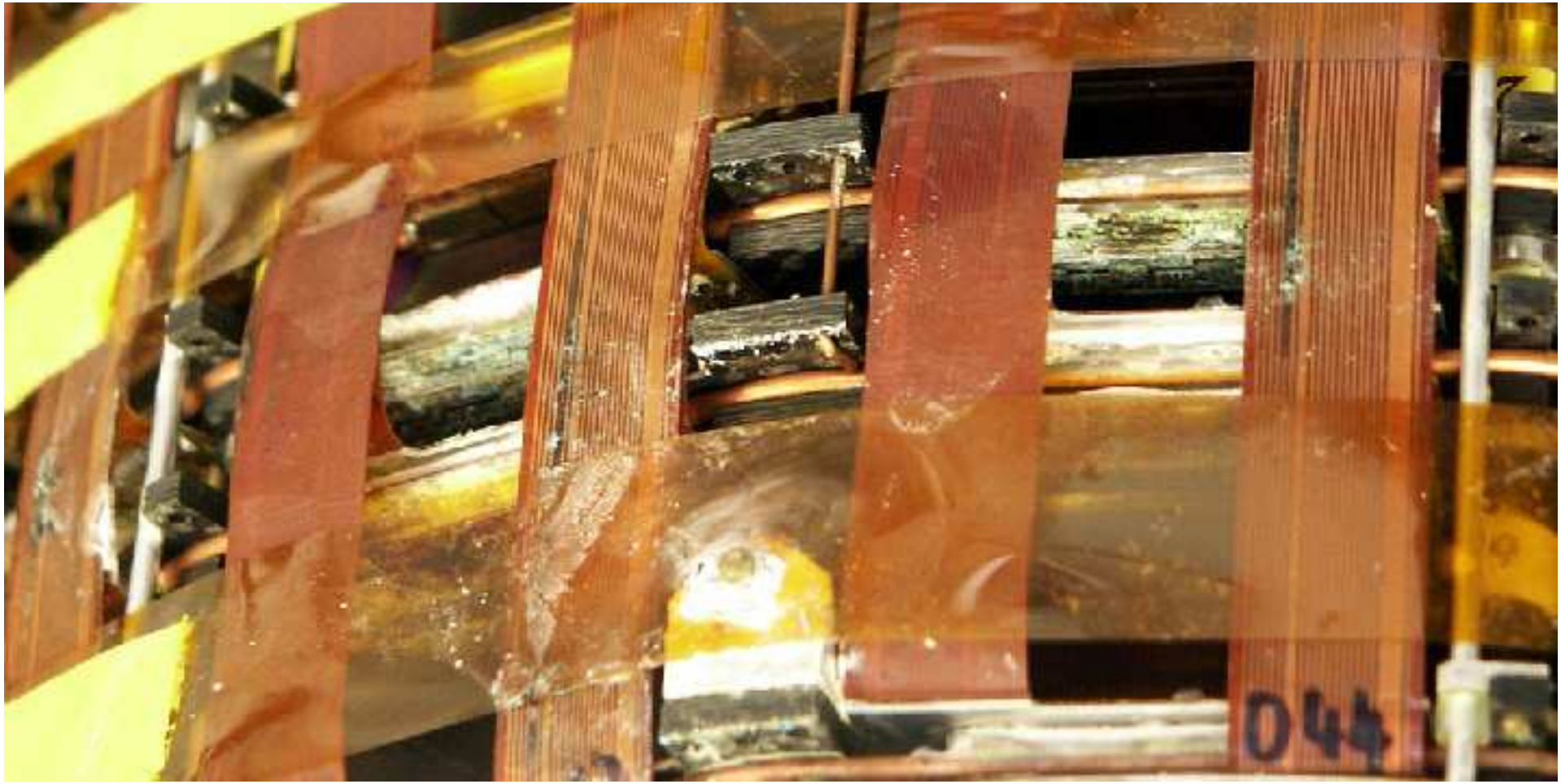
H1 Forward Silicon Tracker: water damage



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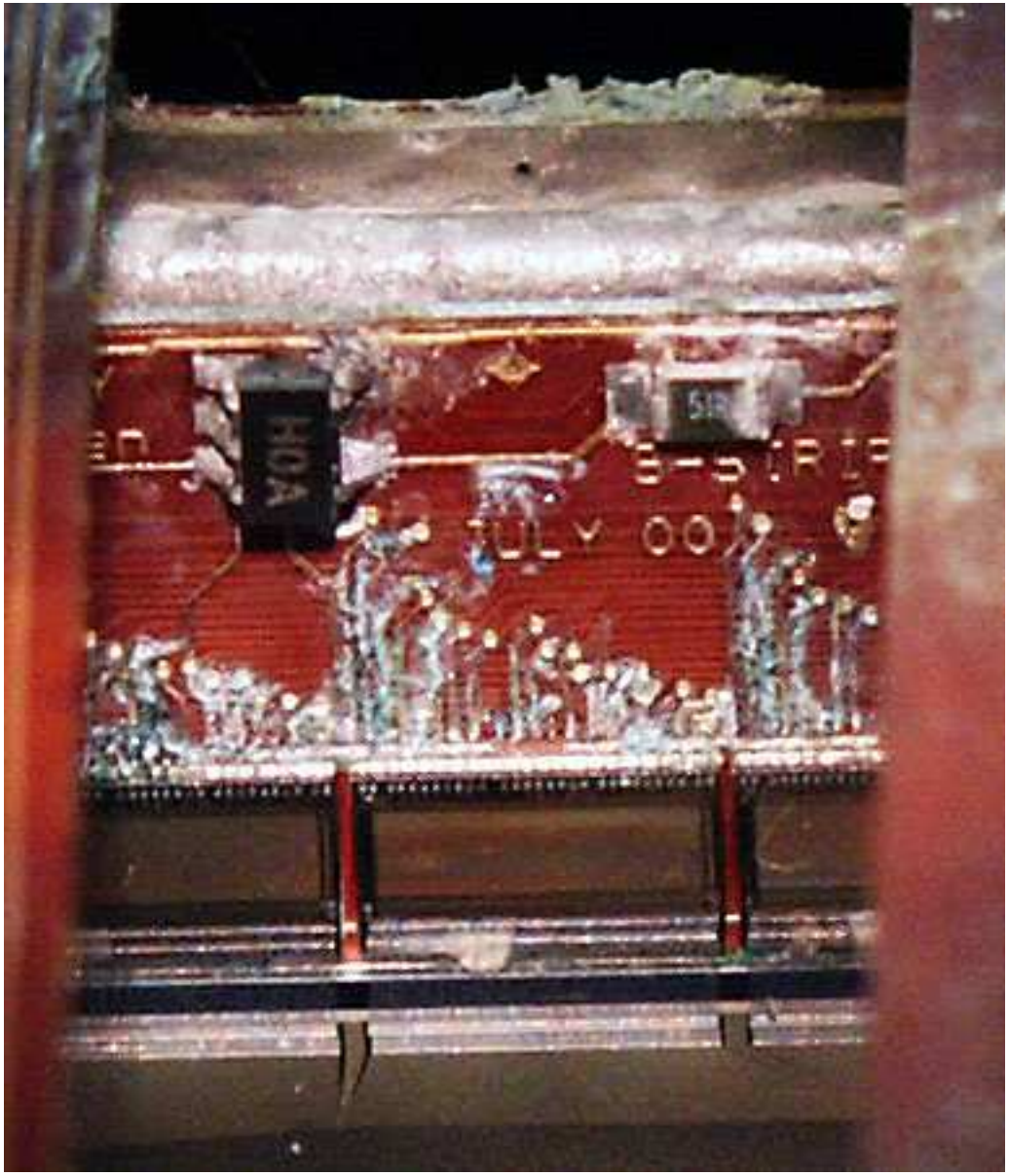
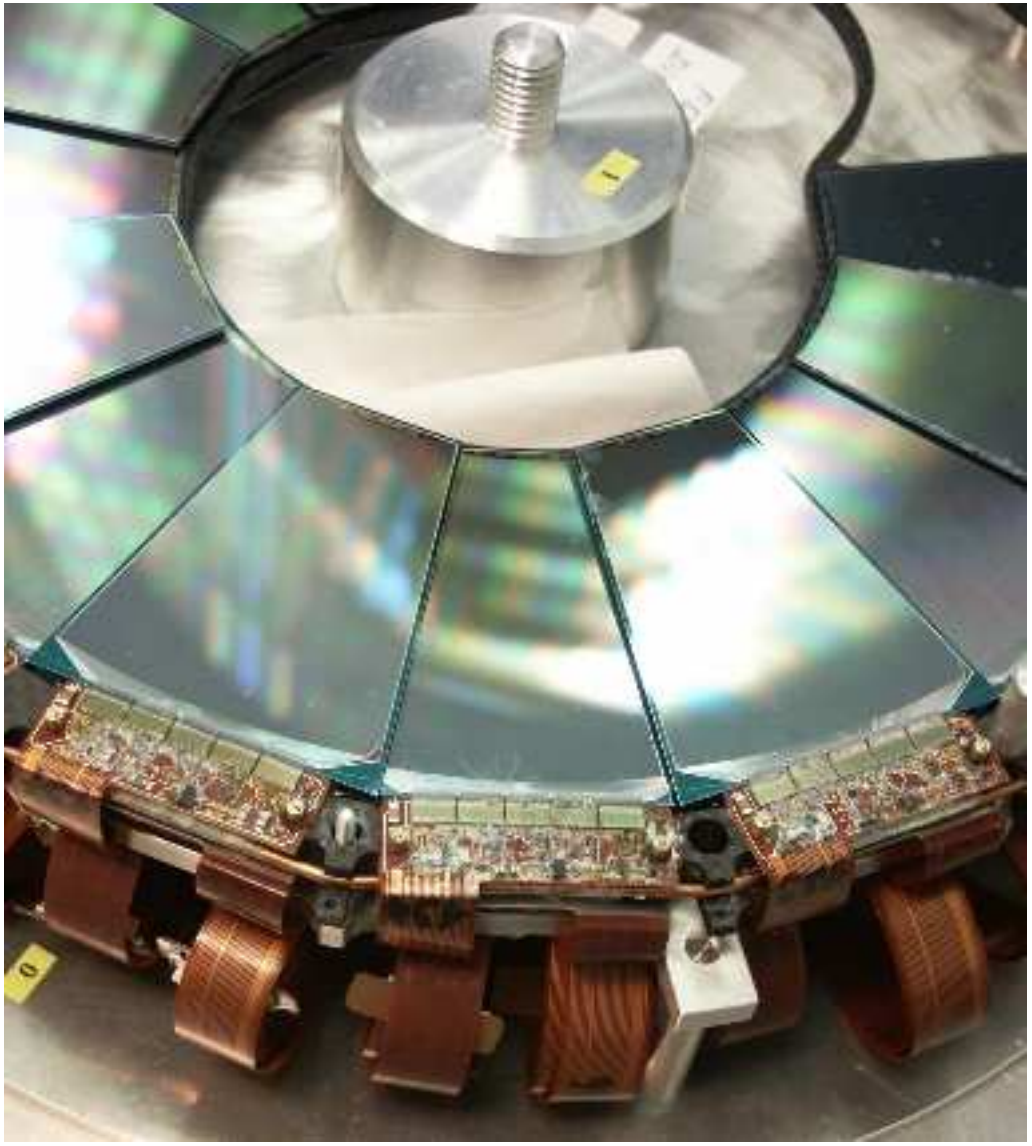


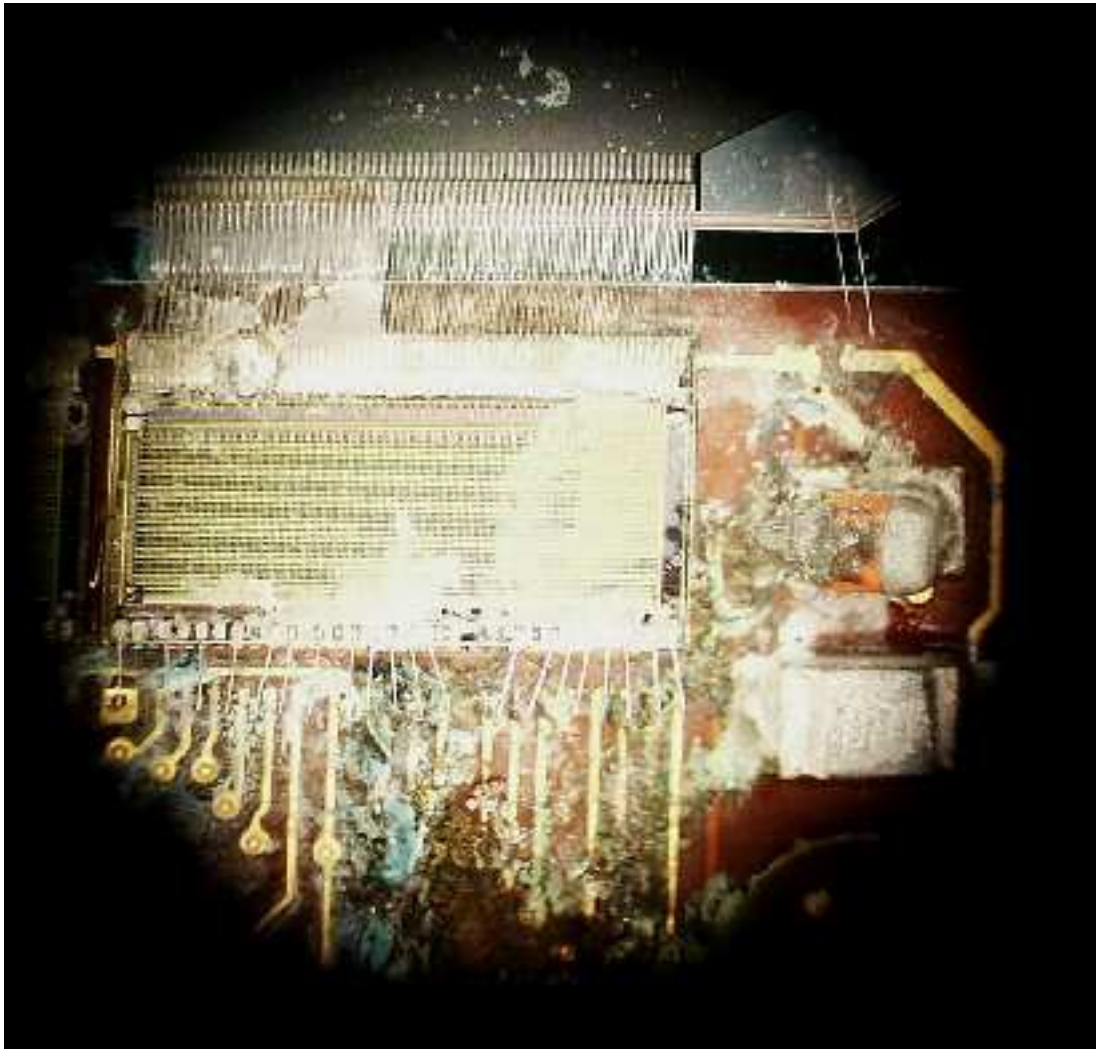
- Corrosion of Cu traces on PCBs.
- Most likely caused by small water leak. Chemistry not understood.
- H1 check lists indicate possible loss of 0.4–0.8 l of cooling water in April–May 2004.
- Investigations are ongoing in Zeuthen.
- BST is fine. Installation decision on Monday.

FST: water damage



- 4 of 7 wheels have corroded hybrids.
- Consistent with the damage pattern observed in May 2004.
- Corroded wheels have good water flow: condensation.
- Clean wheels have blocked cooling pipes.

Damaged FST under the microscope

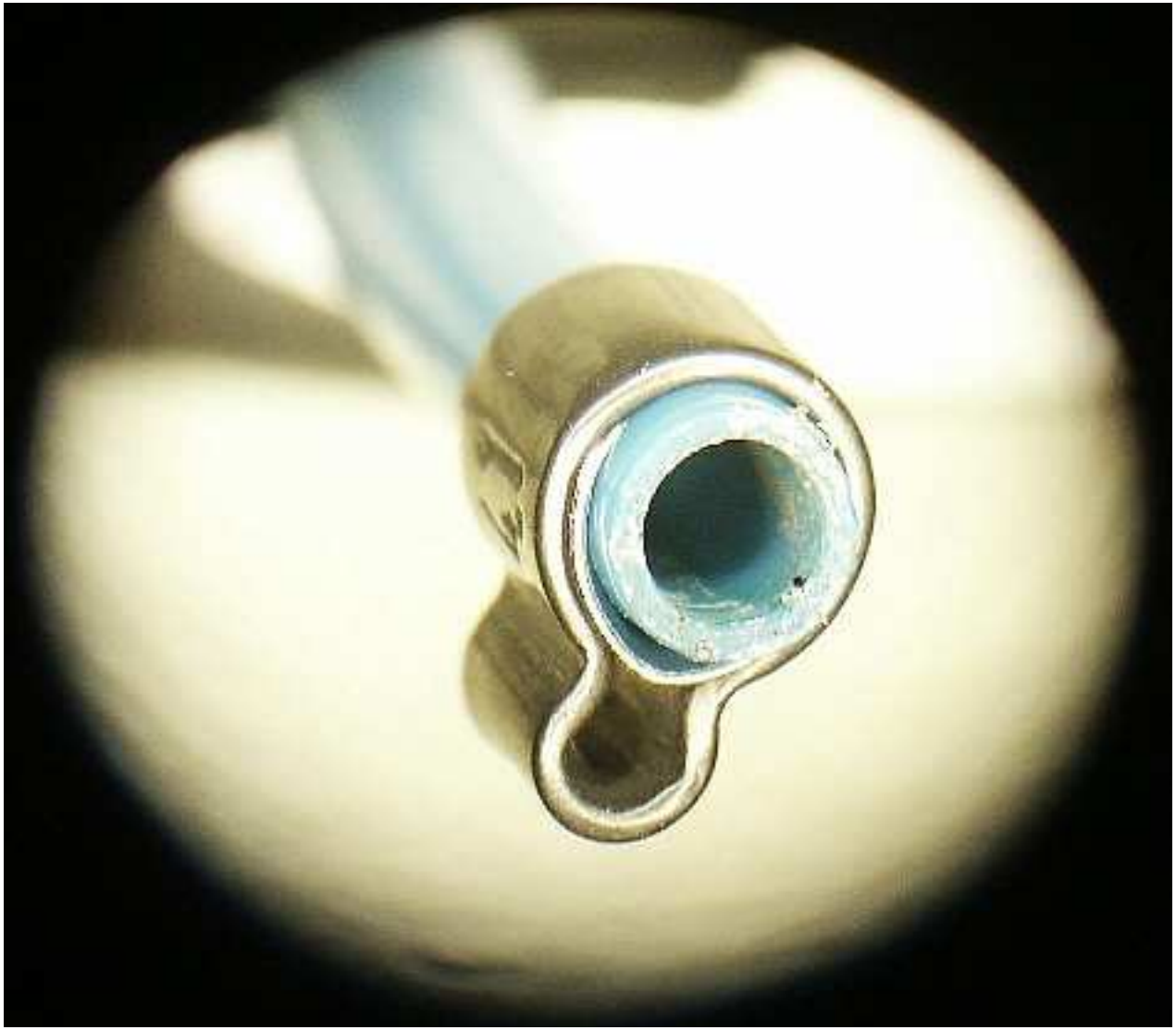


- Corrosion on hybrid traces.
- Deposits on APC readout chip.
- Damage to Si sensor bond pads likely.

FST leak was here

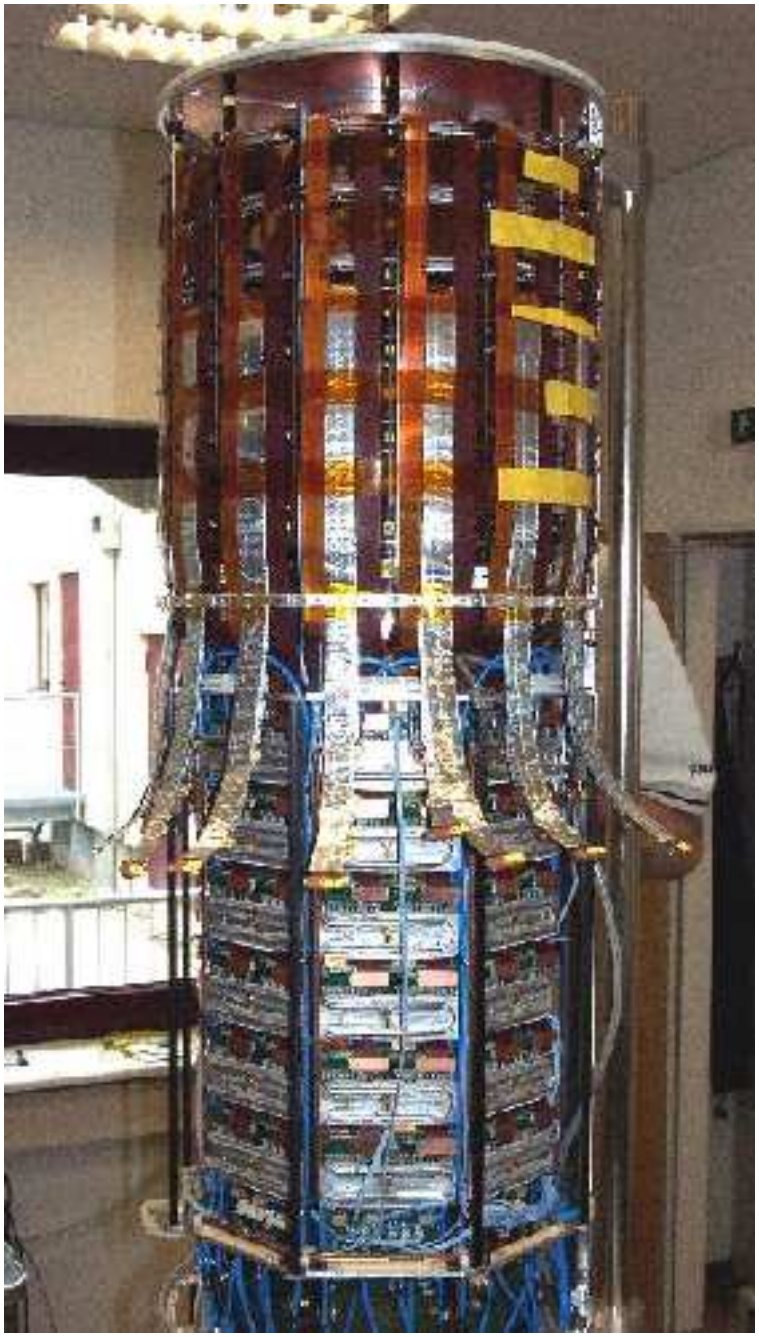
Crimped connection of blue plastic water tube to Cu pipe.

FST: leaky connection



- Bad crimp connection.
- Developed leak after aging of plastic tube.

H1 Backward Silicon Tracker: blocked cooling pipes



- 3 of 6 BST Pad repeater boards have blocked cooling pipes: noisy pad trigger regions.
- One strip repeater was not cooled: inefficient tracking.
- 6 of 10 Si wheels are badly cooled.
- Dosimeters: 25–58 Gy.
- SacMOS readout chips degrade after 100–150 Gy, dead after 300 Gy.

$\Rightarrow$ BST stays for repair in Zeuthen.

FST and BST repair plans

- Order new Si sensors for FST (need 120) at CIS Erfurt. Production capacity available.
- Order new hybrids. Prepare bonding.
- Tests on possible radiation damage underway in Zeuthen.
- Design of radiation hard readout chip continues.
- Rebuild cooling manifolds.
- Consider different cooling medium.
- Install repaired FST and BST next summer shutdown.

New background monitor: BSToF

- Instead of BST Pad radiation monitor at $z = -35\,\mathrm{m}$.
- $R = 6\,\mathrm{cm}$ to $14\,\mathrm{cm}$.
- One scintillator plane, $d = 2\,\mathrm{cm}$.
- 8-fold ϕ segmentation.
- Spacal PM readout.
- CFK support.

Absorber 4 removed

- Waiting for ABS4 with Cu insert.
- p and e beam pipes wll be welded in situ.

NR6 GI2 beam pipe burned and deformed

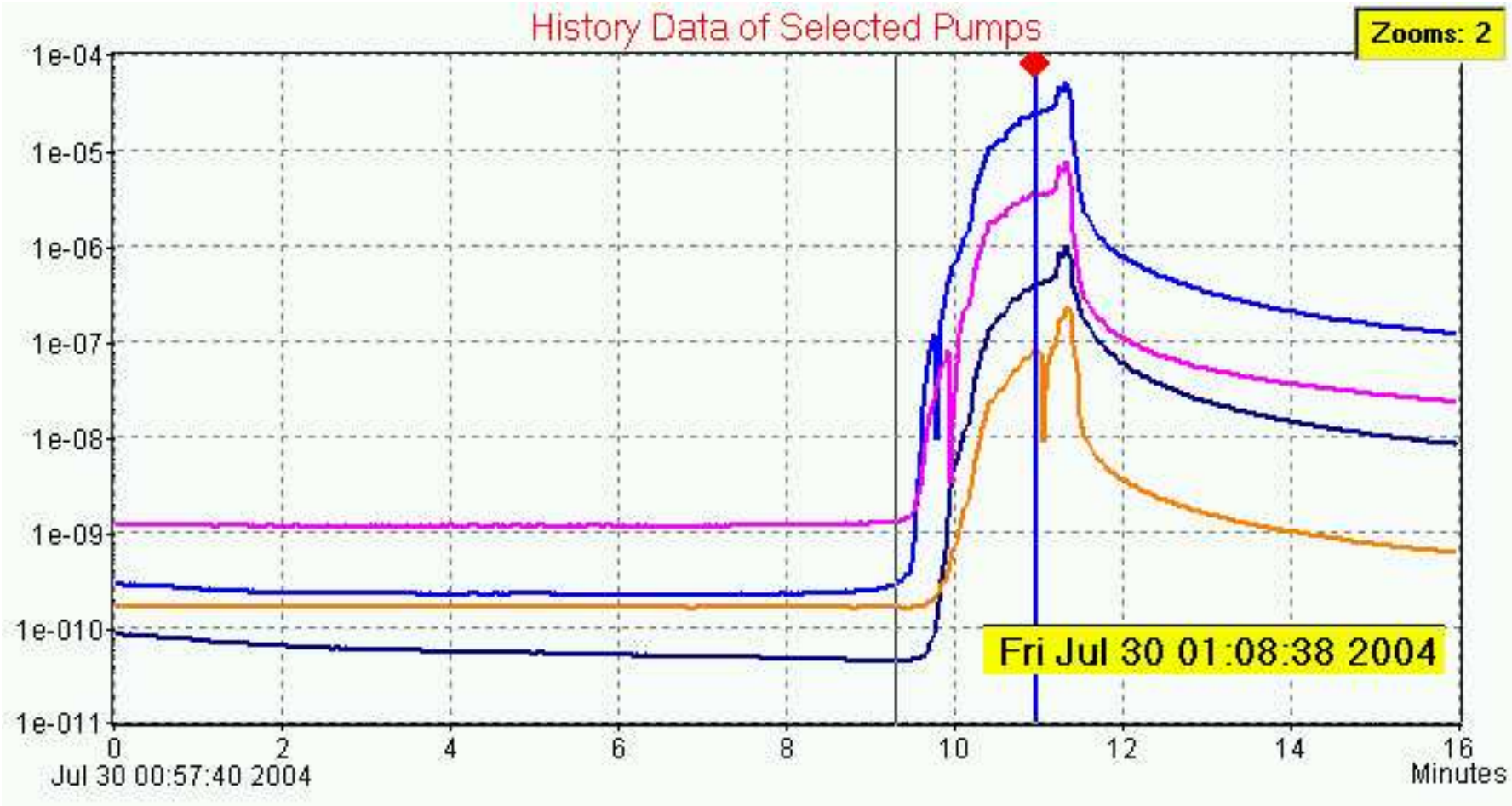
- Install temperature sensors.
- Monitor vacuum pressure.
- Connect BTS counters to e beam dump.

GI2 magnet opened

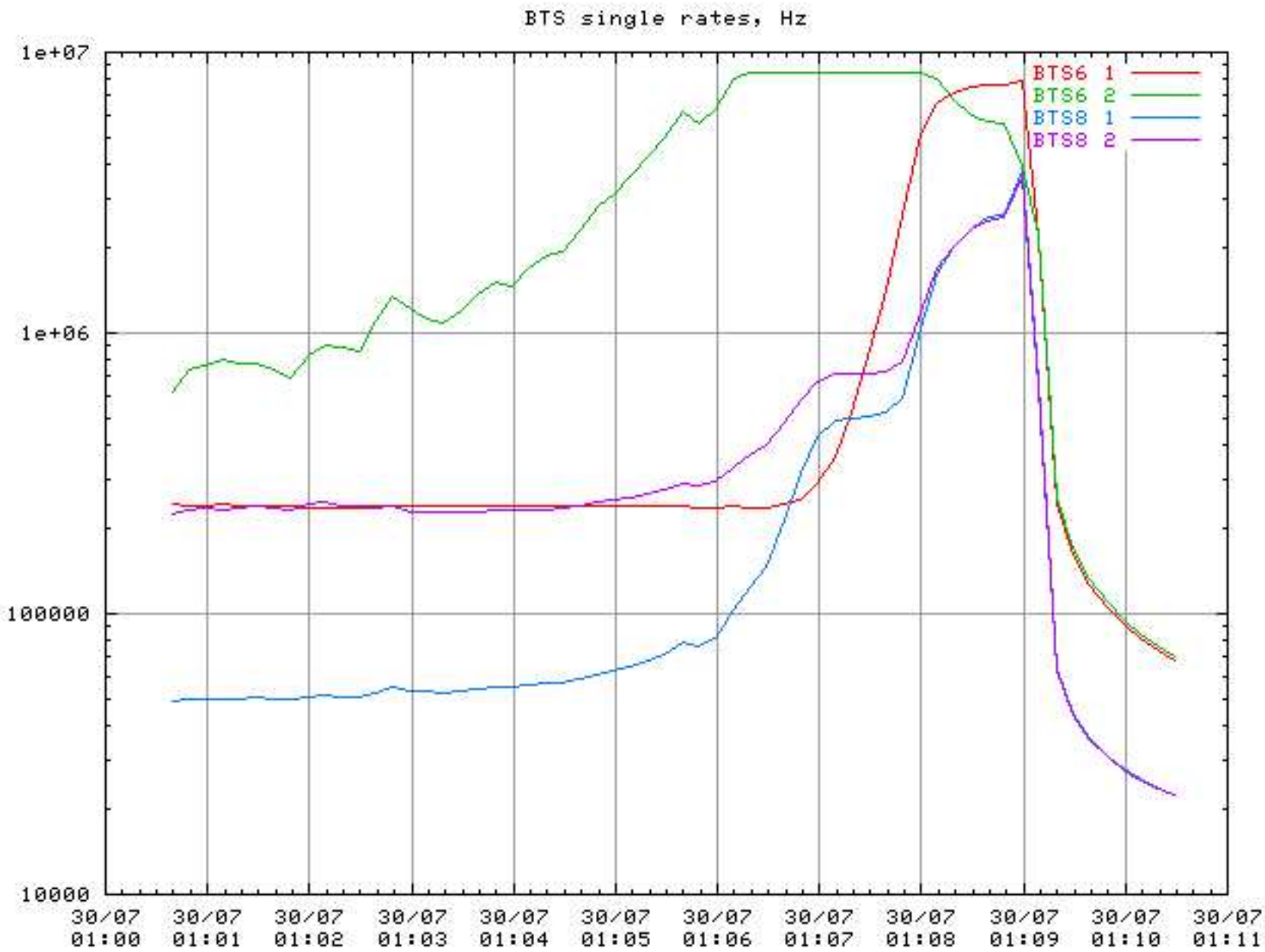
- Burned coil exchanged.

BTS counter during bakeout 26.-28.6.2004

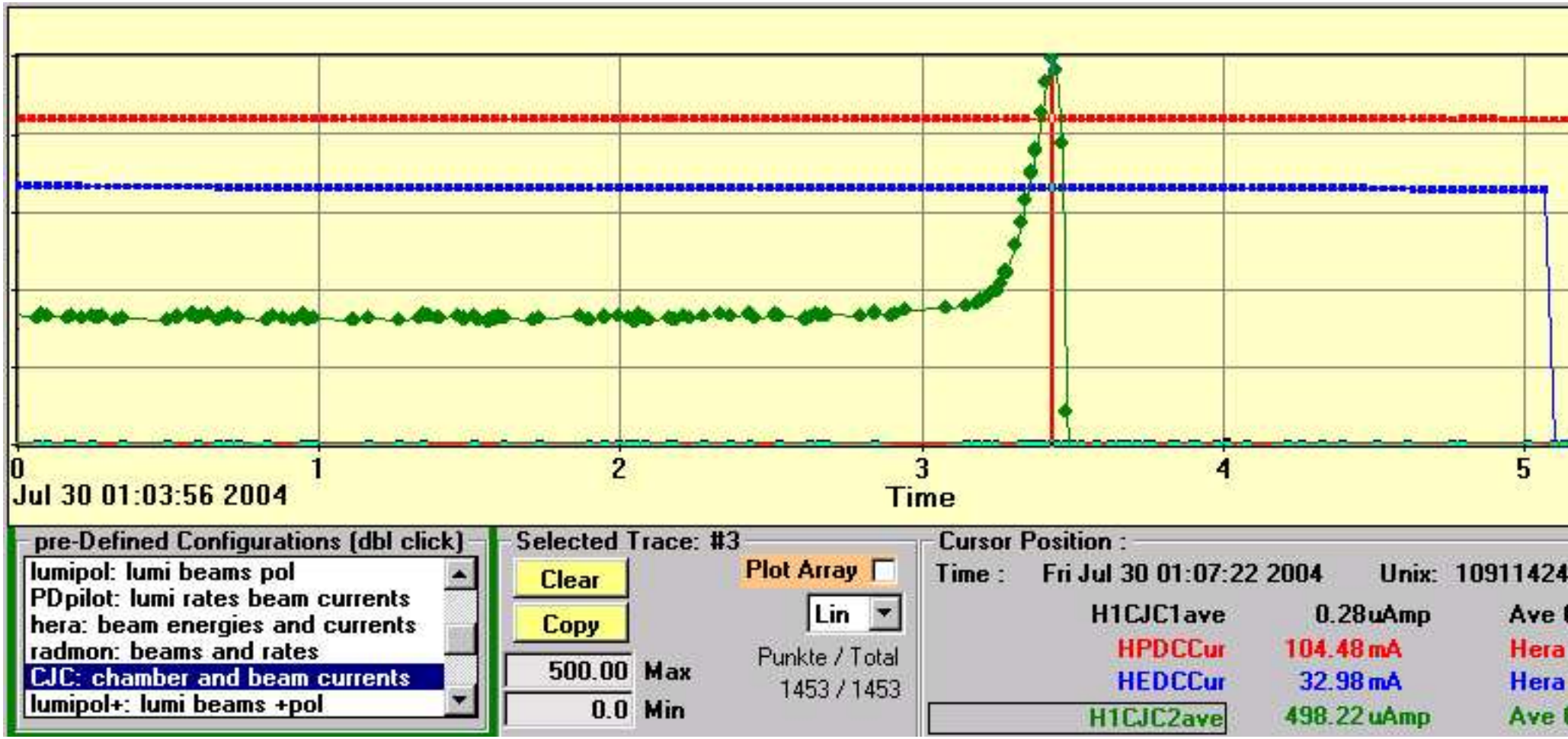
Gas burst on 30.7.2004



BTS counter during gas burst on 30.7.2004



Camber current during gas burst on 30.7.2004



- BTS6.2 reacts 2 min before chamber trip.
- Chamber trips at onset of gas burst.
- Beam loss is another 1.5 min later.

$\Rightarrow$ Plenty of time for a BTS beam dump signal.

New FPS Roman Pots

80/81 m horizontal and vertical pots.

- All stations installed: 61, 80/81, and 90 m.
- 80/81 and 90 m stations passed vacuum test.
- Electrical connection in progress.
- Fiber detectors to be installed last.

Further work on H1

- Central Silicon Tracker: dead quadrant repaired (internal short).
- Central Inner Proportional Chamber: a few inefficient channels repaired.
- Spacal electromagnetic calorimeter: minor repair work.
- Re-installation in progress.
- H1 will be closed as scheduled on 1.10.2004.