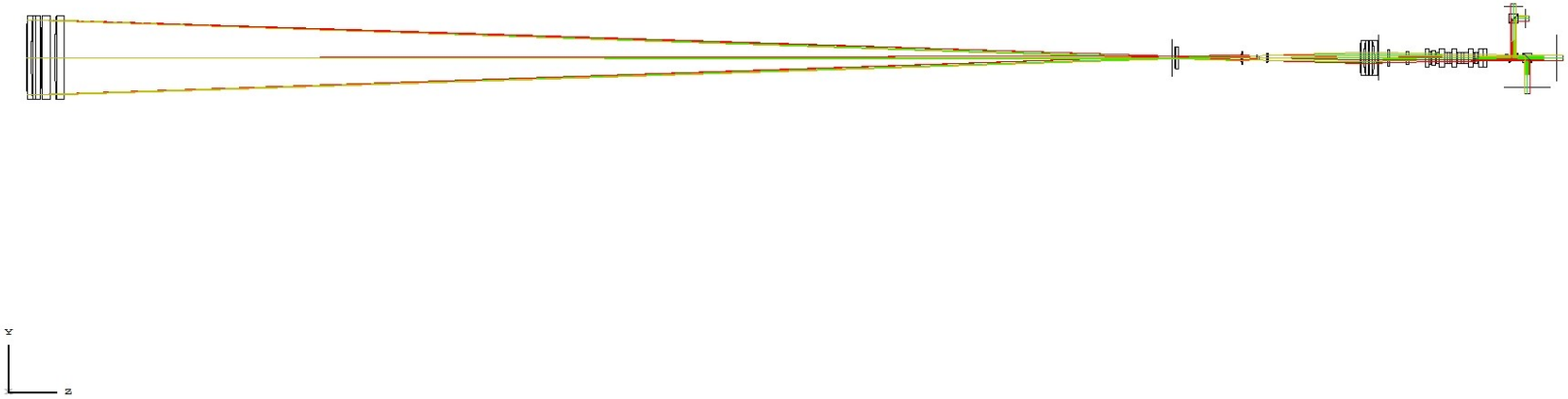
Preliminary PDSS
Achromatic Optical Design Overview

Sept 6, 2013

Optical Design Overview

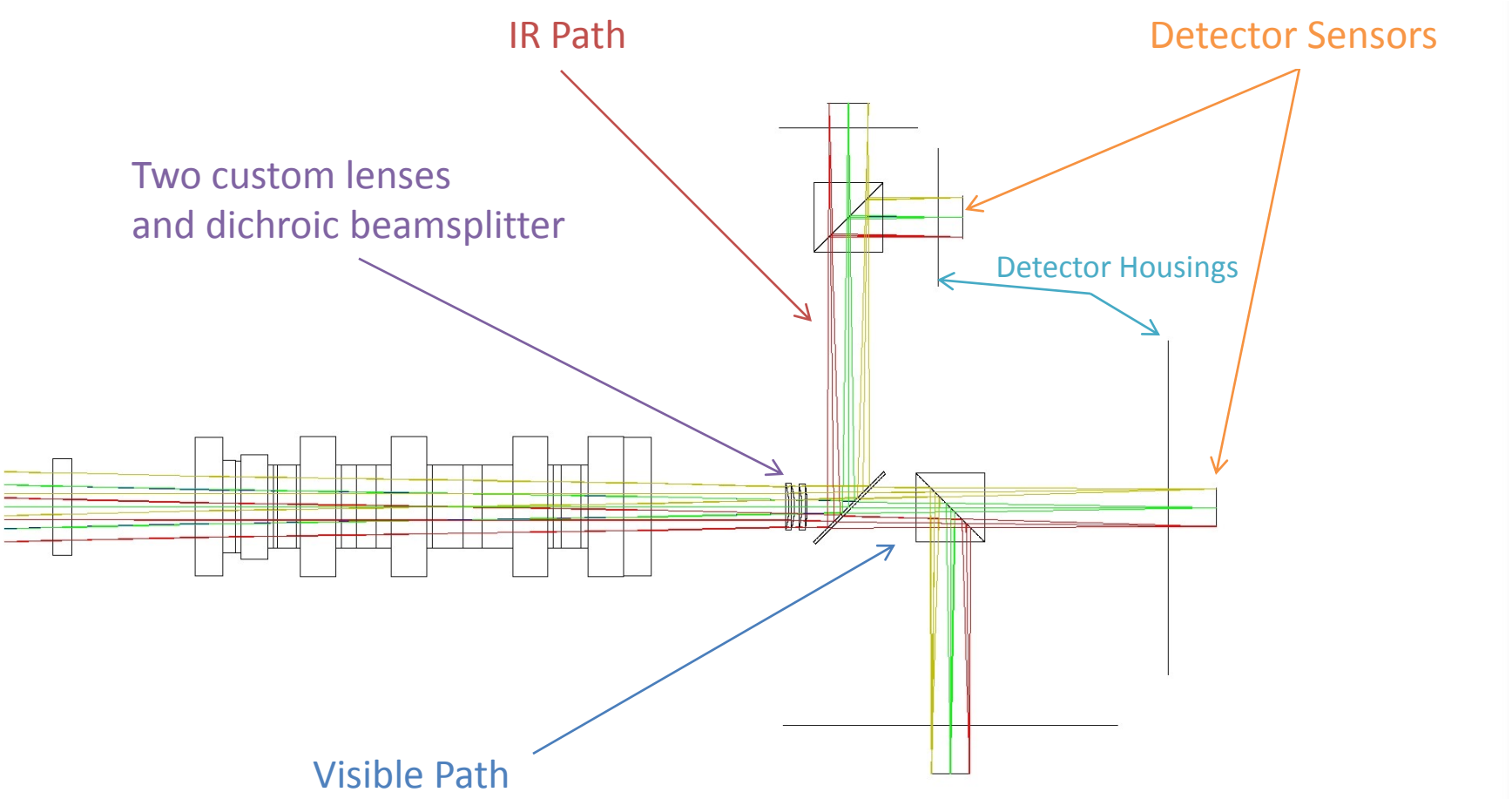


3D Layout

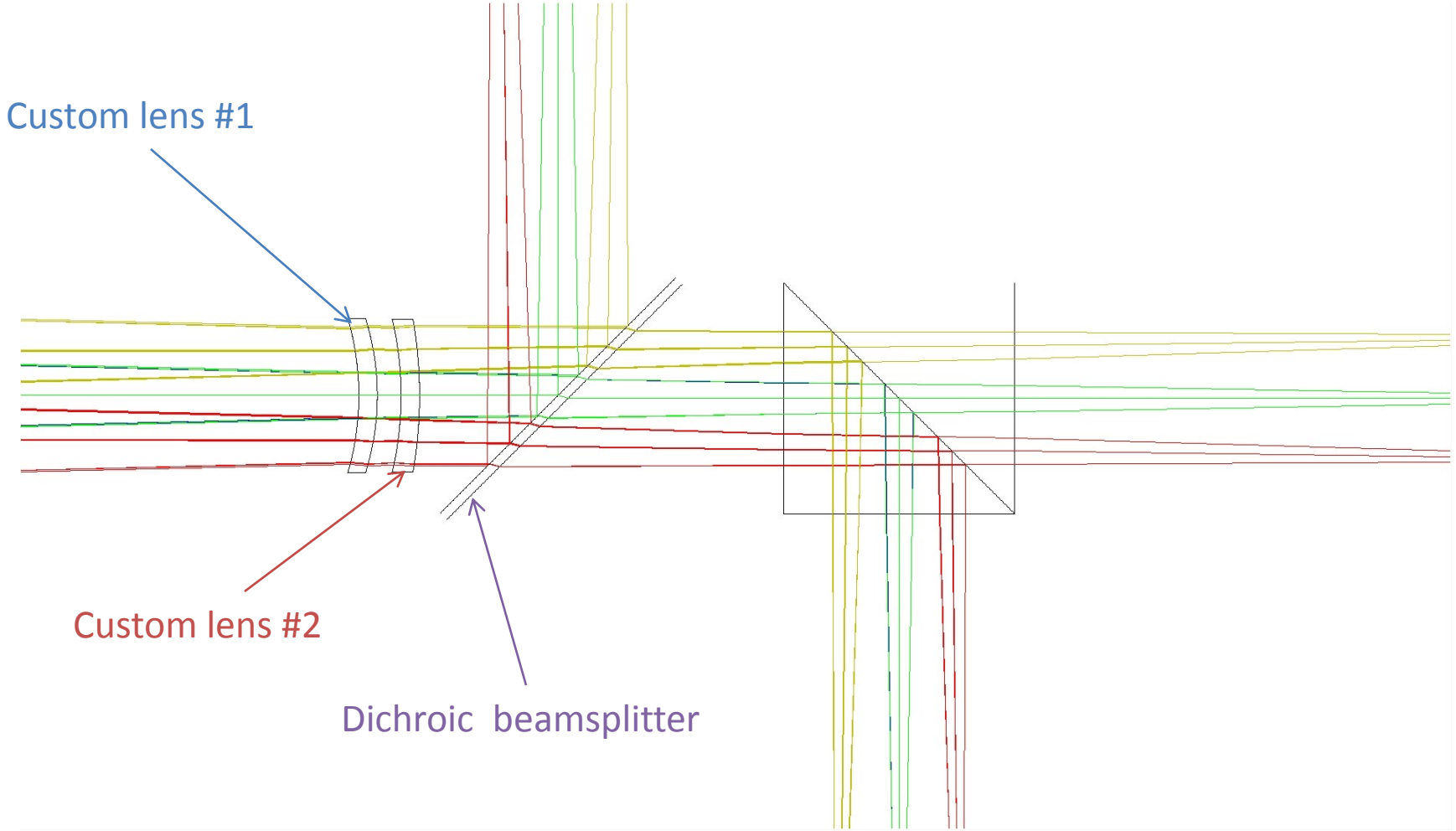
CoMP-S Instrument on 20cm Zeiss Coronagraph Updated at Deployment
9/6/2013

PDSS_8_6_2013_achromatic.zmx
Configuration: All 9

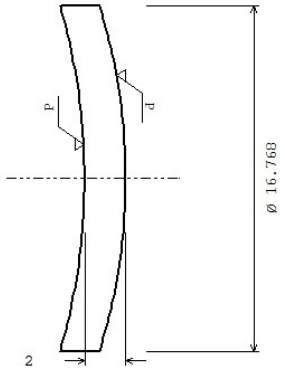
Close up of PDSS



Close up of custom optics



Custom Lens #1 Drawing



Dimensions in Millimeters

Left Surface	Material	Right Surface
R 29.9244 CC	GLASS: S-LAM3	R 28.0337 CX
$Ø_E$ 16.768	N_d= 1.717004	$Ø_E$ 16.768
Ⓚ	V_d= 47.93	Ⓚ
3/	0/ -	3/
4/ -	1/ -	4/ -
5/ -	2/ -	5/ -
6/ -		6/ -

ISO Element Drawing Indications According to ISO 10110

DATE	SCALE	DRAWN	APPRV
9/6/2013	3.7000:1		

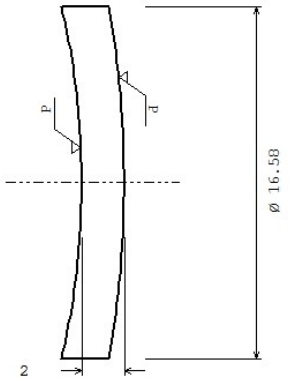
PROJECT/TITLE

PDSS Instrument on 20cm Zeiss Coronagraph

PART/DRAWING	REVISION

PDSS_8_6_2013_achromatic.zmx
Configuration 9 of 9

Custom Lens #2 Drawing



Dimensions in Millimeters

Left Surface	Material	Right Surface
R 36.102 CC	GLASS: SF10	R 48.5628 CX
$Ø_E$ 16.58	N_d = 1.728250	$Ø_E$ 16.58
Ⓚ	V_d = 28.41	Ⓚ
3/	0/ -	3/
4/ -	1/ -	4/ -
5/ -	2/ -	5/ -
6/ -		6/ -

ISO Element Drawing Indications According to ISO 10110

DATE	SCALE	DRAWN	APPRV
9/6/2013	3.7000:1		

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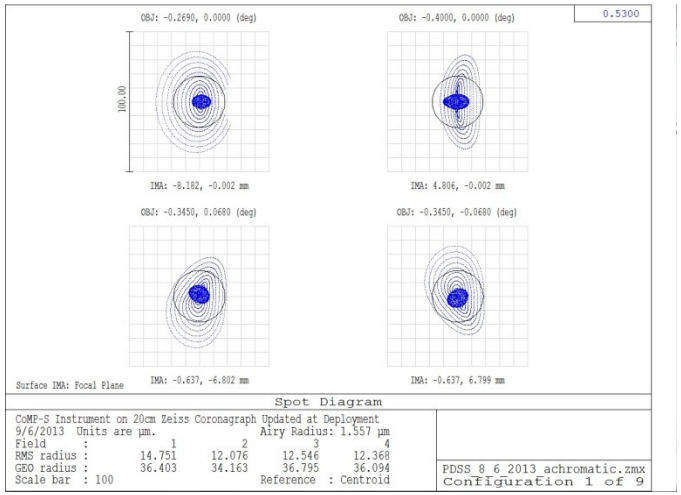
PDSS Instrument on 20cm Zeiss Coronagraph

PART/DRAWING	REVISION

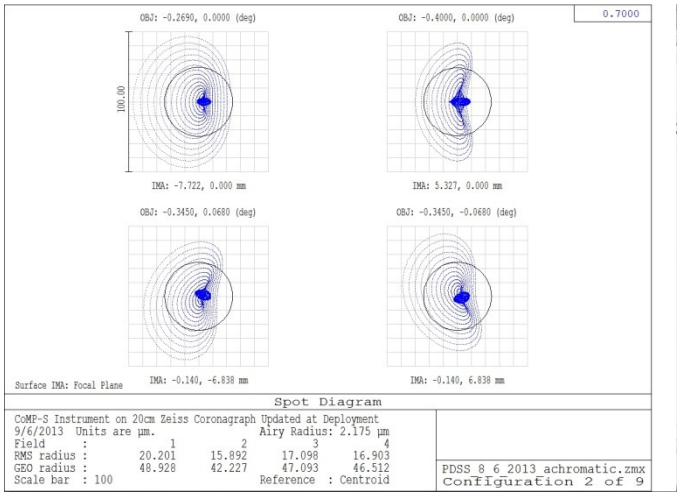
PDSS_8_6_2013_achromatic.zmx
Configuration 9 of 9

Visible Spot Diagrams on the Detector (with no focal movement required)

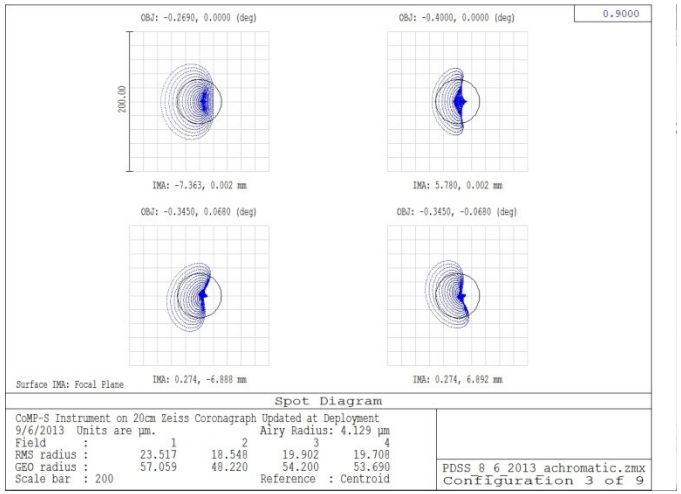
530nm



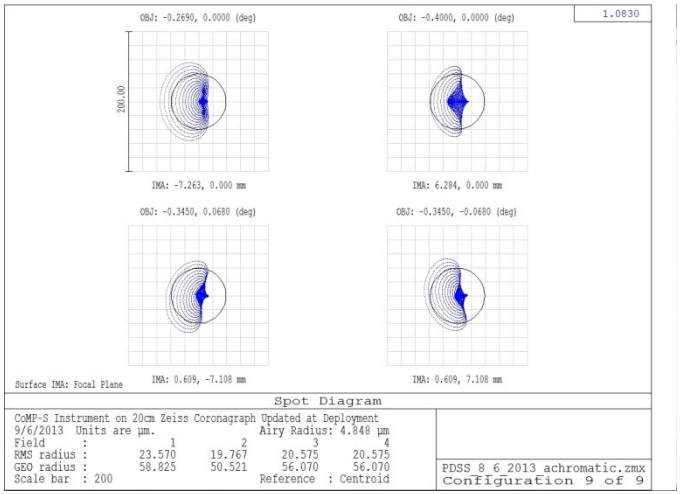
700 nm



900 nm



1083 nm



Optical Task List

1. Quotes for custom lenses
2. Tolerance analysis (make sure no positions are too sensitive with new custom optics)
3. Coatings over large bandpass (CVI HE-420-1100NM, Optimax XBBAR are possibilities)