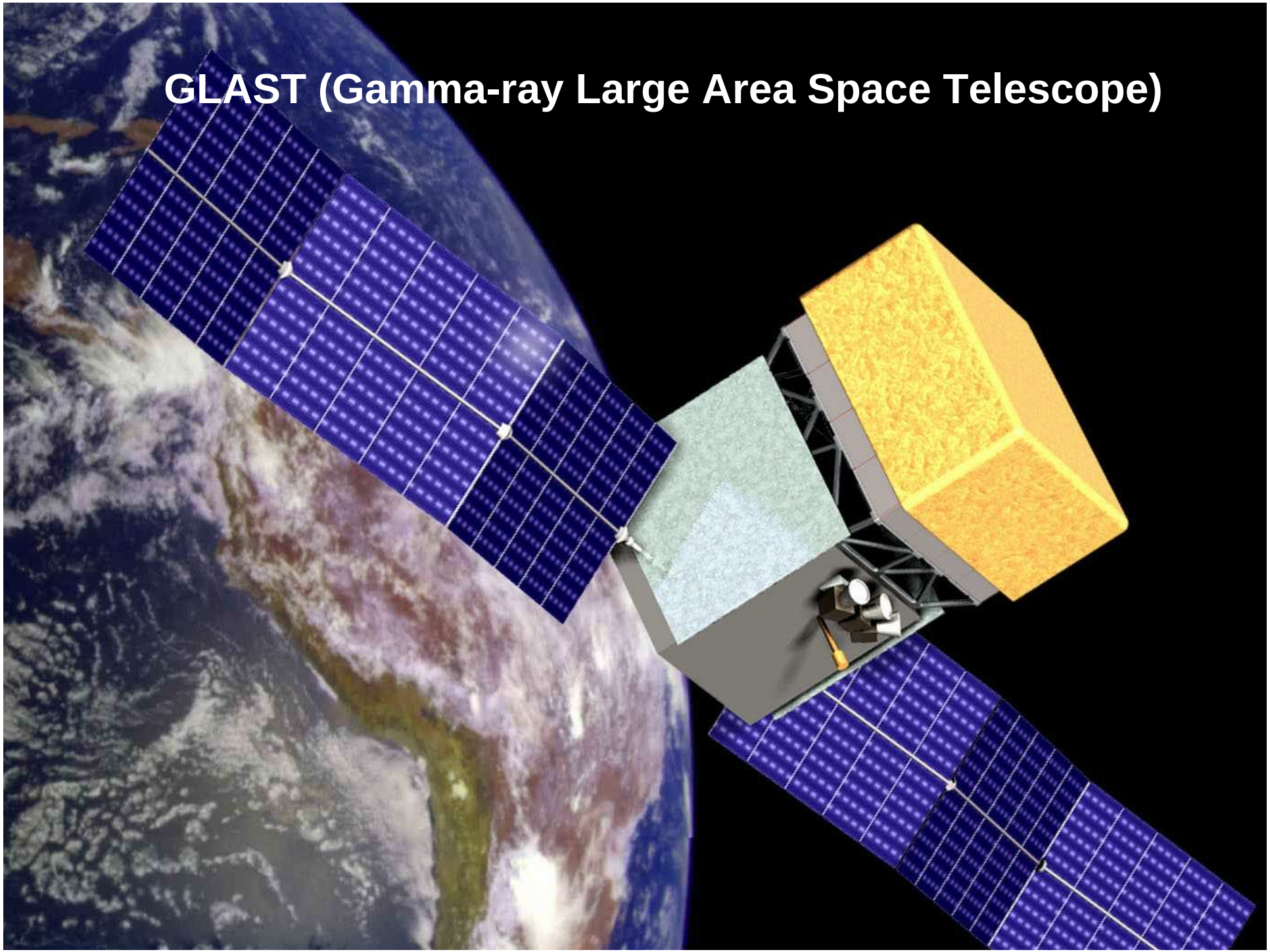
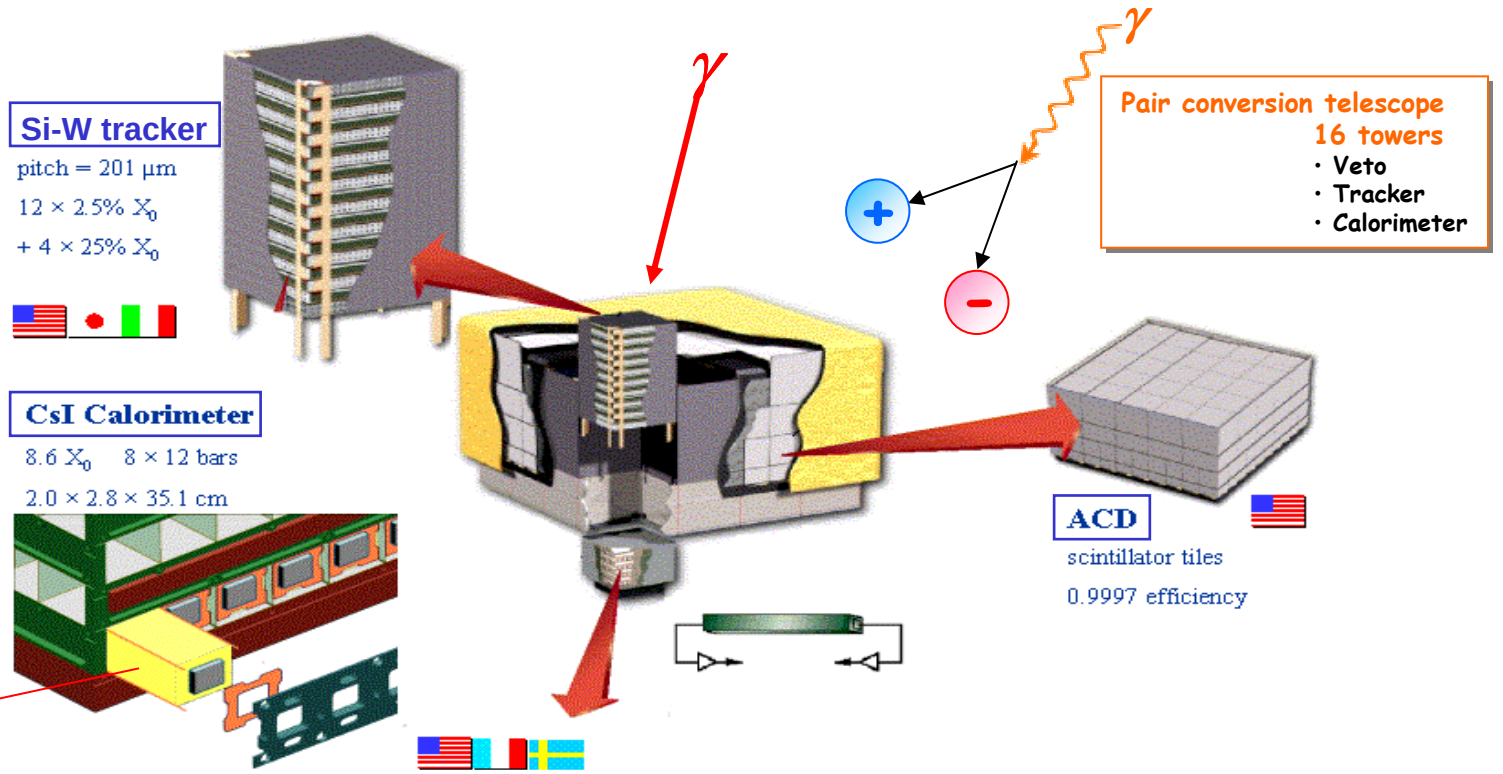
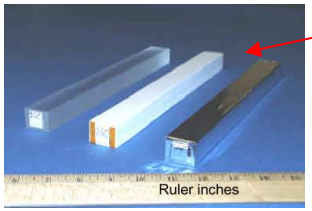
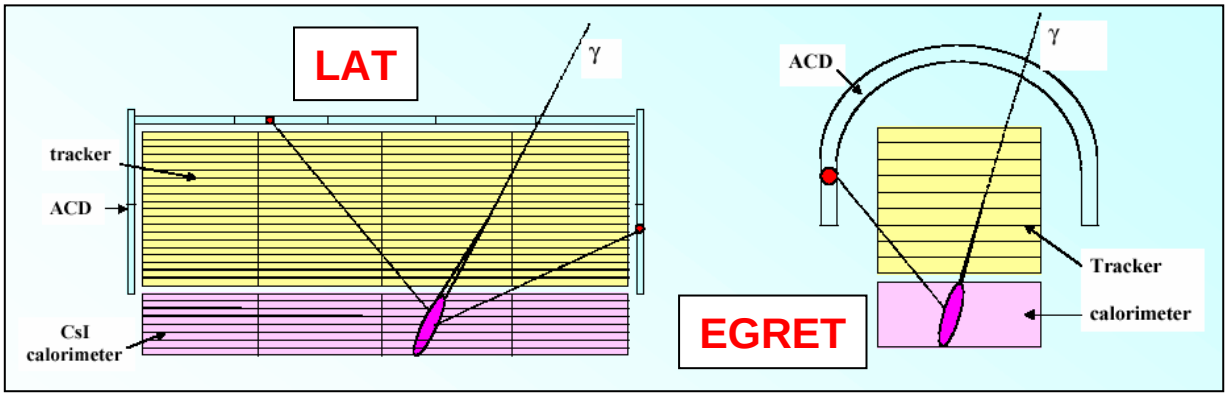

GLAST (Gamma-ray Large Area Space Telescope)

LAT (Large Area Telescope)
30 MeV-300 GeV

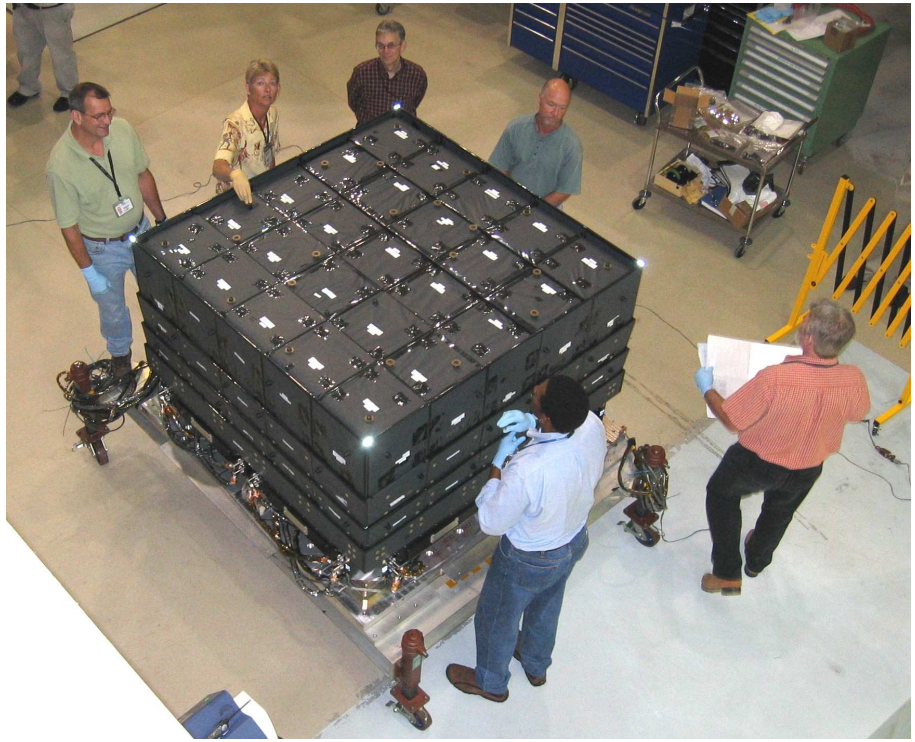




Science
Pulsars, SNRs, Blazars,
GRBs, Dark Matter,
Diffuse emissions



Anti-Coincidence Detector Complete

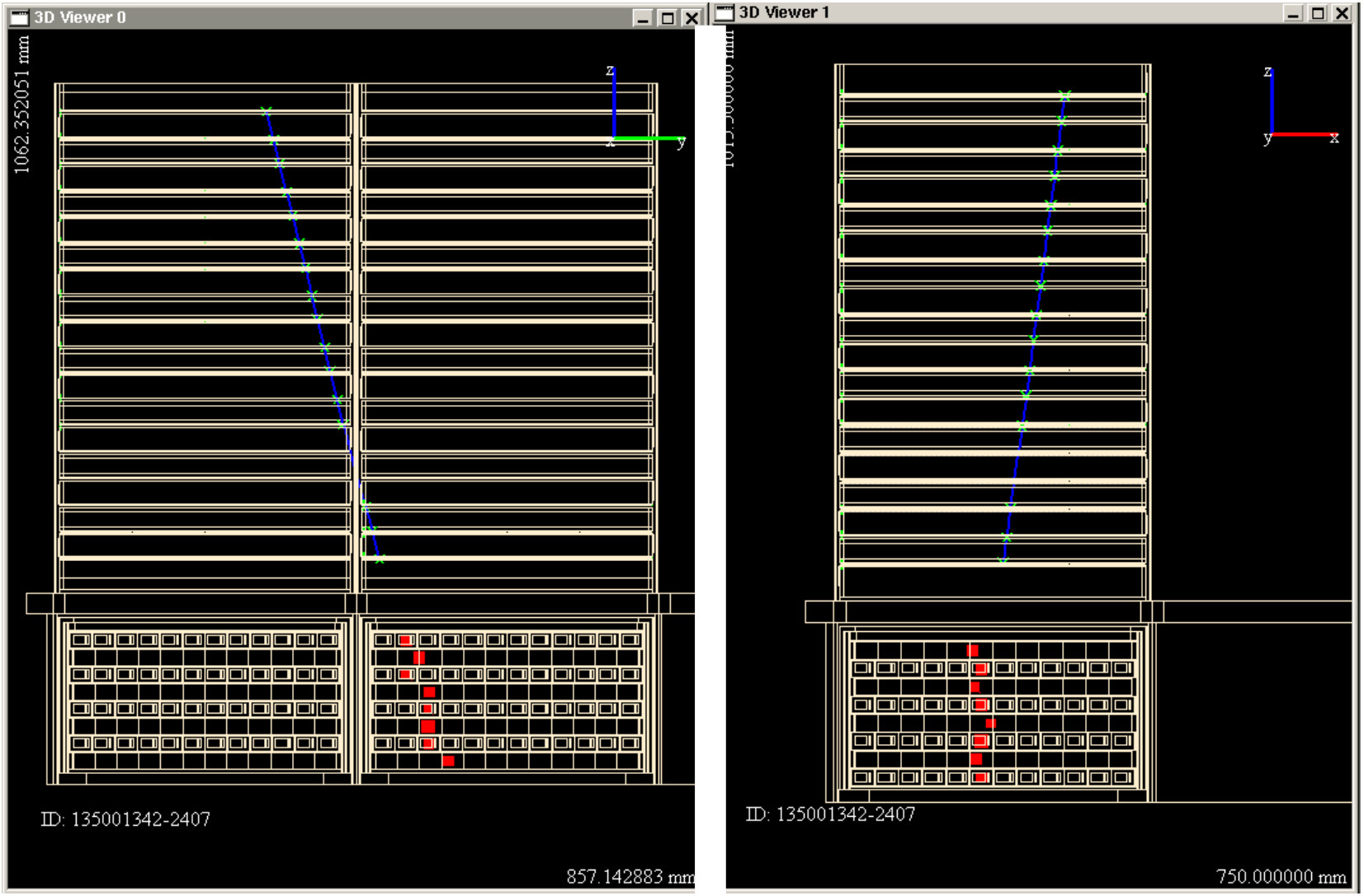


ACD before installation of Micrometeoroid Shield

ACD with Micrometeoroid Shield and Multi-Layer Insulation (but without Germanium Kapton outer layer)

David J. Thompson, GSFC
Thomas E. Johnson, GSFC

“Atmospheric” muons



Program at SPS

Electrons used for testing the response to high-energy EM showers:

- energy reconstruction
- "backsplash" (firing of ACD tiles by backward–emitted electrons)
- behavior of electronics at high-rate….

GEANT4-based Monte-Carlo simulations will be tuned accordingly.

Highest energy, low background required

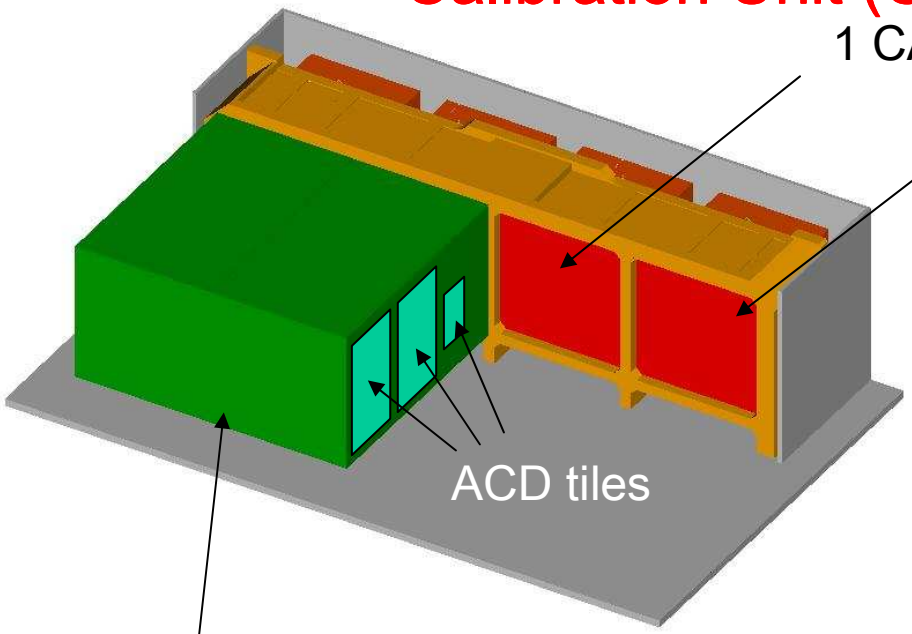
Protons needed for benchmarking the MC simulations developed for cosmic-ray background rejection.

Low e background required

Particle	Energy (GeV)	Angles (deg.)	#Positions per angle	Estimated Statistics	Trigger	Configuration
Electrons	10, 20, 50, 100, 200, 300	0, 20, 40, 60	12	200k	Ext. *	Flight
	100	90	2	200k	Ext.	Flight
	10, 20, 50, 100, 200, 300	180	2	200k	Ext.	Flight
hadrons	10,20,50,100	0, 90	2	1 M	Ext.	Flight

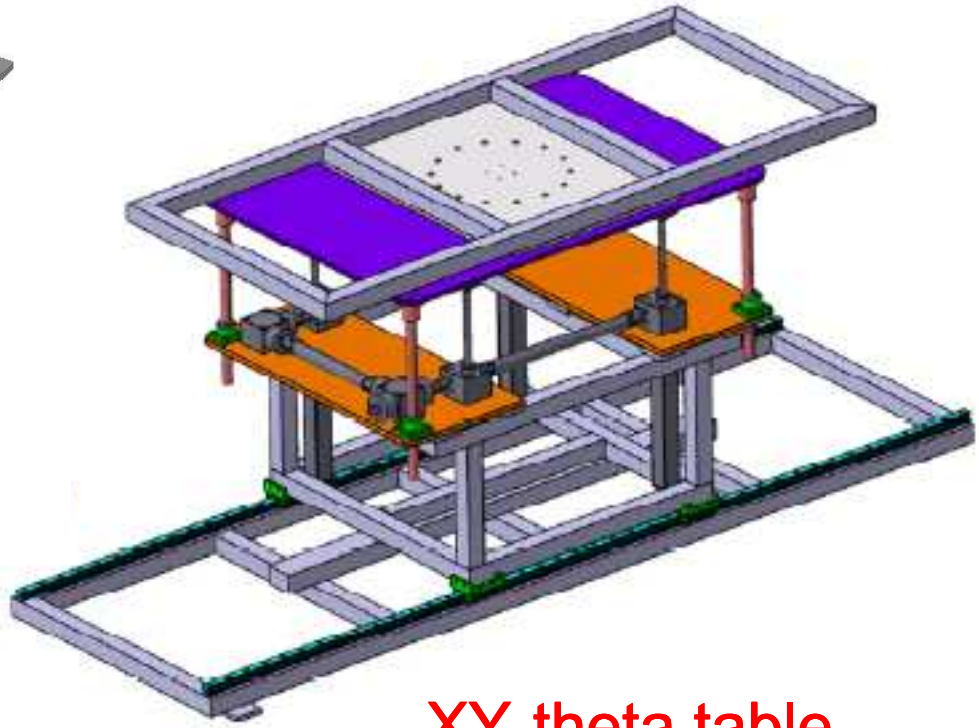
* External trigger from plastic scintillator detectors in the beam line

Calibration Unit (CU)



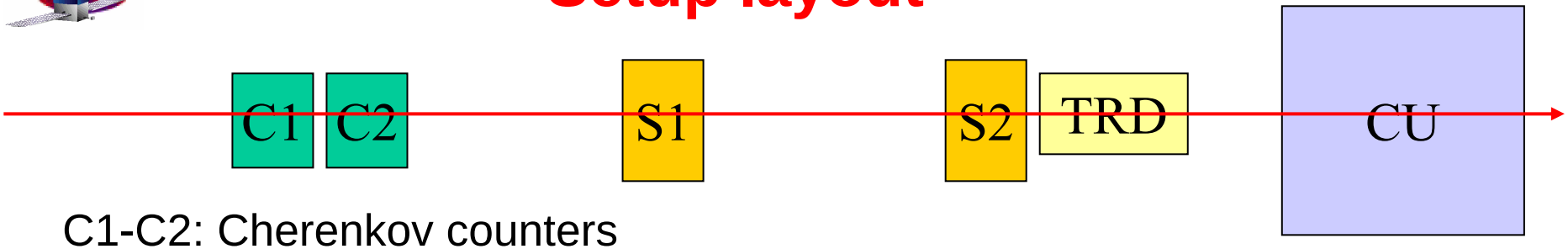
Two flight-spare “towers” (Tracker+CAL)
enclosed in a 2 mm-thick container

Detector at CERN



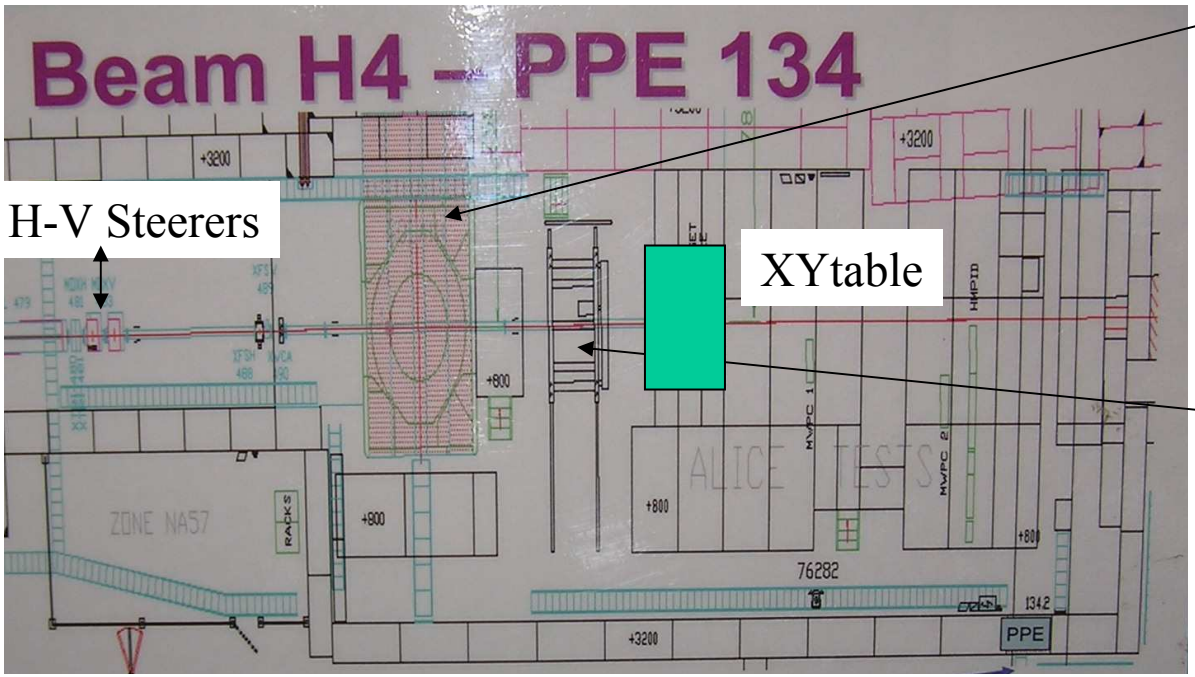
XY-theta table

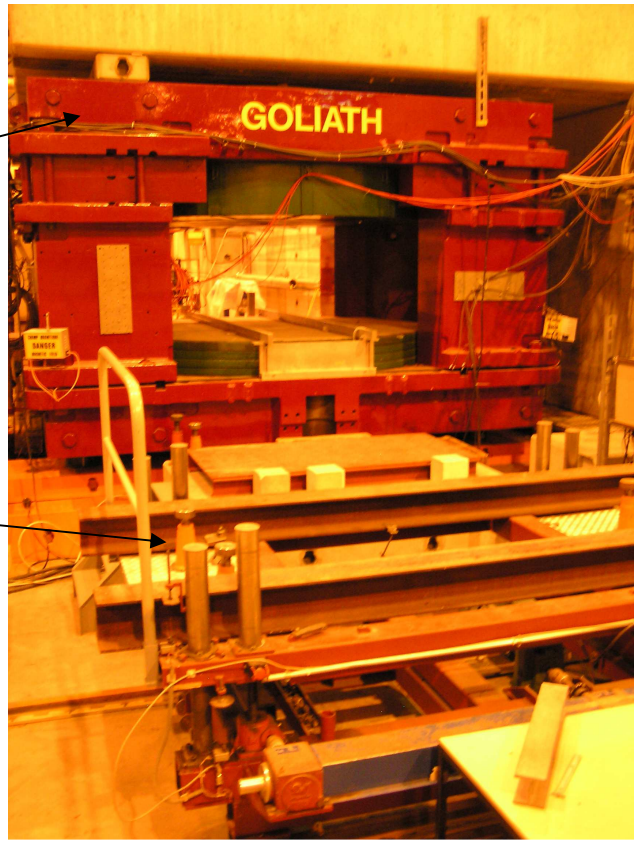
Setup layout



C1-C2: Cherenkov counters
S1-S2: trigger scintillators
TRD

distance from end of vacuum beam pipe to table?
length of Cherenkov counters?





Beams

Rates: most cases < 1kHz. A few runs with 10 kHz at the most favorable energy (100 GeV?)

We strongly request the 0-mrad beam:

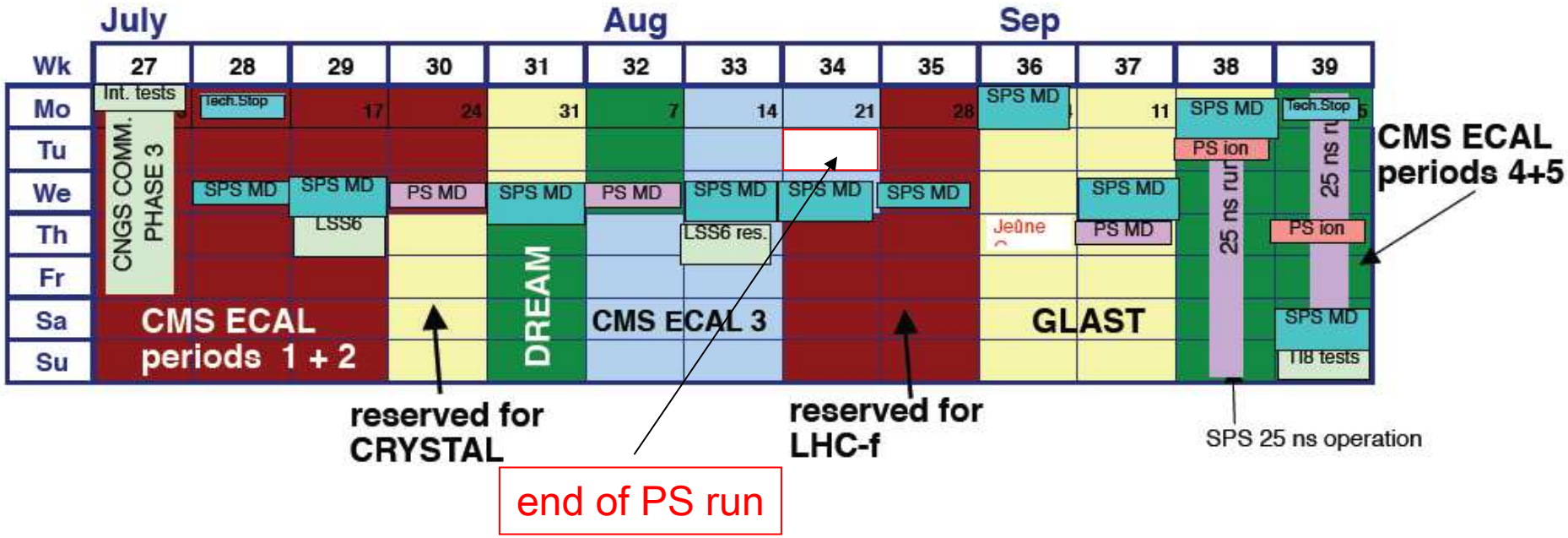
- perfect for electrons: highest energy, low contamination, rate high enough (as found in GLAST run in 2002)

- possible use of tertiary hadron beams (E<100 GeV) if rate if high enough. Rates? Contamination?

PID (in case the 0-mrad mode is not available)
For secondary hadron beams at low energy, we would use Cerenkov counters.
Use of N_2 or He_2 ? Can we switch from one to the other? Max.–Min. pressure?

Possible use of an ancillary calorimeter at high energy.

Planning



Beam: When do we know if there will be constraints on the beam due to H2 (CMS?)?

Installation: - access to the cave?

Barracks: - Will the two barracks be available?
- When can we move in? out?

Storage: clean room: availability, condition of use

Miscellaneous

installation:

X-Y table: position with respect to magnet
cables between cave and barracks: how many? how long?
ground in cave: via electric power (plugs)?
what signals to/from the control room?
use of He bag?

safety: course (when?, what?)
security visit: when?, who?, what?
GLIMOS
film badges

tunnel permit: still possible?

Name of responsible persons for: safety
crane+area
surveyor