PMT’s at UCI

Hank with info from Jeff G. & Bill K.
Original IMB Tubes

Hamamatsu R1408

These were removed from SK during various rebuilds but mostly in 2002.

Usually OK, problem was leaking housing.

About 200 sent to Drexel for Chooz and housing removed there. Essentially all were ok.

Now have about 152 in housings at UCI including those returned from Drexel (see next slide).
Removal process

Removing the housing is not trivial. Originally tried solvent here but not successful. Need to discuss with Drexel about their removal process. Drexel returned 52 tubes that they did not use. They are good but were left over due to slightly higher dark rate or HV being higher or lower than usual, since they clustered their tubes by similar HV.
Bases

Original IBM base. On all of the 152 tubes in housings

New circuit board and base assembly made for Chooz at Drexel. We have a dozen or so of these that were send to us from Drexel.
New 8” Tubes installed during rebuild

Hamamatsu R5912 with modified assembly

Estimated 85 at UCI

These were also removed from SK but tested ok after removal. Once again, fault was probably due to leak at connector which was covered with shrink tubing.
Work Involved

- If possible, quick scope test to see if tube ok
- Remove good R1408 tubes from housings
- Fix or replace base assemblies
- Put together setup for testing all the tubes and sort.
- Pot bases
If we don’t want to do it ourselves, in 2006 Hamamatsu quoted $400 per tube to modify base assembly of old R1408’s to newer R5912’s. Not sure if this assumed that we first remove them from housings. Of course this would involve shipping to Japan and back…not too attractive.