

AMS TIM & General Meeting ACC Status Report



**T. Bruch, P. v. Doetinchem, F. Gillessen, F. Müller, W. Karpinski,
Th. Kirn, K. Lübelmeyer, S. Schael, W. Wallraff, M. Wlochal
I. Phys. Institute B, RWTH Aachen
CERN, 24th October 2006**

ACC System

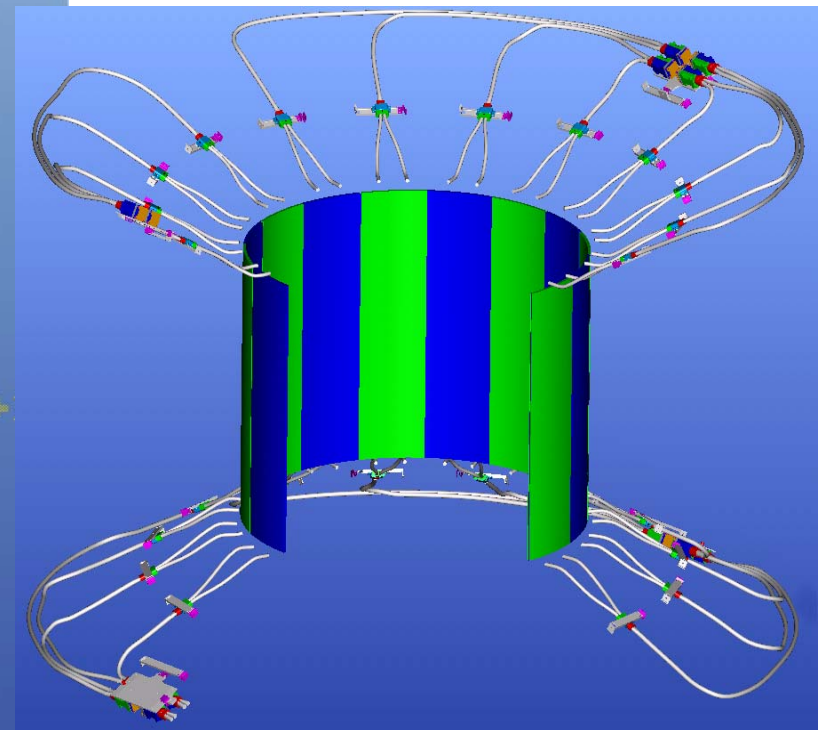
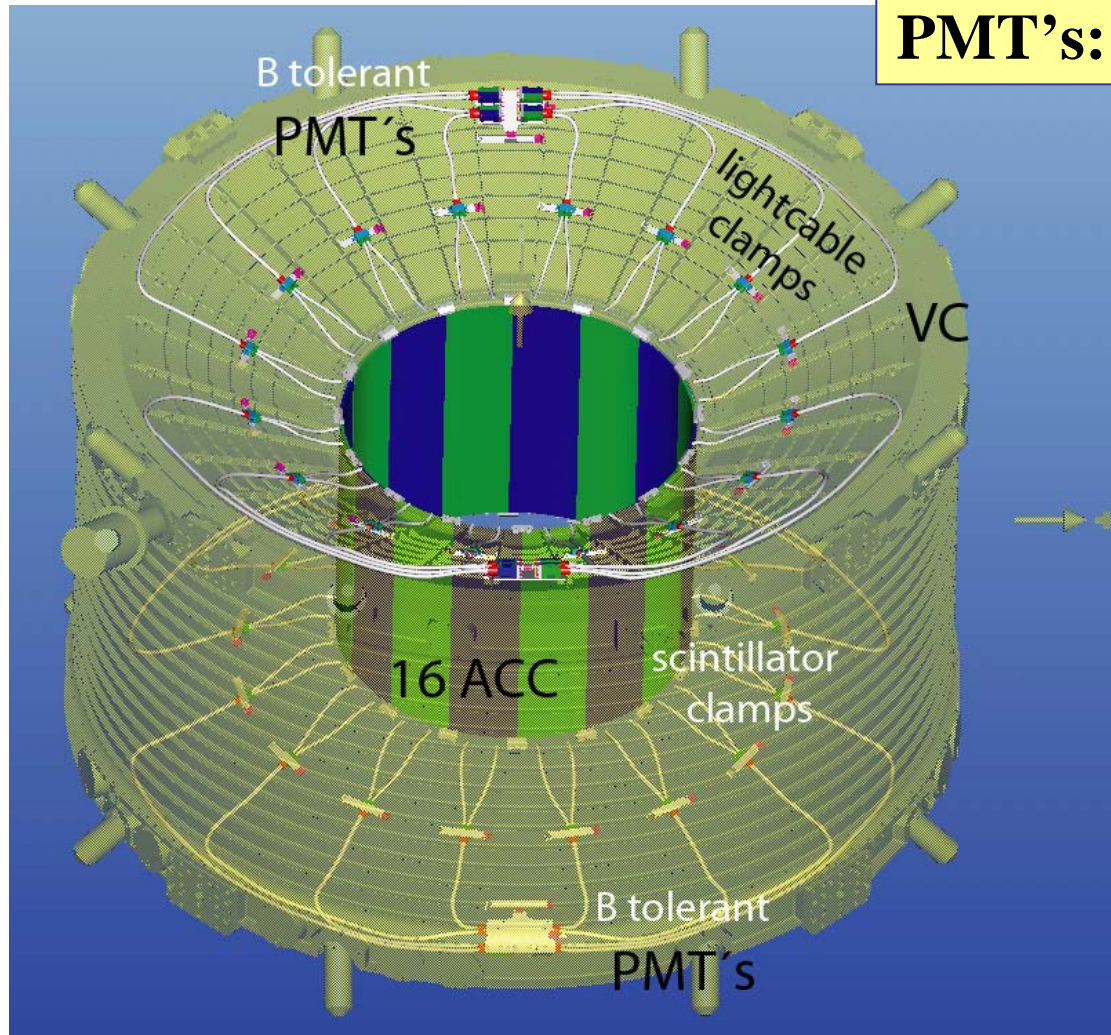
Panel: Bicron BC414

826.5mm x 230mm x 8mm

WLS: Kuraray Y-11(200)M

CLF: Bicron BCF-98

PMT's: Hamamatsu R5946



ACC System

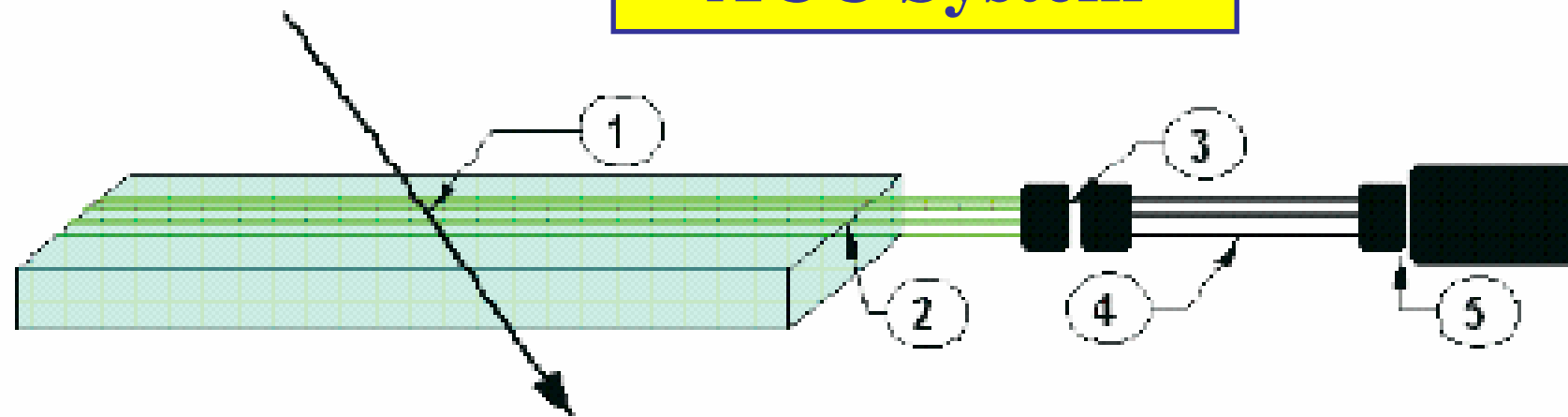
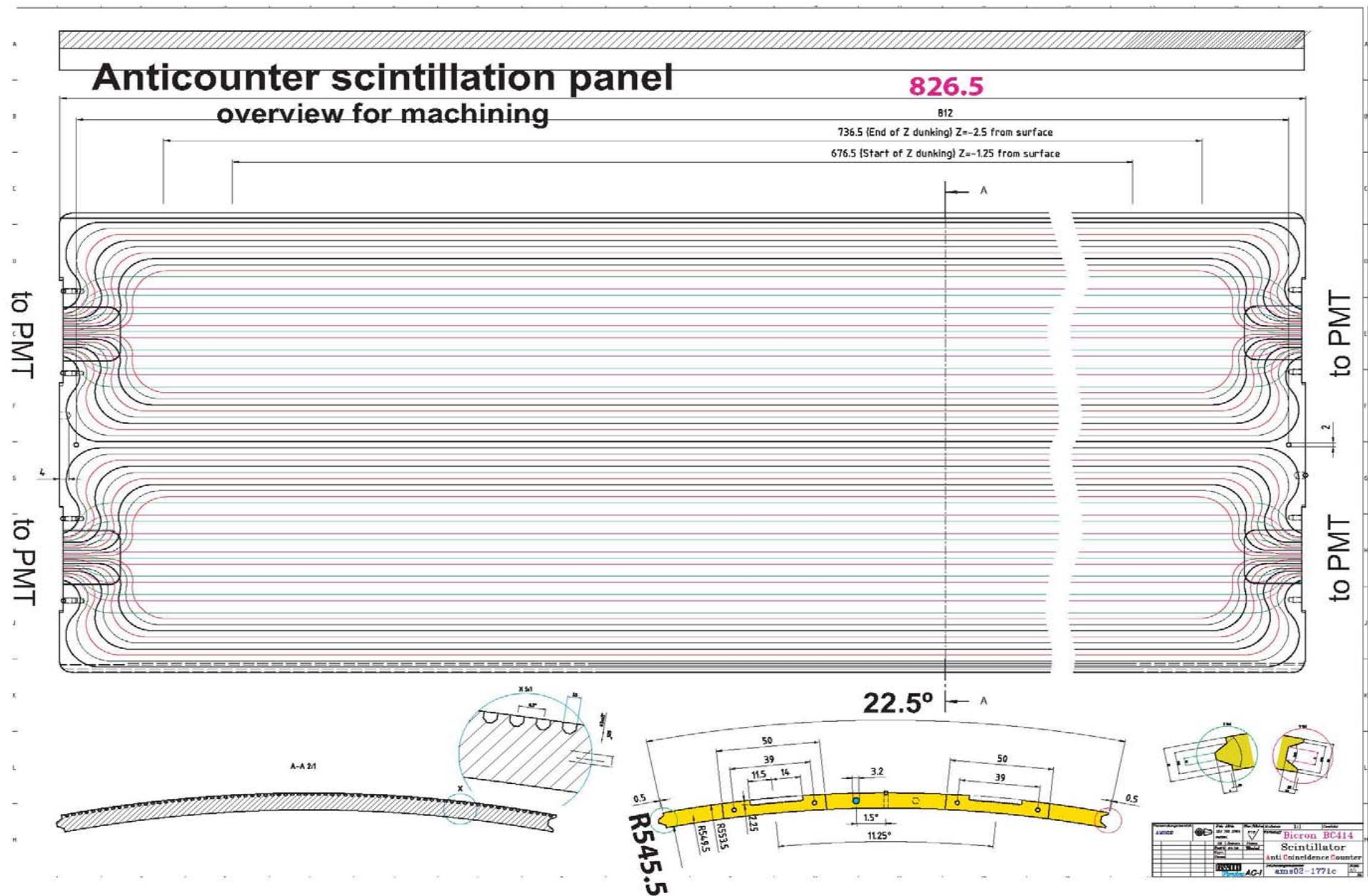
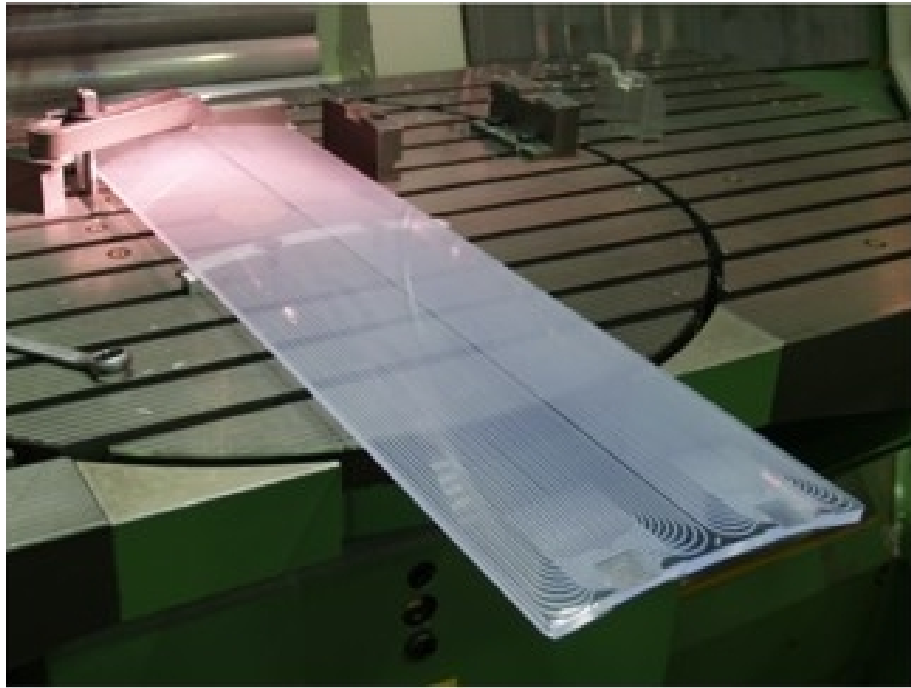


Table: contributions to scintillation signal loss

1	# ph 14400	WLS capture (solid angle) 50%	Stoke eff 90%	Trapping eff 5.4 %	# ph 350
2	# ph 350	Attenuation length WLS 342 cm center to PMT 100 cm 74.6 %			# ph 261
3	# ph 261	Fresnelloss WLS fiber output 95.5 %	Fresnelloss clear fiber input 95.5%		# ph 238
4	# ph 238	Attenuation length clear 800cm clear to PMT max 300 cm 68%			# ph 161
5	# ph 161	Fresnelloss clear fibre output 95.5%	Fresnelloss PMT window 95.5%	QE PMT 10%	# p.e 15

ACC Scintillation panel





ACC Scintillator Panel machining

machining (grooves):

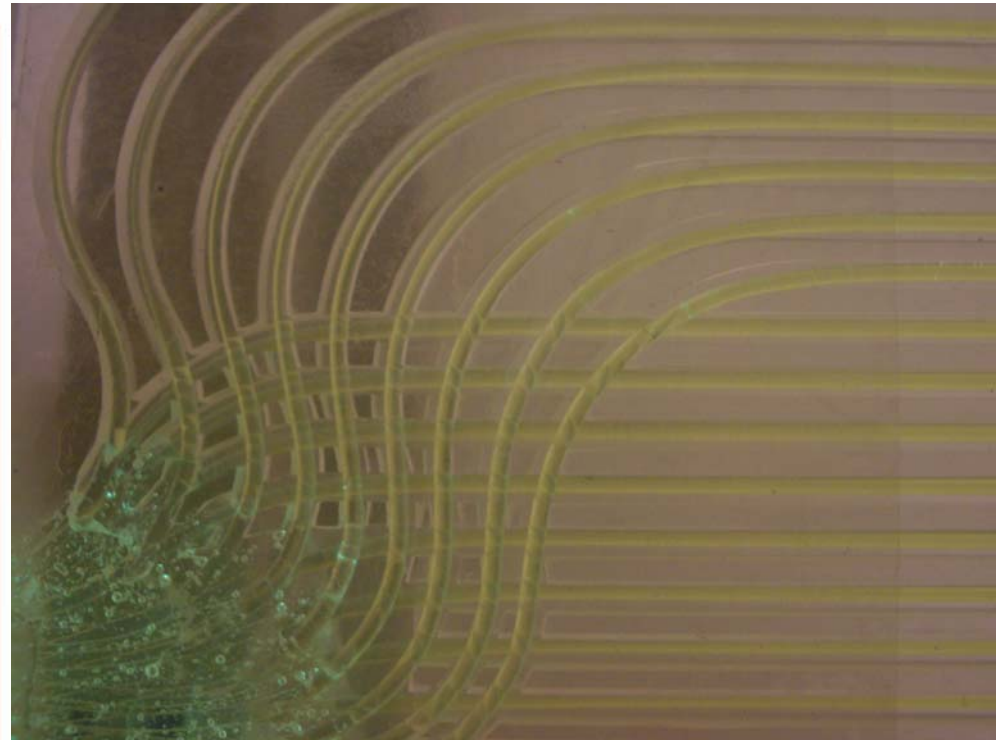
all (16+2) done



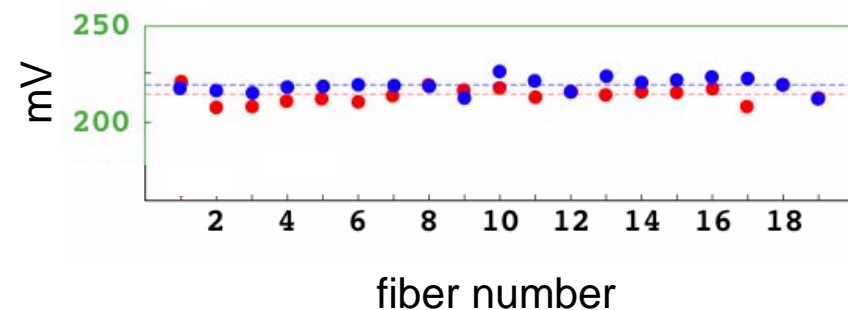
**Fibres are thermally preconditioned
=> less mechanical stress during insertion
and hence less damages,
=> more homogeneous light transport**



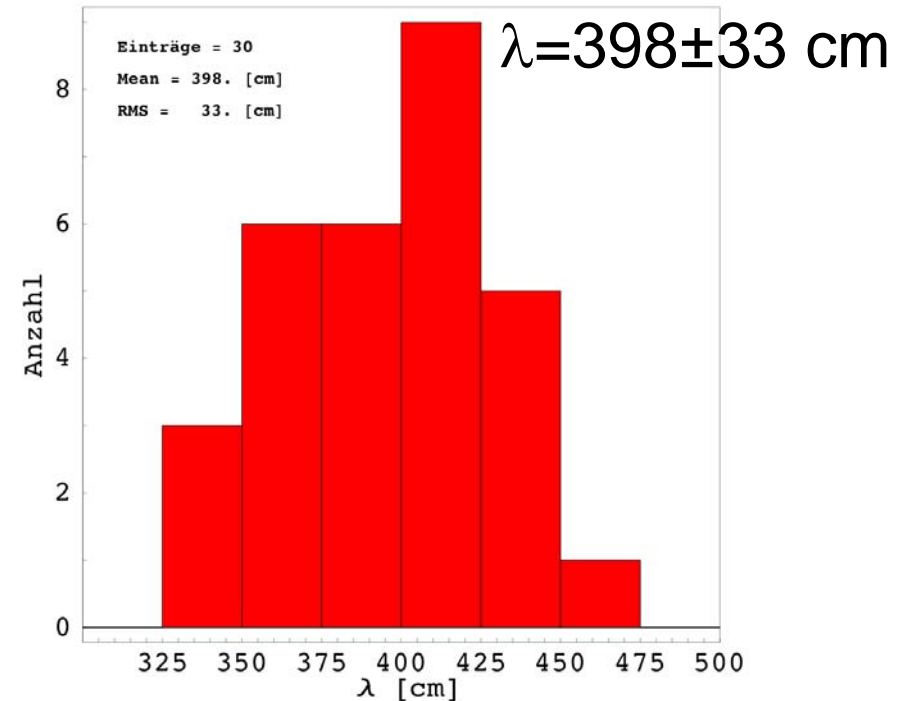
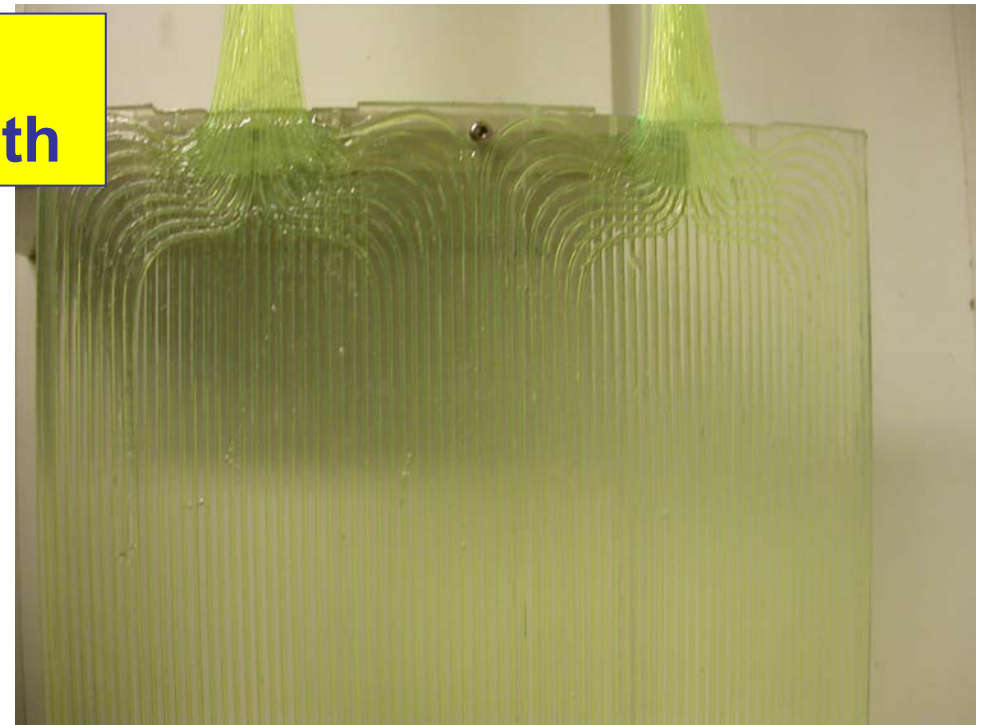
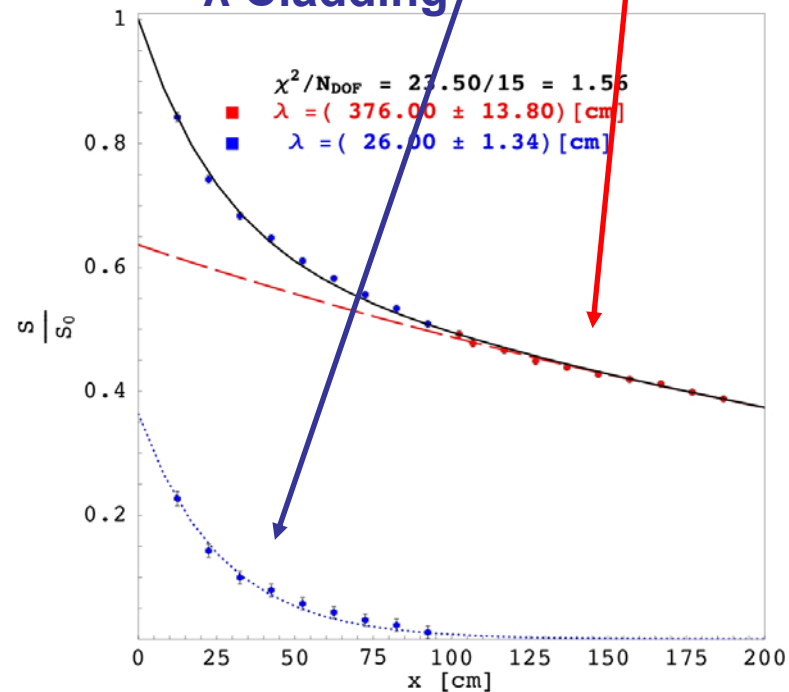
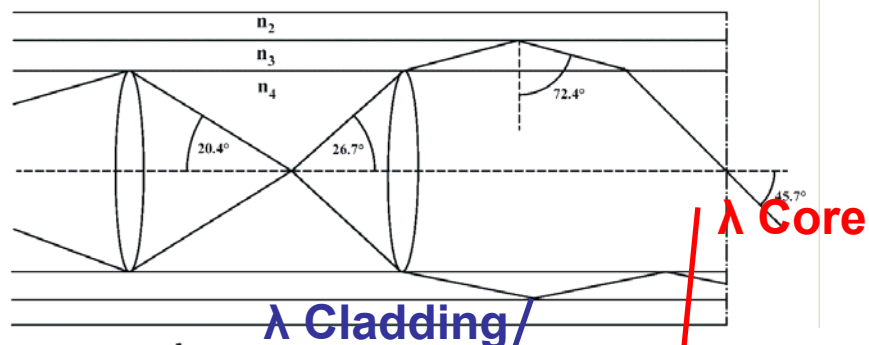
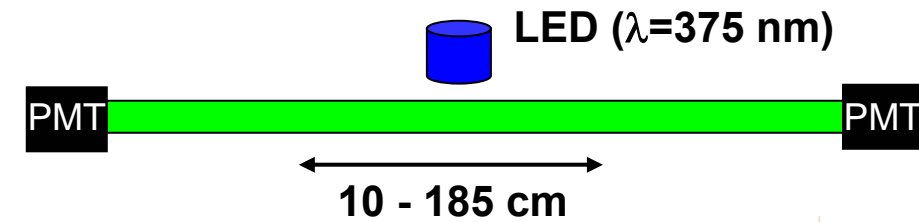
ACC Scintillator Panel WLS preparation



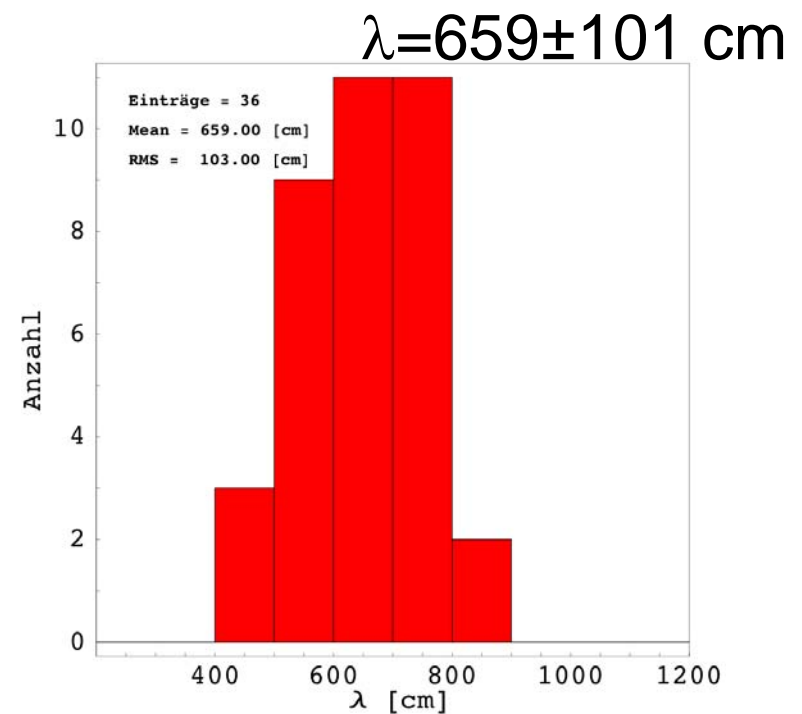
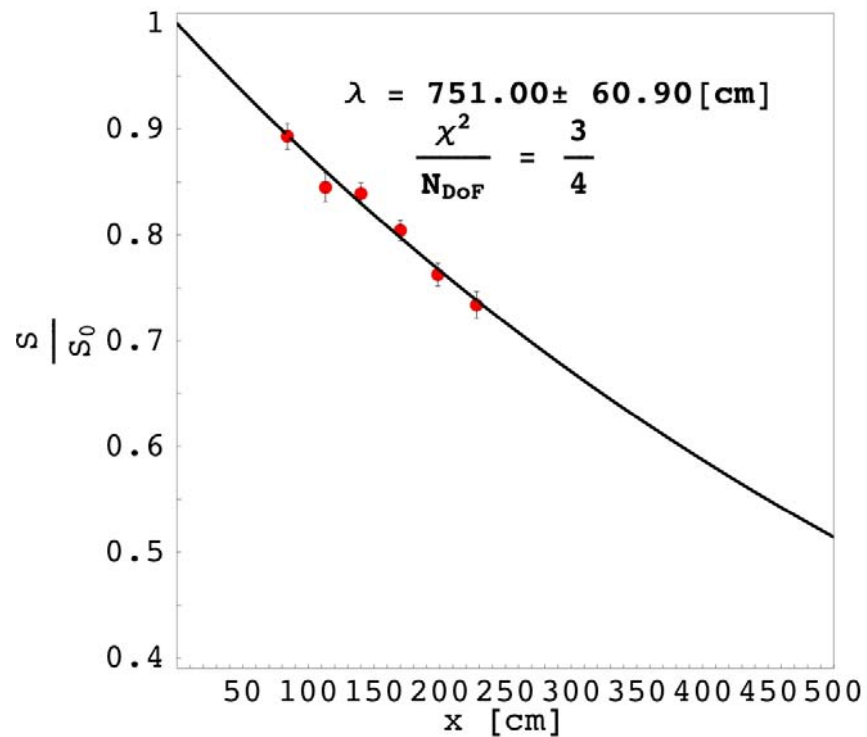
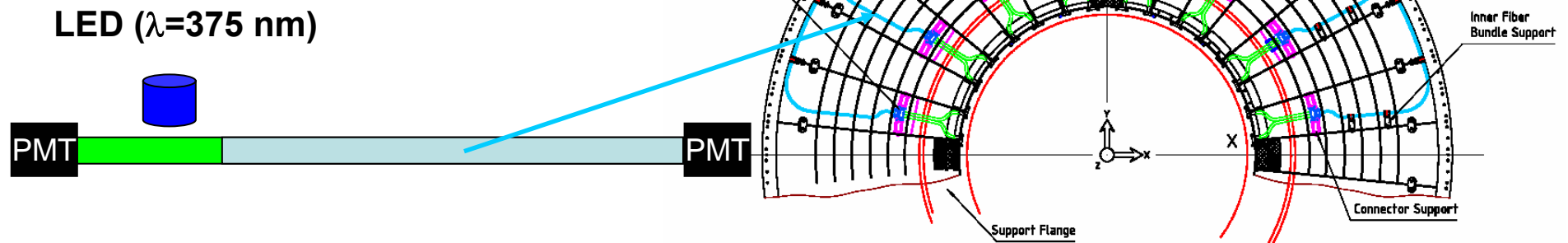
BLUE: straight Fibres RED: bent fibres



ACC Scintillaton Panel WLS Fibers Attenuation Length



ACC Scintillaton Panel Clear Fibers Attenuation Length

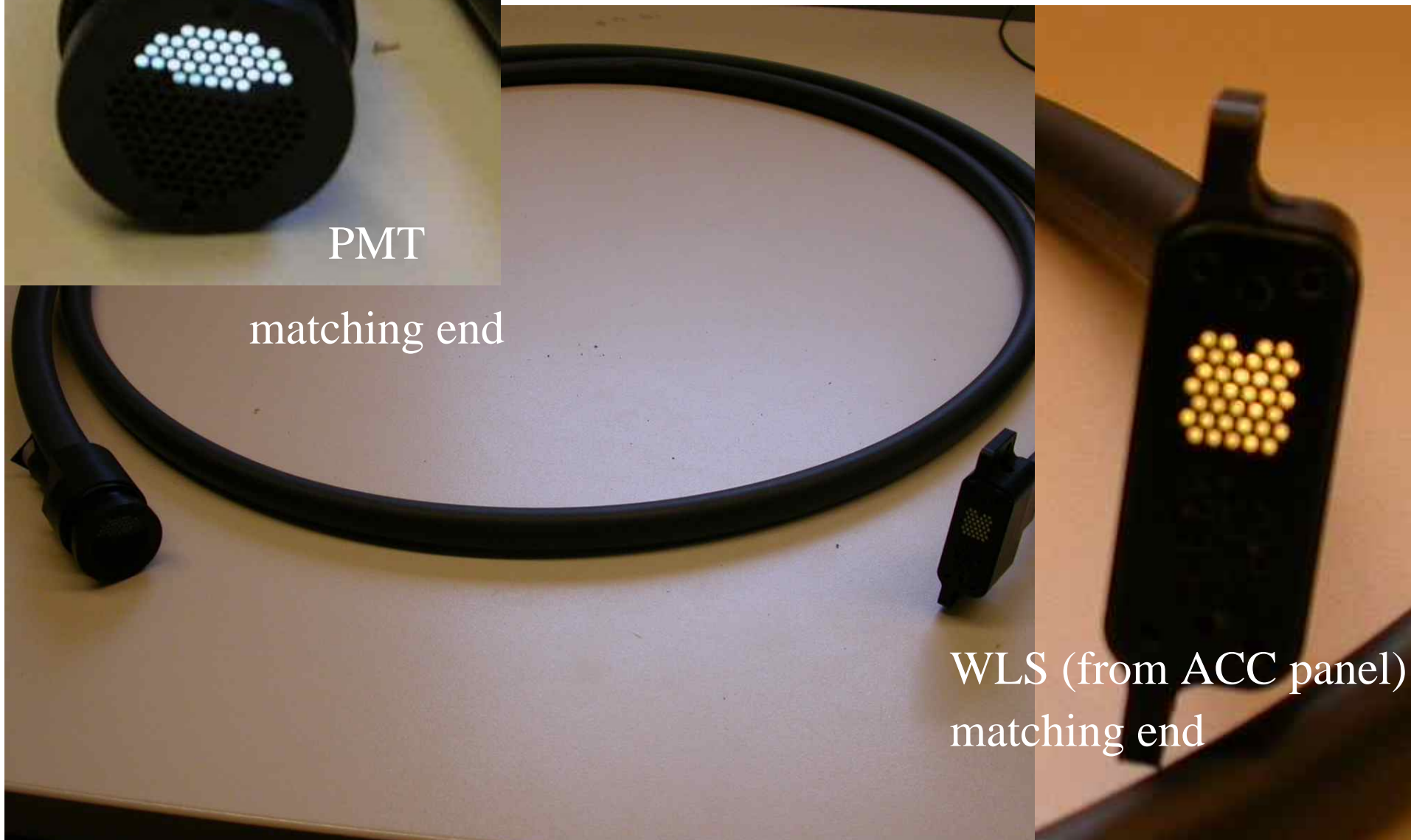


ACC Scintillation Panel Couplings under test



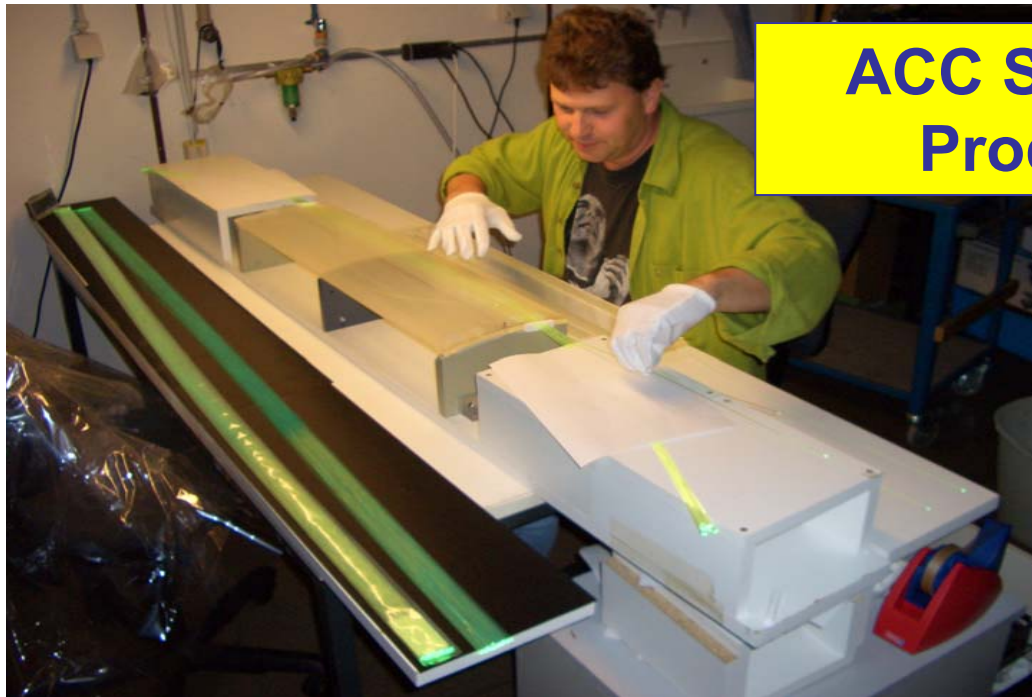
PMT

matching end

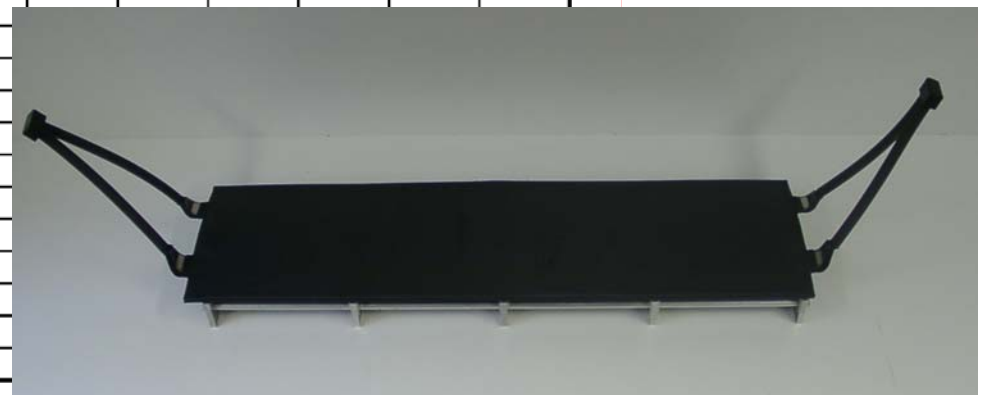


WLS (from ACC panel)
matching end

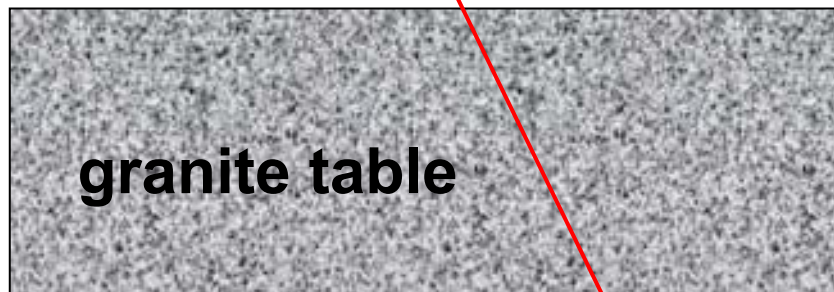
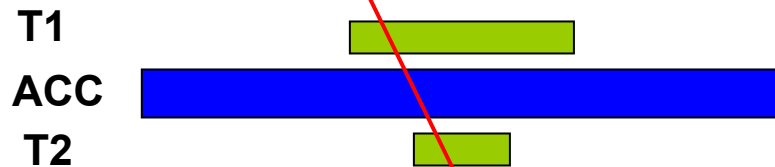
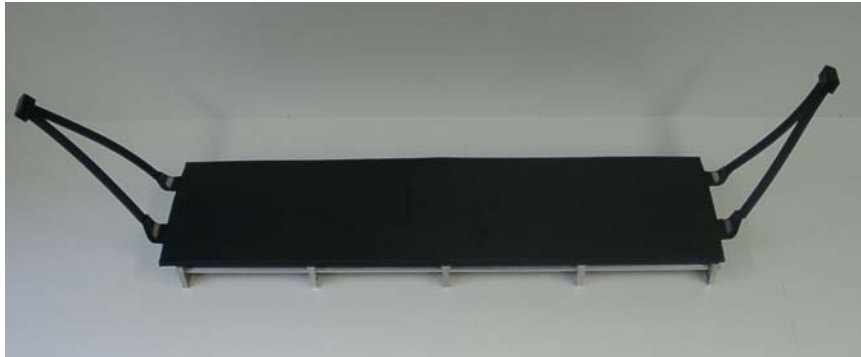
ACC Scintillator Panel: Production Status



ACC-Nr	1.	2.	3.	4.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1															PEBS Box
2											12.10.6- 16.10.6	12.10.6- 16.10.6	12.10.6- 16.10.6	12.10.6- 16.10.6	PEBS Box
3	1.9.6	1.9.-6.9.6	1.9.-6.9.6	6/7.9.6	8.9.6	8.9.6	11.9.6	11.9.6	14.7/18.9.6 ACC-Labor						
4	Panel defekt														
5	12./13.9.6	12./13.9.6	12./13.9.6	12./13.9.6	13.9.6	13.9.6	18.9.6	18.9.6	19./20.9.6 ACC-Labor						
6	29.8.6	30./31.8.6	30./31.8.6	30./31.8.6	1.9.6	1.9.6	5.9.6	5.9.6	6.9-13.9.6 ACC-Labor						
7	19./20.9.6	19./20.9.6	19./20.9.6	19./20.9.6	20.9.6	20.9.6	22.9.6	22.9.6	Chemieraum						
8	25.9.6	25.9.6	25.9.6	26.9.6	27.9.6	27.9.6 Chemieraum									
9	27.9.6	27.9.6	27./28.9.6	28.9./4.10.6	4.10.6	4.10.6	6.10.6	6.10.6 Chemieraum							
10	6.10.6	1./3.10.6	1./3.10.6	3.10.-7.10.6	7.10.6 Chemieraum										
11		ACC-Labor													
12															
13															
14															
15															
16															
17															
18															

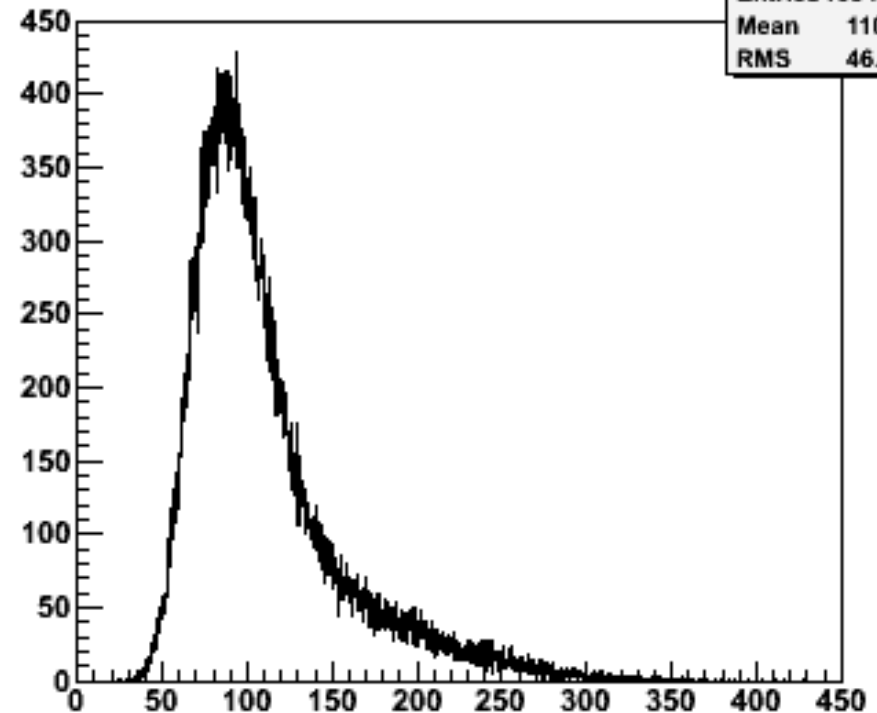


ACC: First flight panel in cosmic test stand



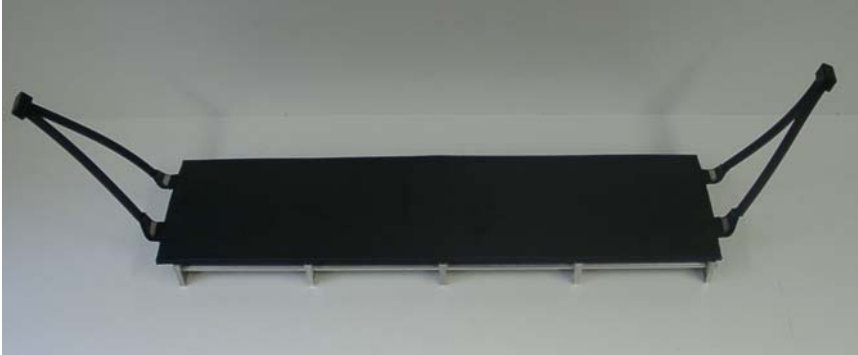
T3

PHS der Summe beider PMT (ZH 5810 @ 2020V + ZH 5998 @ 2100V)

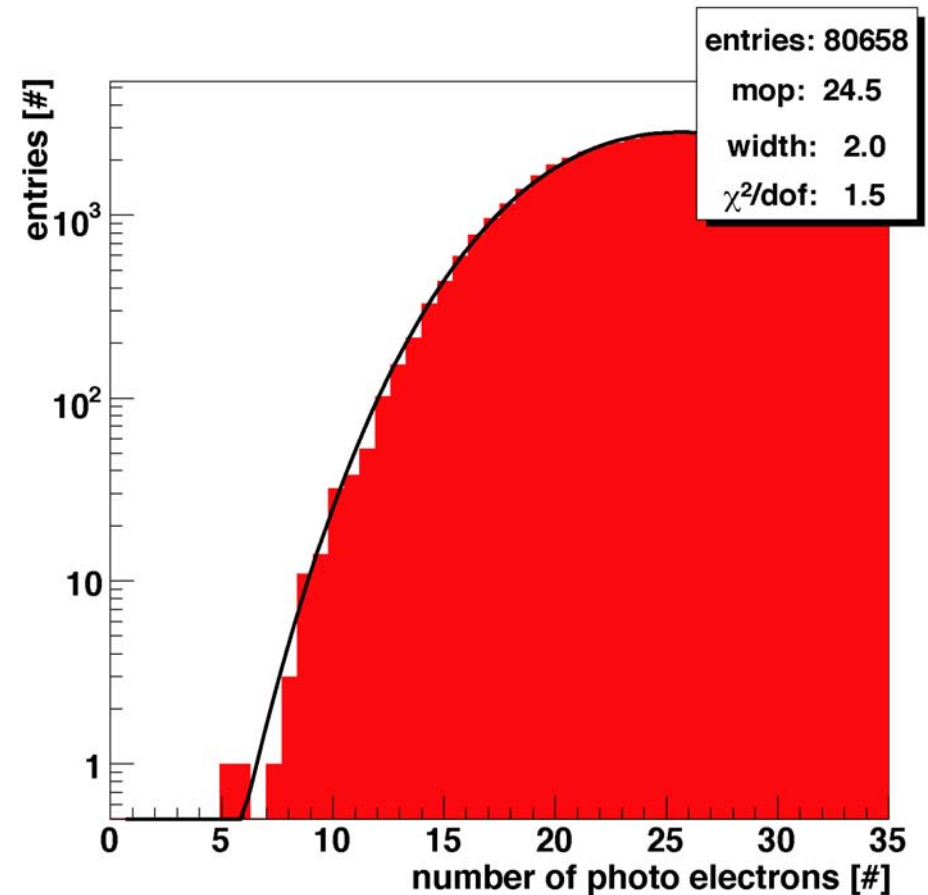
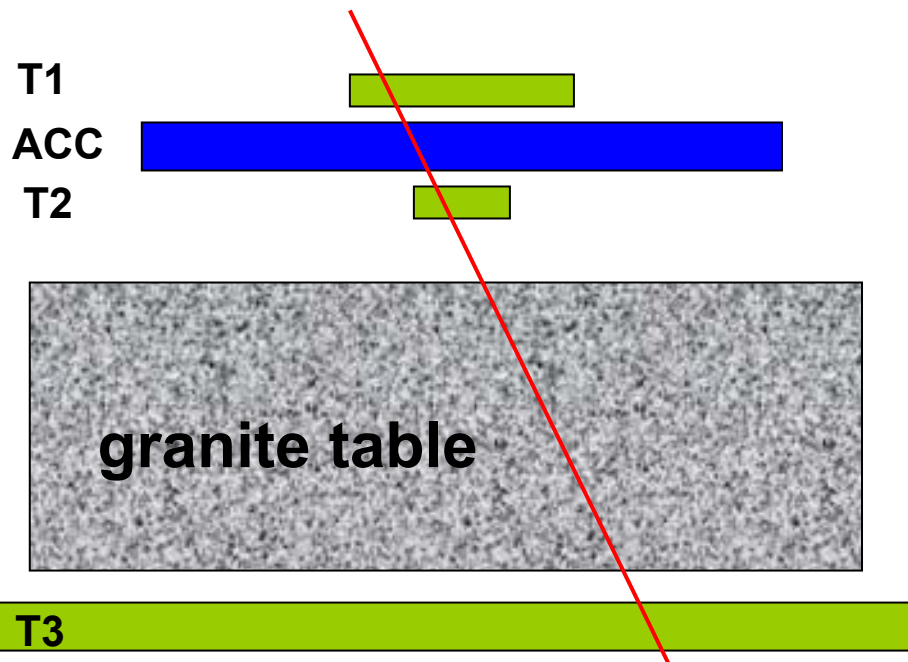


0 20 40 60 80 100 120
Anzahl an Photoelektronen (Eichladung 3.3 [pC])

ACC: First flight panel in cosmic test stand

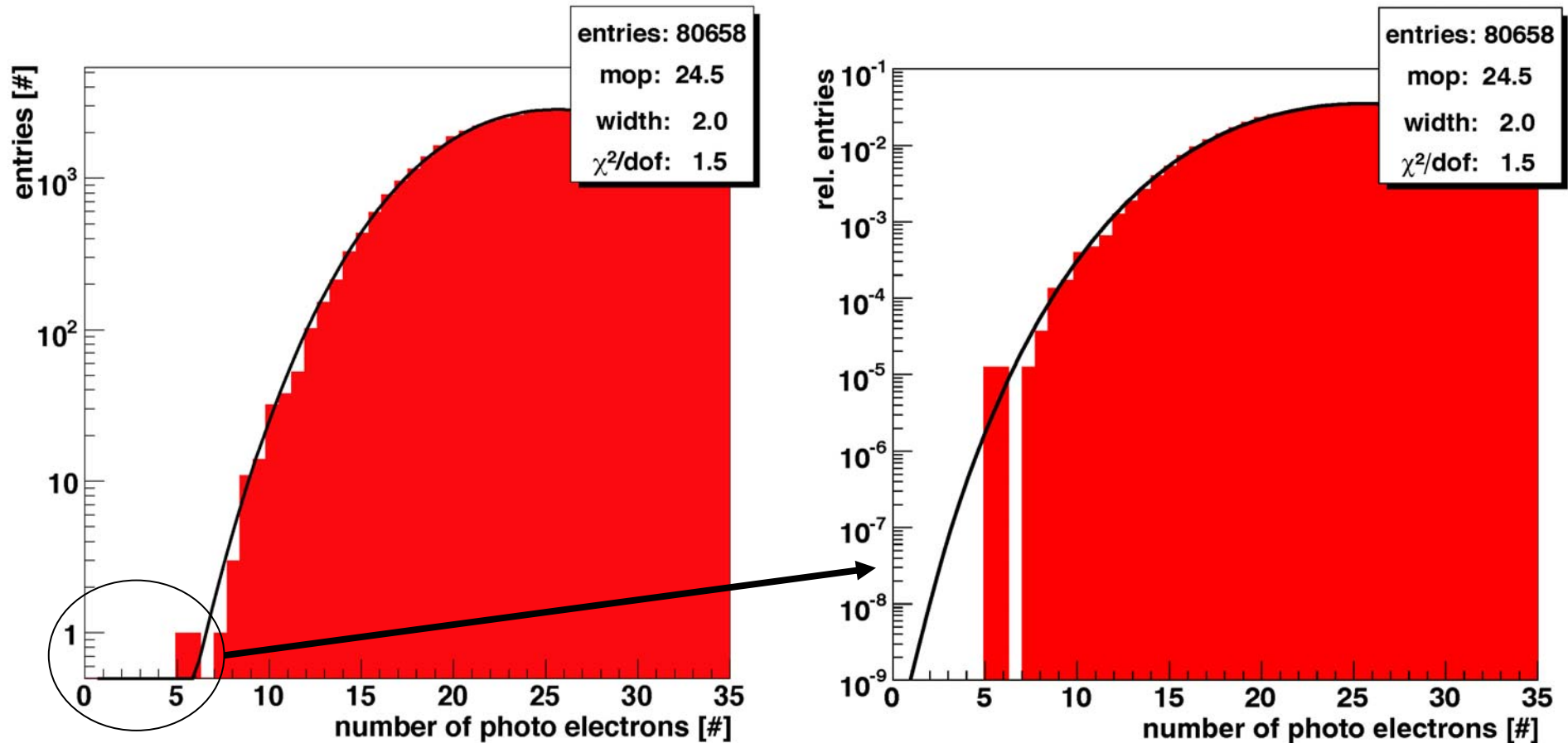


0 missed out of 80658 triggers



ACC: First flight panel in cosmic test stand

0 missed out of 80658 triggers
and now testbeam at CERN



ACC Testbeam: T9 East Area Protons 10 GeV



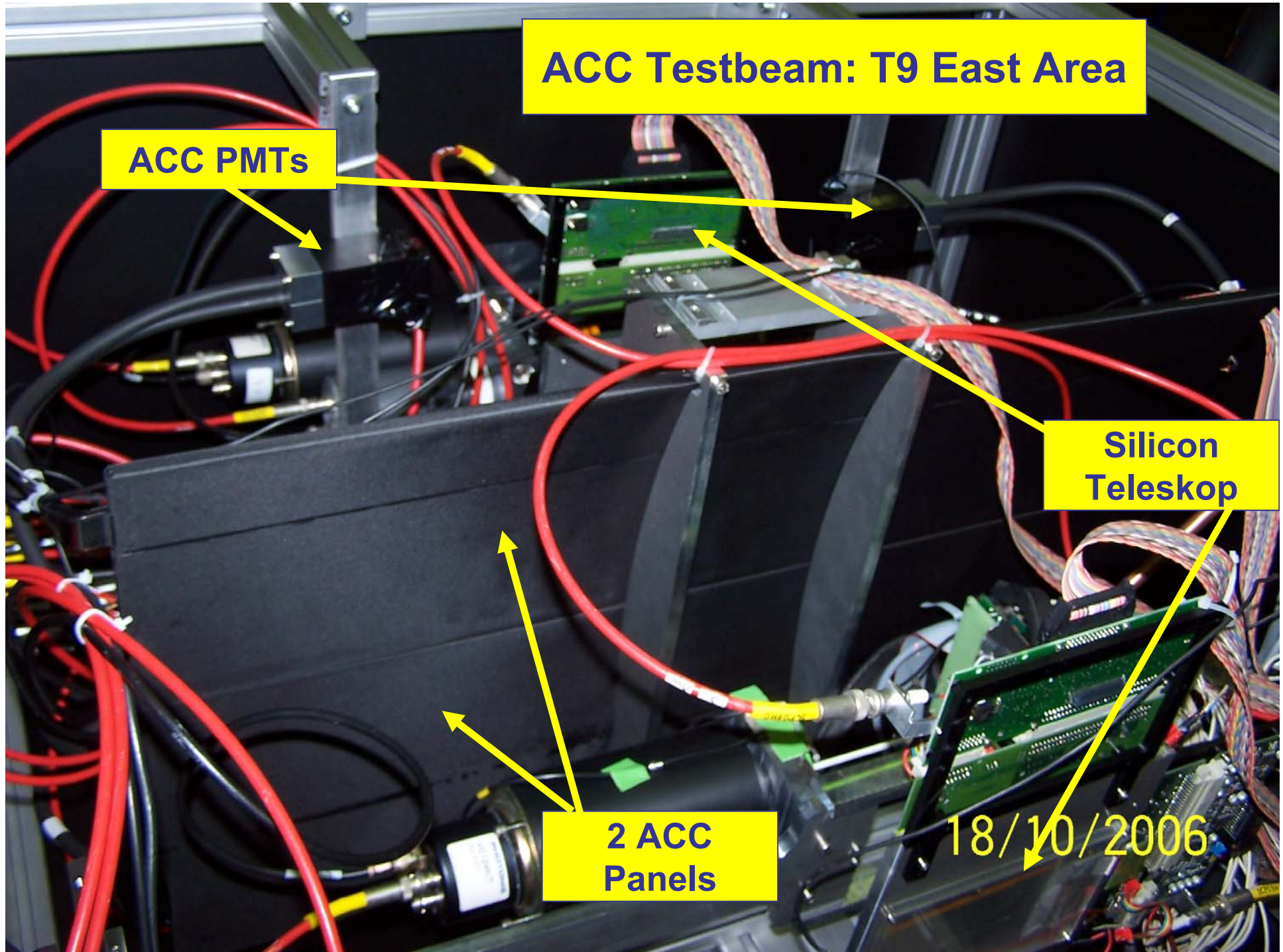
ACC Testbeam: T9 East Area

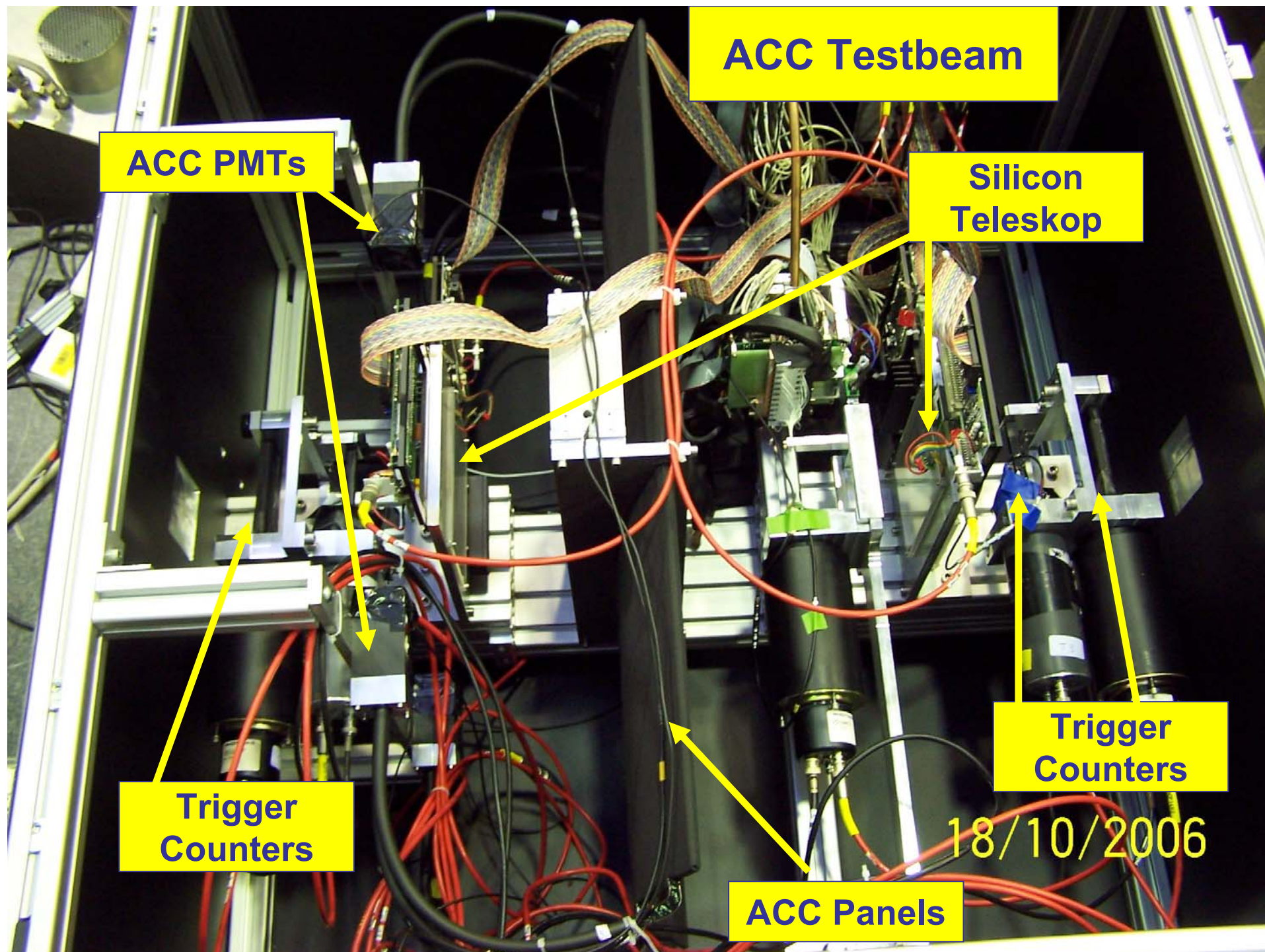
ACC PMTs

Silicon
Teleskop

2 ACC
Panels

18/10/2006





ACC Testbeam

ACC PMTs

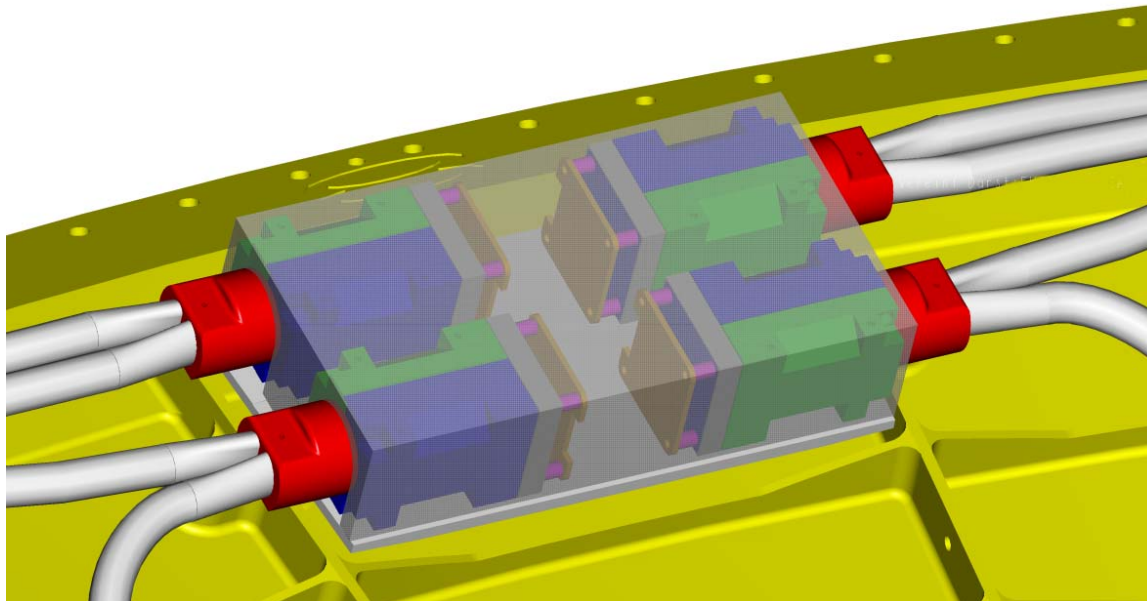
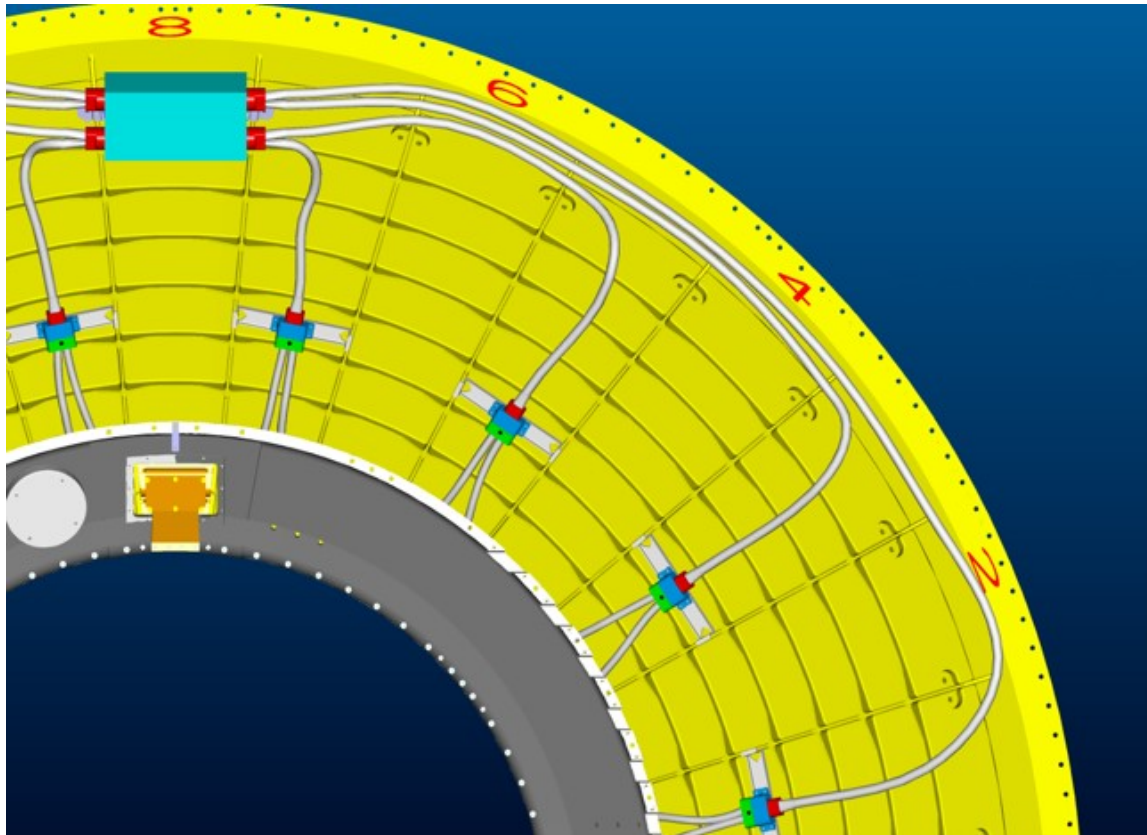
**Silicon
Teleskop**

**Trigger
Counters**

**Trigger
Counters**

ACC Panels

18/10/2006



ACC System Status

- All flight components in hand
- Production of flight panels has started
- Optimization of clear fiber cable couplings is ongoing till end Nov. 06
- Production of PMT boxes start Dec. 06
- ACC System will be delivered May 07 to CERN for integration into AMS-02.