16:22 #4096 pedestal
16:26 #4097 LED
16:39 #4098 α
16:48 #4099 CR

5/Oct/2002

0:07 stop 4099
0:08 #4100 pedestal
0:09 #4101 LED
0:20 #4102 α
0:04 #4103 CR

8:04 stop #4103
8:10 #4104 pedestal
8:16 #4105 LED
8:27 #4106 α ⇒ this data file seems to have some problem
8:42 #4107 CR ⇒ stopped 9:10.

9:13 #4106 taken again α.
9:22 #4107 CR. again
10:52 #4107 stopped
10:53 #4108 pedestal
10:56 #4109 LED
11:10 #4110 α
11:22 #4111 cosmic

16:32. #4111. stop.
16:34. #4112. pedestal.
16:36. #4113. LED calibration.
16:46. #4114. α.
16:55. #4115. cosmic.

6
19:48 #4115 stopped (who stopped?) ⇒ No data
↑ by "ADC gate error"

2002
Oct/06
~~27:23~~ 0:38
#4116 pedestal

0:39 #4117 LED
0:50 #4118 α
0:59 #4119 CR
〜
8:08 #4119 stopped

~~8:09 #4120 pedestal~~
~~8:10 #4121 LED~~
8:48 ~~8:23~~ ~~#4122 α~~
~~8:39 #4123 CR~~
α以降に交換した. #4120〜#4122 removed

pedestalのσが大きすぎるため. X

9:44 ~~9:23~~ #4123 pedestal
9:24 #4124 LED
9:35 #4125 α
9:47 #4126 CR
〜
16:27 #4126 stopped
~~16:28 #4127 pedestal~~
~~16:29 #4128 LED~~ → HV errorに気づいた

HV.16-1 が. HV=0vになった.
⇒ desable. ⇒ enable. OK.

#4127, 4128 file remove

16:43 #4127 pedestal
16:45 #4128 LED
16:56 #4129 α
17:05 #4130 CR
〜
Oct/07
0:17 #4130 stopped

NTP 導入. ← 定時より10分遅れてるので.

C:\> net time /setntp:210.173.160.27 ← 133.87.32.71 だとOK 17/Oct/2002 〜

control panel → administrative tool → services
→ windows time
startup type : manual → automatic.
見た目は変化ナシ… 何で?

0:33 #4131 pedestal
0:35 #4132 LED
0:47 #4133 α
1:01 #4134 CR
5
8:08 #4134 stopped
8:10 #4135 pedestal
8:11 #4136 LED
8:27 #4137 α
8:42 #4138 CR
5
16:01 #4138 stopped
16:02 #4139 Pedestal

One channel (ADC. 88) has a rather large pedestal but the RMS is small enough. So we ~~decide~~ discard this channel without tagging

16:07 #4140 LED
16:18 #4141 α + trigger RUN
16:29 #4142 COSMIC RAY RUN
22:00 molecular sieve 6.9×10^{-3} Pa @80°C → 100°C

23:50. Stop the RUN #4142.
FAL Stop. and FASTBUS off. divider off.

08 / Oct. / 2002.

0:00 ~ 1:30.

Active F/O の導入による時間分解能への影響を調べるために、一部の channel を、
通常の passive divider へ戻して、data taking する事にする。
そのために、Discri #1. (CAMAC slot #2) に対応する 16 ch 分を、passive に戻した。
この Discri に対応する PMT は、

F20, F25, F26, F22, F31, F32, F33, F34, BT6, R8, R9, T11, BT12, R14, R15-T13.

に当たり、これらは、Right side の α をとらえることになる。 (P203 参照)。

1:30. divider 差し替え完了。

1:42 #4143. alpha. @ passive divider. (Discri 1.)

2:40. divider, : Active F/O に復帰、完了。

HV adjust test.

Analyzer / Parameters / ADC calibration / Adjust HV ::= 1

saved as hvadjust_test8.hv

pulses
88, 90, 93, 96, 99, 102

LED 1 & 5

5:43 #4144 pedestal
5:47 #4145 LED for HV adjust

11:30 (heater in chamber → 20V → 40V
fill outer vessell with 0.2atm of N_2 gas ⇒ recovery start

9/Oct/2002

Gas Xe α

10:50 : Hv ならし 運転開始 all PMT 100V

11:00 : 〃 all PMT 300V

13:30 : 〃 all PMT 500V

14:00 : LXe-1E6_092402.hv (液体XeのHVデータ) を load

☆ Gas Xe α 測定開始 inner press. = 208.4 kPa, holder low T_{up} = -90.3 °C Up T_{up} = -95.4

16:00 : ~~Pedestal & #4146~~ ⇒ active divider (△) a power off

16:03 : ~~#4147 Led~~

16:05 : #4148 Pedestal) failure

16:08 : #4149 Led)

☆ Gas Xe α 測定開始 16:20 の圧力・温度 inner Press. = 202.7 kPa holder T_{low} = -89.4 °C T_{up} = -82.2 °C

16:17 ; #4150 Pedestal

16:20 ; ~~#4151~~ Led. ⇒ HV adjust on になっていた

~~16:43~~ 16:56 : #4152 Led P = 199.7 kPa, T_{low} = -88.4°C, T_{up} = -82.3 °C

↳ Fal 落ちる。が run 自体は使える。

17:04 : #4153 Led ⇒ Fal 落ちる。が run 自体も使える。

17:30 : ~~#4154 #4155~~ #4156 ⇒ α, P = 196.9 kPa, T_{low} = -87.58, T_{up} = -81.95 °C

17:40 : #4157 α, same as #4156. 10,512 events

#4158 α, same as #4157 online で Qsum が見えない。

18:26 : #4160 α. P = 199.3 kPa, T_{low} = -85.96 °C T_{up} = -81.1 °C.

58,014 events

Signal が小さいので

F2, F3, F12, F18, F32, F33, F17, F23 HV + 50V

19:18 #4161 α. 5分21

19:35 E2 −50V, all PMT +20V

#4162 α. P = 199.3kPa, T_{low} = −85.3°C, T_{up} = −81.0°C
20,000 events

20:08: 右のαのeventが多いので
bottom 8, 9, 14, 15 +60V, その他 +20V
left 8, 9, 14, 15 +30V その他 +10V
top 8, 9, 14, 15 +30V その他 +10V

20:20:
#4163 α → no data

diskがfullなので E:¥gasXe10.0ct に #4150 ~ #4162 を移動

20:20
#4164 α. 55,718 events
↳ また Rightのαのeventが多い(他の2倍程度)
E2 +30V Frontのその他の玉 +20V

Bt 8, 9, 14, 15 +20V
L 8, 9, 14, 15 +20V
T 8, 9, 14, 15 +20V
R 8, 9, 14, 15 −20V

19 20 21 22
13 14 15 16 ←α
5 8 9 10
① 2 3 4
↖PMT

20:40 #4165 α. 25,719 events

L 1, 2, 3, 4, 7, 8, 9, 10, 13, 14, 15, 16, 19, 20, 21, 22. +20V
Tot, Bottomも同様に +20V
あとかし.

#4166 α. まだ右が多い

R. 全部 0.5 −20 V　　R14 2512 −20 V
R1 −10 V
R6 −20 V

21:05 #4167 α. ~~4166~~ 76,159 events
P = 198.3 kPa　Tlow = −84.2, Tup = −80.3 °C
各位置の α の event 数が ほぼ同じになった。OK!

21:20 #4168 pedestal
21:22 #4169 Led
} Failure.

21:24 #4170 pedestal.
21:26 #4171 Led

181.7 kPa　Tlow = −83.4, Tup = −79.8
Surfmeter bottom −83.3, (=) middle −81.9

22:23 #4172 LED → Failure, (HV error)
22:29 #4173 LED
22:36 #4174 α → miss trigger

162.7 kPa　Tlow −83.3　Tup = −79.8
Surf bt −83.2　Surf md −81.9

22:56 #4175 LED
23:01 #4176 α → miss trigger
23:12 #4177 α

176.8 kPa　Tlow −83.0　Tup −79.7
Surf bttm −82.6　Surf mid −81.4

23:36 #4178 LED → failure
23:39 ~~#4179~~ LED → no data
23:44 ~~#4180~~ α → nodata

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0:07 #4181 Led → no data

P=141.4 kPa, T_{low} = -82.7°C T_{up} = -79.7°C

0:15 #4182 α → failure
#4183 α → failure
→ disk full.

P=184.5 kPa, T_{low} = -82.8°C. T_{up} = -79.7°C

0:30 ~~#4184 Led~~ → miss triger.

0:35 #4185 Led. P=126.0 kPa, T_{low} = -82.8°C
T_{up} = -79.7°C

#4186 α. p=127.8 kPa. 50,38/event

P=100.0 kPa T_{low} = -82.4°C T_{up} = -79.4°C.

1:00 #4187 Led.

1:11 #4188 α 5,847

LXeCR-7 run data

pstmp17 (win2k)

LPCR7 (9.46 GB) F:\020915_021010_lxecr7\ R207 15/Sep/2002 ~ R242 10/Oct/2002

interval (38MB) F:\020729_020915\ R180 29/Jul/2002 ~ R207 15/Sep/2002

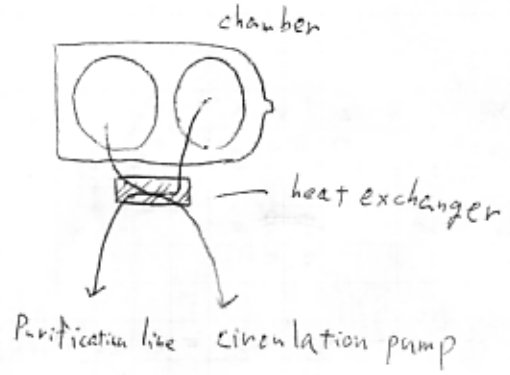
pstmp12 (Linux)

/scratch3/muegamma/020915_021010_lxecr7/

/scratch3/muegamma/020729_020915/

16:00 回収終了

10/17 Add a new heat exchanger



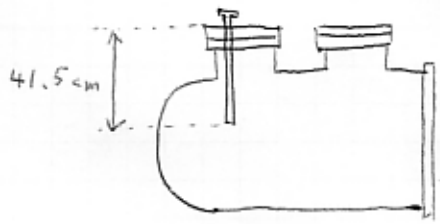
10/18 5:00 evacuation start

14:00 ~~He~~ He leak test
inner vessel ~ 10^{-11} Pa m³/sec O.K.

~~a~~ week leak was found around bypass of molecular sieves
↓
it has to be fixed on Monday

inner vessel 1.5×10^{-1} Pa
outer vessel 5.3×10^{-3} Pa

10/21 add teflon tube at Xenon inlet of chamber



He leak test weak leaks are found at { TMP oil gauge (Purify line) ↳ apply Araldite
signal feed through ↳ ~~pt~~ pt stycast

10/22 He leak test { inner vessel < 1×10^{-10} Pa·m³/sec
purification line < $\sim 1.0 \times 10^{-9}$ Pa·m³/sec

14:30
inner vessel 3.1×10^{-2} Pa
outer vessel 8.6×10^{-4} Pa
purification line 2.6×10^{-3} Pa

10/23 10:00
inner vessel 2.5×10^{-2} Pa
outer vessel 7.6×10^{-4} Pa
purification line 3.0×10^{-4} Pa

24/Oct/2002

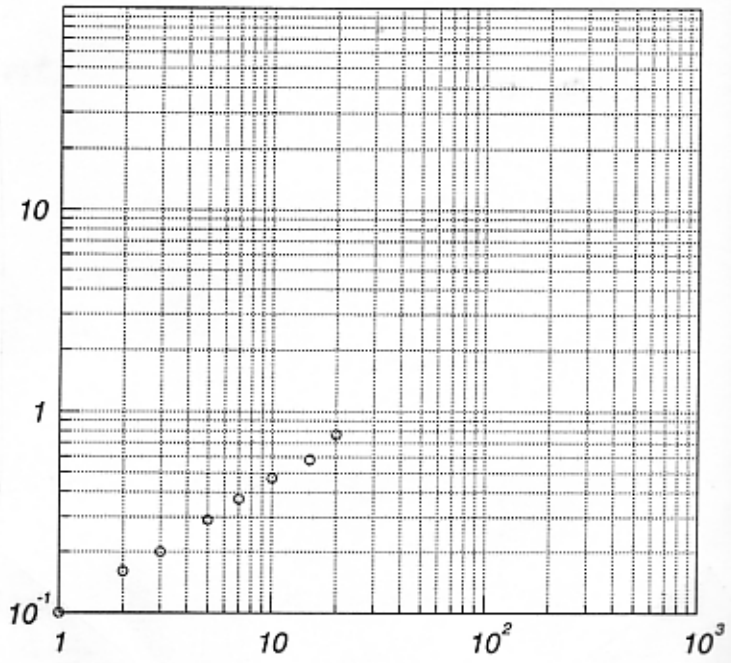
12:00 inner vessel 2.1×10^{-2} Pa
outer vessel 7.9×10^{-4} Pa
purification line ~~2.8~~ 2.0 $\times 10^{-4}$ Pa

rga00029 Purification line + circulation pump
open valve at the top of chamber

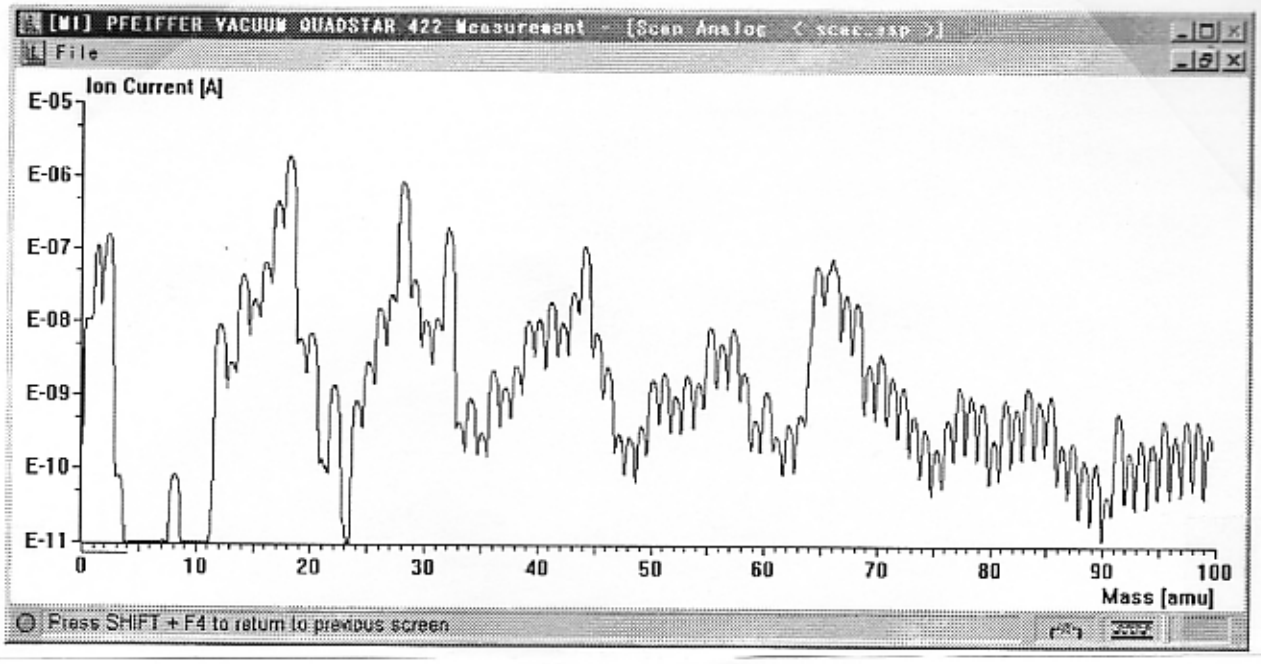
rga00030 purification line + circulation pump + chamber
5.0×10^{-4} Pa

13:00 chamber buildup

Time	Press
0	2.0×10^{-2} Pa
1	1.0×10^{-1}
1.5	
2	1.6
3	2.0
5	2.9
7	3.7
10	4.7
15	5.8
20	7.7



16:30 fill chamber with Xe of 2.0 atm
start pre-cooling

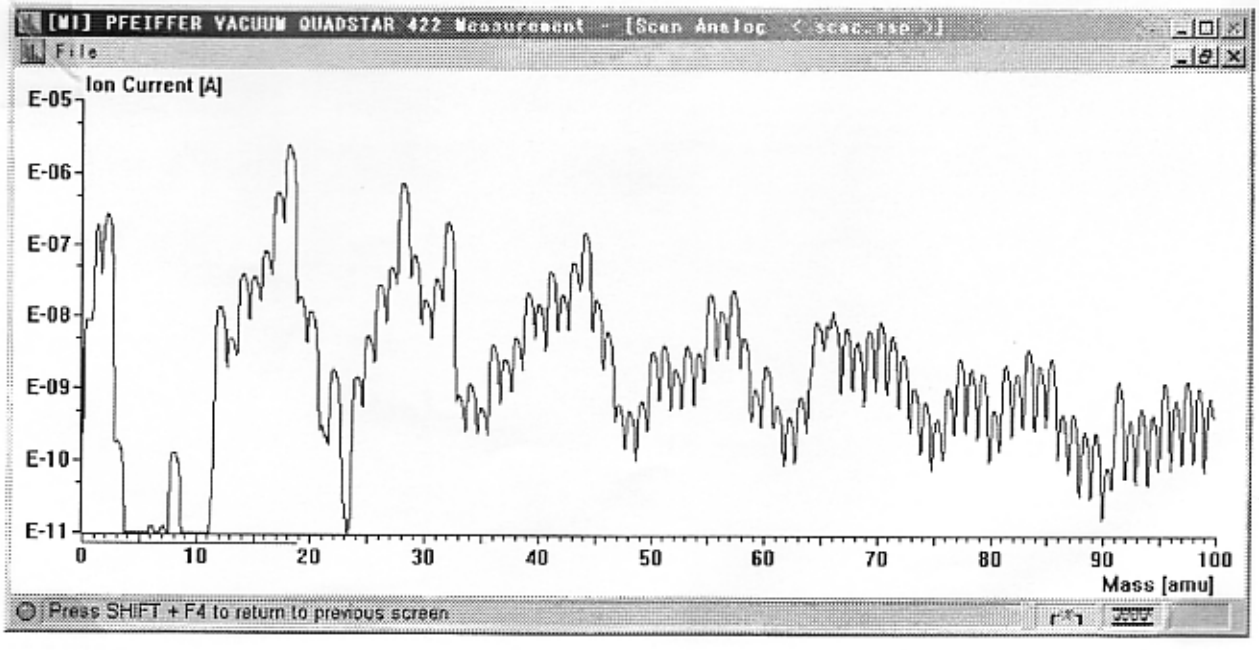


[MI] PFEIFFER VACUUM QUADSTAR 422 Measurement - [Mult_Col_Tab_]

File

Measurement Number:			17	Process	Process	Process
Nbr	Type	Ident	Unit	18:53:00 ??	18:53:22 ??	18:53:45 ??
0	Part.Pre	TOTAL	mbar	4.747E-06	4.690E-06	4.634E-06
1	Part.Pre	Ar	mbar	1.921E-08	1.894E-08	1.870E-08
2	Part.Pre	CO2	mbar	1.327E-07	1.318E-07	1.308E-07
3	Part.Pre	H2	mbar	8.564E-08	8.490E-08	8.421E-08
4	Part.Pre	H2O	mbar	3.152E-06	3.114E-06	3.075E-06
5	Part.Pre	CxHy	mbar	8.805E-08	8.624E-08	8.397E-08
6	Part.Pre	N2 / CO	mbar	9.073E-07	8.948E-07	8.837E-07
7	Part.Pre	O2	mbar	3.614E-07	3.589E-07	3.576E-07
8	Part.Pre	He	mbar	3.966E-11	4.069E-11	3.960E-11
9						
10						
11						
12						
13						
14						
15						
16						

Press SHIFT + F4 to return to previous screen



[MI] PFEIFFER VACUUM QUADSTAR 422 Measurement - [Mult.Col.Tab.]

File

Measurement Number:			9	Process	Process	Process
Nbr	Type	Ident	Unit	— 19:01:57 ??	— 19:02:20 ??	— 19:02:42 ??
0	Part.Pre	TOTAL	mbar	5.626E-06	5.632E-06	5.647E-06
1	Part.Pre	Ar	mbar	2.044E-08	2.045E-08	2.044E-08
2	Part.Pre	CO2	mbar	1.401E-07	1.420E-07	1.435E-07
3	Part.Pre	H2	mbar	4.931E-08	4.915E-08	4.951E-08
4	Part.Pre	H2O	mbar	3.464E-06	3.484E-06	3.505E-06
5	Part.Pre	CxHy	mbar	5.712E-08	5.869E-08	5.999E-08
6	Part.Pre	N2 / CO	mbar	1.449E-06	1.435E-06	1.426E-06
7	Part.Pre	O2	mbar	4.456E-07	4.433E-07	4.424E-07
8	Part.Pre	He	mbar	6.043E-11	6.060E-11	5.942E-11
9						
10						
11						
12						
13						
14						
15						
16						

Press SHIFT + F4 to return to previous screen

13:00 start liquefaction

using getter and molecular sieve

27/Oct.

08:00 liquefaction finished.

- Vessel pressure : 0.122 MPa.
- Xe Tank : 0.02 MPa.
- Temperature @ lower : −103.5 °C.

↓ waiting for liquid Xenon become stable.

09:20. start to suply high voltage.

09:30. set to HV = 100 V @ all PMTs.

09:34. HV set file : all-500.hv loaded.

17:00 start to liquefy Xe in 1 gallon cylinder.

16:30 liquefaction finish

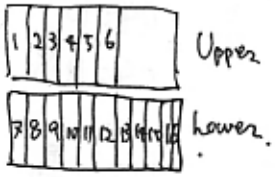
18:33. HV set file : LXe-1E6_0928402.hv loaded,

27/Oct./2002.

18:34. Active divider [redacted] burned! ⇒ (Divider ③. -3
Divider ⑮ -2 .

HV error : HV 9-[redacted].10.

Divider module ID.



Activie divider burned, again!
⇒ (Divider ③. & ⑧.).

HV error : HV 6-8.
HV 4-8.
HV 18-8.

Active divider burned, Divider ⑮ - 6.
Active divider burned, Divider ⑥ - 1.

LXeCR8

20:09. pedestal run. #4198. ⇒ Failure. (Trigger NG).
#4199. pedestal run
#4200. LED calibration RUN.

Stop #4200, because of Divider burst & HV error.

- Active divider :
- HV. 1-1.
  HV. 13-4.

Active divider burned
Divider ⑧ - 5

HV error : HV 5-2

	22:04	#4201	pedestal
X	22:05	#4202	LED ⇒ failed, removed
	22:32	#4202	LED again
X	22:53	#4203	⇒ failed

#4201 ~ #4203 removed

28/Oct/2002

03:58 #4204 pedestal

03:59 #4205 LED

04:10 #4206 α

04:18 #4207 CR --- FIRST CR

↑ ~~TC1,2,3~~

⑧ Software gains of TC1,2,3 were 0 up to the first 24 events.

⇒ set to 1.0

But only histograms of TC[1,2,3][upper, lower] were wrong,

No effects for analysis.

08:08

08:09 #4208 pedestal

08:10 #4209 LED

8:20 #4210 α

8:35 #4211 CR

abnormal pedestals

ADC #	G10-#	
40	2-9	→ seems no problem on active divider
60	2-29	→ active divider broken.
70	3-7	
123	4-28	

14:30 start to evacuate Xe tank for He leak test.

Xe tank He leak test $< 6.0 \times 10^{-10}$ Pa·m³/sec O.K.

15:55 stop 4211

15:52 #4212 pedestal

exchange Active divider ⑧ to other one

16:28 #4213 pedestal

ADC# ~~40~~ 60 is good, but #56 becomes broad.

exchange Active divider ⑨ to other one

noisy channel (seen with oscilloscope)

⑨ - ch 1 upper

⑨ - ch 5 lower

⑨ - ch 7 lower (not noisy but large

⑧ - ch 2 upper, lower

⑧ - ch 7 upper, lower no signal (not

17:15 # 4214 pedestal

17:15 # 4215 pedestal

(Fast Bus でいくつかの問題 ・ADCのフューズが飛んでいた → 交換
・クリップの為の一電圧を供給する青の線がちぎれていた ↓ ハンダづけ

20:00 # 4216 pedestal

exchange Active Divider (16) with other one

20:50 # 4217 pedestal

23:35 circulation start! → バルブ開閉が間違っていて気相から吸い出していた。

23:36 # 4219 pedestal

23:39 # 4220 Led

23:49 # 4221 α

23:55ぶろ # 4222 Cosmic Ray

29/Oct/2002

3:38 Hv error, automatically restart

8:11 #4222 CR stopped.

8:12 #4223 pedestal

8:13 #4224 LED

8:24 #4225 α

8:32 #4226 CR

10:30 circulation start (from liquid phase)

14:13 stop 4226

14:14 # 4227 pedestal

14:15 # 4228 LED

14:30 # 4229 α

14:38 # 4230 CR

29/Oct/2002

16:17 stop 4230

16:18 #4231 pedestal

16:20 #4232 LED

16:30 #4233 α

16:39 #4234 CR

30/Oct/2002

00:00 : stop #4234

0:01 #4235 pedestal → Failure

#4236 pedestal. } ※ No Good.

0:03 #4237 Led

0:17 #4238 α } pedestal : #4231 were substituted.

0:30 #4239 CR } LED : #4232

S

8:19 #4239 stopped

8:20 #4240 pedestal

8:22 #4241 LED

8:37 #4242 α

8:45 #4243 CR

15:57 stop #4243.

15:58 #4244 pedestal T16 Sn-Mg-Cs peak ~ 900ch, σ ~ 0.3P

16:02 #4245 Led.

16:13 #4246 α

16:23 #4247 CR

16:30 Cooling water for the refrigerator cold head is now circulating! Cooling power looks to be improved !!

~~30~~ 31 / Oct / 2002

1:17	stop 4247		
1:19	# 4248	pedestal	An Active divider broken. (was)
1:20	# 4249	LED	
1:29	# 4250	α	

Active divider repair

1:54	# 4251	pedestal	miss trigger
1:55	# 4252	LED	
2:08	# 4253	pedestal	
2:09	# 4254	LED	
2:26	# 4255	alpha	
2:40	# 4256	cosmic ray	
7:47	stop 4256		
7:48	# 4257	pedestal	
7:49	# 4258	LED	
7:59	# 4259	α	
8:08	# 4260	CR	
16:15	stop # 4260		
16:16	# 4261	pedestal	seems to be wrong.
16:18	# 4262	Led	
16:28	# 4263	α	
16:41	# 4264	Cosmic Ray	
16:48	stop # 4264		

recallbration

16:49	# 4265	pedestal
16:50	# 4266	Led
17:07	# 4267	CR.

18:30 start refregerator cold head regeneration

- stop compressser ① and rotally valve ② controll
- stop heater controll on LabView
- on mscb commander
  - >addr 1
  - >wc 1 100
  - >wr 1 1
  - >quit

cold head → 290 K

- start compressser ② and rotally ① valve control
- start heater control on LabView

23:42 stop 4267

23:43 # 4268 pedestal

23:45 # 4269 LED

23:56 # 4271 α

LN2 消費 study

pressure (inner vessel)	サンプル時間	LN2 duty 比
0.125~0.130 Pa	167 分	36 %
0.129~0.130 Pa 前半	134 分	25 %
後半	199 分	21 %
0.134~0.135 Pa 前半	116 分	21 %
後半	150 分	22 %
ここで LICON 交換		
0.139~0.140 Pa	112 分	31 %

LICON PE 1.2 (gauge atm)

→ 以上より 0.134~0.135 が最適と VI も save

~~31/Oct/2002~~

1/Nov/2002

0:09 # 4272 CR

7:57 stop 4272

7:58 # 4273 pedestal

7:59 # 4274 pedestal

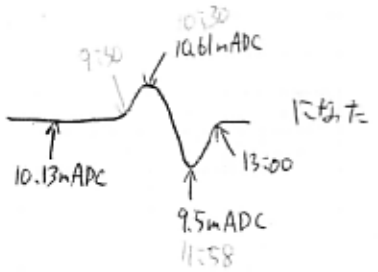
8:00 # 4275 LED

8:10 # 4276 α

8:19 # 4277 CR

1/Nov/2002

11:30~11:55. (N_2を流しすぎ 160.2kまで内圧が低下.



11:49~12:05 PAR paused. while HV off

12:07 161.3kまで回復. 全てのPMTはHV, current 異常なし。

13:00 161.7k ... なかなか 163.0kには戻らない.

15:40 162.5kに....

16:05 #4277 CR stopped

16:06 #4278 pedestal

16:07 #4279 LED

16:21 #4280 α

Test of Yury's AMP. done by SM

Insert Yury's AMP to LZ, S13-M5Z instead of MACRO splitter.
(Gain x10)

RUN #4281. Pedestal RUN. RMS 45.54
~6000 events MEAN 432

Gaussian fit σ = 1.633 ch

In Run #4278 (w/o Yury's AMP), the corresponding channel has a distribution with
RMS 3.598, Mean 183.6
Gaussian fit σ = 0.7590

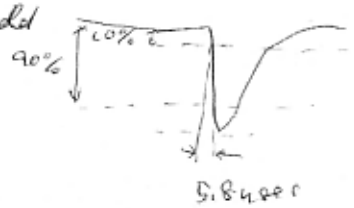
For confirmation, take data. w/o Yury's AMP.
~6000 events RMS 3.239 Mean 183.5
Gaussian fit σ = 0.7271
ok

See the distribution on the next page

Yury's AMP TEST & SUMMARY

Rise Time was measured with various setting by averaging 512 evts
(Fall?) for L7 (S13-M57)

- Raw signal. −4.0mV Trigger threshold



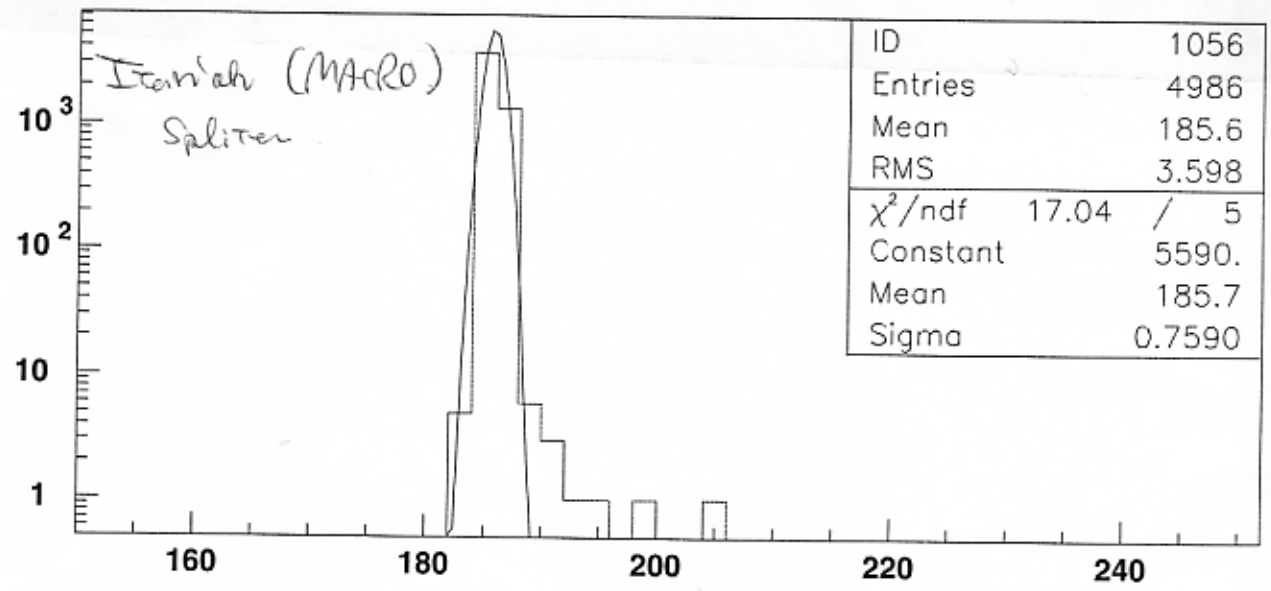
Fall time 10% → 90% 5.80 msec

- W/ Yury's AMP & W/O MACRO Spliter −40mV threshold

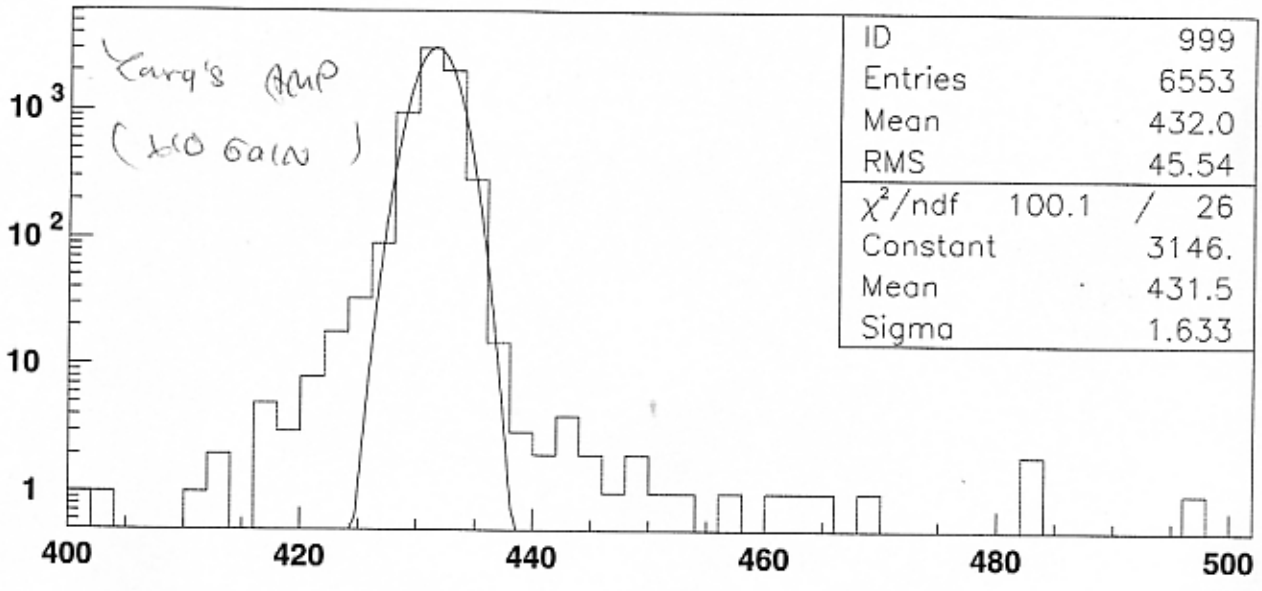
Fall time 10% → 90% 6.60 msec

- W/O Yury's AM & W/ MACRO Spliter −4mV threshold

Fall Time 10% → 90% 8.20 msec.



L7 S13-M57 C56



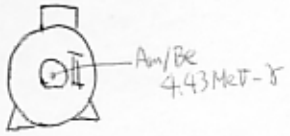
L7 S13-M57 C56

1/Nov/2002

Remark More than half channels of Tary's AMP are dead!!!
(Cost this time, but may be in this one year.)

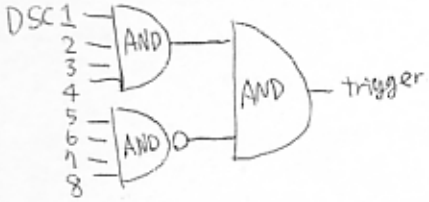
ch #	1	2	3	4	5	6	7 8
A	Ok	x	x	Ok	Ok	Ok	x x
B	Ok	x	x	Ok	Ok	x	x x

Am-Be test



#4283 ~ #4307 ..... test runs, these files should be removed.

trigger setting
threshold = -60mV



・光速の為、cosmicray event と、α event を除こうとすると、五のtrigger が better.

23:24 #4308 background measurement ... 30.000 evts
23:36 #4309 Am/Be を上図の通りにセットして測定 -- 100.000 evts

↑ lxecr8

2/Nov/2002

3:30 recovery start!!

data-backup

lxecr7終了後 ~ lxecr8開始前 ... pstmp12:/scratch3/muegamma/021022_021023
~~84~~MB. pstmp17: F:\021022_021023/
ICEPP: /s/muegamma1/021022_021023

lxecr8 ..... pstmp12:/scratch3/muegamma/021025_021102_lxecr8/
2.1GB pstmp17: F:\021025_021102_lxecr8\
ICEPP: /s/muegamma1/021025_021102_lxecr8/

~~19:10 Output from slidac to microheater changed to ~5V~~

mscb設定

node 2

0	8bit	8	counts
1	8bit	4	byte
2	8bit	5	byte
3	8 bit	0	"
4	8 bit	0	"
5	8 bit	0	"
6	8 bit	0	"
7	8 bit	0	"
8	8 bit	0	"
9	~~8~~ 32bit	0.9755	factor
10	~~8~~ 32bit	-0.3	V

node 3

Config

0	Gain Cal	0.9669	factor
1	Ofs Cal	0	deg