

Logbook DESY testbeam June 2021

16-4-2020

Quad 12: T2K gas with 340 V and 280V/cm and about 10 mm drift distance

Run 1089 threshold 55

Run 1090 threshold 80

Change quad from 12 (2nd position) to **quad 19** (3rd position). Chip 3 seems to be broken.

Run 1091 threshold 80

Run 1092 threshold 80 moved laser position

Run 1093 threshold 55

Run 1094 blocked leaser to make mask: masked a few pixels per chip

Run1096 threshold 55

Run1097 threshold 80

Change to **quad 21** in 4th position

Start with 1098-1099 to mask a few pixels

Run1100 threshold 55

Run1102 threshold 55 moved laser position

Run1103 threshold 80

Changed wheel filter from 120 to 300

Run1104 threshold 80

Run1105 threshold 55

Wheel back to 120, box rotated from 46.5 to large angle

Run1107 threshold 55

Run1110 threshold 55

Change to even large angle

Run1113 Threshold 55

Run1114 Threshold 55

Run1116 Threshold 80

Run1117 Threshold 80 wheel to 300

Wheel back and angle to ~46, gas flow to 1ml/min

23-4-2020

-340 V and 280 V/cm

Still on quad 21, try to mask more pixels using run 1119. Threshold still at 80.

Start runs with 3500 ppm O₂ and 4485 ppm H₂O

3V power supply: 2.47 A (off) , 3.14 A (all 4 chips on)

Run 1122 Threshold 80

Run 1124 Only chip 0, Chip 1,2,3 all pixels masked, and IBIAS_PREAMP_ON, IBIAS_DISCS1_ON, and IBIAS_DISCS2_ON to 0

3V power supply 1.38 (off, 3 chip masked), 2.05 (only chip 0 on)

Run 1126 Only chip 1, Chip 0,2,3 all pixels masked

3V power supply 1.4 (off, 3 chips masked), 2.07 (only chip 1 on)

Run 1127 Only chip 2, Chip 0,1,3 all pixels masked

3V power supply 1.4 (off, 3 chips masked), 2.08 (only chip 2 on)

Run 1128 Only chip 3, Chip 0,1,2 all pixels masked

3V power supply 1.39 (off, 3 chips masked), 2.06 (only chip 3 on)

From SPIDRTMon

Only chip 3 (no data, laser off): VDD 1548 mV 1388 mA 2156 mW

All chips (no data, laser off): VDD 1548 mV 2467 mA 3820 mW

All chips (data, laser on): VDD 1548 mV 3135 mA 4856 mW (runs 1129, 1130)

Only chip 0 (no data, laser off): VDD 1544 mV 1383 mA 2134 mW

Only chip 0 (data, laser not on chip): VDD 1548 mV 2052 mA 3182 mW (run 1131)

Only chip 0 (data, laser on): VDD 1548 mV 2052 mA 3176 mW (run 1132)

Only chip 1 (no data, laser off): VDD 1544 mV 1399 mA 2166 mW

Only chip 1 (data, laser on): VDD 1548 mV 2070 mA 3202 mW (run 1133)

Try with old daq setting of 80 Mbps :

Run 1134

Run 1135

Go to **quad 24** in 1st position. Runs 1136-1139. Threshold 80

Run 1141 Same angle (~46)

Run 1143 diagonal from chip 0-3-2 (angle 66)

Run 1145 diagonal from chip 0-3-2

Run 1146 diagonal from chip 0-1-2

Run 1149 reverse angle (angle 30)

Placed the box at a vertical angle of ~ 4 degrees, by inserting extra space at the door side.

Run 1152

Run 1154

Cosmic run 1155

Run with Sr source

Run 1158: 340 V one minute run

Run 1159: 320 V one minute run

Run 1160: 330 V 3 minute run

Now with collimator, 330 V

Run 1162: 330 V collimated beam?

Run 1163: 330 V collimated beam?

7-5-2020

Box moved over 2.5 mm in the direction of the laser beam. $V_{\text{grid}} = -340$ V, $E = -280$ V/cm

Run 1164: first run at $z = 32$ mm

Run 1165: run on both chips

Run 1166: more hits, no difference?

Now flushed even more and we can retry. Low flow

Run 1168 run on both chips, one point per chip

Do with high flow:

Run 1169: no difference

Remove protection glas

Run 1170: no difference

Run 1171: restart of daq software, no difference

Run 1172: no display, no difference

Run 1173: closer to grid

Turn everything off, and retry

Run 1175: $O_2 \sim 1700$ ppm

Run 1176: $O_2 \sim 900-800$

Run 1177: $O_2 \sim 750$

Run1178: O2~700-600
Run1179: O2~605-560
Run1180: O2~560

Wheel from 120 to 200

Run1181: O2~470
Run1182: O2~378

Stop flow

Run1183: O2~450

Wheel from 200 to 120

Run1184: O2~480
Run1185: O2~605
Run1186: O2~694-722

Run1187: O2~812-844
Run1188: O2~913

After being off for about 20 minutes:

Run1189: O2~255

After another 20 minutes, and wheel to 200,

Run1190: O2~100

Had high voltage off for about half an hour, O2 now at 156 ppm

Run1191: no difference

After having the laser off for a while,

Run1192: no difference

Now turn everything off, except laser

Run1193: no difference, still large discrepancy in the number of hits

Run1194: wheel back to 120

11-5-2020

Gas flow was at 5ml/min over the weekend. O2 start at 800, after a few seconds of gas flow off to 1350 ppm, H2O from 3300 ppm to 3600 ppm.

Before running daq, temperature of all four chips is 88 degrees, after running daq, 45-48 degrees.

Run 1196: first run, again a difference in number of hits between chip 0,3 and 1,2 gas flow, temp off

Run 1197: same run, same result, gas flow on.

Run 1198: z scan

Temperature has risen to 57, 56, 54, 55 degrees

Changed to negative ion: Ar/iC₄H₁₀/CS₂ 93.5/4.1/1.4 gas bottle 200740, flush at 50 ml/min.

Threshold to 55 dac counts

After one hour flushing O₂ at 85 ppm, 3297 ppm H₂O. O₂ suddenly jumped to 478 ppm??. O₂ meter is very unstable

V_{grid} = -380 V and E = 300 V/cm

Run 1200: First measurement, keep flow at 50 ml

Tried masking pixels from run 1200 to 1204, but it is very hard, move back to threshold at 80dac. Was chip3 at threshold 90dac before?

Set flushing to 5 ml/min for an hour. O₂ at around 700, H₂O 4467 ppm.

Run 1204 at a single drift distance.

Run 1205: masking at low threshold

Run 1206: still at low threshold, but too many hits.

Back to high threshold 80dac

Run 1211: start z scan. 300 V/cm. O₂ around 500, H₂O 4853

Wheel from 140 to 40

Run 1212: z-scan. 500 V/cm. O₂ around 500, H₂O 5000

Run 1213: short run to check number of hits. Number of hits on chip3 is now same as chip 1 and 2

Run 1214: for large z

Run 1215: low z again

Run 1216: after restart of daq

Run 1217: wheel back to 40

Disconnected O₂, and set flow to 50 ml/min for a few minutes.

Run 1218: difference is back

Switch back to T2K, and flush with 50 ml/min.

Run 1219: 340 V, 280 V/cm: same pattern

Run 1220: set laser intensity higher

Run 1221: same settings

Run 1222: same settings

9-30-2020

Trying to place the O₂ meter back. In air meter is around 7 %.

27-4-2021

Filter in field supply inserted (2 x 0.22 uF, 2 x 4.7 M, 1.5 M). High grid current (100 => 75 nA). Possible cause: moisture (chamber not flushed for long time). We switch now when leaving the gas to the laser N2 at 50 ml/min.

5-5-2021

Test under N2 => at $V_g = -340$ and $F = -350/\text{cm}$ no gas gain observed with Sr source. Grid current stable at 62 nA.

Noise tests. Under N2 is all OK, HV on or off.

After 1h flush with T2K again noise test done

$V_f = -350 \text{ V/cm}$

$V_{\text{grid}} = 0 \Rightarrow$ noise conc 0 OK (between 1.7M and 2M hits total)

$V_{\text{grid}} = -100 \Rightarrow$ noise OK, $I_{\text{grid}} = 12 \text{ nA}$

$V_{\text{grid}} = -200 \Rightarrow$ noise OK, $I_{\text{grid}} = 22 \text{ nA}$

$V_{\text{grid}} = -250 \Rightarrow$ noise OK, $I_{\text{grid}} = 25 \text{ nA}$ (after 2 h flush @ 50 ml/min)

$V_{\text{grid}} = -300 \Rightarrow$ noise (4-5.5M hits), $I_{\text{grid}} = 33 \text{ nA}$, possibly caused by secondary emission

We have doubts on bottle 200901 (mixture may contain too little quencher) => we switch to 200715 (mixed by Harry on 29-1-2021)

$V_{\text{grid}} = -300 \Rightarrow$ noise 2.4M hits, $I_{\text{grid}} 37 \text{ nA}$

$V_{\text{grid}} = -320 \Rightarrow$ noise M hits, $I_{\text{grid}} 39 \text{ nA}$

$V_{\text{grid}} = -340 \Rightarrow$ noise hits, $I_{\text{grid}} 40 \text{ nA}$

Currents strong temperature dependent: no power ca 35 nA, while RO some 55 nA

8-5-2021

Chamber under gas after N2 flush. After 2.5 h HV on, 340 V on grid.

Constant current about 60 nA, going down. With source 22nA jump up, after 2 min 17 nA jump down.

After lunch grid from 340 to 350 V. Grid current initially bit spiky (peaks of a few tens nA), later more stable.

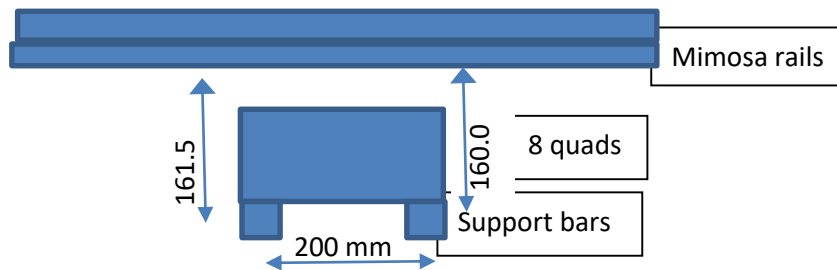
13-5-2021

11:30 Chamber under 350V grid. Source starts at 22 nA, going down to about 10 nA after 5 min.

Start DESY test

15-6-2021

11:30 Chamber. Alignment verification chamber wrt Mimosa support (Top view)



Detector since 14-6-21 17:00 running on N2.

Forced compressed air cooling installed on the DC-DC converters of both concentrators.

Pneumatic air movement checked. $Z = 0 \Rightarrow$ minimal drift distance. 2 steps of about 15 mm.

$X = 0 \Rightarrow$ detector at lowest position.

The structure bends in vertical direction by its weight of an angle of about 1 mm over 70 mm.

15-6-2021

Cooling concentrator modified. Now forced compressed air directly blowing onto the gap between both LV cooling blocks of the concentrator.

16-6-2021

11:30 Chamber moved into magnet. Problems with glycol cooling caused by folding of the few cm silicon tube between Delrin cooling pipe and the detector connector. Solved by reducing the silicon tube such that the Delrin tube just touches the detector connector.

17-6-2021

Very low flow on cooling lines. Caused by deformation of the silicon lines close to the detector.

Solved by shortening the silicon lines to the minimum.

Track rate very low (~ 1 Hz) while a few hundred Hz expected, tracks often truncated.

Gas bottle replaced, no effect.

19-6-2021

HV problems solved.

- Short on grid voltage: 3.5 μ A at 340 V. Chip 11 was shorted, discovered by checking the TOT per chip. The wire to the grid has been disconnected to solve this. Now still the 50 – 60 nA grid current remains.

- The field voltage was absent caused by the additional SHV cable. Replaced by another cable. Also the guard and the shaping wires cables did not make contact. Replaced by other cables from DESY.

Detector now running well, hundreds of tracks per s.

Cooling blocks on concentrators became very hot in spite of the pressured air cooling. Additional cooling by the 8 cm ventilation added.

Levaard rebooted at around 15h, after that the logged pneumatic positions are probably not correct, actual position not defined.

Data taking started at 23:18, HV340 run 6909 p 6.0 GeV 32 chips

Positions probably $x = 1$ and $z = 1$

Run 6905 started at 21:34 HV Grid 340 V, Edrift = 280 V/cm, $p = 5.0$ GeV/c, position 32 chips,

Run 6906 started at 22:20 HV Grid 340 V, Edrift = 280 V/cm, $p = 5.0$ GeV/c, position 32 chips,

20-6-2021

Run 6909 stopped around 8:30. 71 Gb collected, 89k triggers. Stages set to 1,2 to align the scintillators to the detector.

Run 6911 with moved detector position $x = 1$ $z = 2$ 300 triggers

From data on various stage positions we deduce roughly for the beam profile:

22 mm in horizontal (Z) direction

25 mm in vertical direction (X) position

Drift time range estimated at 610 ns i.e. 40 mm \Rightarrow 65.6 μ m/ns

Run 6916 started at 11:25. HV Grid 340 V, Edrift = 280 V/cm, $p = 6.0$ GeV/c, position $x=1$, $z=1$, 32 chips,

Run 6917 started at 13:04. HV Grid 340 V, Edrift = 280 V/cm, $p = 6.0$ GeV/c, position $x=1$, $z=2$, 32 chips, 20055 triggers

Run 6918 started at 15:07. HV Grid 340 V, Edrift = 280 V/cm, $p = 6.0$ GeV/c, position $x=1$, $z=3$, 32 chips, 20995 triggers

Run 6919 started at 17:20. HV Grid 340 V, Edrift = 280 V/cm, $p = 6.0$ GeV/c, position $x=0$, $z=0$, 32 chips, 45000 triggers

Run 6920 started at 22:00. HV Grid 340 V, Edrift = 280 V/cm, $p = 6.0$ GeV/c, position $x=2$, $z=0$, 32 chips, 109000 triggers

21-6-2021

Run 6921 started at 08:15. HV Grid 340 V, Edrift = 280 V/cm, $p = 6.0$ GeV/c, position $x=0$, $z=0$, 32 chips, triggers Stopped because link1 produced more data than link0.

Run 6922 started at 09:00. HV Grid 340 V, Edrift = 280 V/cm, $p = 6.0$ GeV/c, position $x=0$, $z=0$, 32 chips, triggers

There is a difference of a factor of 3 in the link1 to link0 data rate

The arawana data 6900-6922 were copied to elrits /run/media

On arawana removed 6920-6922

On Elrits we have 6900-6921 (included)

Preparing for high data rates.

Run 6923 at 13:31 HV Grid 340 V, Edrift = 280 V/cm, p = 6.0 GeV/c, position x=0, z=0, 32 chips, triggers

Change settings of the silicon Telescope thresholds of 4 sigma (efficiency 87%) instead of 6 sigma (efficiency 55%). Run with no busy; so all triggers will now pass.

Run 6924 at 14:26 HV Grid 340 V, Edrift = 280 V/cm, p = 6.0 GeV/c, position x=1, z=0, 32 chips, triggers

Run 6925 at 15:51 HV Grid 340 V, Edrift = 280 V/cm, p = 6.0 GeV/c, position x=1, z=0, 32 chips, triggers 781.

Run 6926 at 15:51 HV Grid 340 V, Edrift = 280 V/cm, p = 6.0 GeV/c, position x=1, z=0, 32 chips, triggers 710. Changed the thresholds for the TPX3 to conc0 = 60 conc1 = 65 (was 60 and 60). This indeed reduces the number of large events.

Run 6927 at 16:21 HV Grid 340 V, Edrift = 280 V/cm, NEW p = 5.0 GeV/c, position x=1, z=0, 32 chips, triggers 710. Changed the thresholds for the TPX3 to conc0 = 60 conc1 = 65 (was 60 and 60). Short test run at high rate: 6292 triggers. Problem with DAQ.

Inspection in T24/1: the cooling trumpet was not blowing on the concentrator. Now fixed.

Run 6928 at 16:28 HV Grid 340 V, Edrift = 280 V/cm, NEW p = 5.0 GeV/c, position x=1, z=0, 32 chips, triggers 250k ; in total 75 G in 20 minutes. Need to go to 24/1 to repower the SPDR.

Run 6929 stopped

Run 6930 at 17:06 HV Grid 340 V, Edrift = 280 V/cm, NEW p = 5.0 GeV/c, position x=0, z=0, 32 chips, triggers 265k; in total 50 G in 20 minutes.

Run 6931 started at 17:35, Edrift = 280 V/cm, NEW p = 5.0 GeV/c, position x=2, z=0, 32 chips triggers = 221k; 23+44=67 GB stopped at 17:56; 20 mins

Run 6932 started at 18:23, Edrift = 280 V/cm, NEW p = 5.0 GeV/c, position x=2, z=1, 32 chips triggers = 117k; 11+19=30 GB stopped at 18:33; 10 mins;

Run6933 at 18:41 , Edrift = 280 V/cm, NEW p = 5.0 GeV/c, position x=0, z=1, 32 chips; 9+13 GB stopped at 18:50; 10 mins;

Run6934 at 19:01 , Edrift = 280 V/cm, NEW p = 5.0 GeV/c, position x=2, z=1, 32 chips; 11+10 GB: triggers 73k, stopped at 19:11; 10 mins;

Run6935 at 19:18 , Edrift = 280 V/cm, NEW p = 5.0 GeV/c, position x=2, z=2, 32 chips; 16+8 GB: triggers 115k, 10 mins;

Run6936 at 19:34 , Edrift = 280 V/cm, NEW p = 5.0 GeV/c, position x=2, z=3, 32 chips; 14+7 GB: triggers 108k, 10 mins;

Run6937 at 19:48 position x=0, z=3, 32 chips; 13+12 GB: triggers 70k, 10 mins;

Data from 6930 till 6937 is copied on the external elements disc.

Run 6938 , Edrift = 280 V/cm, HIGH p = 6.0 GeV/c, Rotated detector x = 1 z = 1 angle 10.0 degrees (upstream is lifted) NB original angle is pm 0.5 degrees ONLY 31 chips
Nice diagonal left bottom to right top.

Run 6939 , Edrift = 280 V/cm, HIGH p = 6.0 GeV/c, Rotated detector x = 1 z = 1 angle 10.0 degrees (upstream is lifted 32 chips. Nice diagonal.

Run 6940 at 21:06, Edrift = 280 V/cm, p = NEW 5.0 GeV/c, Rotated detector x = 1 z = 1 angle 10.0 degrees (upstream is lifted) 32 chips. 15+21GB

Run 6941 and 6942 , Edrift = 280 V/cm, HIGH p = 6.0 GeV/c, NEW Rotated detector x = 1 z = 1 angle - 10.0 degrees -> No good diagonal BECAUSE detector not in beam.

Run 6943 , Edrift = 280 V/cm, HIGH p = 6.0 GeV/c, NEW Rotated detector x = 1 z = 1 angle -10.0 degrees. Looks fine.

Run 6944 , Edrift = 280 V/cm, NEW p = 5.0 GeV/c, NEW Rotated detector x = 1 z = 1 angle -10.0 degrees. High stats 13G + 15G

Run 6945 , Edrift = 280 V/cm, HIGH p = 6.0 GeV/c, Rotated detector x = 1 z = 1 angle 10.0 degrees ... Only 31 chips

Run 6946 , Edrift = 280 V/cm, HIGH p = 6.0 GeV/c, Rotated detector x = 1 z = 1 angle 10.0 degrees ... with 32 chips Nice diagonal.

Run 6947 started for the night with Edrift = 280 V/cm, HIGH p = 6.0 GeV/c, Rotated detector x = 1 z = 1 angle 10.0 degrees ...
with 32 chips... 300GB was produced ...

Run 6948 LOW FIELD started 13:23 HV340 run 6948 p = 6 GeV detector 0 rotation 32 chips Ed = 130 V/cm x = 1 and z = 1 Test with 500 triggers. TPX3 OK. Si has a problem reconfigure the silicon.

Run 6949 LOW FIELD started 14:07 HV340 run 6948 p = 6 GeV detector 0 rotation 32 chips Ed = 130 V/cm x = 1 and z = 1. Run 9292 triggers. TPX3 Si OK.

AT 14:26 CHANGED to use the BUSY for the Si and TLU.

Run 6950 LOW FIELD started 14:29 HV340 run 6948 p = 6 GeV detector 0 rotation 32 chips Ed = 130 V/cm x = 1 and z = 1. 5780 triggers. TPX3 and Si OK. But the DAQ produces error and ends up with threshold 0 in link1.

AT 15:00 CHANGED back where DO NOT use the BUSY for the Si and TLU.

Run 6951 LOW FIELD HIGH STATS started 14:29 HV340 run 6948 p = 5 GeV detector 0 rotation 32 chips Ed = 130 V/cm x = 1 and z = 1. 5780 triggers. TPX3 and Si OK.

External DISCS: LEPCOL disk 1 and disk 2 contain all the B=0 data up to (including) run 6951

!!!!!!!!!!!! Now at 0.5 Tesla !!!!!!!!!!!!!
!!!!!!!!!!!! Now at 0.5 Tesla !!!!!!!!!!!!!
!!!!!!!!!!!! Now at 0.5 Tesla !!!!!!!!!!!!!

Prepared External DISCS: LEPCOL disk 3 and disk 4 for the B>0.2 data sets

Run 6952 B = 0.5 T LOW FIELD HIGH STATS started 20:17 HV340 p = 5 GeV detector 0 rotation 32 chips Ed = 130 V/cm x = 0 and z = 0. 73262 triggers in Mimosa and 116410 trigger in TLU. TPX3 and Si OK.

Run 6953 B = 0.5 T LOW FIELD LOW STATS started 21:29 HV340 p = 5 GeV detector 0 rotation 32 chips Ed = 130 V/cm x = 1 and z = 0.

Beautiful data from the first 500 triggers

23-06-2021

9:00 found Run 6953 crashed (disk full?)

11:07 Si Telescope was still going; stopped it at trigger 202269

11:30 Ramp down the magnet

Connect external disc to arawana and copy data to disk

15:10 Copying of 300GB was finished

15:12 Start ramp up magnet step by step to 0.5 T

Run 6954 B = 0.5 T LOW FIELD HIGH STATS started 15:22 HV340 p = 5 GeV detector 0 rotation 32 chips Ed = 130 V/cm x = 2 and z = 0. 73810 triggers in Mimosa and 112982 trigger in TLU.

After the run was stopped and SPDR needed to be resetted in the area.

Run 6955 B = 0.5 T LOW FIELD HIGH STATS started 15:48 HV340 p = 5 GeV detector 0 rotation 32 chips Ed = 130 V/cm x = 1 and z = 1. 116432 triggers in TLU.

After the run was stopped and SPDR needed to be resetted in the area.

16:05 Magnet quenched or we broke the interlock.

The cause is that the door contact was not proper

The ELRITS computer has now a new network card

18:21 Run 6956 started; p=5, Ed=130 V/cm, Vgrid=340 V, X=1 Z=2

18:45 Run 6956 stopped; 120821 TLU triggers; 81244 Mimosa triggered; run duration=1418 s (85 Hz)

18:51 Run 6957 started; p=5 GeV, Ed=130 V/cm, Vgrid=340 V, X=1 Z=3

19:04 Run 6957 stopped: 111996 triggers (73308 Mimosa triggered); run duration 745 sec (150) Hz

19:10 FROM NOW ON Edrift = 280 V/cm

19:14 Run 6958 started; p=5. GeV, Ed=280 V/cm, Vgrid=340, X=1 Z=3 Missing Chip!

19:35 Run 6959 started; p=5. GeV, Ed=280 V/cm, Vgrid=340, X=1 Z=2 Missing Chip!

19:55 Run 6960 started; p=5. GeV, Ed=280 V/cm, Vgrid=340, X=1 Z=1 Missing Chip

Stopped at 50.000 events, missing chip.

20:23 Run 6961 started; p=5. GeV, Ed=280 V/cm, Vgrid=340, X=1 Z=1 50000 events

Reset Spidr

20:23 Run 6962 started; p=5. GeV, Ed=280 V/cm, Vgrid=340, X=1 Z=2

Accidently started with previous run nr. Restart with correct 6962 number.

Beam stopper in. No data. Discart run.

20:54 Run 6963 started; p=5. GeV, Ed=280 V/cm, Vgrid=340, X=1 Z=2

Reset Spidr in zone

21:20 Run 6964 started; p=5. GeV, Ed=280 V/cm, Vgrid=340, X=1 Z=3

21:41 Run 6965 started; p=5. GeV, Ed=280 V/cm, Vgrid=340, X=1 Z=0

22:03 Run 6966 started; p=5. GeV, Ed=280 V/cm, Vgrid=340, X=0 Z=0

22:32 Run 6967 started; p=5. GeV, Ed=280 V/cm, Vgrid=340, X=2 Z=0

22:54 Run 6968 started; p=6. GeV, Ed=280 V/cm, Vgrid=340, X=1 Z=1
23:10 Stopped run 6968, 2300 good events. Closed beam, magnet off..

24-06-2021

9:30 Ramping magnet to 0.5 T

10:15 Magnet at 1.0 T

10:25 Start run 6969 p=6 GeV, Vgrid=340 V, Edrift=280 V/cm, X=1 Z=1

Peter is analysing this run while we take data, and showing ABSOLUTELY FABULOUS TRACKS

11:22 Stopped run 6969; 11190 triggers

11:23 Start run 6970 p=6 GeV, Vgrid=340V, Edrift=280 V/cm, X=0 Z=1 (upper part of detector, incl. dead chip 11)

11:40 Run 6970 stopped; 3010 triggers, duration 1000s, ~3 Hz

11:48 Start run 6971 p=6 GeV, Vgrid=340V, Edrift=280 V/cm, X=2 Z=1 (lower part of detector)

12:05 Run 6971 stopped: 3368 triggers, duration 1000 s, 3.3 Hz

12:09 Start run 6972 p=6 GeV, Vgrid=340V, Edrift=280 V/cm, X=1 Z=0

E = 5.0 GeV

13:35 Start run 6973 p=5.0 GeV, Vgrid=340V, Edrift=280 V/cm, X=1 Z=0 100 k triggers

13:58 Start run 6974 p=5.0 GeV, Vgrid=340V, Edrift=280 V/cm, X=0 Z=0 100 k triggers

14:23 Start run 6975 p=5.0 GeV, Vgrid=340V, Edrift=280 V/cm, X=2 Z=0 100 k triggers

14:50 Start run 6976 p=5.0 GeV, Vgrid=340V, Edrift=280 V/cm, X=2 Z=1

Testing new "excess data generation" stop.

New stop worked after 13 k events.

15:02 Start run 6977 failure excess stop

15:05 Start run 6978 p=5.0 GeV, Vgrid=340V, Edrift=280 V/cm, X=2 Z=1 Wrong exit

15:10 Start run 6979 p=5.0 GeV, Vgrid=340V, Edrift=280 V/cm, X=2 Z=1 Exit failure

15:20 Start run 6980 p=5.0 GeV, Vgrid=340V, Edrift=280 V/cm, X=2 Z=1 Exit failure

15:32 Start run 6981 p=5.0 GeV, Vgrid=340V, Edrift=280 V/cm, X=2 Z=1 with previous run script 100 k events. Do not use; only 31 chips.

15:53 Start run 6982 p=5.0 GeV, Vgrid=340V, Edrift=280 V/cm, X=1 Z=2

16:12 Run 6982 stopped; 162259 triggers, duration 1139 s, 142 Hz Do not use; only 31 chips.

16:22 Start run 6983 p=5.0 GeV, Vgrid=340V. Edrift=280 V/cm, X=1 Z=1

16:35 12 Run 6983 stopped; 100899 triggers, duration 689 s, 146 Hz **Do not use; only 31 chips.**

16:42 Start run 6984 p=5.0 GeV, Vgrid=340V. Edrift=280 V/cm, X=0 Z=1

16:50 **RUN STOPPED because only 31 chips present; Peter checking previous runs: also 6983 and 6982 and 6981 in error. Start redoing runs.**

16:56 Start run 6985 p=5.0 GeV, Vgrid=340V. Edrift=280 V/cm, X=0 Z=1

17:14 Run 6985 stopped; 152489 triggers (100256 Mimosa events) , duration 1091 s, 142 Hz

17:23 Start run 6986 p=5.0 GeV, Vgrid=340V. Edrift=280 V/cm, X=1 Z=1

17:39 Run 6986 stopped; 152464 triggers (100315 Mimosa events) , duration 1085 s, 141 Hz

17:45 Start run 6987 p=5.0 GeV, Vgrid=340V. Edrift=280 V/cm, X=2 Z=1

17:55 **RUN STOPPED because of many errors followed by TIMEOUT; all thresholds = 0**

66730 TLU triggers (43644 Mimosa events); next run at same settings

17:59 Start run 6988 p=5.0 GeV, Vgrid=340V. Edrift=280 V/cm, X=2 Z=1

18:17 Run 6988 stopped; 142409 triggers (93689 Mimosa events) , duration 1061 s, 141 Hz

18:24 Start run 6989 p=5.0 GeV, Vgrid=340V. Edrift=280 V/cm, X=1 Z=2

18:35 Run 6989 stopped; 100316 triggers (66067 Mimosa events) , duration 713 s, 141 Hz

18:41 Start run 6990 p=5.0 GeV, Vgrid=340V. Edrift=280 V/cm, X=1 Z=3; 92279 triggers 60731 Mimi

LOW Efield and high momentum RUN

18:51 Start run 6991 p=6.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=1 Z=0

22:30 After nice dinner, run 6991 is still running; sofar 4.8 GB + 5.8 GB= 10.6 GB.

Keep it going for the night (fingers crossed)

25-06-2021

08:05 Run 6991 still going! Magnet stayed up overnight

09:17 123 k events! Stop run

Beam energy set at 5.0 GeV

09:43 Start run 6992 p=5.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=0 Z=0 100 k events, chip lost, again
Cold restart of concentrators

10:31 Start run 6993 p=5.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=0 Z=0 100 k good events

10:50 Start run 6994 p=5.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=1 Z=0 100 k good events

11:15 Start run 6995 p=5.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=2 Z=0 OK, but last part thr=0

11:43 Start run 6996 p=5.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=2 Z=1 First half OK, then many errors

12:08 Start run 6997 p=5.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=1 Z=1

(in the small "Description" window of the run_control it is mentioned as p=6 GeV; info that is stored on the DAQ logfile. So could be wrong also for runs 6992-6996)

12:30 Stopped run 6997; 185733 triggers (121726 Mimosa events), duration 1209 secs, 13GB+12GB
PROBLEM ONLY 31 chips

12:35 Start run 6998 p=5.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=0 Z=1

13:10 Stopped run 6998: 200 k events PROBLEM ONLY 31 chips

14:42 Start run 6999 p=5.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=1 Z=1 Repeat run 6997 100 k events

15:06 Start run 7000 p=5.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=0 Z=1 Repeat run 6998 100 k events

15:27 Start run 7001 p=5.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=1 Z=2 100 k events

15:51 Start run 7002 p=5.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=1 Z=3 ByteStream data not OK
Cold restart TPX chips.

16:43 Start run 7003 p=5.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=1 Z=3 114 k events

Beam Energy set at 4 GeV

17:09 Start run 7004 p=4.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=1 Z=1 100 k events

Beam Energy set at 3 GeV. Very high counting rate!

17:21 Start run 7005 p=3.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=1 Z=1

17:29 Stopped run 7005, 90 k events, Too many errors

Beam Energy set at 1 GeV, for nicely curved tracks

17:21 Start run 7006 p=1.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=1 Z=1

17:39 Stopped run 7006: many errors, chip lost after 4000 triggers

19:36 Magnet moved down by 5 mm. New position -10 mm

Beam energy set at 6.0 GeV

17:21 Start run 7007 p=6.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=1 Z=1 500 good events

Beam energy set at 1 GeV

20:04 Start run 7008 p=1.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=1 Z=1

20:06 Stopped run 7008: too many errors.

20:10 Start run 7009 p=1.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=1 Z=1 Beautiful bended tracks!

10:31 Stopped run 7009. 19 k beautiful events

20:41 Tilt chamber by 10 deg
Beam energy set at 5.0 GeV

20:55 Start run 7010 p=5.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=1 Z=1

21:22 Tilt chamber by -10 deg

21:25 Start run 7011 p=5.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=1 Z=1

21:50 Rotated magnet around vertical axis by 6 deg clockwise seen from above +6 deg)

21:57 Start run 7012 p=5.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=1 Z=1

21:50 Rotated magnet around vertical axis to +1.6 deg

22:03 Start run 7013 p=5.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=1 Z=1

21:50 Rotated magnet around vertical axis to -1.6 deg

22:09 Start run 7014 p=5.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=1 Z=1

22:13 Rotated magnet around vertical axis to -7 deg

22:15 Start run 7015 p=5.0 GeV, Vgrid=340V. Edrift=130 V/cm, X=1 Z=1

Rotated magnet to 0 degrees BACK

26-06-2021

09:05 Goniometer rotated by 90 deg for tilting the chamber in the other direction. Goniometer set at 0 deg now. Interlock on the magnet seems to have broken in spite of efforts to avoid this. Beams switched on.

