated.

Open Dragone

$\alpha = 30 \text{ deg}$



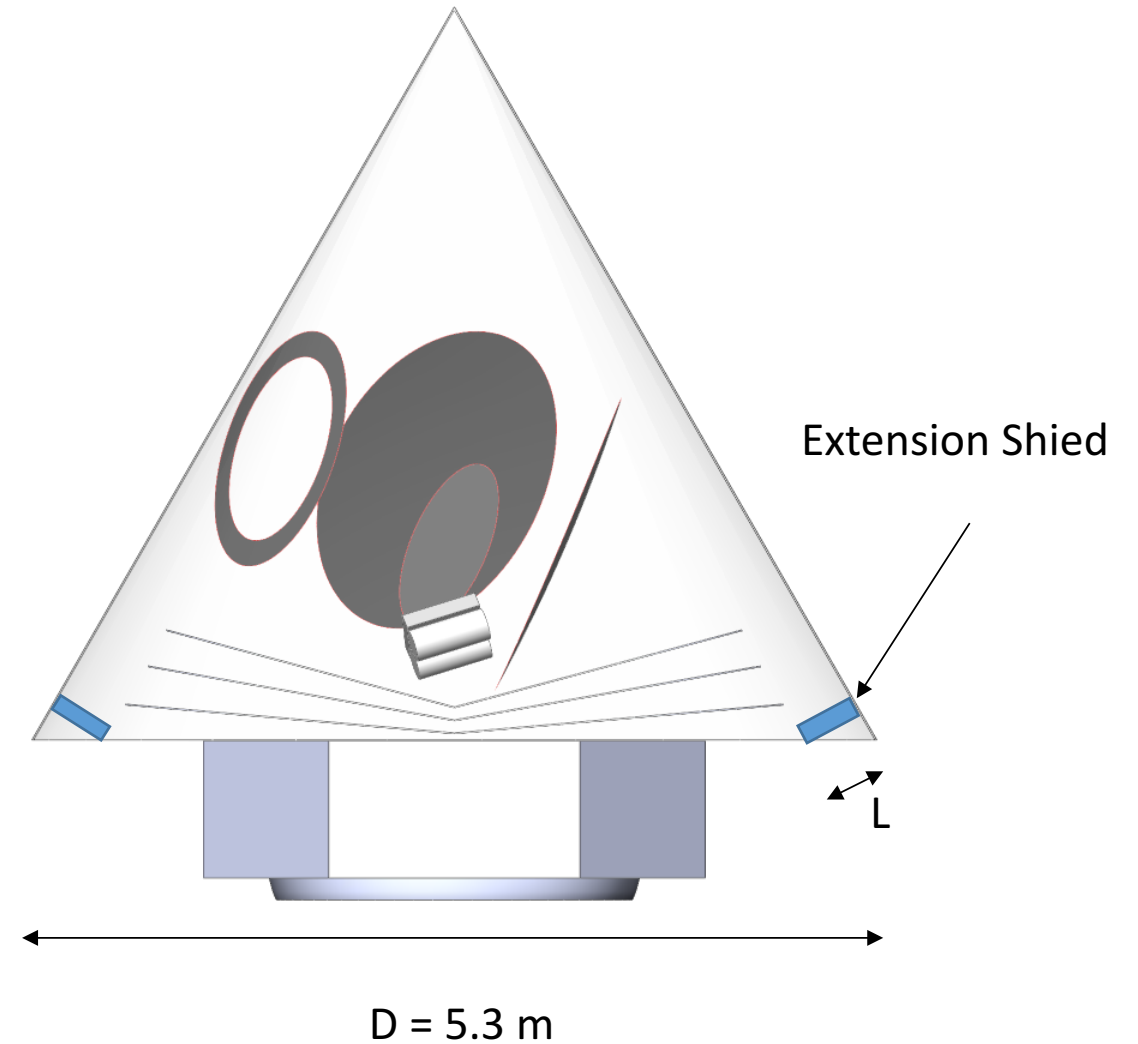
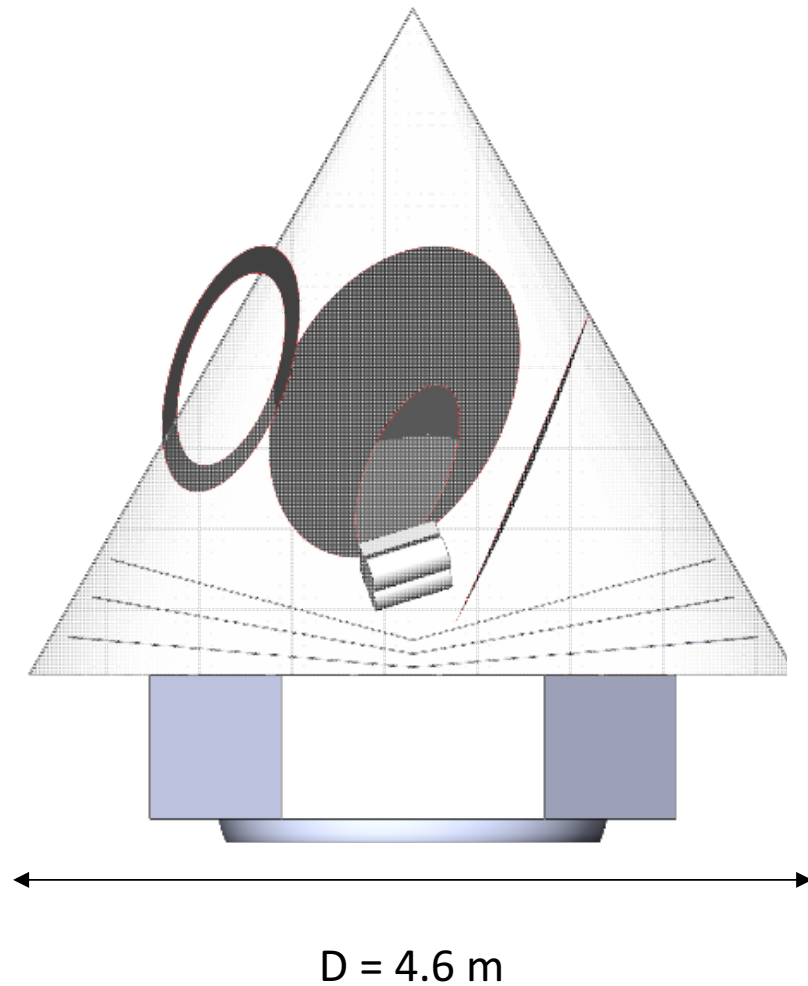
$D = 4.6 \text{ m}$



$D = 5.8 \text{ m}$

Cross Dragone

$\alpha = 30 \text{ deg}$



Open Dragone

Alpha [deg]	D [m]	L [m] *
22	4.6	0
30	5.8	0.52
35	6.7	0.86
40	7.8	1.23
45	8.8	1.50
50	10.5	1.90

* $L = \cos(\alpha) \cdot (D - 4.6) \cdot 0.5$

Cross Dragone

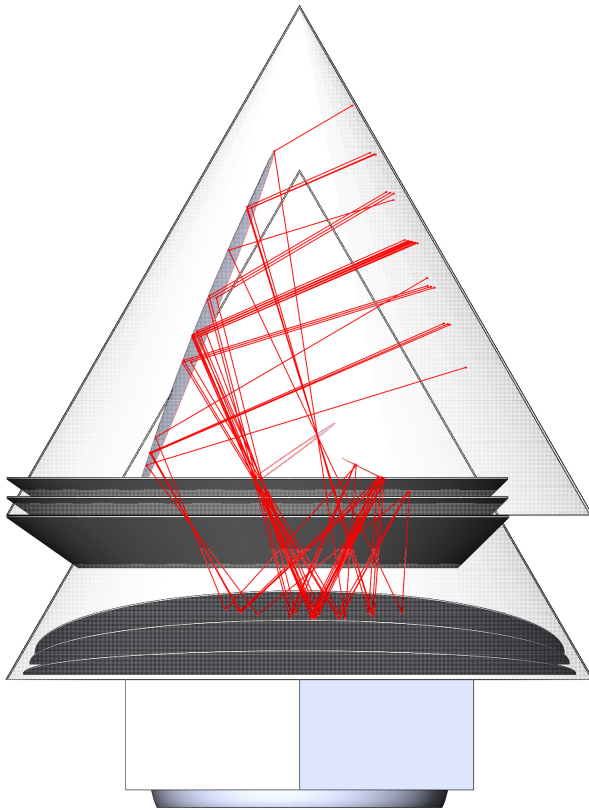
Alpha [deg]	D [m]	L [m] *
22	4.6	0
30	5.3	0.30
35	5.8	0.50
40	6.4	0.70
45	7.2	0.92
50	8.2	1.15

* $L = \cos(\alpha) \cdot (D - 4.6) \cdot 0.5$

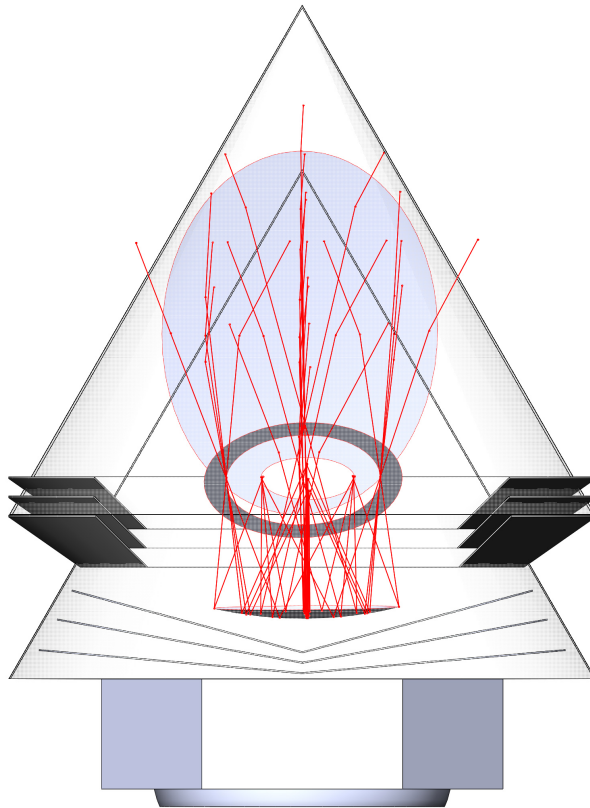
“Add-on” Undeployable Sunshields

Two cones both with $\text{Alpha} = 30^\circ$

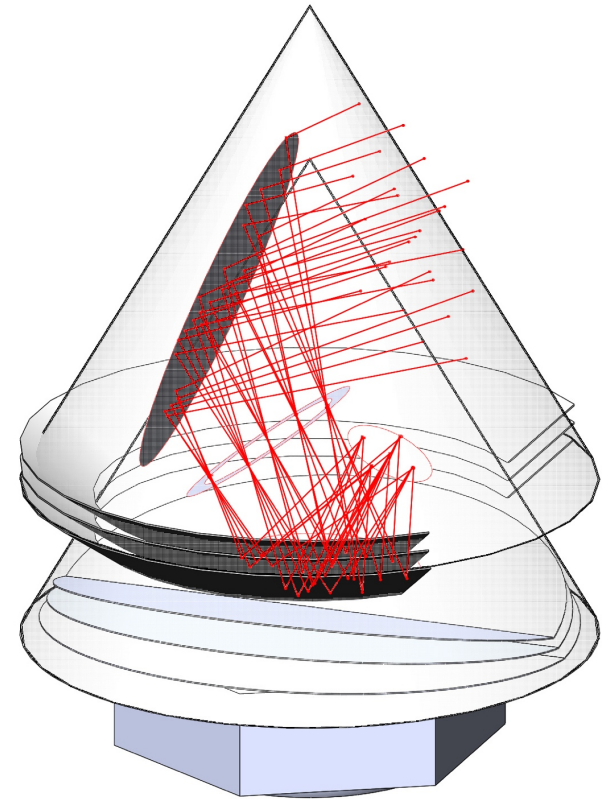
More thermal simulation will be done locally at UMN.



Left



Front



“Nice” view