



Gantry Status



University of California Santa Barbara

UCSB Gantry Team:

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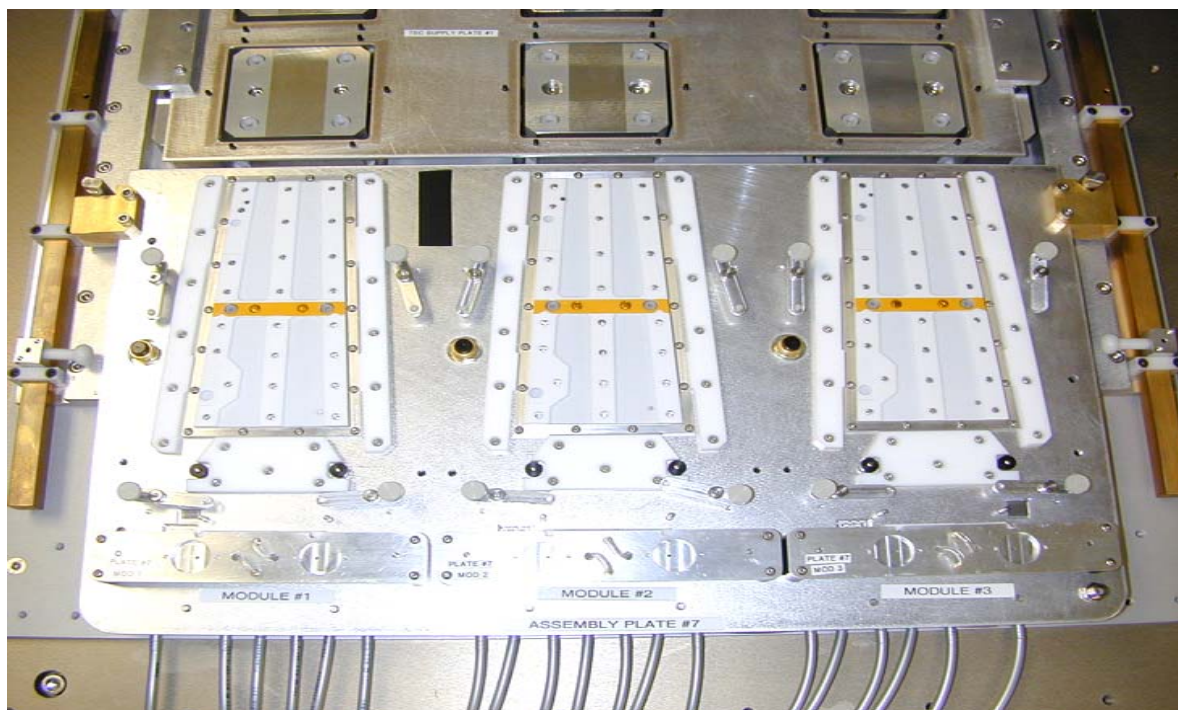
Dean White



TEC Module Production



- **Completed 1st TEC R6 assembly plate.**
- **Produced 4 modules on it in mid-December. All within gantry module specifications.**
- **Plan to produce 30 TEC R6 modules over 2 week period (3/day) starting next week.**





TOB Module Production



- **Just completed 150 module production run over 2 week period (15 modules/day)**

***5 TOB r-phi
assembly plates
in the curing cabinet.***

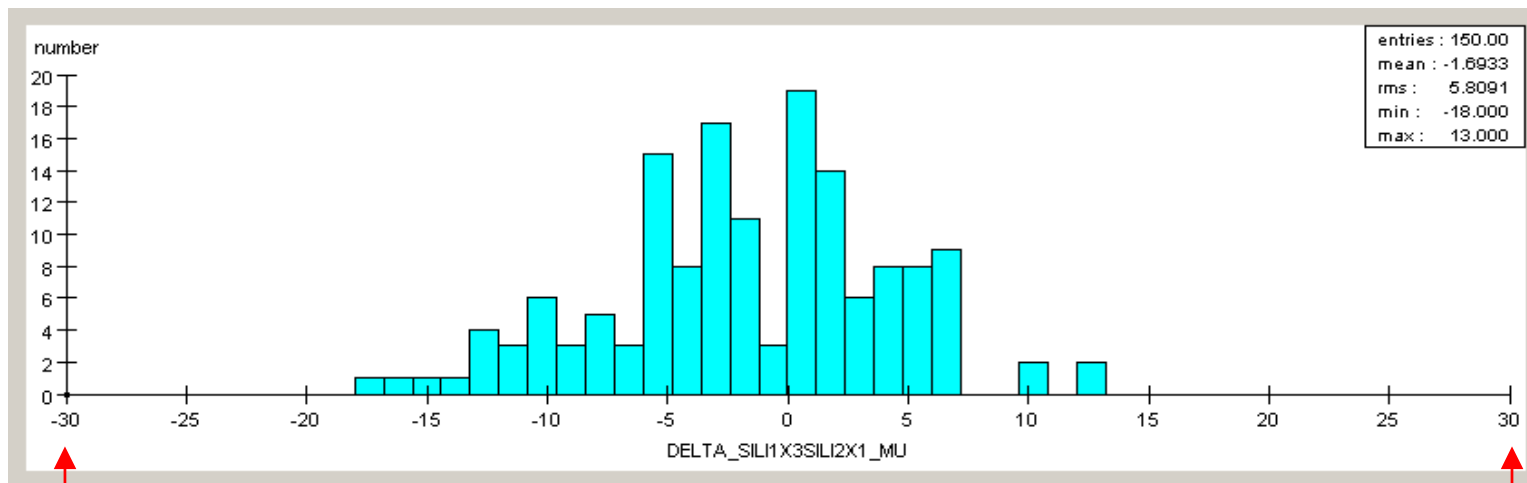




150 Module Production Run

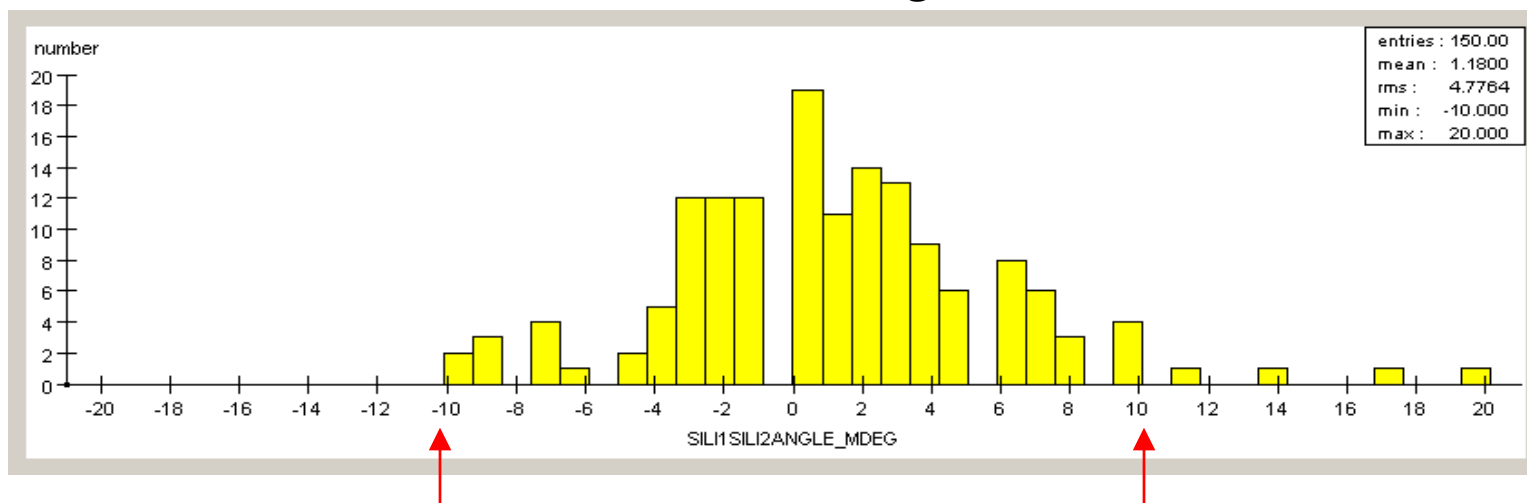


Delta Sili1X3 Sili2X1



Red arrows show cuts

Sili1 Sili2 Angle

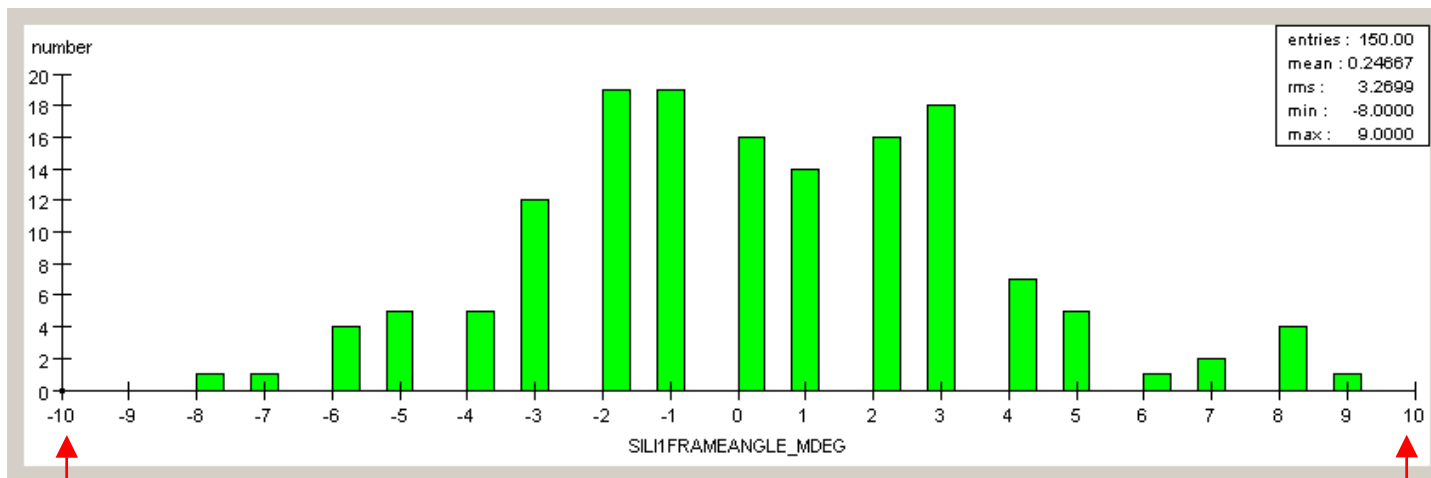




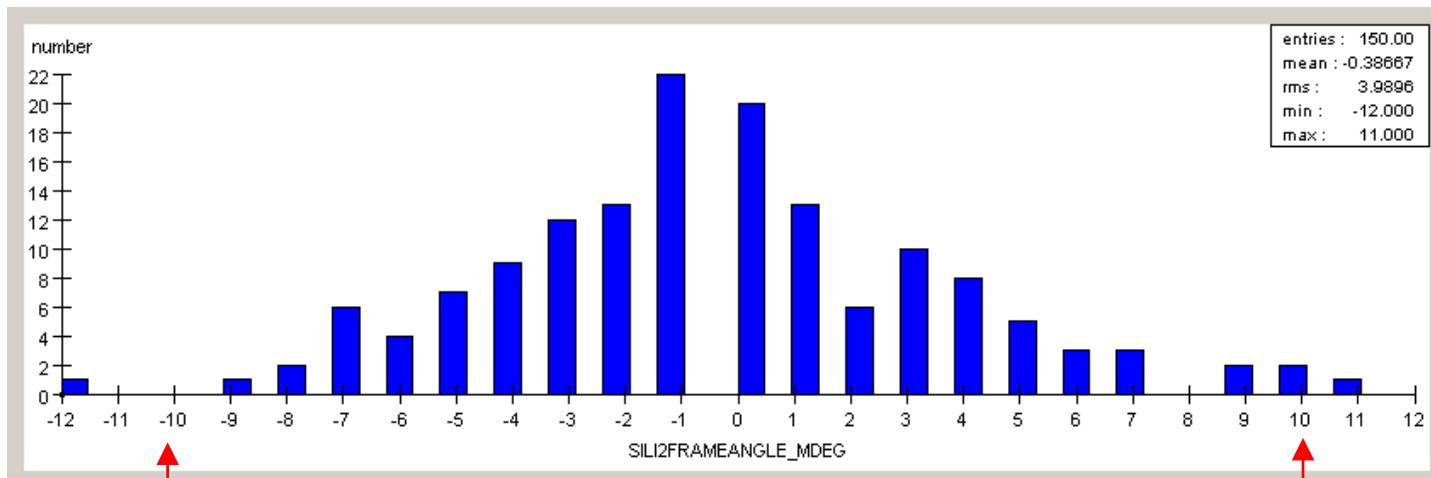
150 Module Production Run



Sili1 to Frame Angle



Sili2 to Frame Angle

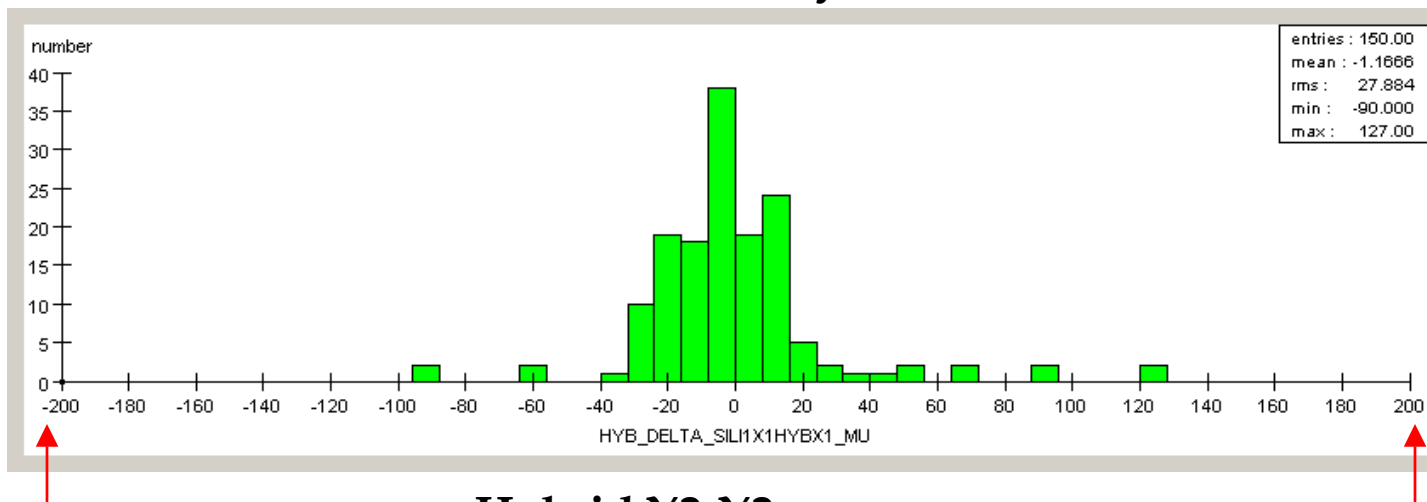




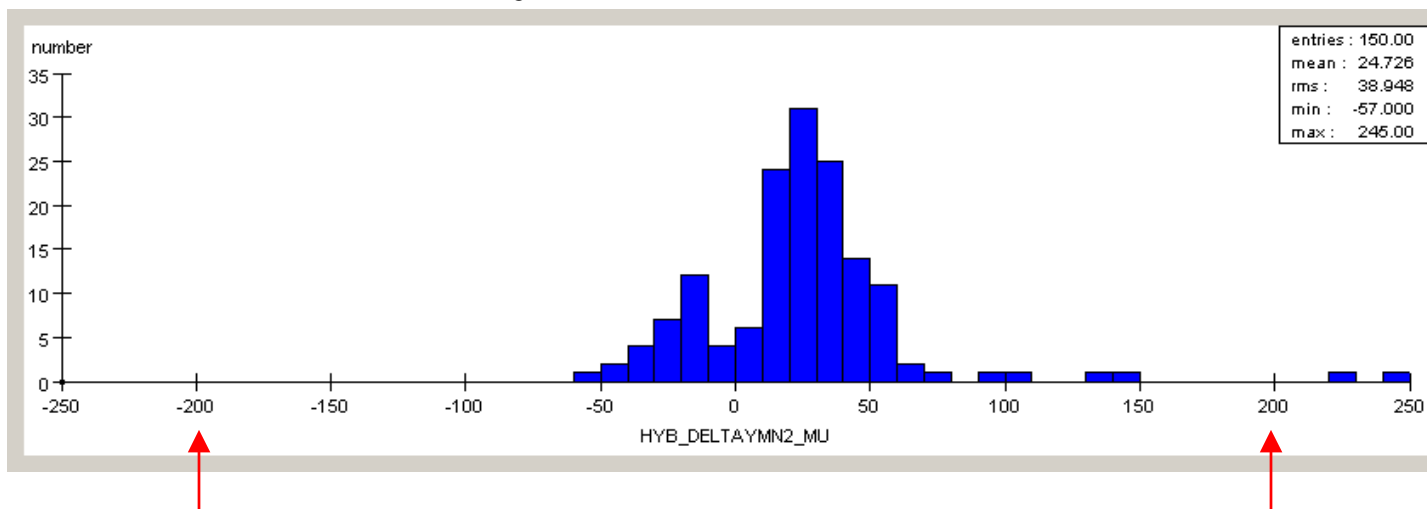
150 Module Production Run



Delta Sili1X1 HybridX1



Hybrid Y2-Y2nom





150 Module Production Run



- 8 modules flaged during 150 module run.

<i>Module #</i>	<i>Problem</i>	<i>Location</i>
<i>5061</i>	<i>Hybrid Y2-Y2nom = 245um</i>	<i>Plate 4, module 1</i>
<i>5072</i>	<i>Sili1/Sili2 angle = 11 mdeg</i>	<i>Plate 4, module 2</i>
<i>5075</i>	<i>Sili1/Sili2 angle = 11 mdeg</i>	<i>Plate 2, module 1</i>
<i>5091</i>	<i>Sili1/Sili2 angle = 14 mdeg</i>	<i>Plate 2, module 2</i>
<i>5092</i>	<i>Sili1/Sili2 Angle = 20 mdeg Sili2 frame angle = 12 mdeg</i>	<i>Plate 2, module 2</i>
<i>5153</i>	<i>Sili2 frame angle = 11 mdeg Sili2 X3-X3nom = 32 um</i>	<i>Plate 1, module 1</i>
<i>5162</i>	<i>Sili1/Sili2 angle = 17 mdeg</i>	<i>Plate 2, module 2</i>
<i>5165</i>	<i>Hybrid Y2-Y2nom = 221um</i>	<i>Plate 4, module 1</i>



150 Module Production Run



- *Although angular placement of individual sensors with respect to the frame was quite good (2 flags for 300 sensors placed), there was some difficulty meeting the sensor to sensor angle (5 flags).*
 - *Since we now have data on 150 modules, we will be adding U rotation corrections to each position on the assembly plates if needed. We will also update the basic X and Y corrections that we have been using.*
 - ***Even with these corrections the 10 mdeg angle between sensors seems quite tight. Could this be opened up to 15 mdeg?***
- *The 2 modules flagged for hybrid placement each had one end of the PA very close to the sensor, but both were wirebonded without problem.*
 - *These 2 modules were both built at the same position. After finding no obvious mechanical problem with the position, we added .5mm thick silicon rubber on the feet of our hybrid tool to keep the hybrid from sliding around on the tool. Modules made after that were fine. We plan to add it to our other hybrid tools.*



150 Module Production Run



- Overall production went smoothly (15 modules/day for 10 days in a row).
- After-cure surveying of 15 modules and production of 15 new modules (5 plates) could be accomplished by 3:00 if no problems were encountered.
 - This seems to be about max production for 2 technicians per 8 hour day if parts reception and preparation are also included.
- Module gluing items:
 - Using syringe pistons without a hole. Get more consistent dispensing. Can use one syringe of DC 3140 for all five plates of modules during a day.
 - Mix RTV12 and Tra-Duct 2902 for every assembly plate.
 - Do not use syringe tip position check tool. Manually check for misaligned tips. Also check tip length after assembling on glue tool. Built tip length test fixture to easily do this check (avoids potential gantry E-stop if tip is too long).



Additional Assembly Plates



- ***10 more module assembly plates are in different stages of design and construction:***
 - ***2 more TOB R-phi plates – dwgs are in the Physics machine shop, parts are expected to be done by the end of February.***
 - ***2 more TOB stereo plates – dwgs are in the Physics machine shop, parts are expected to be done by the end of February.***
 - ***2 more TEC R6 plates – dwgs are in the Physics machine shop, parts are expected to be done by the end of February.***
 - ***2 TEC R5N plates – design in progress. Plan to make 1st modules in March***
 - ***2 TEC R5S (stereo) – design in progress***



Misc. Gantry Items



- ***5 sets of U600BASE/32MB Controller & 4EN-PC Expansion cards for the European gantries will arrive at UCSB by mid February. Order placed in mid- Dec.***