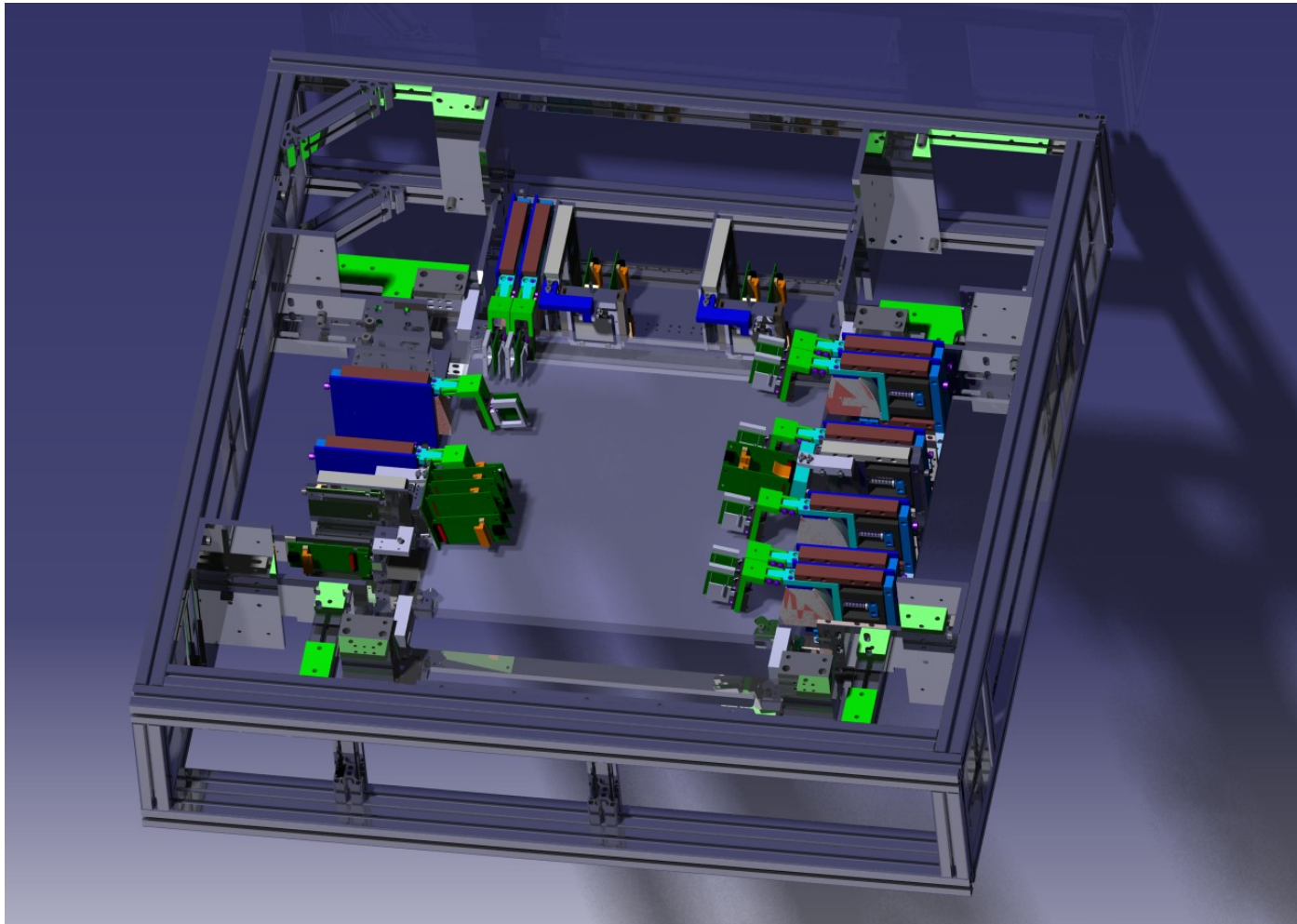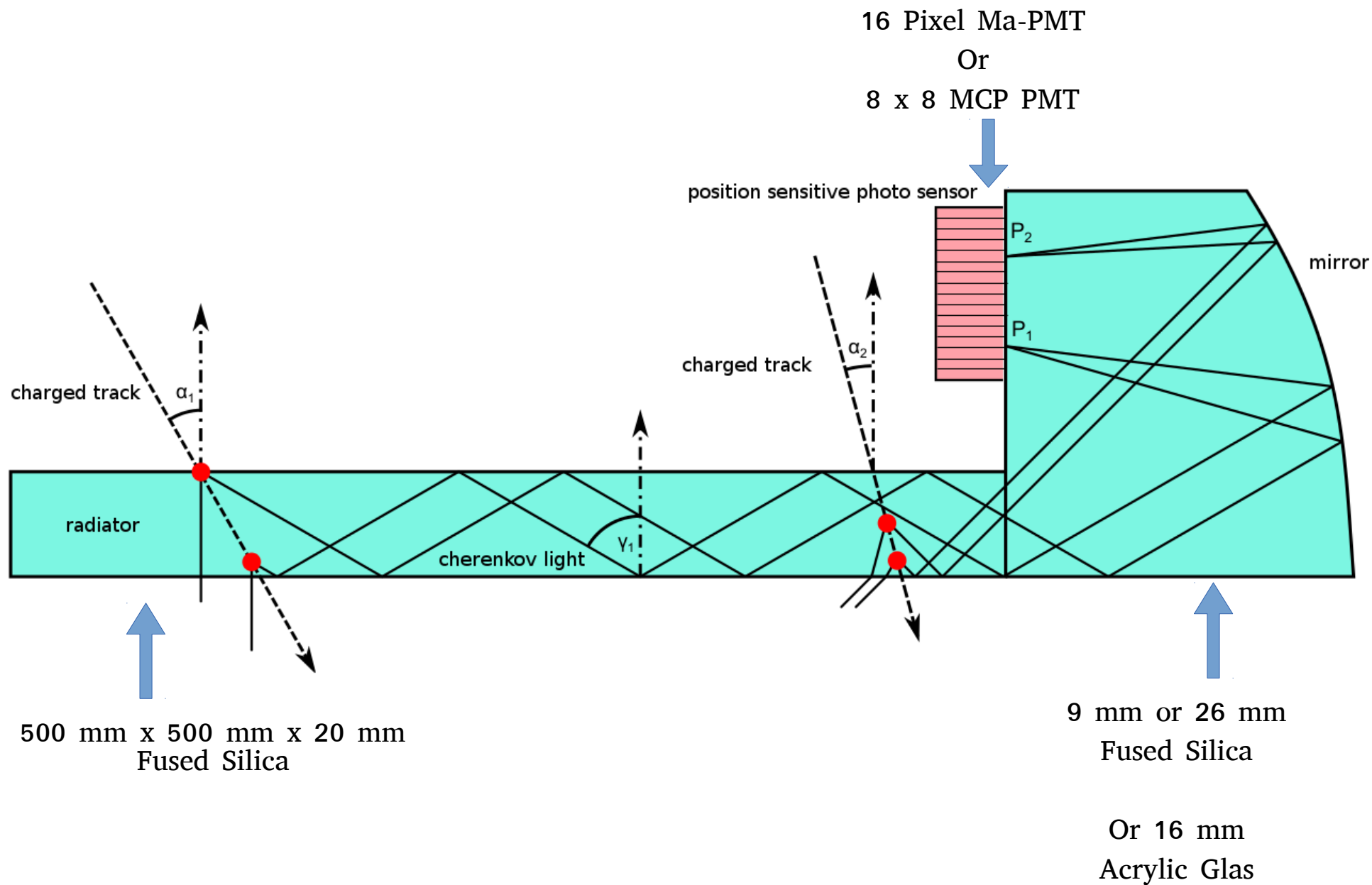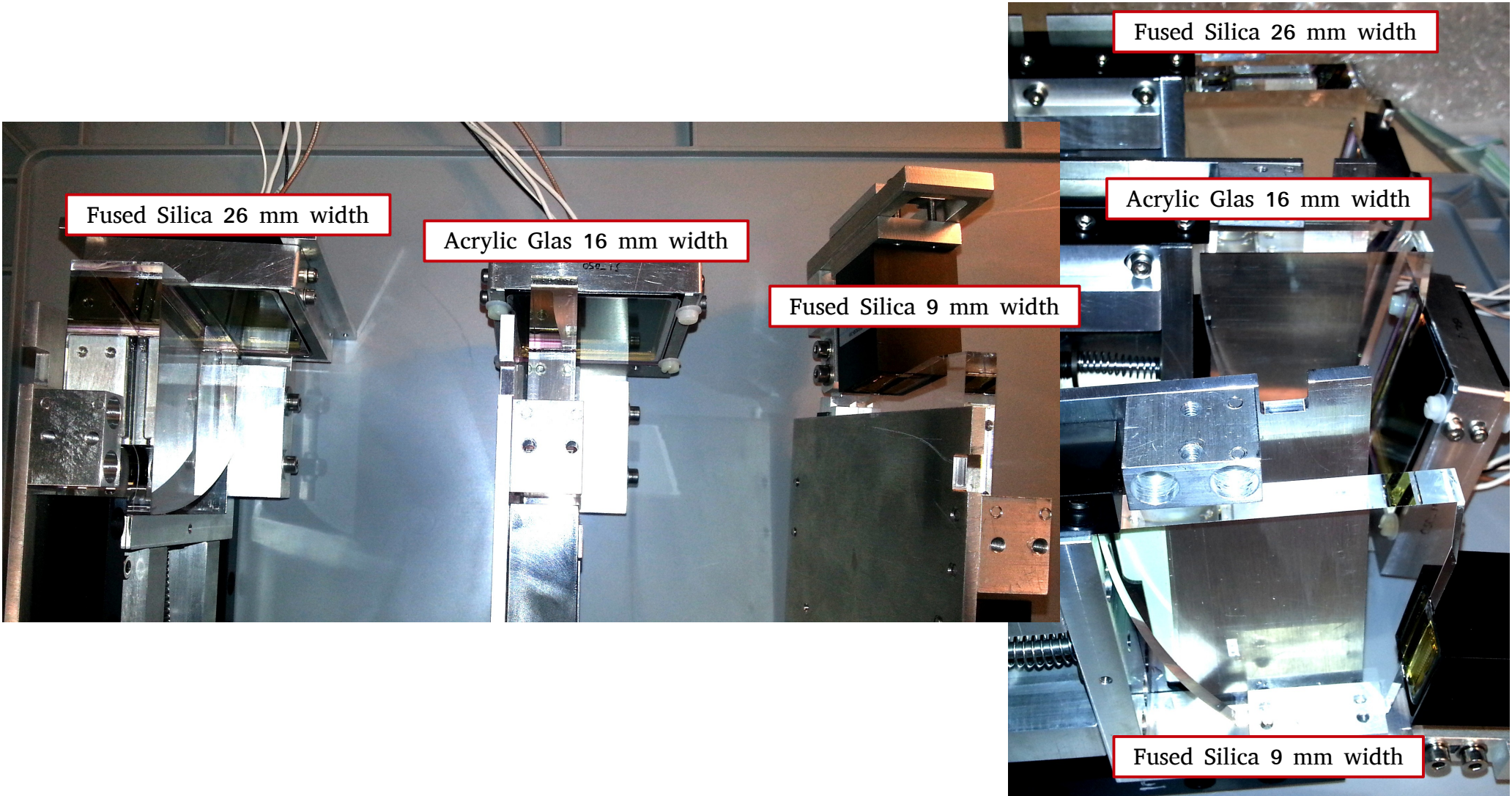# The next DISC-DIRC Prototype

Working Principle
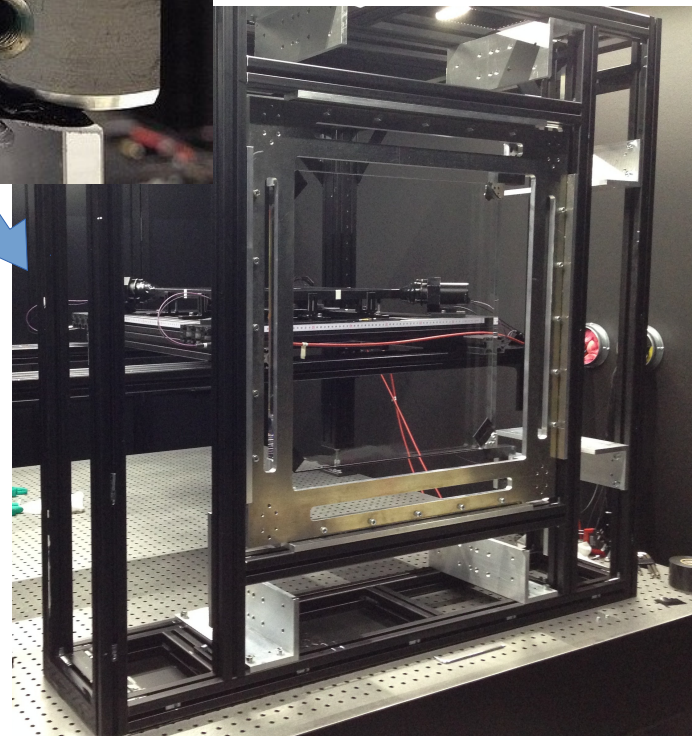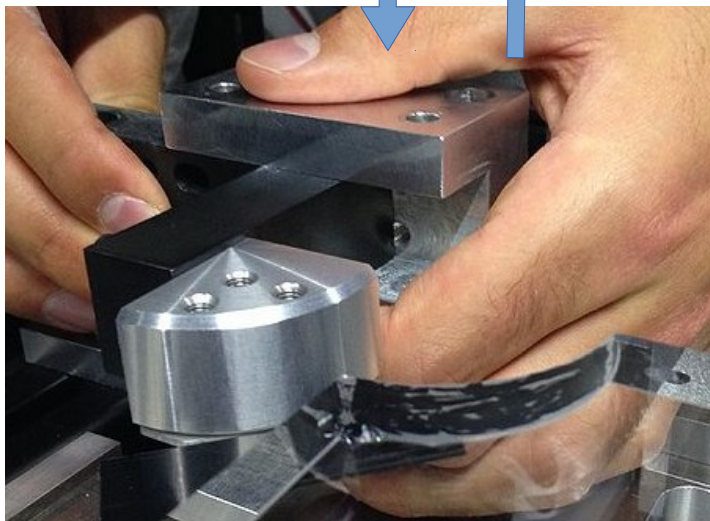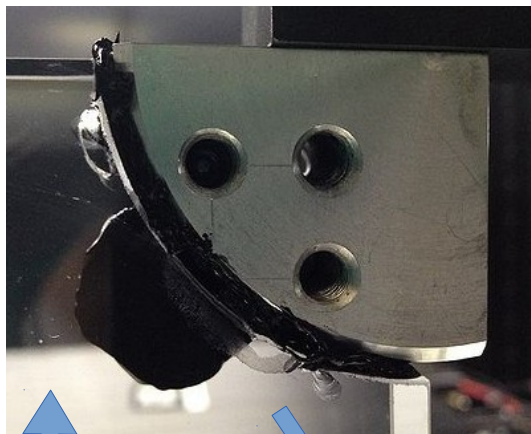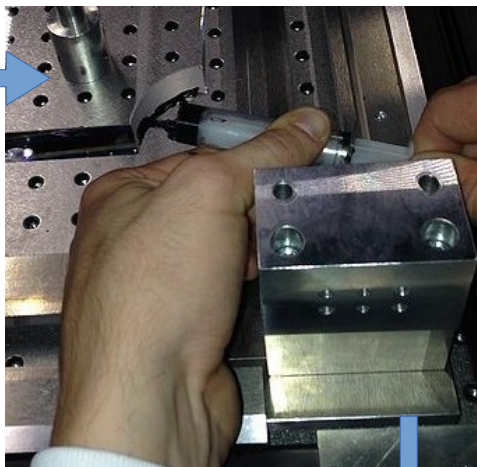

16 Pixel Ma-PMT
Or
8 x 8 MCP PMT

position sensitive photo sensor

P_2

P_1

mirror

charged track α_1

charged track α_2

radiator

cherenkov light γ_1

500 mm x 500 mm x 20 mm
Fused Silica

9 mm or 26 mm
Fused Silica

Or **16 mm**
Acrylic Glas

Focusing Light Guides

Fused Silica 26 mm width

Fused Silica 26 mm width

Acrylic Glas 16 mm width

Acrylic Glas 16 mm width

Fused Silica 9 mm width

Fused Silica 9 mm width
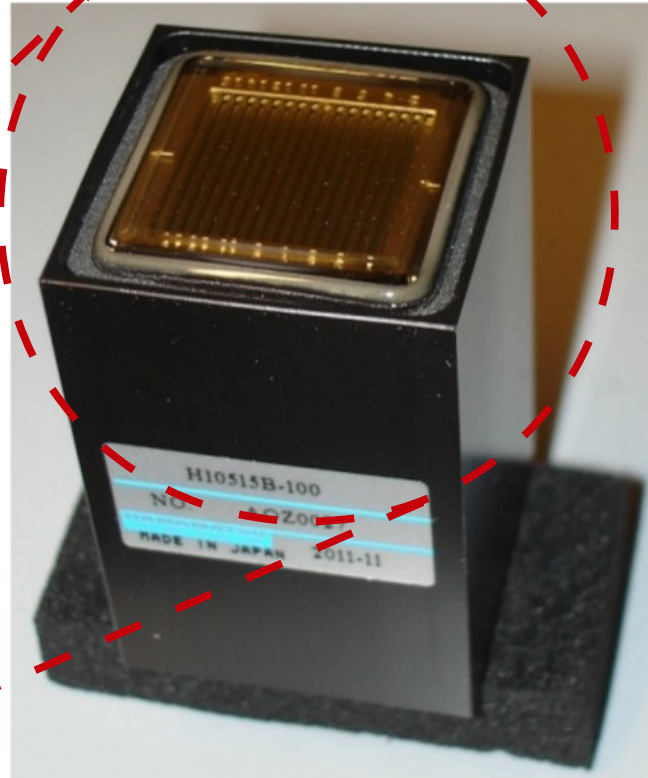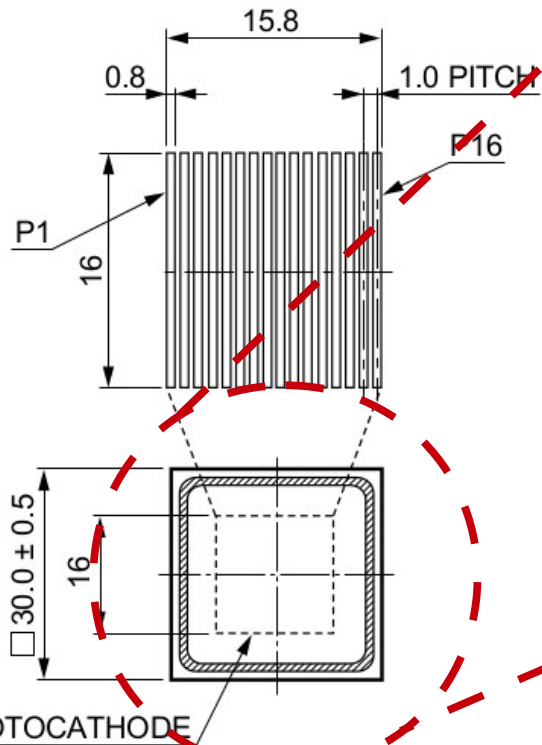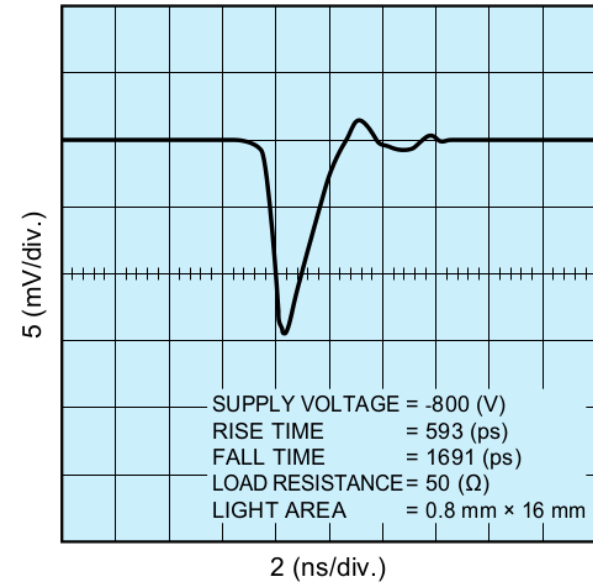
Radiator Mounting

500mm x 500mm x 20mm
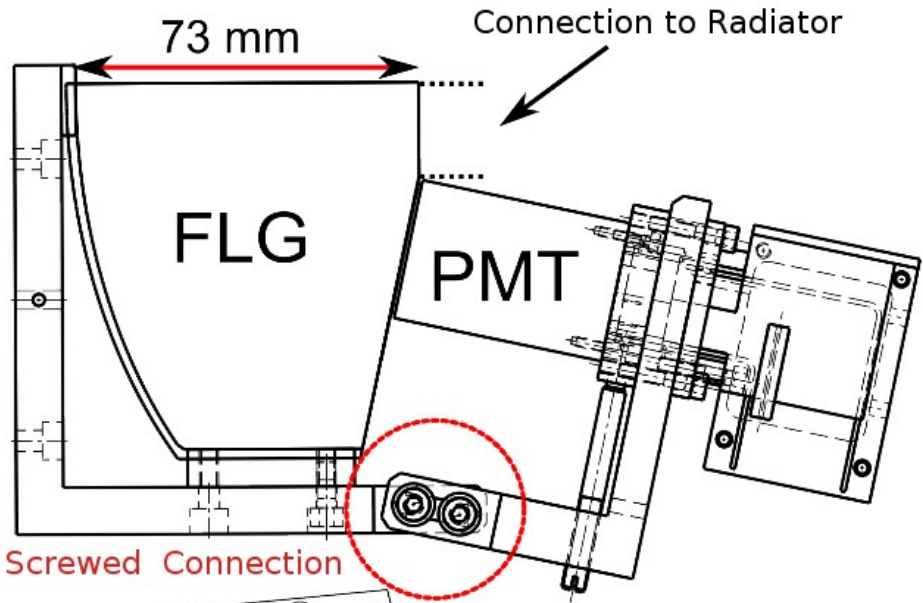Fused Silica
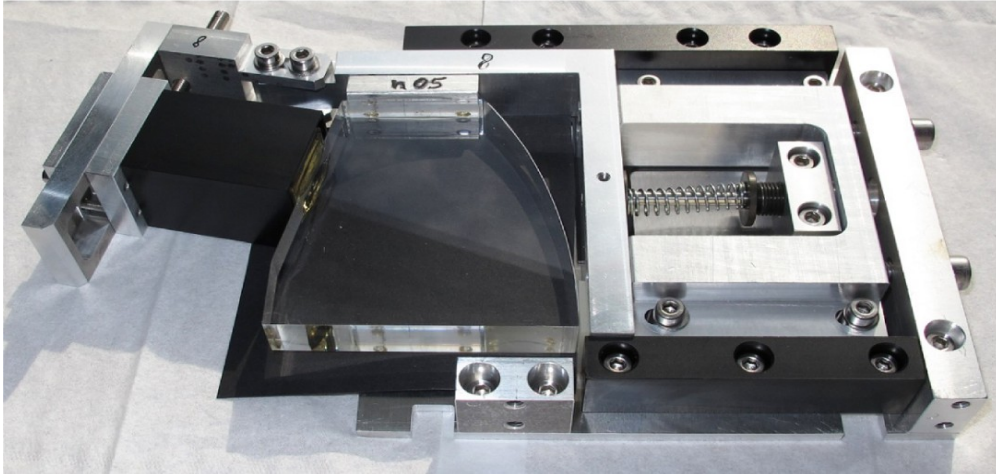
Ma-PMTs
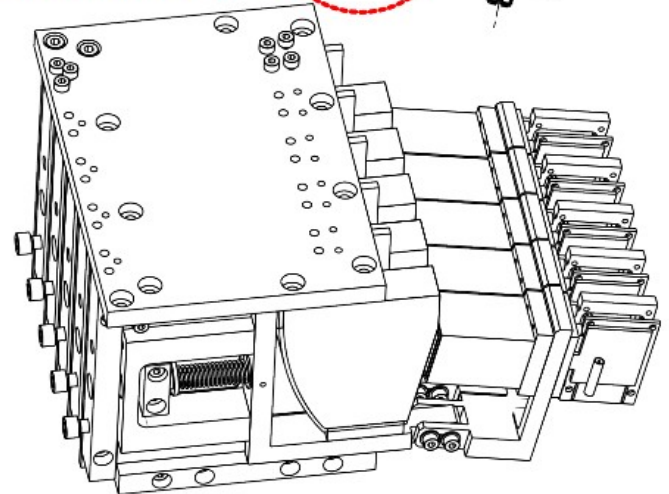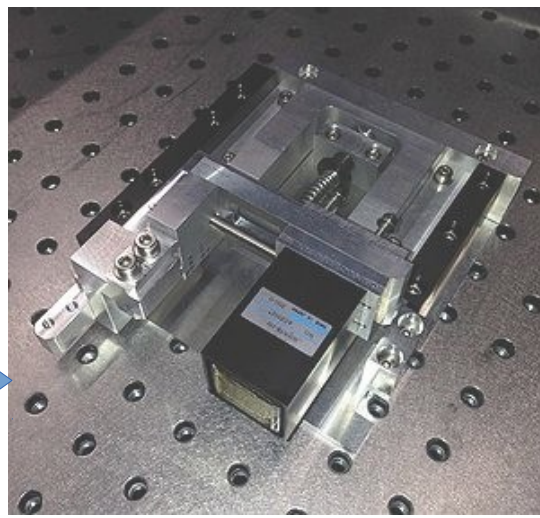
A total **22** of these Sensors were used

16 stripes

They were
1) Directly coupled to the radiator
2) Attached to a FLG out of acrylic glass
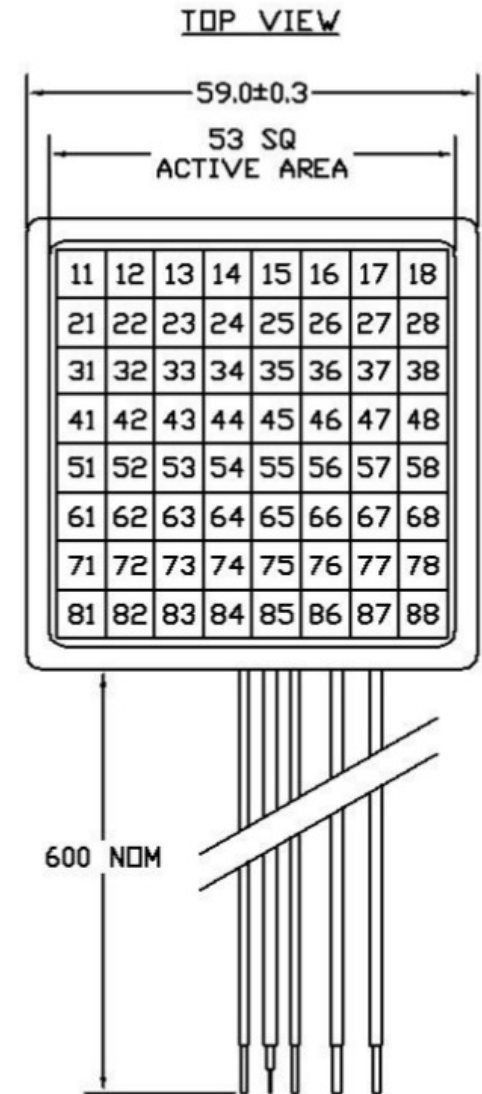3) Attached to a FLG out of fused silica
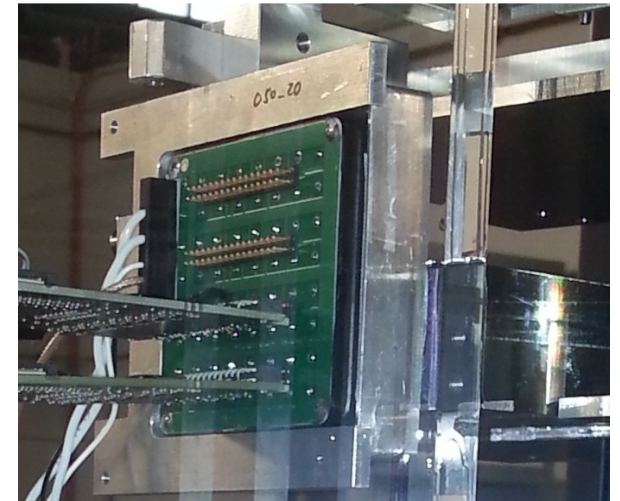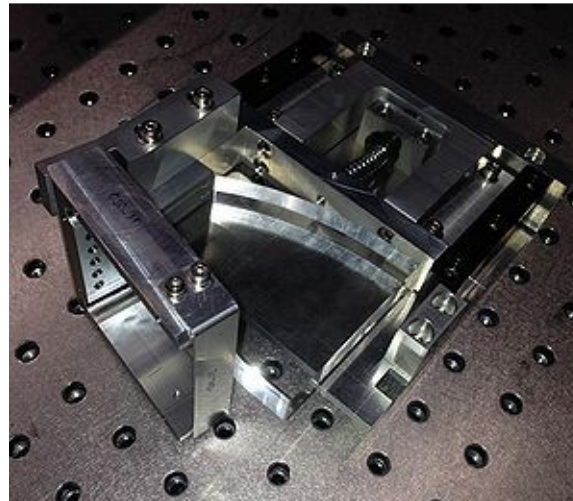
Ma-PMTs

73 mm

Connection to Radiator

FLG

PMT

Screwed Connection

Direct coupling to the radiator

8x8 Planacon MPC-PMT

- 8 x 8 array, 5.9 / 6.5 mm (size / pitch)
- Active area 53 x 53 mm

- Directly coupled to the radiator
- Attached to a FLG out of acrylic glass
- Attached to a FLG out of fused silica

TOP VIEW

59.0±0.3

53 SQ
ACTIVE AREA

11	12	13	14	15	16	17	18
21	22	23	24	25	26	27	28
31	32	33	34	35	36	37	38
41	42	43	44	45	46	47	48
51	52	53	54	55	56	57	58
61	62	63	64	65	66	67	68
71	72	73	74	75	76	77	78
81	82	83	84	85	86	87	88

600 NOM

8x8 Planacon MPC-PMT

Readout

Scaled Sketch

500 mm x 500 mm x 20 mm

Plexiglas FLG · Plexiglas FLG · Ma PMT · Quartz FLG · Quartz FLG · Plexiglas FLG · Plexiglas FLG · Plexiglas FLG · MCP · Plexiglas FLG · Plexiglas FLG · MCP

Plexiglas FLG · Plexiglas FLG · Plexiglas FLG · Plexiglas FLG · Plexiglas FLG · Plexiglas FLG · Plexiglas FLG · Plexiglas FLG · Plexiglas FLG · Plexiglas FLG · Plexiglas FLG · Plexiglas FLG · Plexiglas FLG
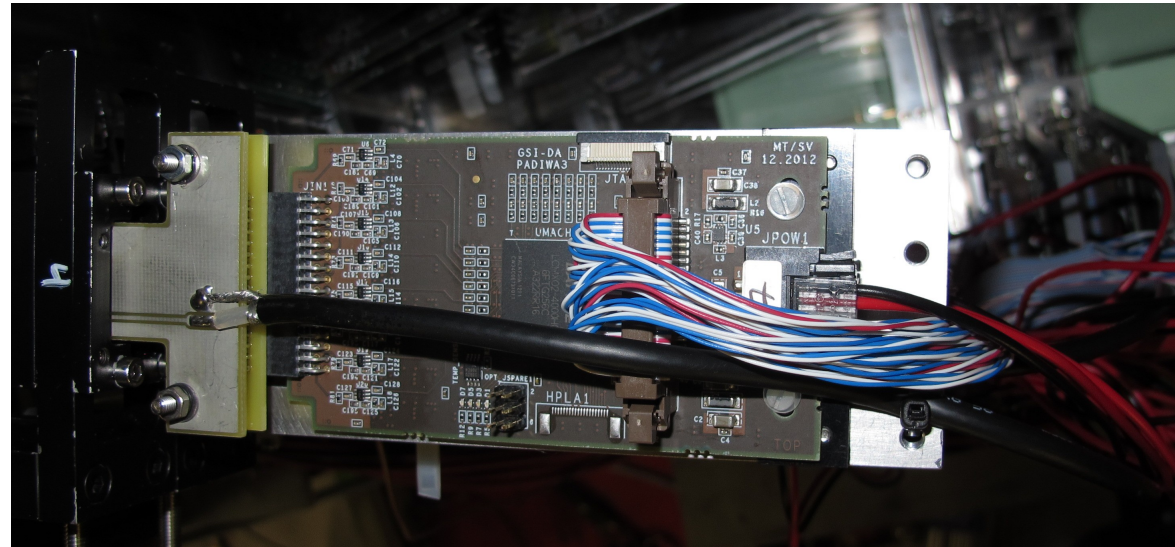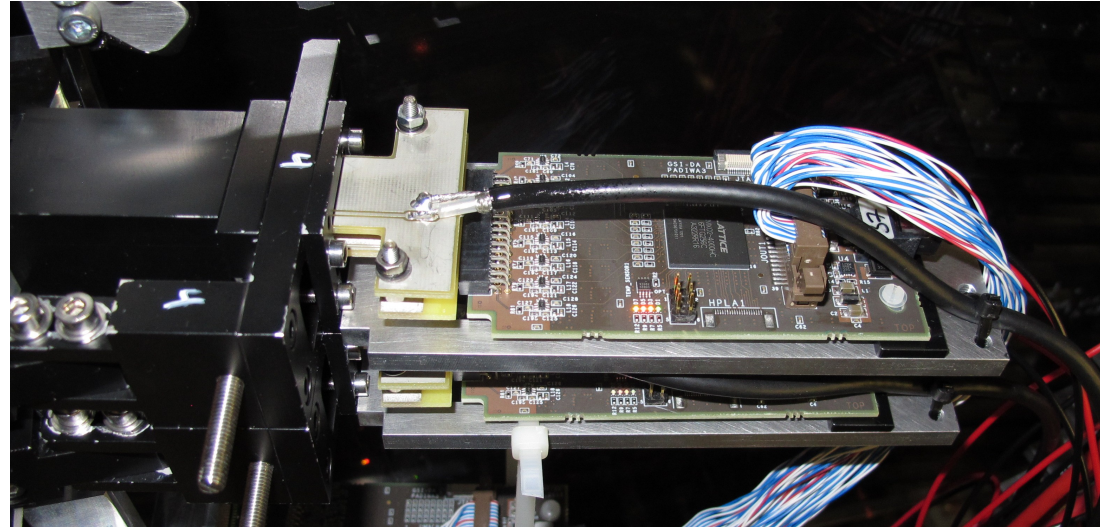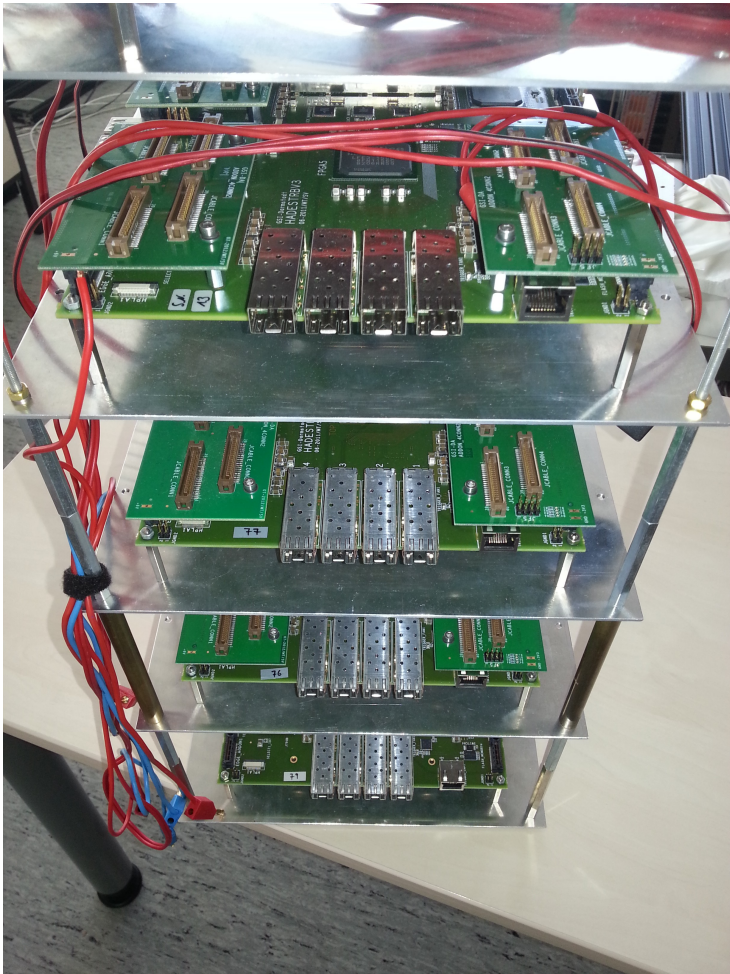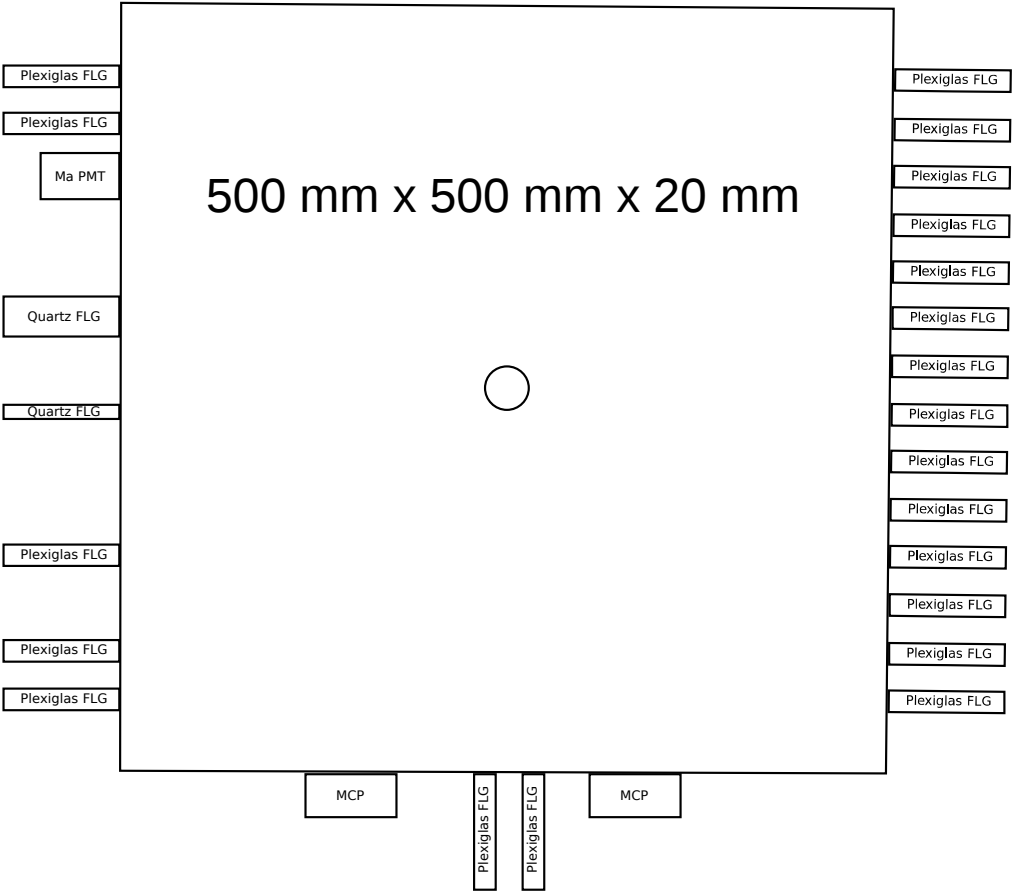
Testbeam Setup 04.11.2013   view upstream

Beam · y · x

14 Steckplätze pro Seite
30 vorhandene PaDiWas

1 PaDiWa pro PMT
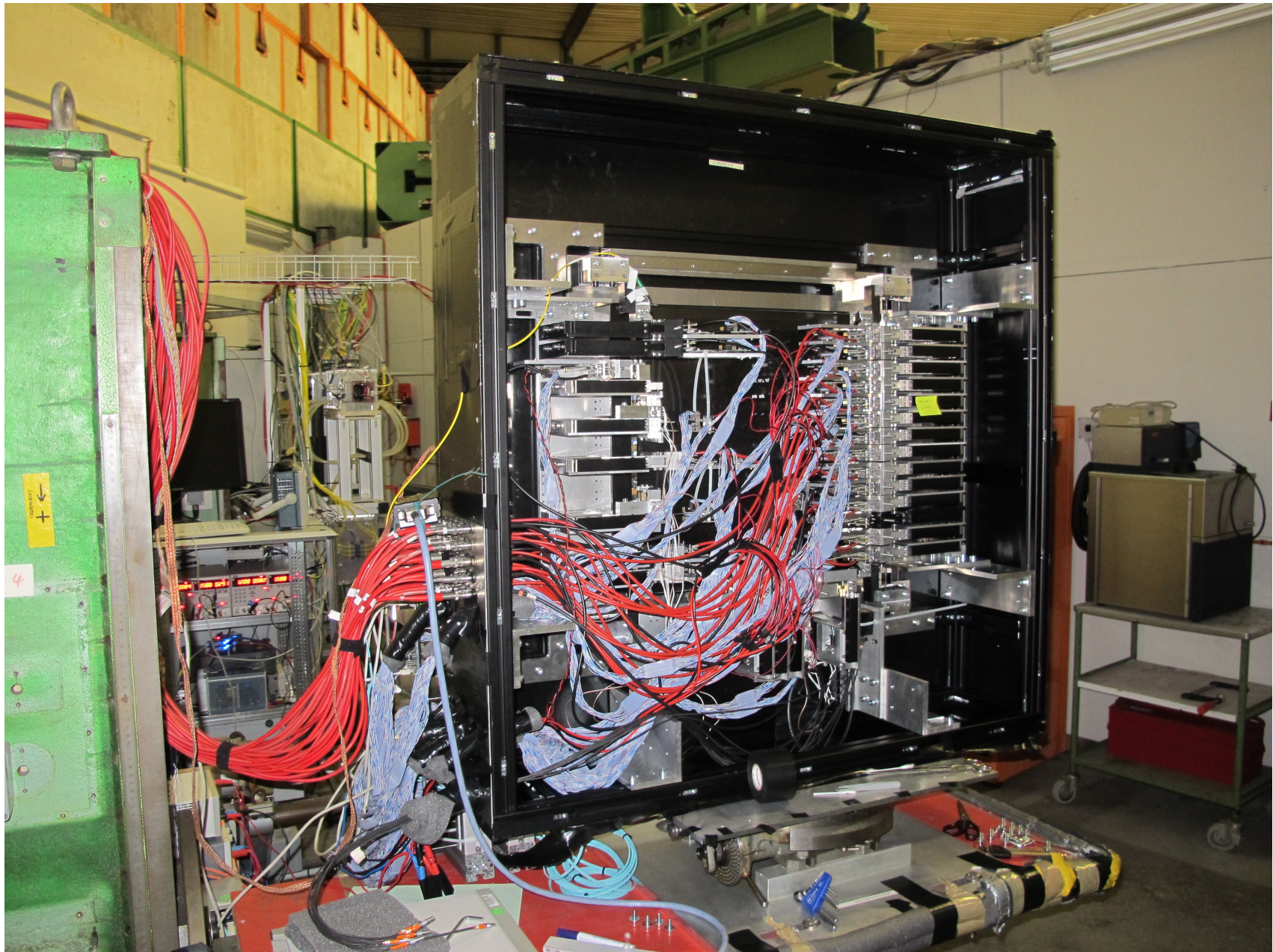2 PaDiWas pro MCP
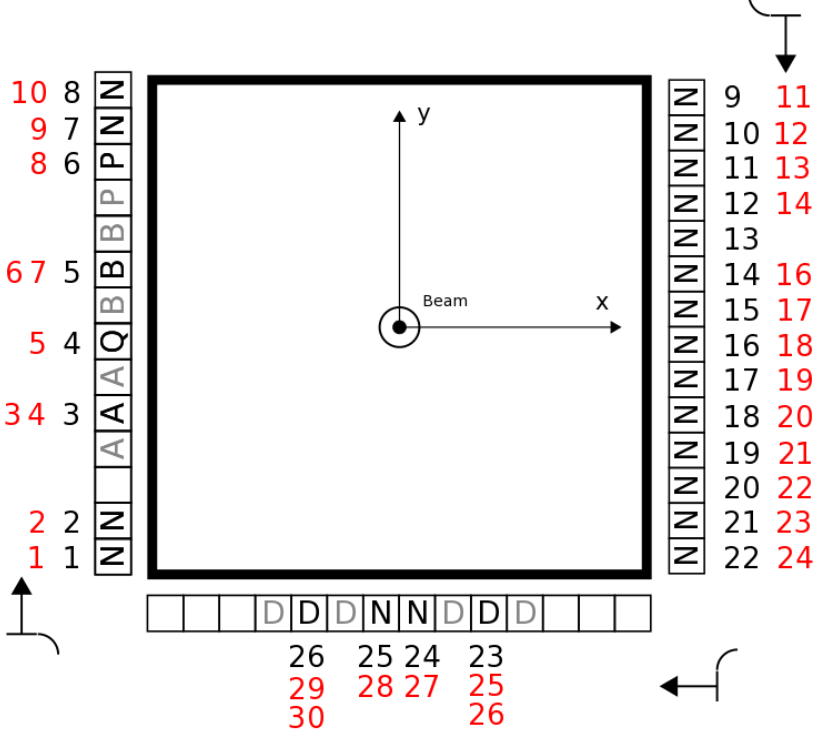
N Plexiglas FLG mit PMT
P PMT direkt
D MCP direkt
Q Quartz FLG mit PMT
A Plexiglas FLG mit MCP
B Quartz FLG mit MCP
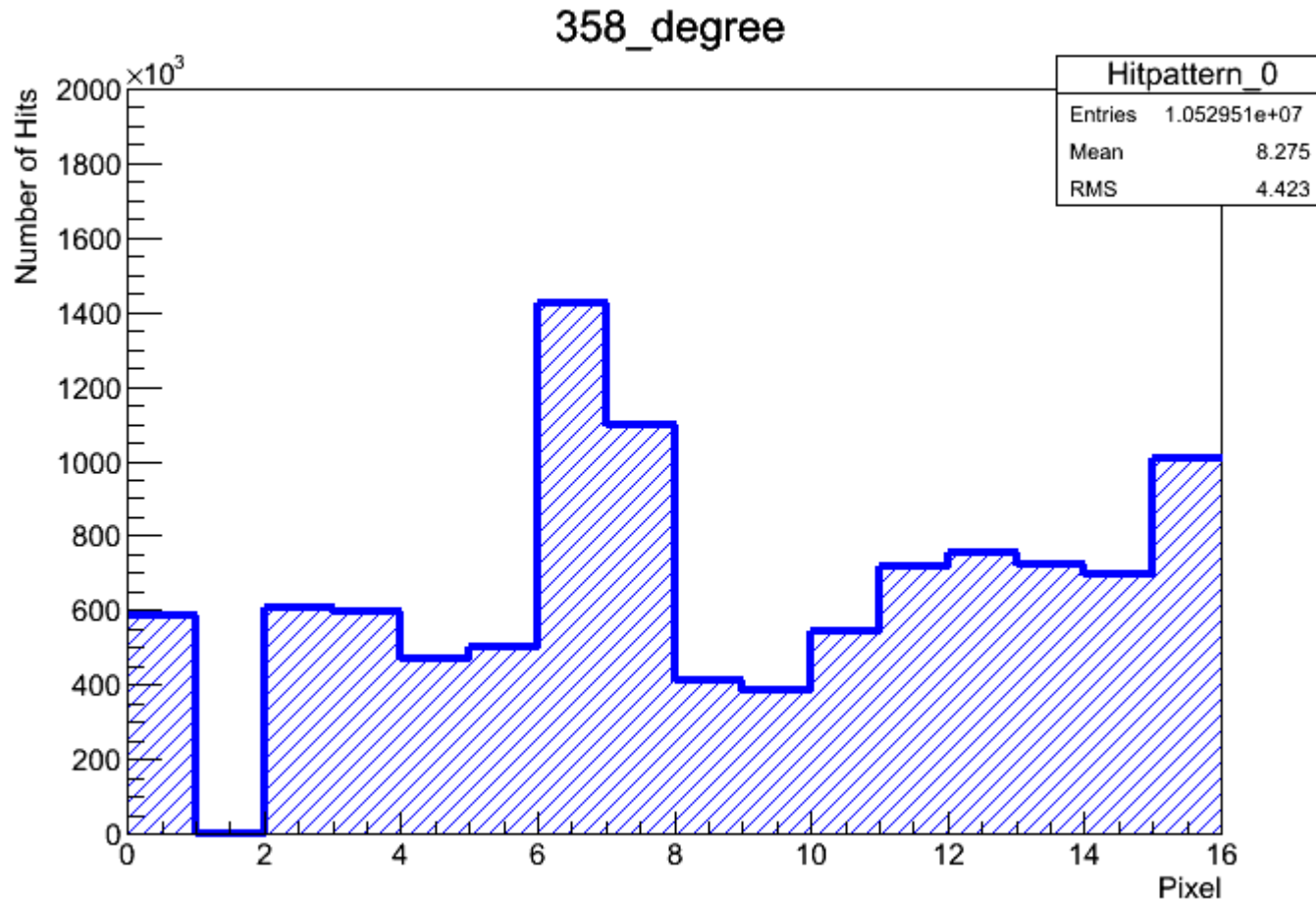X Passiv (Mechanik)

Pictures from the Beam Site
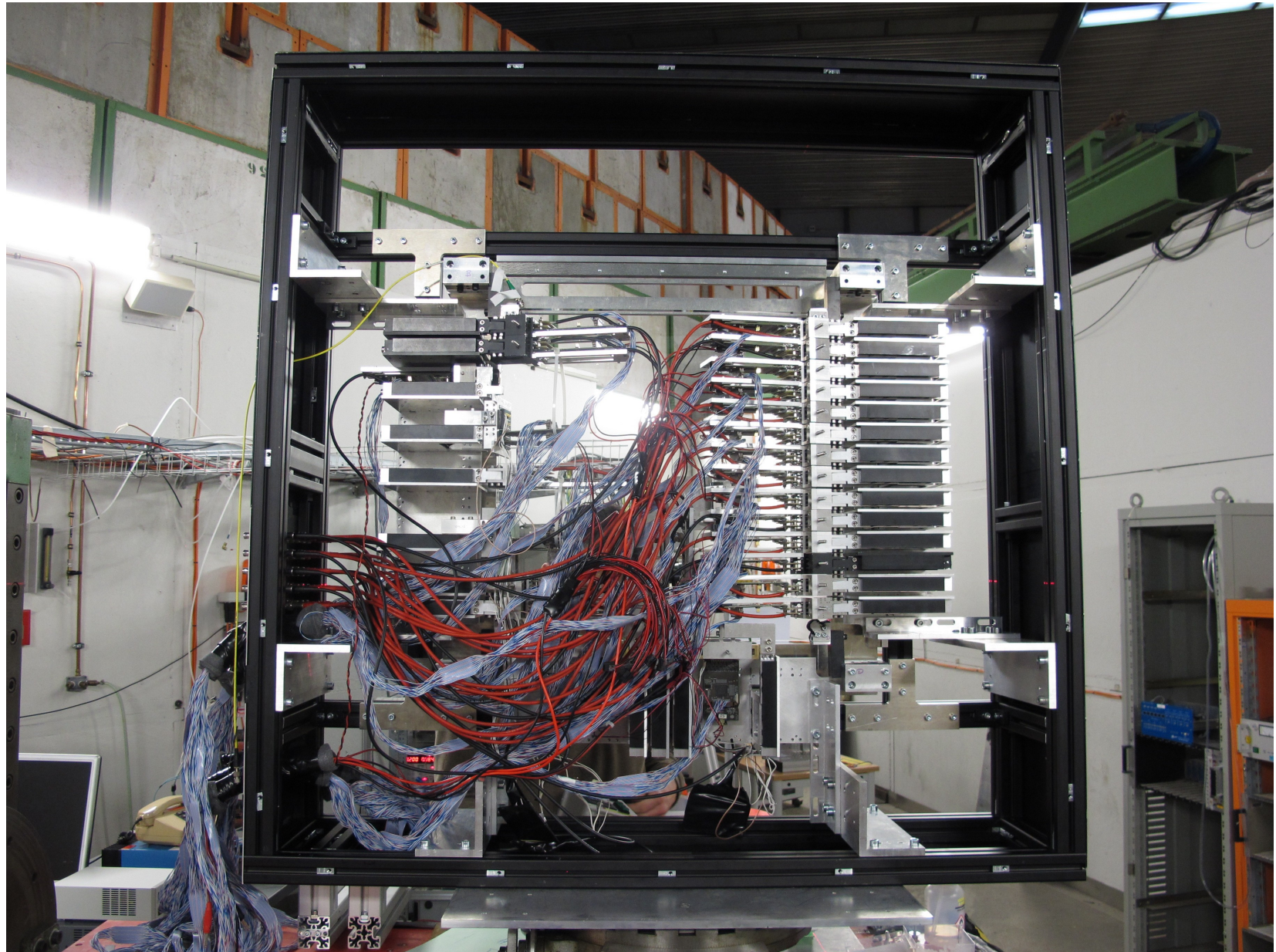
Pictures from the Beam Site

Results

- Hit distribution of the thin Quartz FLG with a MaPMT
  - Spectra are still unnormalized
  - Timing information unused so far

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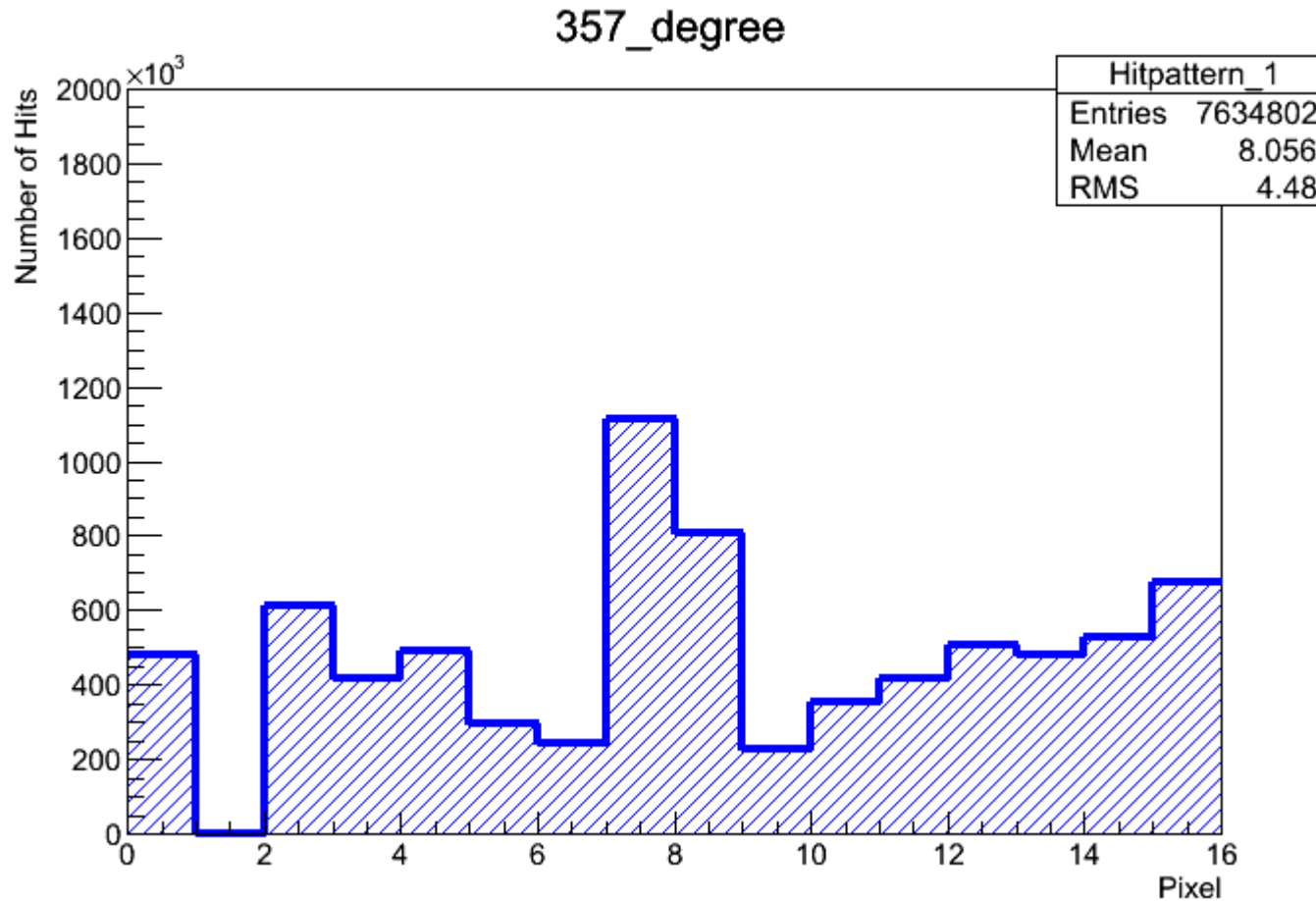 - Timing information unused so far

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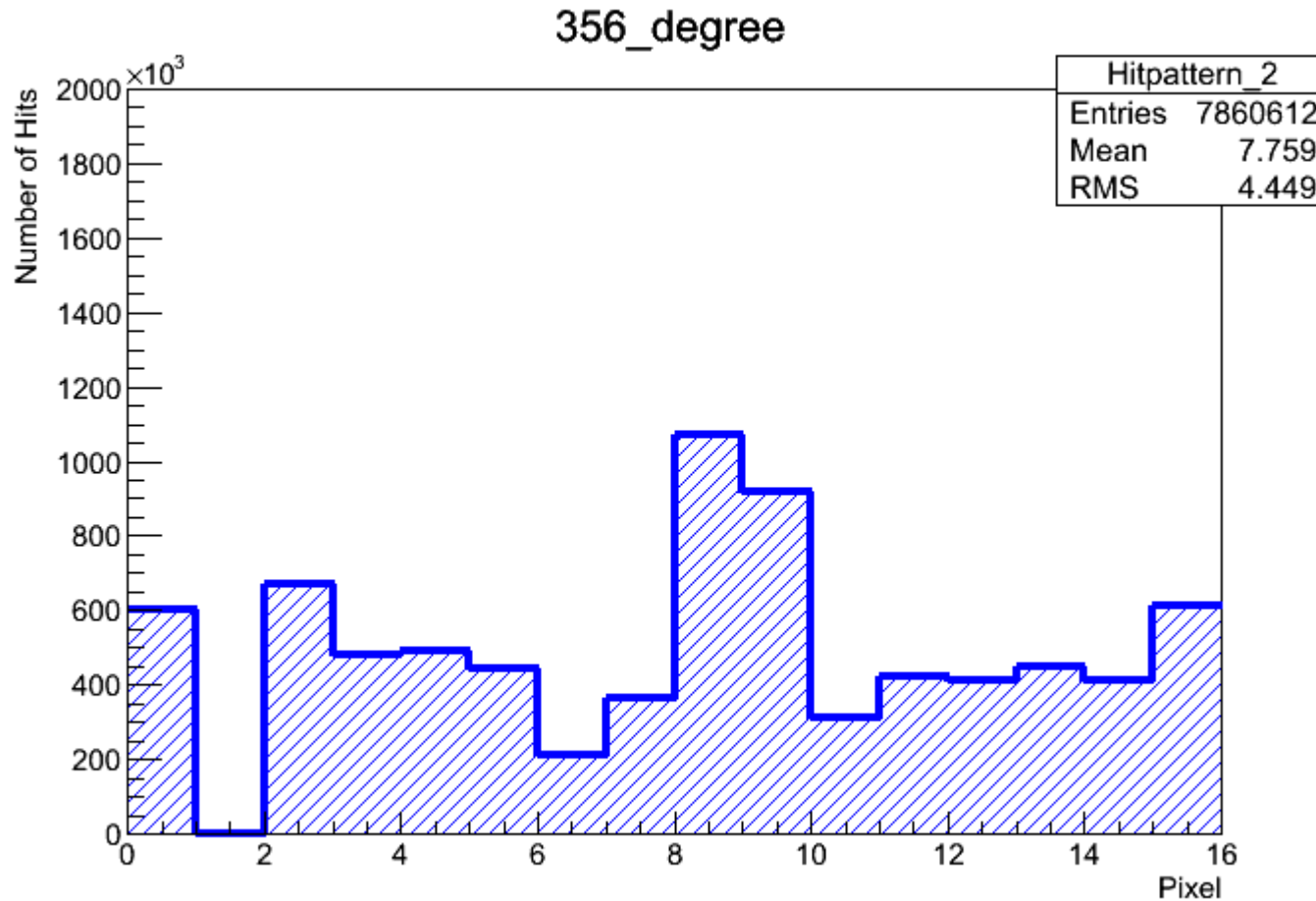 - Timing information unused so far

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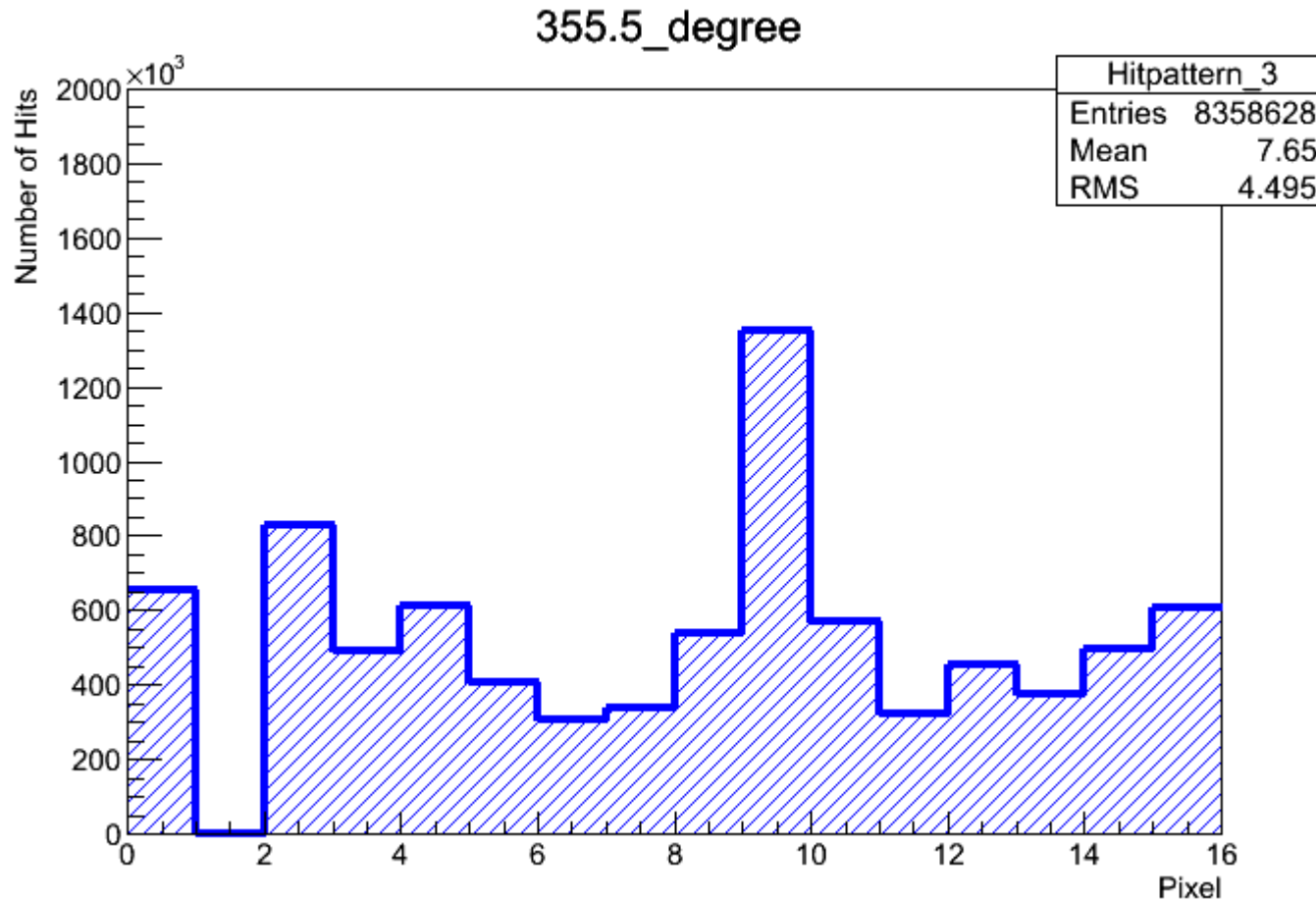
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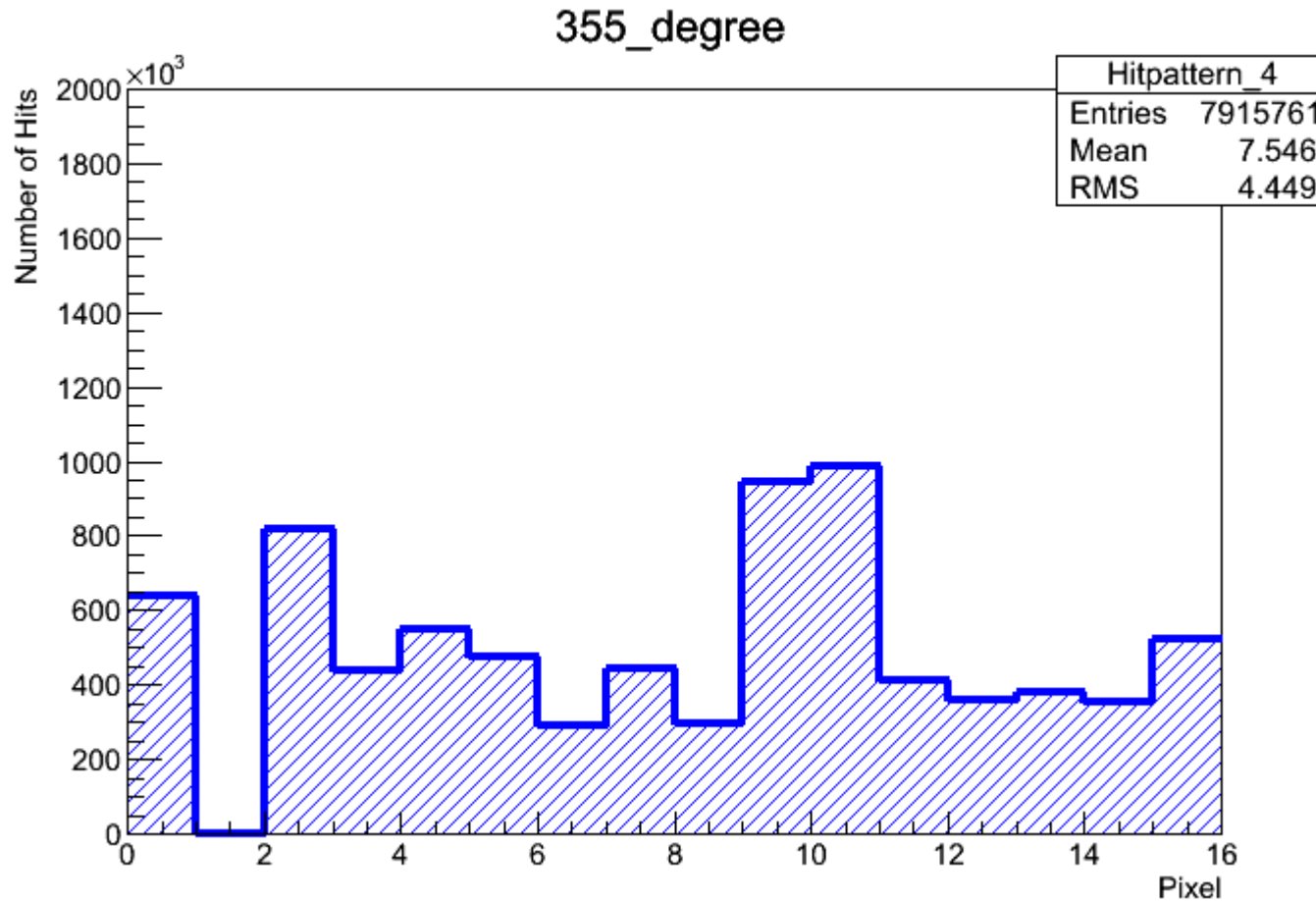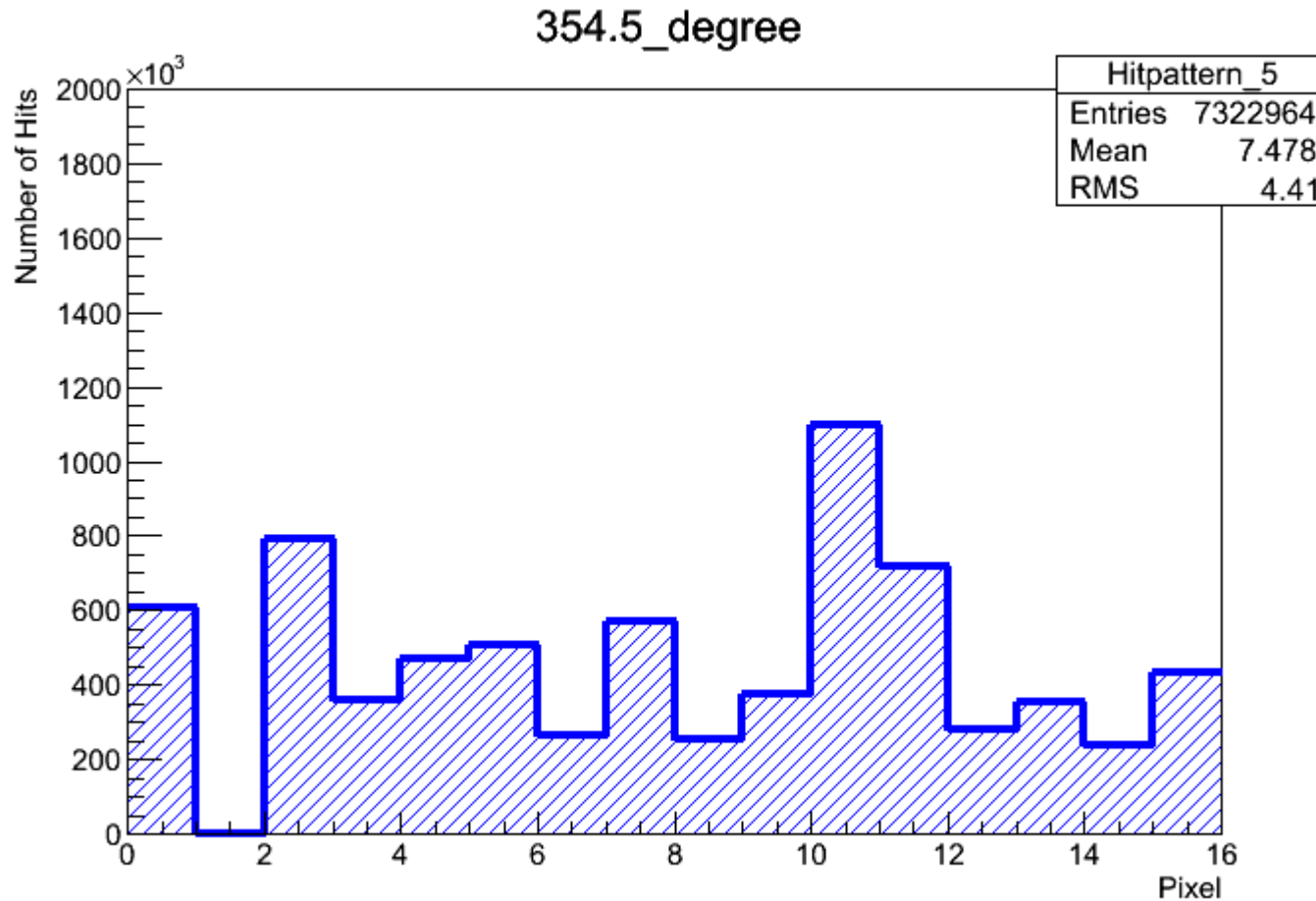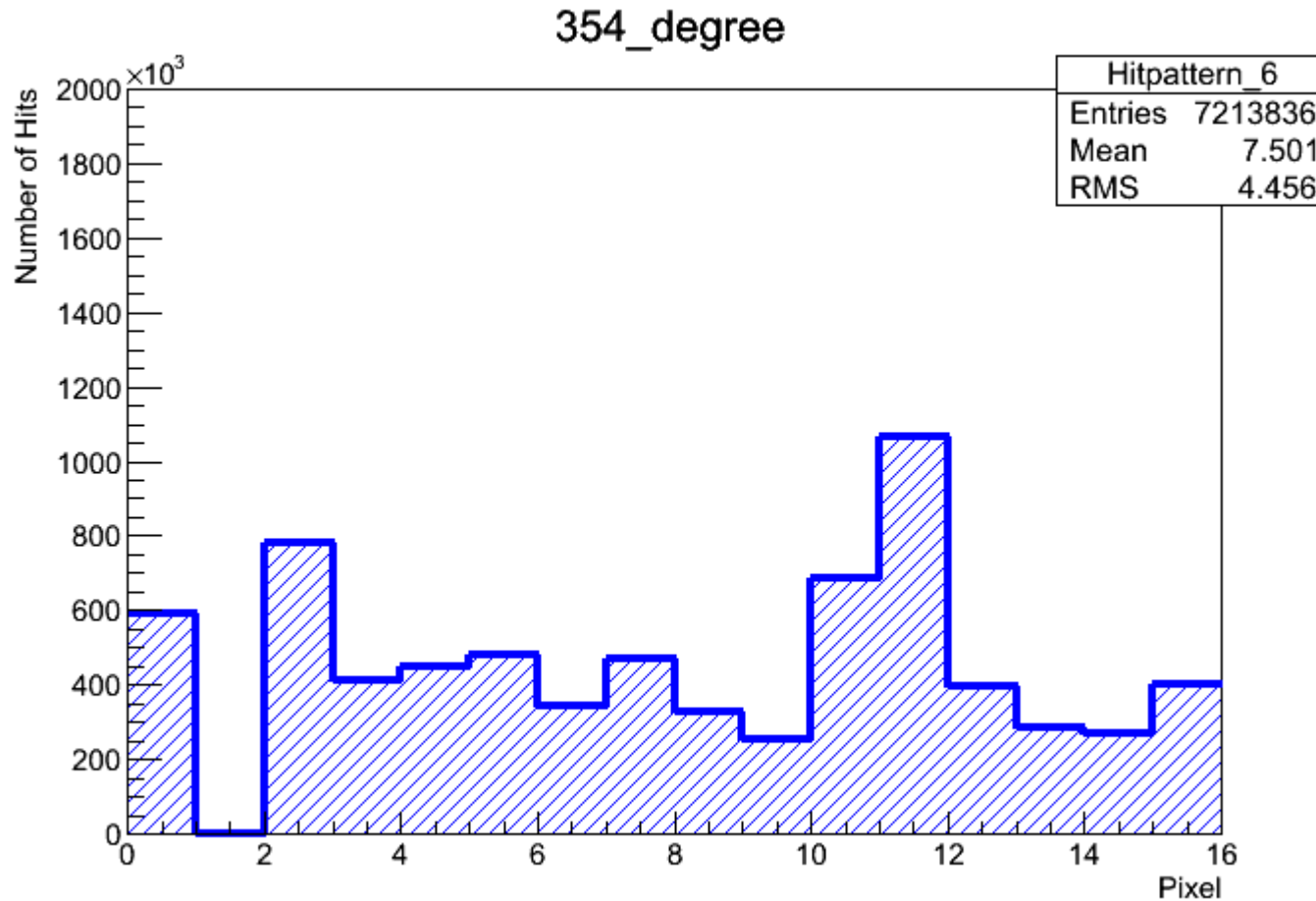   - Timing information unused so far

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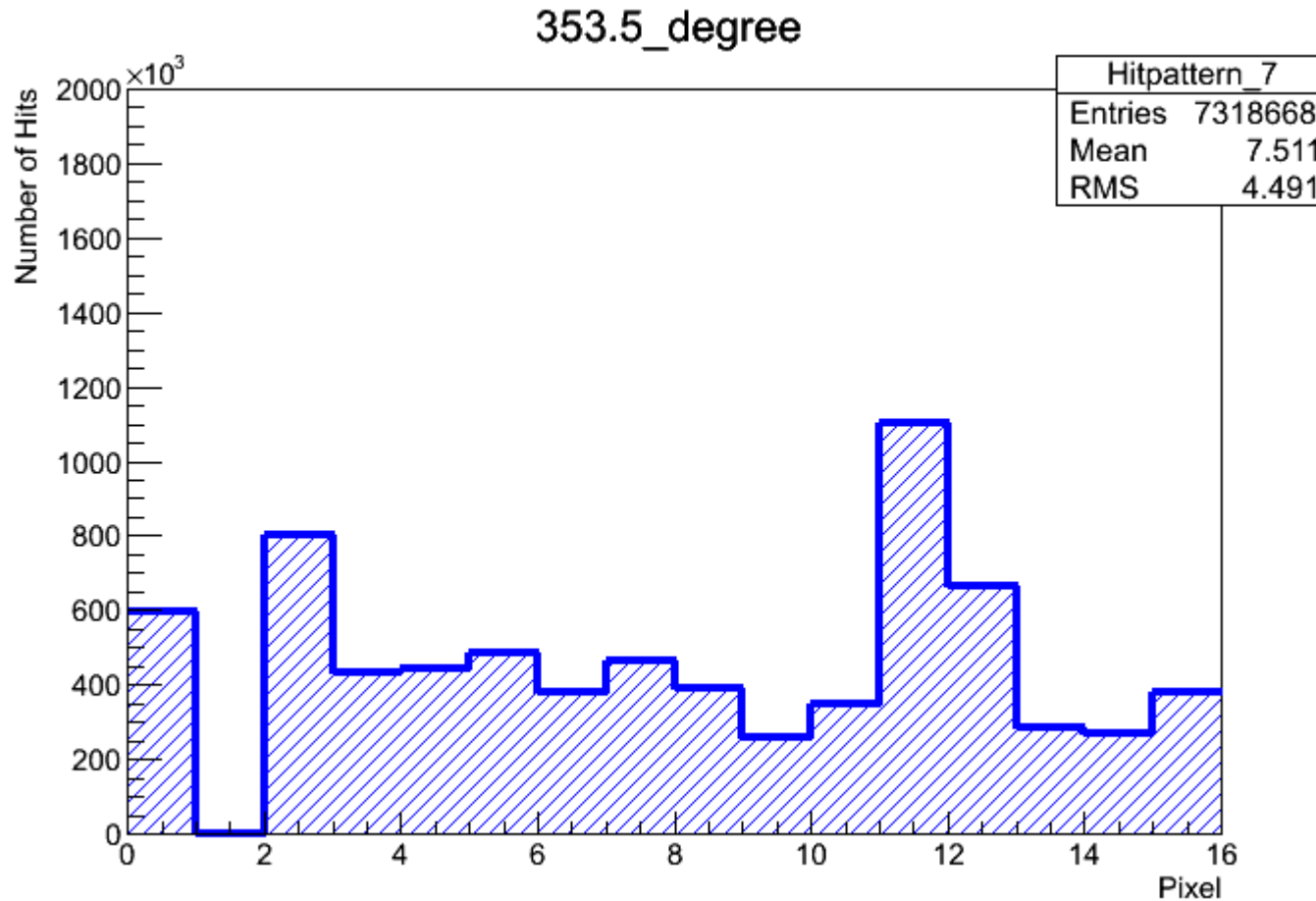 - Timing information unused so far

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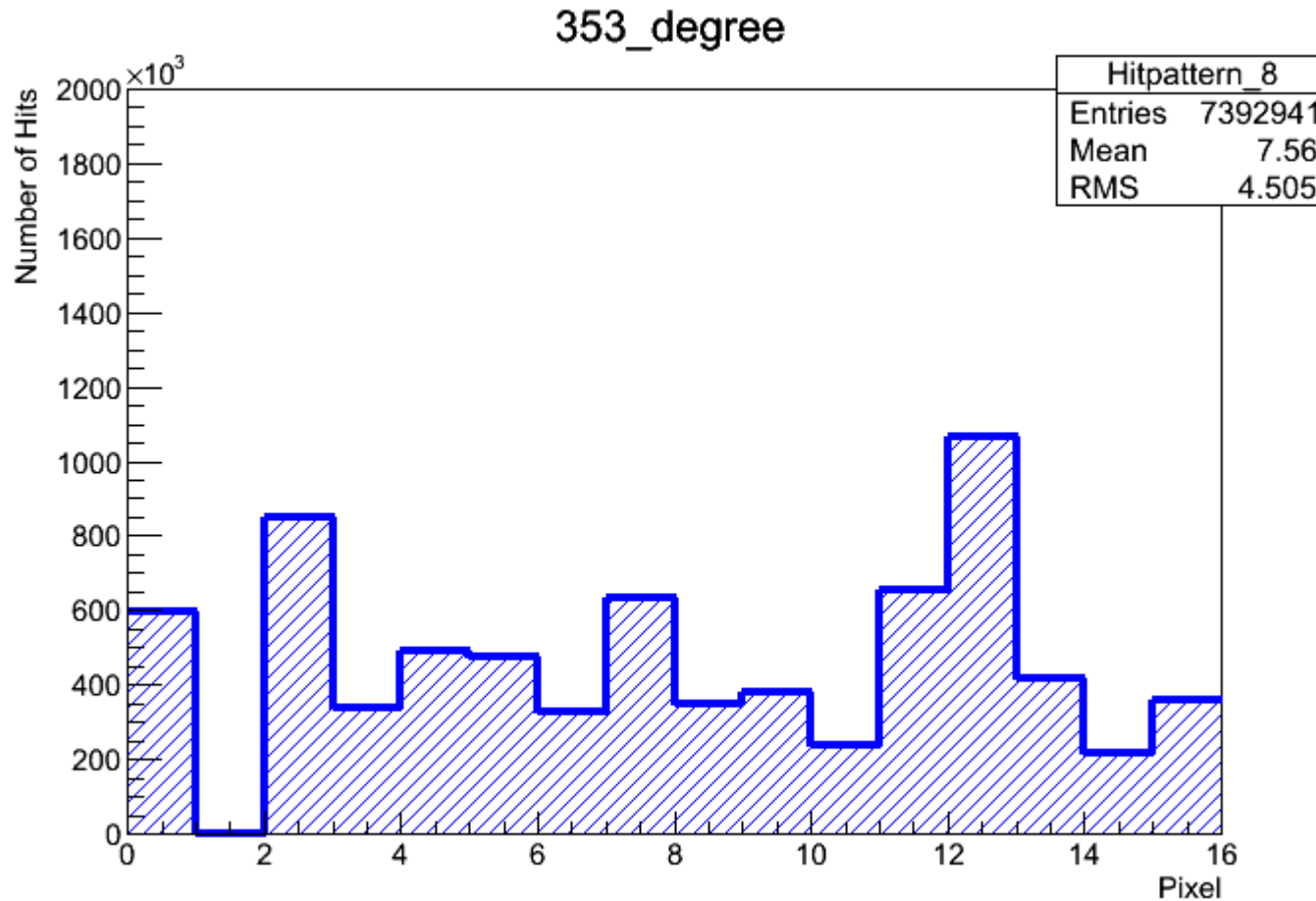 - Timing information unused so far

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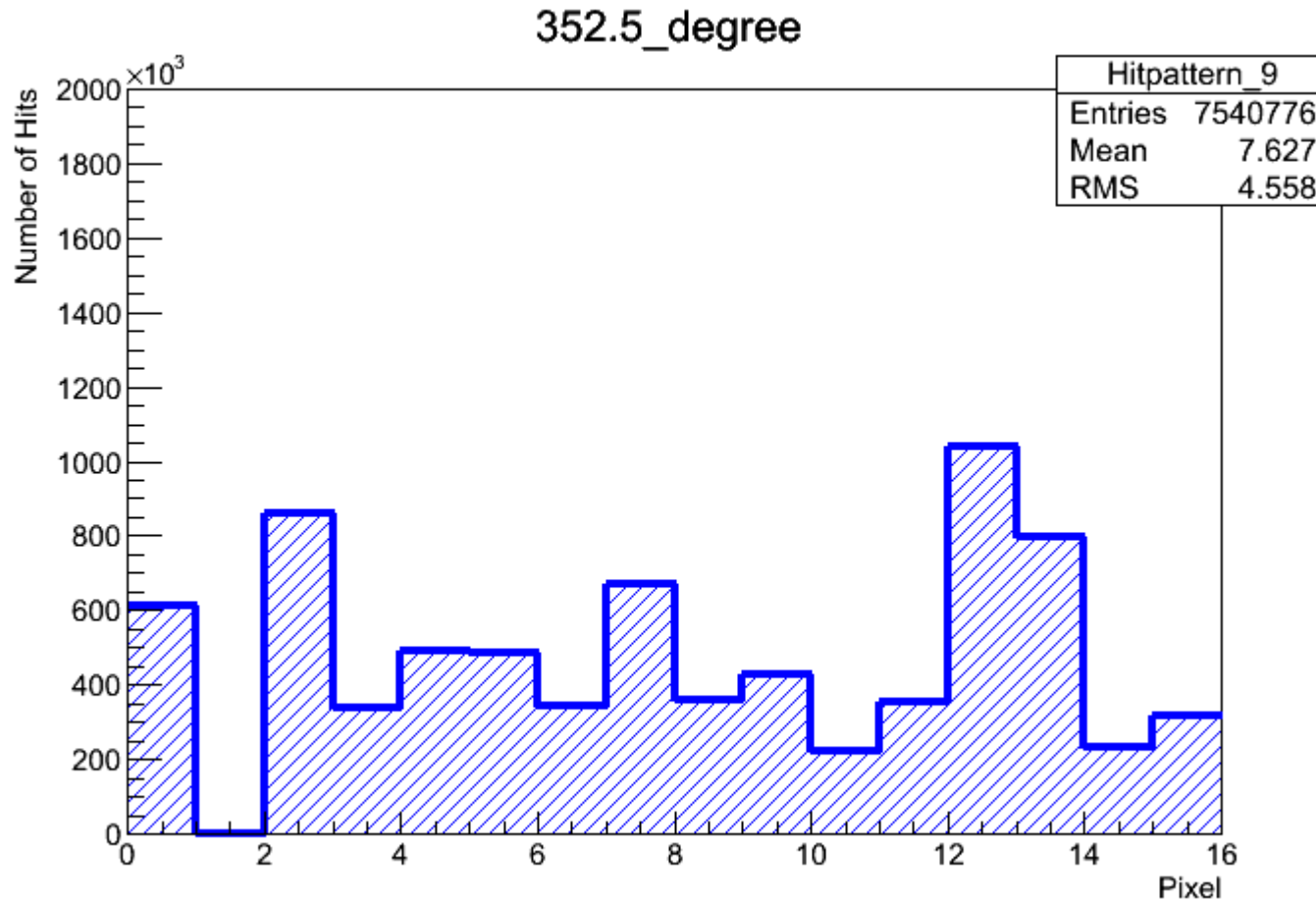 - Timing information unused so far

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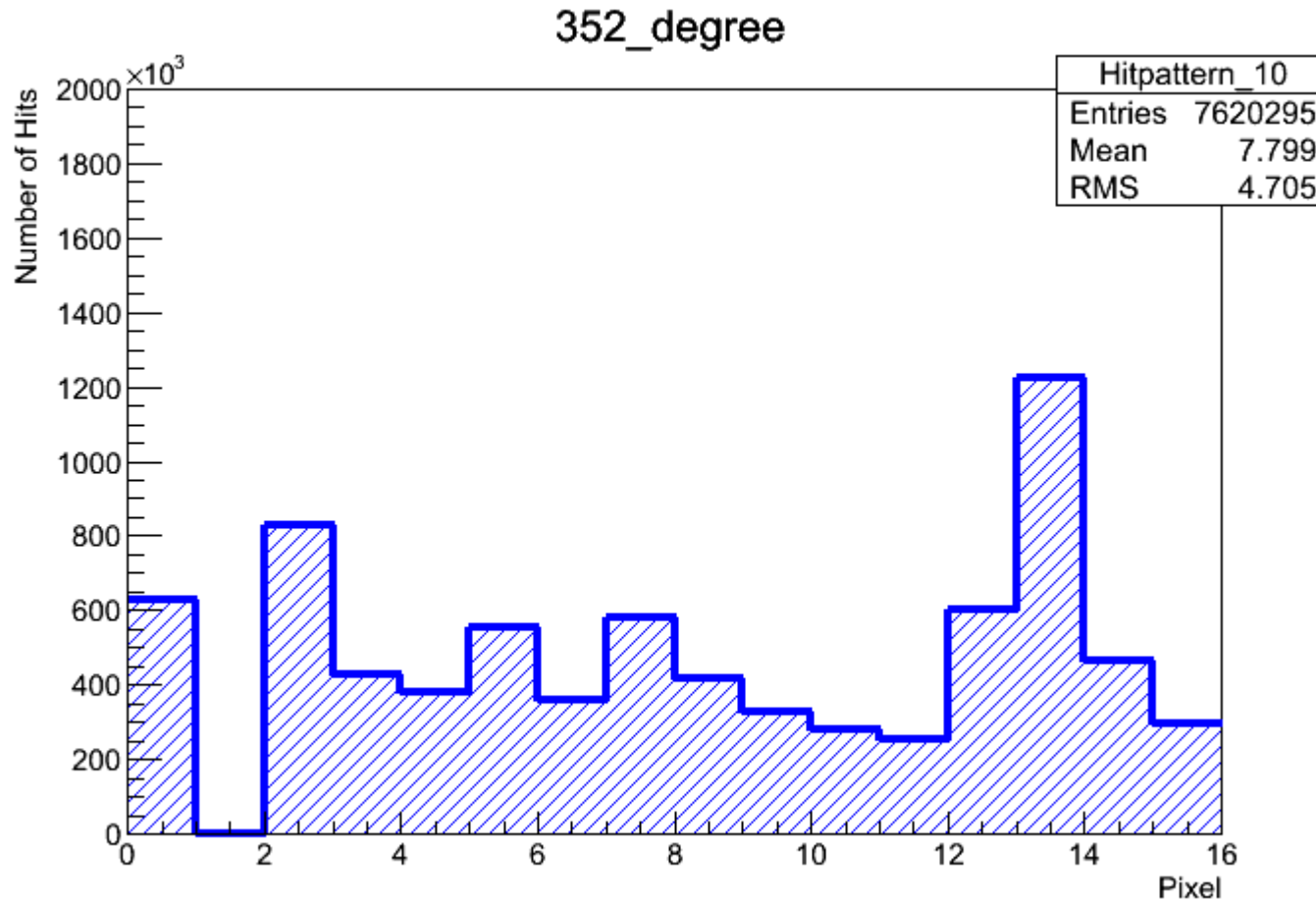 - Timing information unused so far

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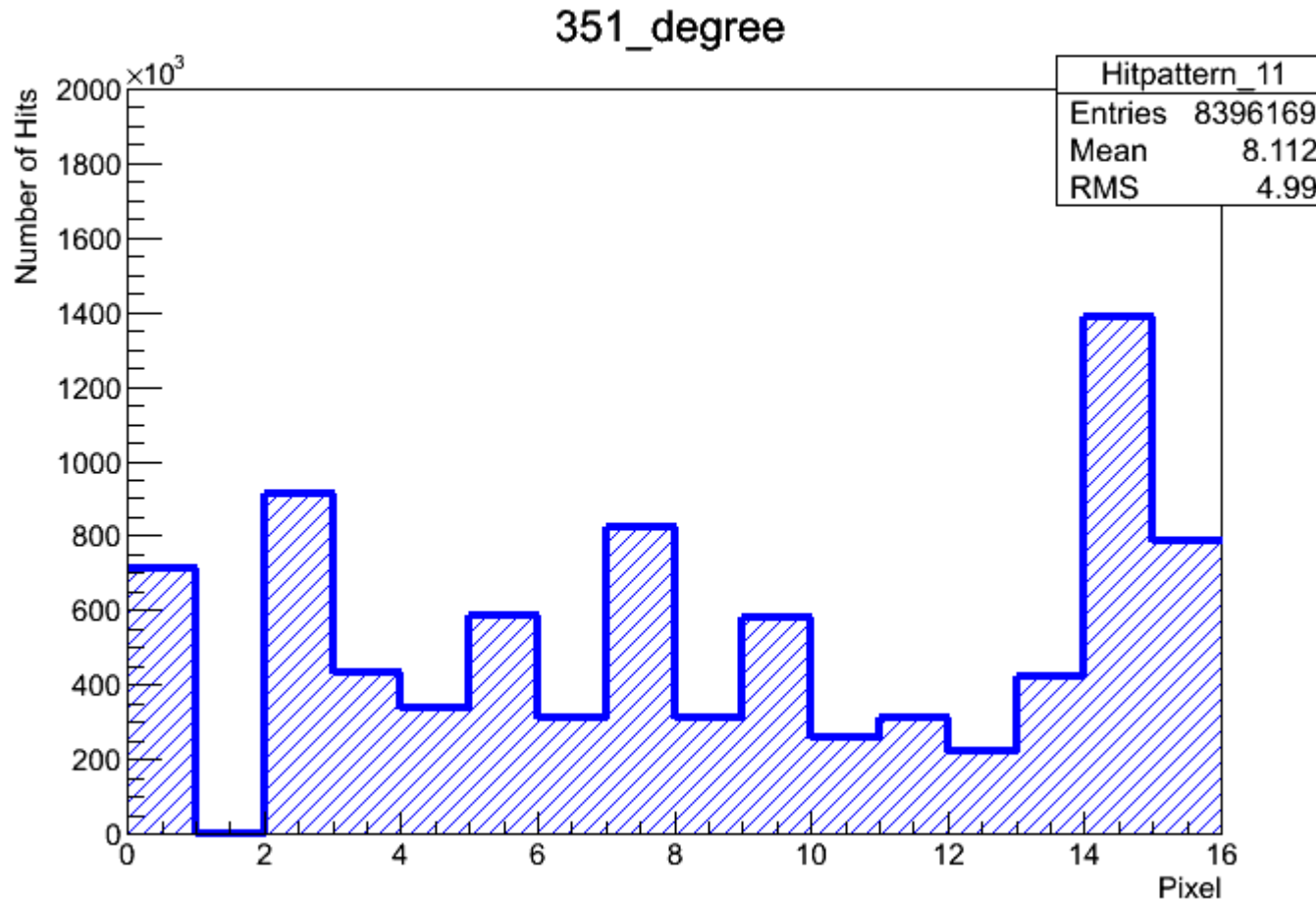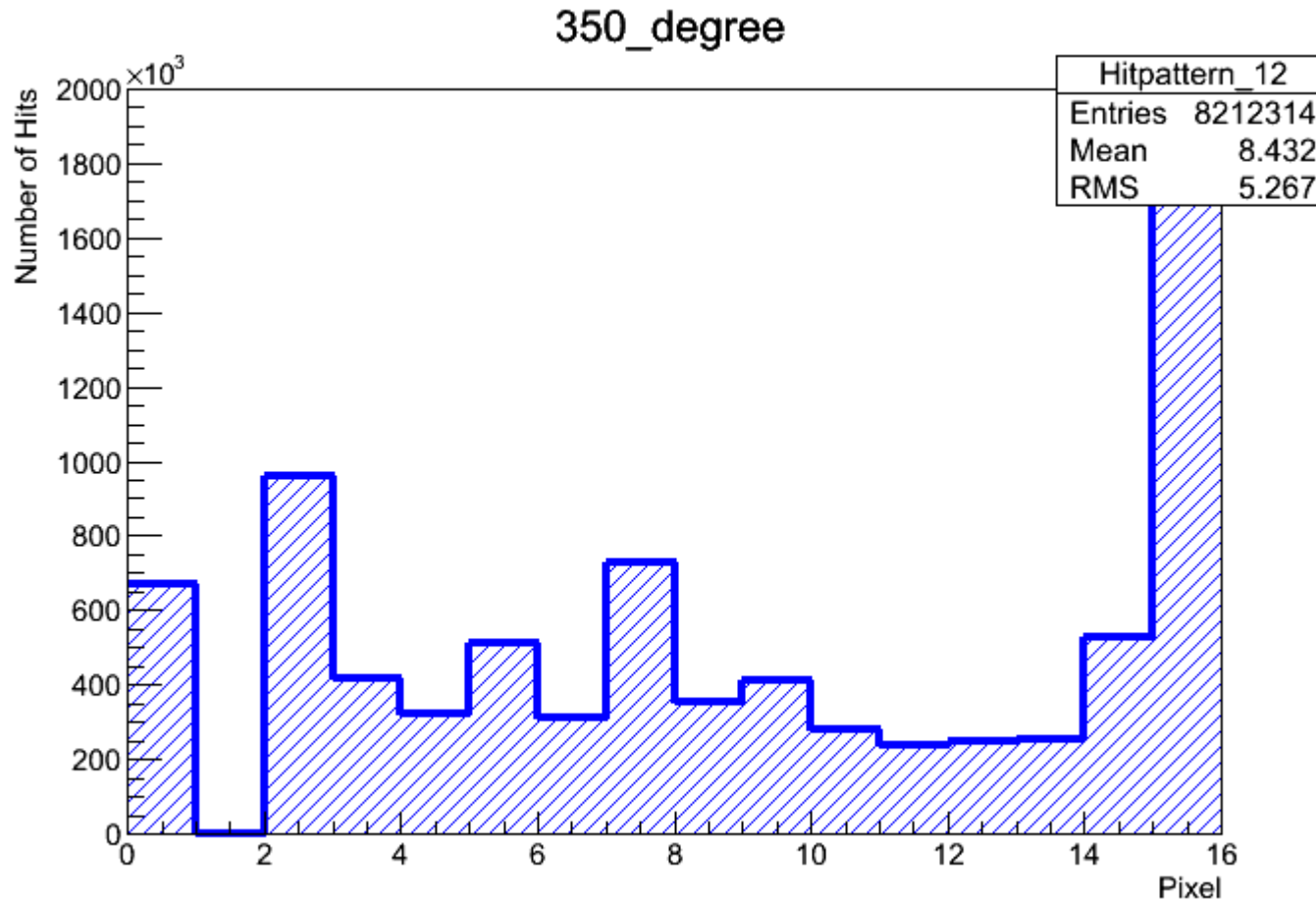 - Timing information unused so far

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Outlook

- Timestamps in raw-data are puzzling
- Noise cuts have to be applied
- The data has do be analysed and compared to Monte Carlo

Thank you!