

Status of Inputs, Products and Interfaces

Feng Zhao

JPL

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ACW #2

Outline

- Status of inputs
 - Design inputs to PROPER analysis
 - Design inputs to Optical Design/Layout
- Status of Products:
 - TFOM: Performance estimate from PROPER
 - Used ad input for SFOM
 - WFE sensitivity
- Status of DCIL compliance assessment:
 - TFOM: Optical Design/Layout
 - 0.6 deg off axis
 - Instrument envelop

PROPER Simulation Status (9/24/2013)

AFTA Coronagraph PROPER model Support						2013					
Architecture	Advocate	Received design?	PROPER modeler	PROPER Status	Jul	Aug	Sep	Oct	Nov	Dec	
Shaped pupil	Kasdin	Received (earlier pupil)	Krist	●	Start Design 7/25	Design effort	9/20	Rec draft design	10/21	Rec final design	11/22
PIAA	Guyon	Monochromatic	Krist	●	Start Design 7/25	Design effort	9/20	Rec draft design	10/21	Rec final design	11/22
Hybrid Lyot	Trauger	Un-official	Krist	●	Start Design 7/25	Design effort	9/20	Rec draft design	10/21	Rec final design	11/22
Vector Vortex	Serabyne	Non-optimal monochromatic	Krist	●	Start Design 7/25	Design effort	9/20	Rec draft design	10/21	Rec final design	11/22
PO-VNC (contains competition-sensitive information)	Lyon	N/A	Lyon* (*OSCAR model)								
DAVINCI-VNC	Shao	Received prelim design. PROPER code development near complete	Menesson Sidick	●	Start Design 7/25	Design effort	9/20	Rec draft design	10/21	Rec final design	11/22
							8/1 PROPER develop start		Del draft PROPER	Del final PROPER	

Design effort
 PROPER effort

- **Details in PROPER presentation: Krist, Menesson and Sidick (Day #2)**
- **Need final design from advocates by 10/21/2013 in order to report final results at ACW#3 11/21/2013**

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Optical Layout Status (9/24/2013)

AFTA Coronagraph Optical Layout															
Architecture	Advocate	Received design?	Optical Engineer	Status	2013										
					Jul	Aug	Sep	Oct	Nov	Dec					
Shaped pupil	Kasdin	Received	Mike Rud	●	Start Design 7/25	↑	9/20	↑	Rec draft design	10/21	↓	11/21	↓	Del draft Layout	Del final Layout
PIAA	Guyon	Received	Mike Rud	●	Start Design 7/25	↑	9/20	↑	Rec draft design	10/21	↓	11/21	↓	Del draft Layout	Del final Layout
Hybrid Lyot	Trauger	Received	Mike Rud	●	Start Design 7/25	↑	9/20	↑	Rec draft design	10/21	↓	11/21	↓	Del draft Layout	Del final Layout
Vector Vortex	Serabyn	Received	Mike Rud	●	Start Design 7/25	↑	9/20	↑	Rec draft design	10/21	↓	11/21	↓	Del draft Layout	Del final Layout
PO-VNC (contains competition-sensitive information)	Lyon	N/A	Eric Mentzel, Hong Tang												
DAVINCI-VNC	Shao	Received	Hong Tang	●	Start Design 7/25	↑	9/20	↑	Rec draft design	10/21	↓	11/21	↓	Del draft Layout	Del final Layout

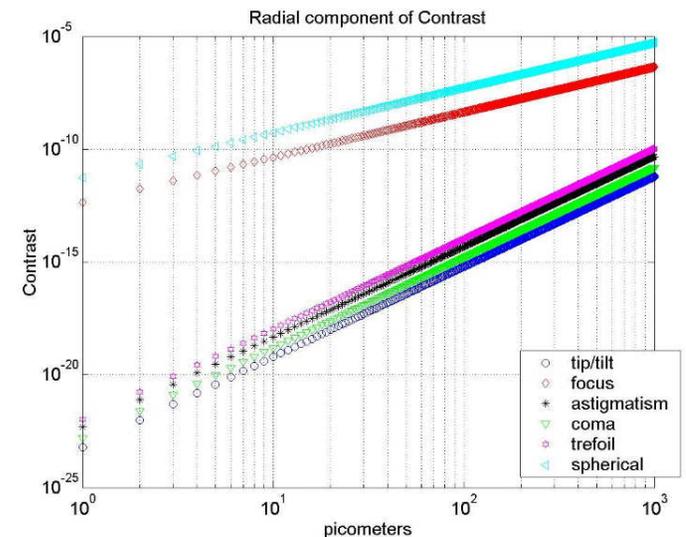
Design effort
 ZEMAX/CODE V effort

- **Details in Optical Design presentation: Rud and Tang (Day #1)**
- **Need final design agreed with advocates by 10/21/2013 in order to report final results at ACW#3 11/21/2013**

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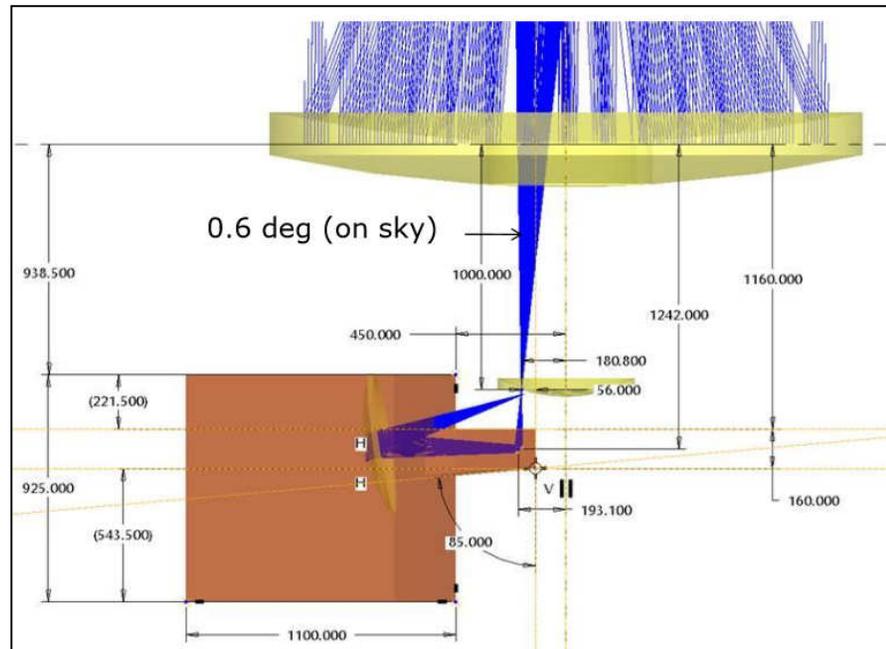
Sensitivity Analysis

- Acceptable wavefront “jitter and drift error” by each design
 - Estimate low order Zernike terms
- It will be used to derive LOWFS requirement
 - Together with OTA jitter/drift input
- Analysis flow:
 - Advocates deliver design to John
 - John runs PROPER and delivers aberration files to Stuart
 - Stuart runs his analysis and produces sensitivity files
 - Need designs early in order to have final results by ACW3
- Presentation by Stuart Shaklan on the approach (Day #2)



DCIL Compliance

- 0.6 deg off axis
 - Acceptable WFE with re-optimized TM and collimating optics
- Mechanical envelop
 - Appears all 6 designs can fit
- Details in presentation (Day #1) by Mike Rud and Hong Tang



Summary

- Optical Design and Layout are in good shape
 - Good confidence for meeting DCIL
- Need final design from advocates by ~10/21/2013 (the earlier the better) in order to report final PROPER and sensitivity results (key TFOM) to final ACW on 11/21/2013
 - Suggest “freeze the design” at ACW2.5