

Bham ATLAS tracker activities

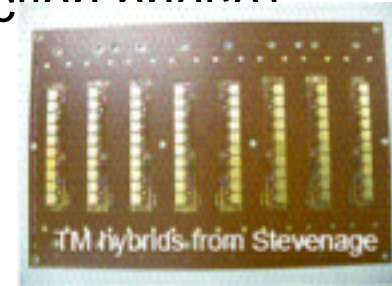
SCT (team continuing from run1)

Run 2: Chris (data checking), Andy (shifts + Qual'n project) if feasible, (JW?)
+ Kostas + others(?)

Issues : important to maintain Bham SCT effort?

ITK (upgrade for HL-LHC; all silicon tracker; pre-production phase)

a) Hybrid production and testing (~1/3 of 20,489)



i) Responsible for hybrid QA; WP3.5

Testing jigs, gluing and bonding, metrology: Sam, Simon (+ Juergen, JW)

Significant effort, based in cleanroom; progress reports at fortnightly phone meetings.

Issues: Simon and Sam often busy with NA62 but clashes not critical so far.

Of course, **essential** to maintain (at least) team of 2 technicians.

Expand effort? – may occur as project develops.... but later; hybrids first!

ii) Hybrid testing: Juergen + (JW)

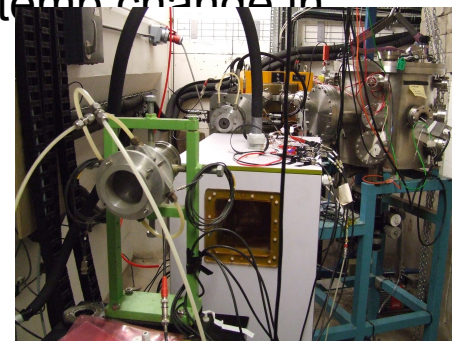
ITK (contd)

- Irradiation on cyclotron

(Matt Baca + JW + colleagues from Sheffield & Liverpool)

Irradiated >100 ATLAS ITK sensor prototypes (mainly strips, some pixels) + opto components + glue samples; + 2 LHCb irradiations.

- Large beam currents (1 μ A) allow HL-LHC fluences to be reached in 80s
- **BUT** significant heating (1 μ A \rightarrow 1.1W in Si sensor) \rightarrow long break in irradiations while new cold box was developed by Sheffield (liquid N₂ based).
- Now base temp = -50C but heating still significant (large temp change in sample). First tests are encouraging.



Issues (apart from ongoing battle with heating!)

- Significant effort – postgrad very useful.
- Joining AIDA2 – EU programme to organise/fund irradiation.

If proposal is successful, users will send samples to Bham cyclotron for irradiation in