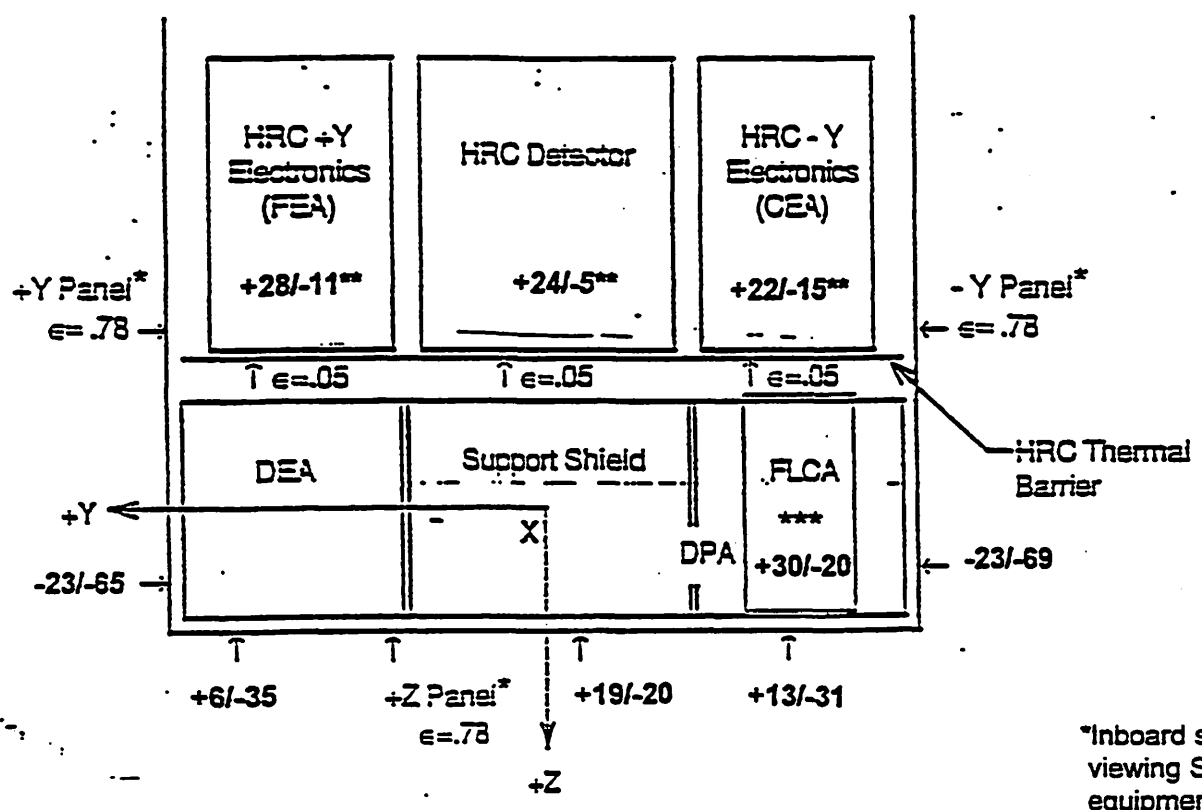


# ACIS Verification Summary Report

<b>Specification:</b>	AXAF Observatory to Science Instrument ICD (IF1-20)
<b>Requirement Number/Title:</b>	3.3.1.1.1.2.3 ACIS Support Structure/DPA/DEA Thermal Interfaces (VRSD 3.3.1.1.1.2.3)
<b>Requirement Statement:</b> For Support Structure/DEA/DPA hot and cold case analysis the boundary temps and surface IR emittances of the ISIM shall be per Figure 3.3-1.	
<b>Verification Method:</b>	<i>Analysis, Validation of Records</i>
<b>Procedure Number:</b>	<i>N.A.</i>
<b>Configuration:</b>	<i>Attached Figures 3.3-1, 3.3-1a, and 3.3-1b are the latest versions from PIRN 20-0030 of Figure 3.3-1.</i>
<b>Cycle Time:</b>	<i>N.A.</i>
<b>Verification Discussion/Results:</b>	
<p><i>The ACIS thermal models include the boundary temperatures and IR emittance values provided in Figures 3.3-1, 3.3-1a, and 3.3-1b from PIRN 20-0030.</i></p>	

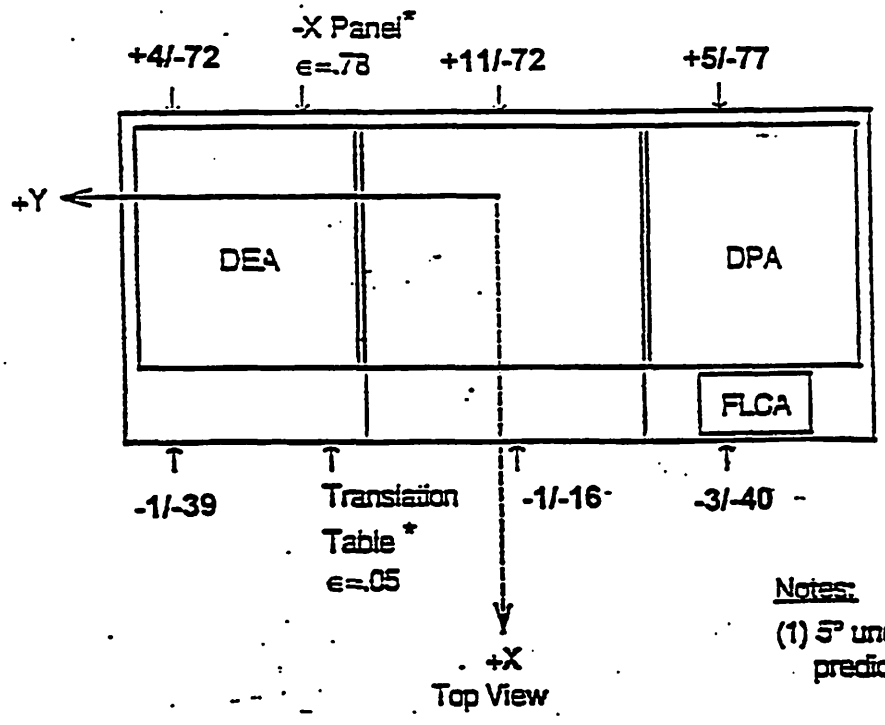
*Ellen M Sen*  
 ACIS Cognizant Engineer

*5/20/97*  
 Date



Hot Case (°C) ACIS Viewing, 180° Sun, 6 ACIS CCDs On  
Cold Case (°C) HRC Viewing, 45° Sun, 2 ACIS CCDs On

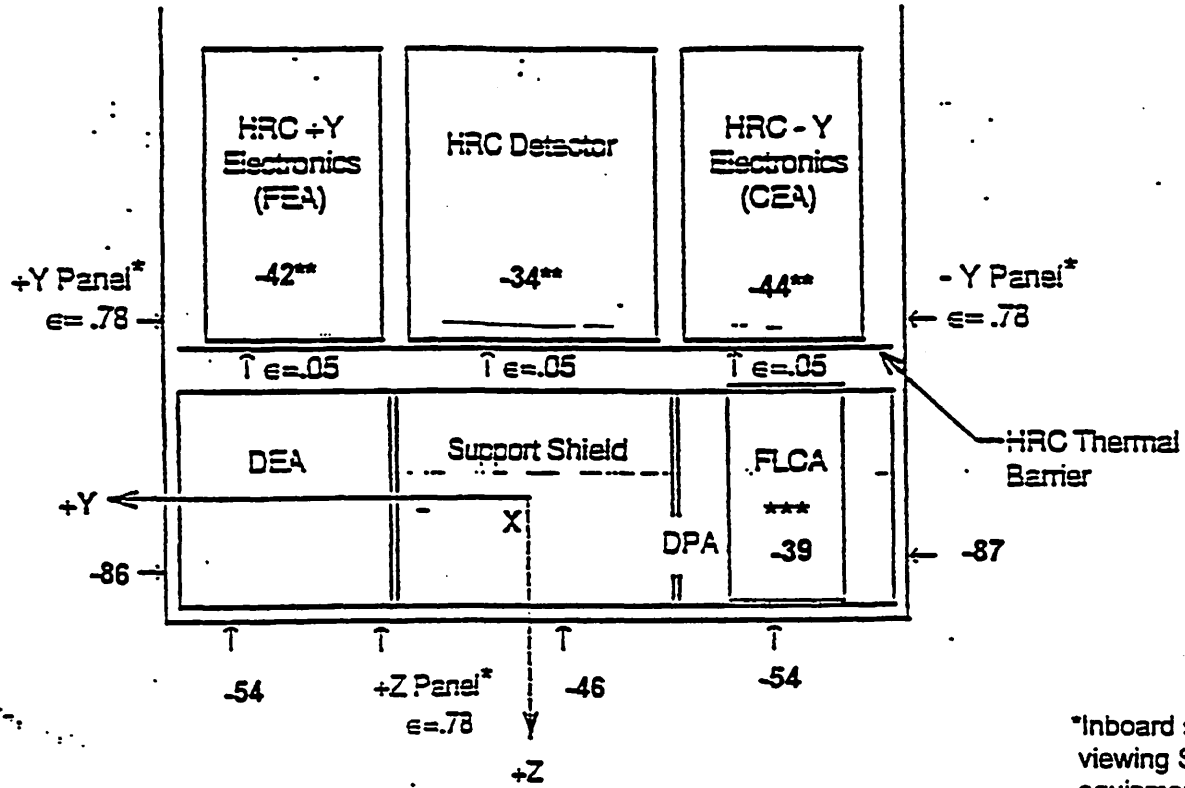
\*Inboard surface viewing SI equipment  
\*\*HRC thermal barrier temperature  
\*\*\*FLCA emittance = 0.84 on -X face, 0.78 on +Z & +Y faces, and 0.10 on remaining faces



Notes:  
(1) 5° uncertainty included in predicted temperatures shown

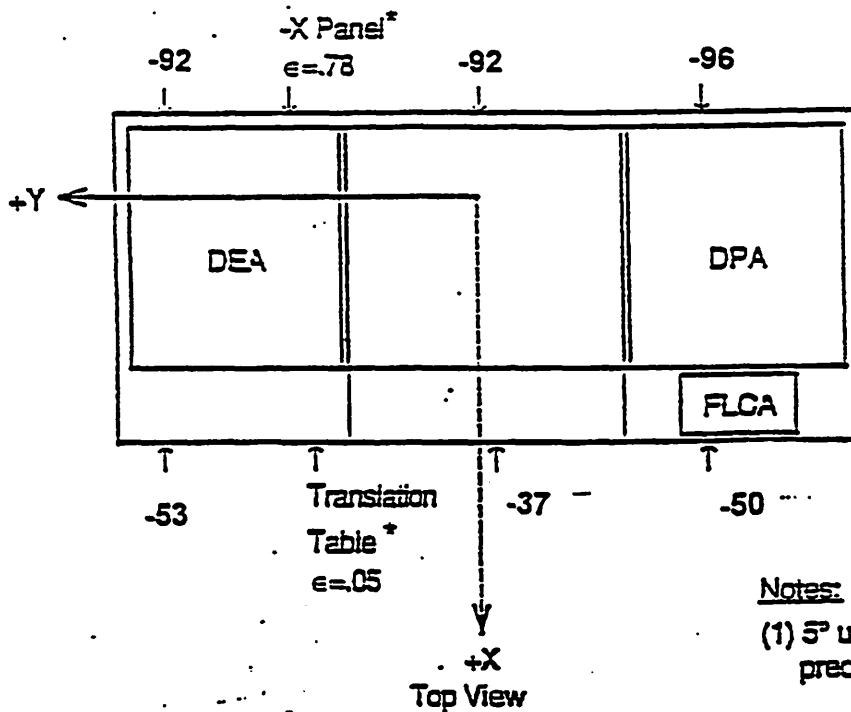
Figure 3.3-1: ISIM Hot and Cold Operational Case Boundary Temperatures and IR Emittances for ACIS Detector Cables and ACIS Protron Shield/DPA/DEA Thermal Analysis

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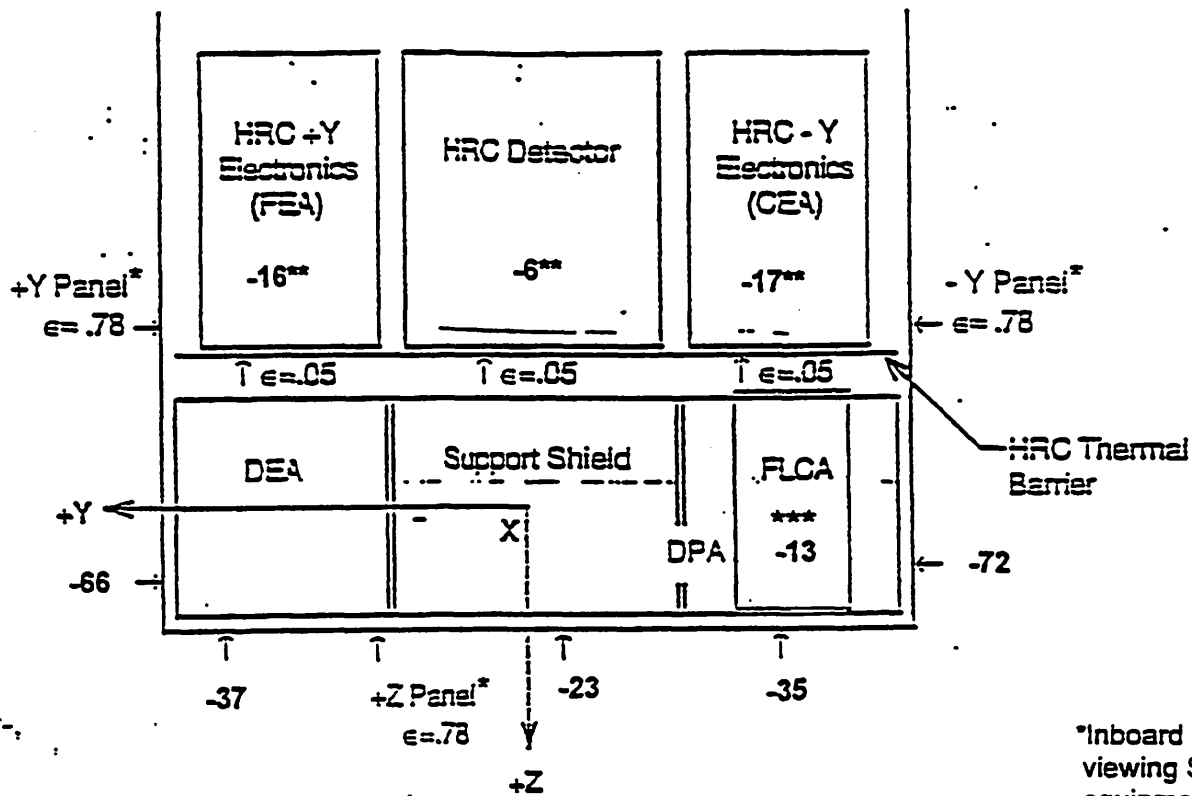
Cold Survival (°C) HRC Viewing, 45° Sun

\*Inboard surface viewing SI equipment  
\*\*HRC thermal barrier temperature  
\*\*\*FLCA emittance = 0.84 on -X face, 0.78 on +Z & +Y faces, and 0.10 on remaining faces



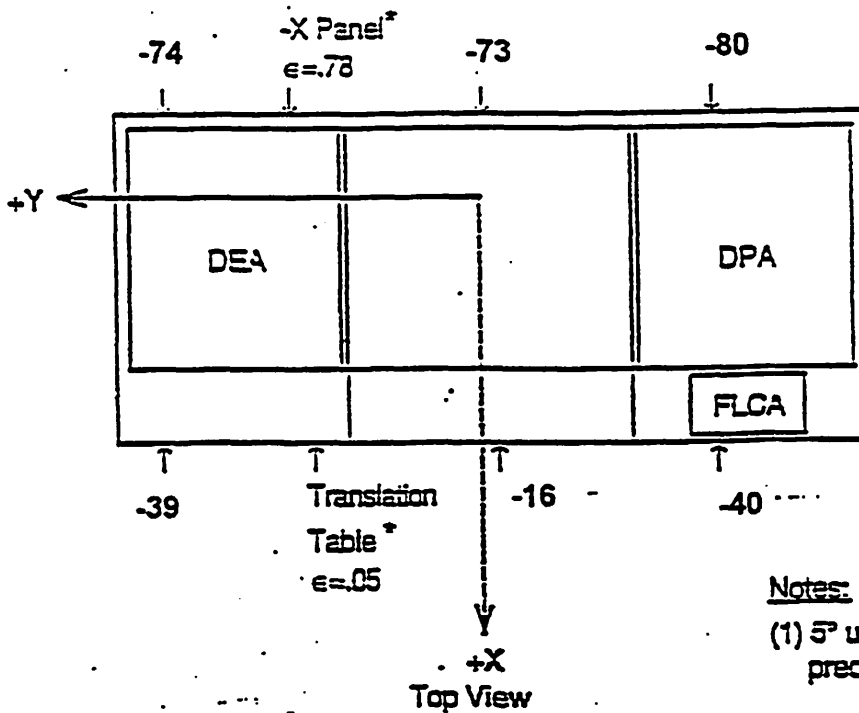
Notes:  
(1) 5° uncertainty included in predicted temperatures shown

Figure 3.3-1a: ISIM Cold Survival, Non-operating Boundary Temperatures and IR Emittances for ACIS Detector Cables and ACIS Protron Shield/DPA/DEA Thermal Analysis



Acis Cold Standby Mode 3A (°C), HRC Viewing, 45° Sun

\*Inboard surface viewing SI equipment  
 \*\*HRC thermal barrier temperature  
 \*\*\*FLCA emittance = 0.84 on -X face, 0.78 on +Z & +Y faces, and 0.10 on remaining faces



Notes:  
 (1) 5° uncertainty included in predicted temperatures shown

Figure 3.3-1b: ISIM ACIS Cold Standby Mode 3A, Boundary Temperatures and IR Emittances for ACIS Detector Cables and ACIS Proton Shield/DEA Thermal Analysis