

# Mirror Technology SBIR/STTR Workshop

June 16<sup>th</sup> to 18<sup>th</sup>, 2009

Hilton Albuquerque, Albuquerque, NM

<b>Tuesday June 16 Pre-Solicitation Workshop</b>				
#	Time	Presenter	Title	Organization
	730	CONTINENTAL BREAKFAST		
0	800	Stahl	Welcome	NASA
1	810	Stahl	50 Years of Mirror Technology Investment at NASA	NASA
<b>Governmental Mirror Technology Investment Program – OPEN</b>				
2	830	Breckinridge	Tomorrow's Astrophysics enabled by today's SBIRs	NASA/JPL
3	850	Stahl	NASA SBIR Subtopic S2.04 "Advanced Optical Components" 2009 Call for Proposals, 2008 Awarded Phase 1 Contracts, 2007 Awarded Phase 2 Contracts	NASA
4	910	Arsenovic	NASA SBIR Subtopic S2.05 "Optics Manufacturing and Metrology for Telescope Optical Surfaces" 2009 Call for Proposals, 2008 Awarded Phase 1 Contracts, 2007 Awarded Phase 2 Contracts	NASA
5	930	Lewis	How NASA/JPL Infuses SBIR-Developed Technologies into Applications	NASA/JPL
	1000	COFFEE		
6	1030	Tapia	AFRL SBIR/STTR Program	AFRL
	1100	<b>DoD Investment Program CLOSED: US Government Only</b>		
7	1110	Evans MacEwen	Space Telescope Technologies in NRO/AS&T	NRO/AS&T
8	1140	LeClair	EOIR Producibility Investments, Insertions and Impacts to BMDS	MDA
	1200	LUNCH		
	1300	Photograph		
<b>Special Session: Flight Qualification of Mirrors – OPEN</b>				
9	1310	Palusinski	Motivation and process for material and mirror system space qualification	Aerospace Corp
10	1340	Witkin	SiC Material Property Characterization	Aerospace
11	1410	O'Brien	Defect Tolerant Design and Proof Load Testing	Aerospace
12	1440	Haber	SiC Powder Production: Quality Control	Rutgers
	1500	COFFEE		
13	1530	Haber	Acoustic Spectroscopy in SiC based Mirror Materials	Rutgers
14	1550	Jiang	High Frequency Phased Arrays for SiC NDE	TRS Tech
15	1610	Stahl	TRL-6 Qualification of JWST Mirror Segments	NASA
<b>CLOSED: US Government and Contractor ONLY</b>				
16	1630	LeClair	Next Generation Sensor Producibility (NGSP) Flight Experiments	MDA
	1700	<b>Government Discussion</b>		

**Wednesday June 17**  
**Funded Project Status Reviews**

#	Time	Presenter	Title	Organization
	730	CONTINENTAL BREAKFAST		
		<b>CLOSED SESSION</b>		
17	800	Duston	SiC Missile Seeker Telescope	ESMaterials
18	820	Sheikh	Silicon Cladding For Optical Finishing (Phase II SBIR)	Surface Optics
		<b>OPEN Session: Optical Fabrication Processes</b>		
19	840	Marusich	Expedited Fabrication of SiC Mirrors	Third Wave
20	900	Jacoby	SiC Lightweight Optics with Hybrid Skins for Large Cryo Telescopes (NASA Phase I)	Optical Physics
21	920	Tellam	Low Cost Lightweight Polymer Derived Ceramic Telescope Mirror (NASA Phase I)	UMS
22	940	Casstevens	Low Cost Very Large Diamond Turned Metal Mirror (NASA Phase I)	Dallas Optical Systems
	1000	COFFEE		
23	1030	Rozzi	Hybrid Machining of SiC Optics (NASA Phase I)	Creare
24	1050	Jacobsen	Development of a Laser Micromachining Process for the Fabrication of SiC Mirrors	MLPC
25	1110	Kelchner	Application of Zeeko's Novel Random Toop Path for Improved Surface PSD (NASA Phase I)	Zeeko
26	1130	Akbas	SUCCESS STORY: Commercialization of Low CTE high stiffness SiC based composites with directly polishable surfaces for mirrors and structures	M Cubed
	1200	LUNCH		
		<b>Optical Metrology</b>		
27	1300	Tricard	Status of Sub-Aperture Finishing and Metrology development	QED
28	1320	North-Morris	Dual Mode Interferometer for measuring dynamic displacement of specular and diffuse components	4D
29	1340	Jo	Practical Issues in Applying a Programmable Holographic Optical Element for Optical Metrology (NASA Phase II)	MetroLaser
		<b>Optical Systems</b>		
30	1400	McCarter	SCSi: Preeminent material for uncooled laser and sensor space systems	McCarter
31	1420	Panthaki	Concurrent Engineering Works – collaborative integrated structural/thermal/optical performance analysis of a space-borne EO sensor	Comet Solutions
	1440	COFFEE		
		<b>Optical Coatings</b>		
32	1510	Sheikh	Very Large Solar Rejection Filter for Laser Communication (NASA SBIR Phase II)	Surface Optics
33		Sheikh	High Reflectivity Broad-Band Silver Coating (Phase I)	SurfaceOptics
34	1540	Smith	Protected Aluminum Coating with Enhanced UV Reflectance	AL A&M
35	1600	Jamison	Status of Multilayer Anti-reflective Coating Development for PMMA Fresnel Lenses (NASA SBIR Phase II)	Nanohmics
36	1620	Wang	Nano-Enabled Low-Index UV Anti-Reflection Coatings for Plastic Optics (NASA SBIR Phase II)	Agiltron
	1640	<b>Government Discussion</b>		

<b>Thursday June 18</b>				
#	Time	Presenter	Title	Organization
	730	CONTINENTAL BREAKFAST		
<b>Funded Project Status Reviews - OPEN</b>				
37	800	Mohring	Single-Point Turning of Polycrystalline Alumina Missile Domes	OptiPro
<b>Structures and Mechanisms</b>				
38	820	Cornie	Ultra-High Thermal Conductivity, Thermal Expansion Matched, Low Density Materials for Dimensionally Stable Space Structures	MMCC
39		Cornie	SUCCESS STORY: Graphite Reinforced Al and Mg Alloy Commercial and DoD spin-offs from SBIR Projects at MMCC	MMCC
<b>Deformable Mirrors</b>				
40	850	Stewart	Ultraflat Tip-Tilt-Piston MEMS Deformable Mirror (NASA Phase II)	Boston Micromachines
41	910	Helmbrecht	1000 Segment DM MEMS Deformable-Mirror Process Development (NASA Phase I)	Iris AO
<b>Special Session: How to Influence ITAR</b>				
42	930	Jewell	Militarily Critical Technologies List "Space Optics"	IDA
	1000	COFFEE		
<b>Funded Project Status Reviews – ITAR CONTROL - CLOSED</b>				
43	1030	Egerman	Status of Corrugated Mirror Technology (NASA ITTP)	ITT
44	1050	Baker	Low Cost Lightweight Mirrors	APS
45	1110	Goodman	Rad Hard Optics	TREX
46		Goodman	CVC SiC to Replace Beryllium Mirrors	TREX
47		Goodman	Prototype HEL Beam Director	TREX
	1200	LUNCH		
48	1300	Telkamp	Stiffness Trends for Low Areal Density Membrane Optical Shells with Coupled Support Structures	Mevicon
49	1320	Flint	Advances in Figure Control of Membrane Optical Shells through Boundary and Electrostatic Correction	Mevicon
50	1340	Hashiguchi	SUCCESS STORY: Development of O-30 Beryllium	Brush-Wellman
	1400	COFFEE		
<b>Special Session: JWST Primary Mirror Segment Assembly – ITAR CONTROL</b>				
51	1430	Brown	Overview of JWST Fabrication Process	BATC
52		Parsonage	Beryllium Materials on JWST	Brush-Wellman
53		Calvert	Machining of the JWST Segments	AXSYS
54		Daniel	Optical Fabrication and Test of JWST PMSAs	Tinsley
55		Stevenson	Optical Coating Preparation	QCI-Denton
56		Gallagher	JWST Mirror Testing at Ball and XRCF	BATC
<b>PANEL DISCUSSION</b>				
	1700	<b>Government Only Discussions</b>		