T**hursday 7/15 PMT glass issue/actions update M Amato**

- Please note - All meeting notes/summaries (these emails), material and thermal cycle test results, compilation tables etc will now be put on a new section of the ACD web site called 'PMT glass issue'. Just starting to get this underway. Go to http://lhea-glast.gsfc.nasa.gov/acd/pmt_issue/

- CTE data in - data from tests of same batch come in different. Overall the tests of the new batch are coming in higher than initial tests. Interestingly one of the old batches (from tubes that passed -40C tests) also shows higher CTE

- Poisons ratio data in using new test procedure- new batch numbers coming in higher than old batch assumptions and book data. Cant retest old batch until we can find uncured samples or big enough cured samples. The samples we ketp are not big enough for the new test.

- Modulus data in works. Data looks like assumptions at room temp. Some confusion over initial data at colder temps. still working on it.
- Strain gauge data implies difference in strain between housings - RTV properties or bonding strength differences could be cause?

- Table listing all PMTs, rail assignment, tests any have seen, failures, RTV batch etc.. created and draft version on web site. Will be updated often as we gain knowledge

- Initial look at PMT diameters for failed units dont directly point towards any direct relationship.

- Partial life test resumed as originally planned, remaining cycles were all only to -16C. After cycle 38 no further tubes failed so far.

- One failed tube pulled. Cracked at outer surface in a region where a large number of external flaws existed. Crack appears to have propagated slowly at first.

- Previously rejected request for 20 additional improved spare tubes approved

- RTV curing shrinkage test under way, first day data does not show much change in dimensions far .

- We will try at least two of three proposed PMT removal techniques on sample to see (machine housing down to fine layer, hand cut thin layer and RTV - slit housing and soak in solvent up to 40C - saw potting betwee tube and housing)

- Additonal tests - Thermal cycling and shock of bare tubes planned (repeat of test passed 5 months ago, see if any evidence of tubes becoming more prone to crack propagation over time under only internal thermal stresses) - test of addition 7

PMTs assemblies potted with old RTV batches but never cycled planned. Other tubes potted with these tow batches passed more severe Qual thermal tests

- Analysis - analyst will try and use strain gauge data to correlate stress model, including some nonlinear features. We also have a desire to analyses whether cutting three to 8 silts in middle of existing potted housings could relive stress enough to allow them to fly without further modification. Only way besides heater or a screening process we dont have yet that already potted PMTs might be able to fly.

- Heater idea being pursued. Draft designs, inquiries into effects on grid, power availability under way.

- 9 alternative designs discussed in separate meeting. Slitting already potted PMTs and/or new slotted design will be looked at for stress. A separate idea avoiding all potting altogether will be tried mechanically next week.