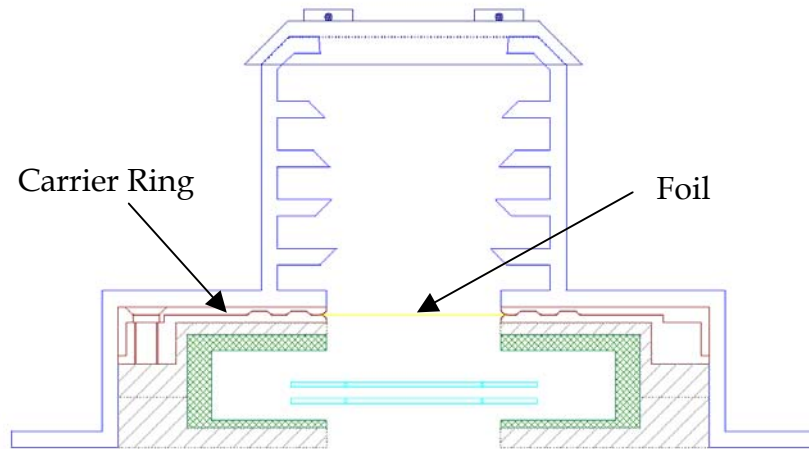


STEREO CONFIGURATION CHANGE REQUEST

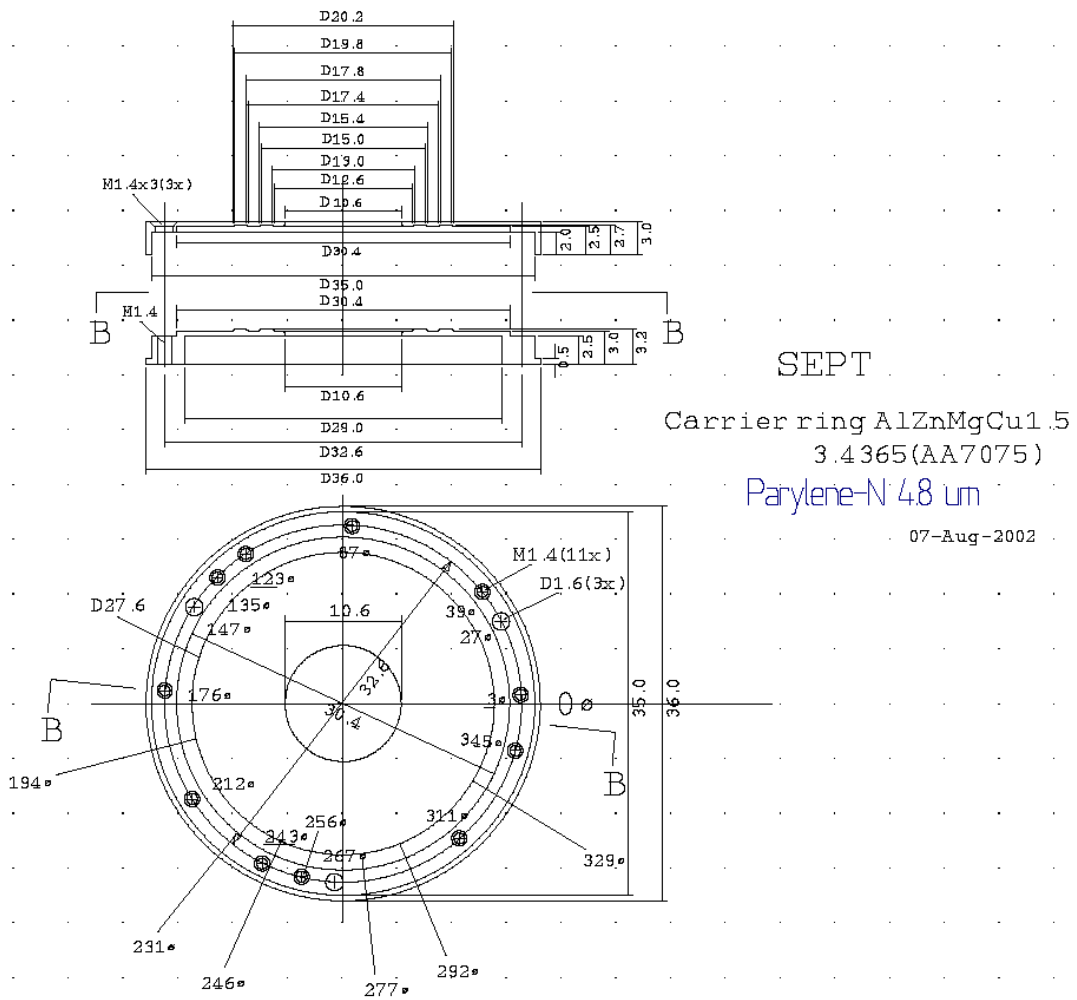
For Office Use Only	TITLE:	CLASS:	NUMBER:	
			I	
			II	DATE:
CONFIGURED ITEM:		ORIGINATOR:		PRIORITY:
STS Number:	Payload: STEREO	Name:	Dave Curtis	<input checked="" type="checkbox"/> Routine
Component :	Experiment: IMPACT	Organization:	U.C. Berkeley	<input type="checkbox"/> Urgent
Component Part #:	Serial #:	Phone:	510-642-5998	<input type="checkbox"/> Emergency
		Email:	dwc@ssl.berkeley.edu	
TYPE OF REQUEST:		RESPONSIBLE ORGANIZATION/INDIVIDUAL:		IMPACTS: (If yes attach additional pages)
<input type="checkbox"/>	Configuration			COST:
<input type="checkbox"/>	Deviation	#		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<input checked="" type="checkbox"/>	Waiver	#		SCHEDULE:
<input type="checkbox"/>	Other:			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
REASONS FOR CHANGE:			RETEST REQUIRED:	
<input type="checkbox"/>	Improvement	<input type="checkbox"/> Test/Payload Failure	<input type="checkbox"/>	No
<input type="checkbox"/>	Reliability	<input checked="" type="checkbox"/> Specification Requirements	<input type="checkbox"/> New Document:	<input type="checkbox"/> Yes
			<input type="checkbox"/> Other:	
PROPOSED CHANGE (Attach additional pages as required):				
<p>The STEREO Environmental Requirements Document (7381-9003 rev B) section 3.4.3 specifies acoustic testing requirements for instruments:</p> <p style="padding-left: 20px;">Instruments that are susceptible to acoustic energy (e.g.: have thin foils) shall verify their capability to withstand the observatory level testing. Specific instrument acoustic test requirements are shown in Appendix B.</p> <p>Appendix B calls out acoustic tests for a number of IMPACT instruments including SIT, SEP Central/HET/LET, SEPT-E, SEPT-NS, SWEA, STE-U and STE-D. We propose not to do acoustic testing on SEPT-E, SEPT-NS, SWEA, STE-U and STE-D.</p>				
RATIONALE (Attach additional pages as required):				
<ol style="list-style-type: none"> 1. SWEA, STE-D, and STE-U contain no thin foils or other fragile parts sensitive to acoustic energy. 2. SEPT-E and SEPT-NS do have paralene foils. We use 4.8 micrometer thick Parylene N foil with 100 nm Al on both sides, mounted on user supplied frames (see attachment). Tensile strength is 6,500 psi (test method: ASTM-D882), Elongation is 30 % (test method: ASTM-D882), Specific gravity is 1.12 g/cm³ (test method ASTM-D1505), Modulus is 350,000 psi (test method: ASTM-D790). We have designed the carrier ring and fabricated it in our mechanical workshop (see attachment). The ring mount is designed to exert a uniform load radially outward. Although Parylene shows high resistance to creep, minor foil sagging may occur from differing coefficients of expansion of the ring and film (6.9 10⁻⁵ /°C). Hole perimeter is rounded off, any burrs are carefully removed. On 11/12-NOV-2003 we have performed an acoustic noise test on SEPT EM for the sole purpose of qualifying the foil and carrier ring design. The noise levels according to 7381-9003 were applied. SEPT EM passed the test. Test report is available on request. We flew similar foils on Wind in nearly the identical configuration without problems. More information attached. <p>We had never planned on doing these tests based on the wording of section 3.4.3. Adding them will have cost and schedule impacts.</p>				
DOCUMENTS/DRAWINGS AFFECTED (Document No./Title/Section)				
AFFECTED (Check all that apply):				
FLIGHT SYSTEMS:		GROUND SYSTEMS:		
<input type="checkbox"/>	Avionics	<input type="checkbox"/>	Electrical and Cables	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Experiment	<input type="checkbox"/>	Software/Firmware	<input type="checkbox"/>
<input type="checkbox"/>	Structures and Mechanical	<input type="checkbox"/>	Other:	<input type="checkbox"/> Other:
REQUIRED APPROVAL DATE: _____				
REQUIRED JUSTIFICATION:				

STEREO CONFIGURATION CHANGE REQUEST

For Office Use Only	TITLE:		CLASS:		NUMBER:	
			I		DATE:	
			II			
CONTRACT/AGREEMENT NUMBER EFFECTIVITY:						
STEREO NAS5-97271		√	IMPACT S-13635Y		PLASTIC NAS5-00132	SECCHI S-13631Y
DOCUMENTS/DRAWINGS TO BE REVISED:						
Document/Drawing Number:		Document/Drawing Title:		Section(s) No.	EO No.:	Date Completed:
PROCESSING APPROVAL:						
CCB						
Out of Board						
Emergency		Systems Engineer			Date	
CCB APPROVAL:						
CCB ACTION DATE:		CCB ACTION ITEMS/CONDITIONS:				
Approved Denied Withdrawn Hold						
CLOSEOUT COMMENTS:					DATE OF CLOSEOUT:	
					CMO	



SEPT Colimator and detector mount



IMPACT Accoustics Waiver

Rationale, Continued:

Since we propose acoustic tests only on a representative sample foil, it is important that all the foils have similar properties. The SEPT paralene foils were manufactured onto IMPACT-provided frames by the Lebow company in California. Representative measurements of the foil material showed remarkably uniform thickness: 4.95 microns +/- 0.2 microns. In response to a query about the repeatability of the foil production process the company states:

The Parylene N foils you have are as exactly identical as any foils can be. I have checked our records and all 14 were made from 1 piece of Parylene, made in the same run. They are small, 10mm, so the overall area we used was just 50x50 mm. They are as identical as any set of foils can be.