

AFTA Coronagraph Workshop (ACW) Series – Charter

6/17/2013

A. Background

At the request of the NASA Administrator, the Astrophysics Directorate (APD) has been studying the use of the 2.4-meter telescopes obtained by NASA as a basis for accomplishing the science of WFIRST, Astro2010's highest-ranked Large Space Mission. A recent study¹ termed the Astrophysics Focused Telescope Assets (AFTA) included an analysis of the possibility of augmenting such a mission with a coronagraphic instrument for direct imaging of exoplanetary systems in our solar neighborhood. The Astrophysics Implementation Plan² calls for continued mission concept study and technology development for AFTA to be prepared for the NRC mid-decadal review in FY2015-16 and a potential new start within this decade. A prioritization and selection of a primary and backup coronagraph technology is needed to support a possible new mission start in FY17, specifically, to support the completion of an updated mission concept report by January 31, 2015 and to enable the prioritization of technology investments. A final point design for the coronagraph is not required until entering Phase A in FY17.

The Exoplanet Exploration Program Office (ExEPO) and AFTA Study Office (ASO) are directed by APD at NASA Headquarters to engage the community in developing and delivering to the NASA Astrophysics Director a recommendation for the AFTA coronagraph technology (primary and backup) by November 2013. The recommendation will best satisfy the threshold and baseline science drivers provided by the AFTA Science Definition Team (SDT), constraints imposed by the ASO and other programmatic criteria including risk and cost.

The following groups will participate in the study:

1. A Working Group (representatives of coronagraph technologists, ASO from GSFC and JPL, and the AFTA SDT)
2. A Steering Committee (a subset of the Working Group responsible for setting agendas and ensuring community representation)
3. Consultants as needed and approved by the Steering Committee
4. An independent Technical Analysis Committee (TAC) approved by APD

¹ <http://wfirst.gsfc.nasa.gov>

² <http://science.nasa.gov/astrophysics/documents/>

A. Structure of the Work: The process leading to a recommendation to APD will be:

1. The Working Group will provide to the TAC the coronagraph technology descriptions, model predictions and any comparisons to metrics by September 30, 2013. The Working Group will start with the current science drivers in the WFIRST-AFTA final report³ until the SDT update.
2. Updates to science drivers (requirement and threshold) will be provided by the AFTA SDT by September 30, 2013 to the TAC, ExEPO, ASO and AD.
3. The TAC will assess both the ability of the technologies to meet the updated science drivers and other technical requirements and to meet the required TRL gates for project formulation. Analysis will be delivered to ExEPO and ASO by October 31, 2013.
4. ExEPO and ASO will develop and deliver a joint recommendation to APD on which 2 coronagraph technologies should be down-selected for continued development by December 2, 2013 using the analysis above as input.

The ACW Series is expected to consist of 2-3 face-to-face workshops and supporting telecons that enable virtual participation for all participants. The ExEPO and ASO may convene a Red Team for vetting of concepts prior to final delivery to the TAC or to ExEPO and ASO.

B. Participants

Steering Committee:

Gary Blackwood (JPL)	ExEPO Manager, ACW Series organizer
Kevin Grady (GSFC)	AFTA Study Manager
Jeremy Kasdin (Princeton)	AFTA SDT Member, Workshop#1 organizer
Scott Gaudi (Ohio State)	ExoPAG EC Chair, member APS
Peter Lawson (JPL)	ExEP Chief Technologist
Tom Greene (ARC)	ExoPAG EC Member, AFTA SDT Member
Wes Traub (JPL)	ExEP Chief Scientist, AFTA SDT Member
Chas Beichman (NExSci)	Director, NExSci
Karl Stapelfeldt (GSFC)	Chair, Exoplanet Probe STDT for Coronagraph
Jeff Kruk (GSFC)	AFTA Scientist

Working Group: Consistent with the AFTA SDT charter, these members will be US Persons. Steering Committee members are also member of the Working Group. Working group members are expected to participate (in person or virtually) in all working group events.

³ <http://wfirst.gsfc.nasa.gov/>

1. Gary Blackwood (ExEPO)
2. Kevin Grady (GSFC)
3. Jeremy Kasdin (Princeton)
4. Scott Gaudi (Ohio State)
5. Peter Lawson (ExEPO)
6. Tom Greene (ARC)
7. Wes Traub (ExEPO)
8. Chas Beichman (NExSci)
9. Karl Stapelfeldt (GSFC)
10. Jeff Kruk (GSFC)
11. Mark Marley (ARC)
12. Marc Clampin (GSFC)
13. Olivier Guyon (UofA)
14. Bruce Macintosh (LLNL)
15. Gene Serabyn (JPL)
16. Stuart Shaklan (JPL)
17. Remi Soummer (STScI)
18. John Trauger (JPL)
19. Aki Roberge (GSFC)
20. Marshall Perrin (STScI)
21. Marie Levine (JPL)
22. Rick Lyon (GSFC)
23. Dave Content (GSFC)
24. Mark Melton (GSFC)
25. Cliff Jackson (GSFC)
26. John Ruffa (GSFC)
27. Jennifer Dooley (JPL)

The SDT Co-Chairs, David Spergel and Neil Gehrels, will be invited to attend the working group events.

Consultants: may be identified and invited as needed by the Steering Committee. Non-US Persons may be considered on an exception basis for invitations to portions of meetings. Consultants are not expected to attend all events or all durations of meetings, except at invitation of Steering Committee.

Technical Analysis Committee (TAC): Membership to be recommended later by ExEPO and ASO to AD for approval.

C. Miscellaneous

1. Information will be disseminated via ExEPO website, AFTA website, quarterly newsletter, the SPIE evening session (August 2013), and ExoPAG (October 5-6 2013), and winter AAS (January 2014)

2. Headquarter APD Program Executives and Program Scientists will be invited as appropriate.

[Signatures when ready]

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June 20, 2013

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