load HV file for α

16:01 #3308 pedestal for α

16:02 #3309 LED 1 & 5 {45 ~ 49}V for α

16:13 #3310 α

load HV file for CR

16:22 #3311 pedestal for CR

16:24 #3312 LED 1 & 5 {45 ~ 49}V for CR

16:36 #3313 CR

21/June/2002.

0:50 Stop the RUN #3313.

HV file reloaded for α.

01:53. Pedestal run for α.

▶ ch-138. (F23, S11-71), ⇒ Overflow.

Mini Card exchange ⇒ OK!

01:09. Pedestal run again. #3315

01:11 LED calibration for α. (145, 45-49V). #3316

1:20 #3317 α

HV set for CR loaded.

#3318 pedestal for CR.

#3319 Led for CR

1:51 #3320 CR

8:05 Yoshimura chamber 6.9 × 10^{-2} Pa baking on @ 40V

8:10 Stop 3320 load HV file for α

8:41 #3321 pedestal for α

8:12 #3322 LED 1 & 5 {45 ~ 49}V for α

8:23 #3323 α ——— failed

8:~~30~~ #3324 α

8:39 #3326 LED 1 & 5 {45 ~ 49}V for α

load HV file for CR

8:51 #3327 pedestal for CR
8:52 #3328 LED 1 & 5 545-493V for CR
~~8:5~~
9:05 #3329 CR
16:00 stop 3329
load HV file for α
16:02 #3330 pedestal for α
16:04 #3331 pedestal for α
16:13 #3332 LED 1 & 5 545-493V for α
16:24 #3333 pedestal for α
16:25 #3334 α
load HV file for CR
16:36 #3335 pedestal for CR
16:37 #3336 LED 1 & 5 545-493V for CR
16:54 #3337 CR

22/June/02'

0:29 stop #3337
HV file for α loaded
0:30 pedestal for α #3338
0:35 led run for α #3339
0:49 α #3340 → failure.
0:50 #3341 α
HV file for CR loaded.
1:17 pedestal for CR #3342.
1:19 #3343 led for CR.
1:33 #3344 CR → failure
#3345 CR

22/June/2002.

08:07. Stop the RUN 3345.

HV set file for α loaded.

08:10. Pedestal run for α. #3346.

08:11. #3347. LED calibration RUN for α. with usual setting.

08:23 #3348. α. ⇨ failure.

08:28 #3349. α ray run, again.

HV reset for COSMIC.

08:38 #3350. Pedestal run for COSMIC.

08:40 #3351. LED Calibration RUN for COSMIC.

08:53 #3352. COSMIC.

11:40 Yoshinum chamber 5.9×10^{-2} Pa → baking off

16:48 stop 3352 load HV file for α

16:49 #3353 pedestal for α

16:50 #3354 LED 1&5 §45 ~493V for α

17:04 #3355 α

load HV file for CR

17:14 #3356 pedestal for CR

17:15 #3357 LED 1&5 §45 ~493V for CR

17:29 #3358 CR

23/June/2002.

00:17. Stop the RUN #3358.

HV set file for α loaded.

00:19. #3359. Pedestal RUN for α.

00:20 #3360. LED Calibration RUN for α, with usual setting.

#3361 ← Failure.

00:32. #3362. α.

HV set file for COSMIC reloaded.

00:43. #3363. Pedestal RUN for COSMIC.

00:44. #3364. LED calibration RUN for COSMIC.

00:56. #3365. COSMIC.

08:05 Stop the RUN #3365.

HV set file for α, loaded.

08:06. #3366, Pedestal RUN for α.

08:07. #3367, LED calibration RUN for α, with usual setting.

08:18. #3368, α. ← Failure.

08:23 #3369, α, again.

HV set file for COSMIC, loaded.

08:32 #3370. Pedestal RUN for COSMIC.

08:33 #3371. LED Calibration RUN for COSMIC.

08:45. #3372. COSMIC.

09:14. Paused, because of HV error. @ HV 1-1.(BT-9).

⇒ Enabling error channel via WEB. ⇒ OK.

09:17. Resumed.

Go to P.126

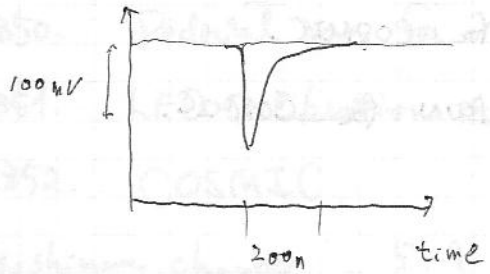
9:45 Yoshinum chamber 1.9×10^{-2} Pa

evacuation stop → fill with Xe gas @ 2.0 atm

relative Q.E. of new type PMT measurement

14:29 qe 0001 am

HV. (upper PMT 1200V
lower PMT 850V



TH (upper 100 mV
lower 100 mV

ADC gate with 500 nsec

15:00	qe 0010 pe	pedestal	5000 eV	bottom
15:002	qe 0010 l1	LED 1	10000 eV	~~Top~~ 25.7°C
15:09	qe 0011 l1	LED 1	10000 eV	mid 25.8°C
15:11	qe 0011 l2	LED 2	10000 eV	~~bot~~ top 26.1°C
15:12	qe 0011 am	Am	50000 eV	2.06 atm
15:17	qe 0012 pe	pedestal	1000 eV	25.7°C
15:20	qe 0012 l1	LED 1	10000 eV	25.8°C
15:22	qe 0012 l2	LED 2	10000 eV	26.1°C
15:25	qe 0012 am	Am	10000 eV	2.06 atm
15:50	qe 0013 pe	pedestal	5000 eV	−14.4°C
15:52	qe 0013 l1	LED 1	10000 eV	−8.57°C
15:54	qe 0013 l2	LED 2	10000 eV	−12.1°C
液化開始		signal が小さすぎる		1.56 atm

(1 gal cylinder ~63 atm)

23/Jun/2002

15:58	qe0013am	Am	10000eV	
16:39	qe0014pe	pedestal	5000eV	-88.9°C
~~16:41~~	~~qe0014l1~~	~~LED1~~	~~10000eV~~	-89.8°C
16:47	qe0014l3	LED1	10000eV	-84.7°C
16:50	qe0014l2	LED2	10000eV	1.177atm
16:52	qe0014am	Am	10000eV	
17:09	qe0015pe	pedestal	5000eV	-90.8°C
17:10	qe0015l1	LED1	10000eV	-92.3°C
17:13	qe0015l2	LED2	10000eV	-85.2°C
17:15	qe0015am	Am	10000eV	1.72atm
17:20	qe0016pe	pedestal	5000eV	-101.4°C
17:22	qe0016l1	LED1	10000eV	-101.2°C
17:24	qe0016l2	LED2	10000eV	-90.6°C
17:26	qe0016am	Am	10000eV	1.38atm
17:48	qe0017pe	pedestal	5000eV	
17:49	qe0017l1	LED1	10000eV	-106.4°C
17:51	qe0017l2	LED2	10000eV	-106.3°C
17:53	液化終了			-105.1°C
17:54	qe0017l3	LED1	10000eV	1.09atm
17:56	qe0017l4	LED2	10000eV	
17:58	qe0017am	Am	10000eV	
18:23	qe0018pe	pedestal	5000eV	-109.3°C
18:24	qe0018l1	LED1	10000eV	-109.3°C
18:26	qe0018l2	LED2	10000eV	-105.9°C
18:29	qe0018am	Am	10000eV	1.42atm

23/Jun/2002

18:57	qe0019pe	pedestal	5000eV	−111.2°C
18:59	qe0019l1	LED1	10000eV	−109.6°C
19:01	qe0019l2	LED2	10000eV	−109.0°C
19:03	qe0019am	Am	10000eV	0.93atm
19:30	qe0020pe	pedestal	5000eV	−111.1
19:31	qe0020l1	LED1	10000eV	−109.9
19:32	qe0020l2	LED2	10000eV	−103.7
19:36	qe0020am	Am	10000eV	1.26atm
20:16	qe0021pe	pedestal	5000eV	−110.2
20:17	qe0021l2	LED1	10000eV	−109.8
20:20	qe0021l1	LED2	10000eV	−98.4
20:22	qe0021am	Am	10000eV	1.6atm
21:40	qe0022pe	pedestal	5000eV	−109.4
21:42	qe0022l1	LED1	10000eV	−109.9
21:44	qe0022l2	LED2	10000eV	−100.5
21:45	qe0022am	Am	10000eV	1.41atm

From P.128

16:00 #3372 (cosmic ray run) stopped.
HV file for α loaded
16:01 #3373 pedestal for α (5,340 evts)
16:03 #3374 LED 1&5 flashing for α 545.−.4910
#3375 failed
16:17 #3376 α run (69,889 evts)
HV file for CR loaded
16:30 #3377 pedestal for CR (5,031 evts)
16:31 #3378 LED 1&5 flashing for CR 545.−.4910
16:43 #3379 CR run start

Go to P.130

23/Jun/2002

22:11	qe0023pe	5000 ev		
22:11	qe0023l1	LED1	10000 ev	
		↓ decrease LED luminosity		−108.9
22:17	qe0023l2	LED1	10000 ev	
		↓ decrease LED luminosity		−109.6
22:19	qe0023l3	LED1	10000 ev	
		↓ decrease LED luminosity		−98.0
22:22	qe0023l4	LED1		
		↓ decrease LED luminosity		1.6 atm
22:24	qe0023l5	LED1		
22:26	qe0023am	Am	10000 ev	

23:39	qe0024pe	pedestal	5000 ev	
23:40	qe0024l1	LED 1	10000 ev	
23:43	qe0024l2	LED 1		−105.5
23:46	qe0024l3	LED1		−109.5
23:47	qe0024l4	LED1		−99.96
23:50	qe0024l5	LED 1		1.46 atm
23:53	qe0024am	~~LE~~ Am	10000 ev	

LP

23:58 stop 3379
load HV file for α

23:59 #3380 pedestal for α

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0:00 #3381 LED 1&5 for α

0:16 #3382 α
load HV file for CR

0:29 #3383 pedestal for CR

0:28 #3384 LED 1&5 {45~49}V for CR

0:40 #33895 CR

0:44	qe0025pe	pedestal	50000 eV
0:44	qe0025l1	LED 1	10000 eV
0:47	qe0025l2	LED 1	10000 eV
0:49	qe0025l3	LED 1	10000 eV
0:52	qe0025l4	LED 1	1000 eV
0:54	qe0025l5	LED 1	10000 eV
0:56	qe0025am	Am	10000 eV
2:02	qe0026pe	pedestal	~~1000~~ 5000 eV
2:03	qe0026l1	LED 1	10000 eV
2:05	qe0026l2	LED 1	10000 eV
2:07	qe0026l3	LED 1	1000 eV
2:10	qe0026l4	LED 1	10000 eV
2:12	qe0026l5	LED 1	10000 eV
2:14	qe0026am	Am	10000 eV
3:00	qe0027pe	pedestal	5000 eV
3:02	qe0027l1	LED 1	10000 eV
3:05	qe0027l2	LED 1	10000 eV
3:07	qe0027l3	LED 1	10000 eV
3:10	qe0027l4	LED 1	10000 eV
3:12	qe0027l5	LED 1	10000 eV
3:14	qe0027am	Am	30000 eV
3:19	qe0027l6	LED 2	10000 eV
3:21	qe0027l7	LED 2	10000 eV
3:24	qe0027l8	LED 2	10000 eV
3:25	qe0027l9	LED 2	10000 eV
3:27	qe0027lx	LED 2	10000 eV

-103.7 °C

-106.4 °C

-96.8 °C

1.87 atm

4:03	qe0028pe	pedestal	5000 ev
4:04	qe0028l1	LED1	10000 ev
4:06	qe0028l2	LED1	10000eV
4:08	qe0028l3	LED1	10000eV
4:10	qe0028l4	LED1	10000eV
4:13	qe0028l5	LED1	10000eV
4:15	qe0028am	Am	30000eV
5:04	qe0029pe	pedestal	5000eV
5:07	qe0029l1	LED1	10000 eV
5:09	qe0029l2	LED1	10000eV
5:12	qe0029l3	LED1	10000eV
5:14	qe0029l4	LED1	10000eV
5:16	qe0029l5	LED1	10000eV
5:19	qe0029am	Am	30000eV
6:04	qe0030pe	pedestal	5000eV
6:06	qe0030l1	LED1	10000eV
6:08	qe0030l2	LED2	10000 eV
6:10	qe0030l3	LED3	10000eV
6:12	qe0030l4	LED4	10000eV
6:15	qe0030l5	LED5	10000 eV
6:20	qe0030am	Am	30000 eV
6:56	qe0031pe	pedestal	5000 eV
6:57	qe0031l1	LED1	10000 eV
7:00	qe0031l2	LED1	10000 eV
7:03	qe0031l3	LED1	10000 eV
7:05	qe0031l4	LED1	10000 eV
7:08	qe0031l5	LED1	10000 eV
7:10	qe0031am	Am	30000 eV

-103.4
-105.6
-99.3
1.57 atm

-101.2°C
-102.3°C
-96.5°C
1.86 atm

24/Jan/2002

7:12 Yoshimura chamber recovering start

7:34	qe 0032 pe	pedestal	5000 eV	
7:35	qe 0032 l1	LED 1	10000 eV	−104.6
7:38	qe 0032 l2	LED 1	10000 eV	−104.8
7:40	qe 0032 l3	LED 1	10000 eV	−56.6
7:42	qe 0032 l4	LED 1	10000 eV	1.03 atm
7:44	qe 0032 l5	LED 1	10000 eV	
7:~~46~~ 50	qe 0032 am	Am	30000 eV	(0.96 atm)

Upper PMT TH → 50 mV

lower PMT TH → 50 mV

8:05	qe 0033 am	Am	30000 eV	1.7 atm
8:07	qe 0033 l1	LED 1	10000 eV	
8:10	qe 0033 l2	LED 1	10000 eV	
8:13	qe 0033 l2	LED 1	10000 eV	

From P.126

8:12 #3385 CR run stopped
HV file for α loaded
8:13 #3386 pedestal for α (5,042 evts)
8:14 #3387 LED 1&5 flash for α 145-49ch ← #3388 failed
8:30 #3389 α run (50,227 evts)
HV file for CR loaded
8:40 #3390 pedestal for CR
8:42 #3391 LED 1&5 flash for CR 145-49ch
8:53 #3392 CR run

9:03	qe0034pe	pedestal	5000 ev		-54.8°c
9:05	qe0034l1	LED1	10000 ev		-94.4°c
9:07	qe0034l2	LED ~~2~~ 1	10000 ev		-16.8°c
9:08	qe0034l3	LED1	10000 ev		
9:11	qe0034am	Am	30000 ev	(1.75 atm)	
9:37	qe0035pe	pedestal	5000 ev		
9:39	qe0035l1	LED1	10000 ev		-20.4°c
9:41	qe0035l2	LED ~~2~~ 1	10000 ev		-50.0°c
9:43	qe0035l3	LED 1	10000 ev		-7.2°c
9:45	qe0035am	Am	30000 ev	1.28 atm	

9:46 pause recovery
close the valve of 1 gal cylinder.
keep Xe of ~~1.39~~ 1.29 atm in the Yoshimura chamber

16:15 #3392 CR run stop (479 evts)

HV file for α loaded

16:16 #3393 pedestal for α (5

16:24 #3394 LED 1&5 for α (45...49V)

~~#3393~~

~~HV file for CR loaded~~

16:42 #3395. α.

HV file for COSMIC, loaded.

16:51. #3396. Pedestal RUN for COSMIC.

16:53. #3397. LED Calibration RUN for COSMIC.

17:05. #3398. COSMIC.

⚠ pstmp12の /scratch2 が disk fullになりました。
ここには ~/users/siquorel/febtest/nup@ の実体がありましたが、/scratch2 が一杯なので、とりあえず、/scratch1/cosmic_jun-2002_nup/ を新たに作りここへ nup@ の link を張り直しました。尚、以前の nup の実体へは、nup_old という link を張ってあります。

24/Jun/2002

20:07 #~~3398~~ 3399 stopped.

20:07 #~~3400~~ 3399 CR run start~

20:17	qe0036pe	pedestal	50000 ev	1.39 atm gas @ room temperature
20:18	qe0036l1	LED 1	10000 ev	
20:19	qe0036l2	LED 1	10000 ev	
20:21	qe0036l3	LED 1	10000 ev	
20:23	qe0036l4	LED 1	10000 ev	
20:26	qe0036l5	LED 1 upper, lower TH	10000 ev →[redacted] mV	
20:32	qe0036Am	Am	30000 ev	

21:55 resume recovering.

22:35 recovery finished.

25/Jun/2002

0:04 #3399 stopped ← load HV set for α

0:08 #3400 pedestal Run for alpha

0:10 #3401 LED 1&5 calibration Run for α {45-493V set

0:22 #3402 α Run (49894 events)

load HV set for CR

0:33 #3403 pedestal Run for CR (4987 events)

0:35 #3404 LED 1&5 calibration Run for CR {45-493V set

0:48 #3405 CR Run

2:51 HV module LRS1458 (include [redacted] HV for trigger counters) suspended.

5

7:55 → Probably, PMT outputs may be unstable for a while.

7:55 #3405 stopped

HV file for α loaded.

7:58 #3406 pedestal for α (5,509 evts)
7:59 #3407 LED 1&5 flash for α 145-4947
8:11 #3~~5~~48 α run
HV file for CR loaded
8:21 #3~~0~~40~~7~~9 pedestal for CR (5,649 evts)
8:22 #3410 LED 1&5 flash for CR 145-4947
8:34 #3411 CR run

14:12 #3411 stopped to stop circulation.
HV file for α loaded.
14:14 #3412 pedestal for α (8209 evts)
14:17 #3413 LED 1&5 for α
14:28 #3414 α
14:40 #3415 α again to monitor the situation after stopping circulation
14:45 Circulation stopped with refrigerater on (keep) circulation
LN_2 off

- LN_2 pressure control btw 1.30 – 1.35.
- Refrigerator set temp 163 K.
- close valves at inlet and outlet of the getter → getter switched off

14:57 All ~~power~~ devices down due to the current leakage at heater controller ~~of~~ for the circulation.

15:02 #3416 α again (~~&~~ 49897 evts)
HV file for CR loaded
15:12 #3417 pedestal for CR
~~15:13 #3418 LED 1&5 for CR~~
15:36 #3418 ~~LED 1&5 for CR~~ pedestal for CR again
15:40 #3419 LED 1&5 for CR
15:52 #3420 CR after circulation stopped
16:31 DewPoint Meter power off. (too low ~~indication~~ d.point and no flow)

25/June/02.

Stop the RUN #3420 on 20:13.

HV file for "α" loaded.

20:14. #3421. Pedestal RUN for α.

20:16 #3422. LED calibration for α.

20:28 #3423. α.

HV file for COSMIC loaded.

20:38. #3424. pedestal for COSMIC

20:39 #3425 LED Calibration for COSMIC.

20:51 #3426. COSMIC.

20:44 Refrigerator stop to refresh.
Warm up Cold head by energizing heater up to 71 W.

21:05 Cold head 281 K

21:10 Cold head 290.4K.

21:13 Comp Restart

21:30 169.1K 134 kPa

26/June/2002

0:10 Yoshimura chamber 2.6×10^{-2} Pa
fill with Xe @ 2.0 atm
Upper / lower → TH1 50 mV

0:30 ~ 0:35	qe0037 pe	pedestal	5000 eV	2.0 atm @ room temp
	qe0037 l1 ~ l5	LED1	10000 eV	
0:36	qe0037 am	30000 eV		
0:42	qe0038 pe	5000 eV		
0:44	qe0038 l1	10000 eV		
0:45	qe0038 l2	10000 eV		
0:48	qe0038 l3	10000 eV		
0:50	qe0038 l4	10000 eV		
0:53	qe0038 l5	10000 eV		

1:00 cooling start

LP. cRun.
1:20 Stop #3426.
Hv set for α loaded.
1:21 #3427 pedestal for α.
1:25 #3428 led for α.
1:35 #3429 α

---

qe0039 pe l1~l5) -79°C
1:30 qe0039 am Am 30000 ev) -79°C -73°C 1.41 atm @ gas

upper
lower) → TH 20 mV

1:35 qe0040 am Am 30000 ev

upper
lower) → TH 15 mV

1:40 qe0041 am Am 30000 ev

1:50 liquefaction start (1gal cylinder ~60 atm)

LP. Hv file for CR load
1:45 #3430 pedestal for CR.
1:47 #3431 Led run to CR.
2:00 #3432 CR

2:43 small chamber liquefaction stopped.

3:20	qe0042pe	pedestal	5000 ev	
3:23	qe0042l1	LED1	10000 ev	−112.5 °C
3:25	qe0042l2	LED1	10000 ev	−109.0°C
3:27	qe0042l3	LED1	10000ev	−99.1°C
3:31	qe0042l4	LED1	10000ev	
3:33	qe0042l5	LED1	10000 ev	1.68 atm
3:35	qe0042am	Am	50000ev	
3:54	qe0043pe	pedestal	5000ev	
3:56	qe0043l1	LED1	10000 ev	
3:58	qe0043l2	LED1	10000 ev	
4:01	qe0043l3	LED1	10000ev	
4:03	qe0043l4	LED1	10000 ev	
4:06	qe0043l5	LED1	10000ev	
4:08	qe0043am	Am	50000ev	

4:20	qe0044pe	pedestal	~~5,000 events~~ 16,335 events ←	−113.4 °C −112.0 °C −103.3 °C 1.22 atm (ABS)
	qe0044l1	LED1	10,000 events	
4:30	qe0044l2	LED1	10,000 events	
	qe0044l3	LED1	10,000 events	
4:33	qe0044l4	LED1	10,000 events	
4:38	qe0044am		50,000 events	1.37 atm. −113.0 °C −112.5 °C −101.0 °C

4:55. ge0045pe pedestal 5,000 events ← −112.6 °C
−113.0 °C
−98.4 °C
1.59 atm

ge0045l1 LED 1 10,000 events

5:00 ge0045l2 LED 1 10,000 events

ge0045l3 LED 1 10,000 events

ge0045l4 LED 1 10,000 events

5:10 ge0045l5 LED 1 10,000 events

ge0045am Am 50,000 events 1.84 atm

5:15 recovery start

(LP) 6:06 ···· stop 3432
load HV file for α

6:07 #3433 α
load HV file for CR

6:24 #3434 CR

8:02 stop 3434
HV file for α loaded

8:04 #3435 pedestal for α

8:06 #3436 LED 1 & 5 {45~49} V for α

8:21 #3437 α
HV file for CR loaded

8:30 #3438 pedestal for CR

8:32 #3439 LED 1 & 5 {45-49} V for CR

8:46 #3440 CR — failure

8:48 #3441 CR

Go to P.139

9:52			
~~9:56~~	qe0046pe	pedestal	5000ev
9:53	qe0046l1	LED1	10000ev
9:56	qe0046l2	LED1	10000ev
9:59	qe0046l3	LED3	

flowを止めてtankとる

10:08	qe0047pe	pedestal	5000ev	
10:10	qe0047l1	LED1	10000ev	時間とともに温度が下がっているのでLEDのoutputも下がっている
	qe0047l2	LED1	10000ev	
10:15	qe0047l3	LED1	10000ev	
10:17	qe0047l4	LED1	10000ev	
10:19	qe0047l5	LED1	10000ev	
10:21	qe0047am	Am	50000ev	↓は時間的な変化なし

-30°
-97°
-92°
1.79atm

10:38	qe0048pe	5000ev	pedestal	-30.5°C	温度はあまり変化なし
	qe0048l1	10000ev	LED1	-69.5°C	
	qe0048l2~l5			-97.1°C	
10:59	qe0048lam	Am	50000ev	1.87	

11:23 qe0049pe 5,0000ev pedestal p=2.01 atm
qe0049l1 10,000events LED1
~
l5
11:38 qe0049am 50,000 events Am p=2.06atm.
-29°C -96°C -67°C

26/Jun/2002

From P.137

16:34 #3441 CR run stopped

HV file for α loaded

16:36 #3442 pedestal for α (5,030 evts)
16:38 #3443 LED 1&5 flash for α 545-499V
16:51 #3444 α run

HV file for CR loaded

17:00 #3445 pedestal for CR (4,633 evts)

failed.

→ HV error お起きていた可能性高い ⇒ 却下

HV file for α loaded.

17:08 #3446 pedestal for α (5,400 evts)
17:09 #3447 LED 1&5 flash for α 545-499V ⇒ failed by HV error

19:48 New HV setting.

C:\online\~~data~~\hvdata\hvdata_26_Jun_2002\

- LXe_1E6_new.hv --- CR run
  BT2 → 0V
  L3 → 0V
  } 昔の hvdata_120502\LXe_1E6.hv から変更点

- LXe_1E6_for_alpha_new.hv --- α run
  BT2 → 0V
  L3 → 0V
  {BT, L, R, T}{2, 3, 8, 9} の玉は、以前の hvdata_120502\LXe_1E6_for_alpha.hv では、LXe_1E6.hv の値に +200V してあったが、今回は、HV trip が頻発したので、各α周りの玉を1つだけ +200V した。
  BT9 → +200V
  L8 → +200V
  T3 → +200V
  R8 → +200V

BT2, L3 は使えなくなりました。

注
L2, L9 の current が 80μA もある。
HV ~ 800V くらいなのにこの値は高すぎる

19:56

26/Jun./2002.

20:00. #3448. Pedestal RUN for α.

20:03. #3449. LED Calibration RUN for α.

20:14. #3450, α. ← top & bottom's α only.

HV set file for COSMIC, loaded. ; "LXe_1E6_new.hv".

20:26. #3451. pedestal for COSMIC.

20:27. #3452. LED Calibration RUN for COSMIC.

20:39. #3453. COSMIC.

〜

22:57 #3453 stopped

new HV setting files.

"LXe-1Eb-for-alpha-new.hv"

address	HV for CR	HV for α	
L2	860	1010	+150
L3	—	—	
L8	869	1069	+200
L9	786	~~936~~	+150
T2	887	1087	+200
T8	871	1071	+200
T3	797	997	+200
T9	876	1076	+200
R2	763	963	+200
R3	—	—	
R8	816	1016	+200
R9	844	1044	+200
BT2	—		
BT3	877	~~877~~ 877	~~+0~~
BT8	819	~~819~~ 819	~~+0~~
BT9	854	1054	+200

- L2, L9 [illegible] はcurrent ≲100μA もある。
- R3は前から死亡
- BT3, BT8は unstable なので current 多すぎ" なので +200V はこれくらい

new HV file for α loaded

23:10 #3454 pedestal for α (5,888 evts)
23:12 #3455 LED 1 & 5 flash for α 945-4945 } TEST runs
23:23 #3456 α run test (3324 evts)

#3457

27/Jun/2002

- supplied HVs changed
  - BT3: 877V → 777V (CR run, α run)
  - T2: 1087V → 887V (α run)

0124 #3457 pedestal for α (5,041 evts)
0126 #3458 LED 1&5 flash for α 545-499V
#3459

} HV error ⇒ failure.

0137 #3460 pedestal for α (5,041 evts)
0138 #3461 LED 1&5 flash for α 545-499V
0150 #3462 α

HV set for CR loaded
1:00 #3463 pedestal for CR
1:03 #3464 Led for CR.
1:16 #3465 CR.
8:36 #3465 stopped

HV set for α loaded.
8:38 #3466 pedestal for α
8:39 #3467 Led for α
8:50 #3468 α

HV set for CR loaded
9:01 #3469 pedestal for CR → failure!
#3470 pedestal for CR.
9:03 #3471 Led for CR
9:18 #3472 CR

27 / Jun / 02.

16:04. Stop the RUN #3472.

HV error occured, HV12-1 (BT38).
Enabled via Web. ⇒ X, again ⇒ X ..... HV12-1. ⇒ Desabled.

HV set file (LXe-1E6-new.hv, LXe-1E6-for-alpha_neco.hv) modified.
BT38: 754V → 0V.

HV set file for α. loaded.

16:16 # 3473. Pedestal RUN for "α". → RUN comment is wrong. "COSMIC" → "α". sorry... (HN).

16:17. # 3474. LED Calibration RUN for α, with usual setting.

16:29. # 3475. α.

HV set file for COSMIC. loaded.

16:41. # 3476. Pedestal RUN for "COSMIC".

16:42. # 3477. LED Calibration RUN for COSMIC.

16:54 #3478. COSMIC.

~19:00 HV suspeded

28/Jun/02 0:11 #3478 stopped

HV file for α loaded
0:12 #3479 pedestal for α (5.071evts)
0:14 #3480 LED run for α 545-497V
0:25 #3481 α run (50000evts)

HV file for CR loaded
0:34 #3482 pedestal for CR (5.108evts) ~~#3483 failed~~
1:06 ~~#3483~~ #3484 LED run for CR 545-497V
1:15 ~~#3484~~ #3485 COSMIC run

8:05 #3485 stopped

28/Jun/2002

HV file for α loaded

~~8:06 #3485 pedestal for α (5,153 evts)~~

~~8:07 #3486 LED 1&5 flash for α 545-499V~~

HV error

8:16 #3485 pedestal for α (5,091 evts)

8:17 #3486 LED run for α 545-499V

~~HV file for CR loaded~~

8:28 #3487 α run (50000 evts)

HV file for CR loaded

8:38 #3488 pedestal for CR (5,539 evts)

8:39 #3489 LED run for CR

8:52 #3490 CR run

?

17:01 #3490 stopped (502 events)

load HV set for α

17:03 #3491 pedestal Run for α

17:06 #3492 LED run for α

17:17 #3493 α Run

HV ~~file~~ file for CR loaded

17:28 #3494 pedestal for CR

17:30 #3495 LED run for CR

17:45 #3496 CR

?

29/Jun/2002

?

0:07 #3496 stopped

load HV set for α

0:08 #3497 pedestal run for α (4,987 events)

0:10 #3498 LED 1&5 run for α

0:21 #3499 α Run (49,895 events)

load HV set for CR

0:32 #3500 pedestal run for CR (4,986 events)

0:34 #3501 LED 1&5 run for CR

0:46 #3502 CR run

29/Jun/2002.

8:20 Stopped #3502.
HV file for α loaded.

8:22 pedestal for α #3503

8:23 Led for α #3504

8:34 α #3505

8:45 HV file for CR loaded.
pedestal for LED #3506

8:46 Led for CR #3507

8:58 CR #3508

16:00. Stop the RUN #3508
Loading HV set file for α.

16:02. # 3509. Pedestal RUN for α.

16:03 # 3510. LED calibration RUN for α, with usual setting.

16:14 # 3511. α.
Loading HV set file for COSMIC.

16:25. # 3512 pedestal RUN for COSMIC.

16:26. # 3513. LED Calibration for COSMIC

16:38. # 3514. COSMIC.

)

30/Jun/2002

0:01 # 3514 Stopped
load HV set for α

0:02 # 3515 pedestal run for α

0:04 # 3516 LED 1&5 run for α

0:17 # 3518 α run ← #3517 failure
load HV set for CR

0:34 # 3519 pedestal run for CR

0:36 # 3520 LED 1&5 run for CR

0:48 # 3521 CR Run

30/Jun/2002

?

8:05 #3521 stopped
load HV set for α

8:06 #3522 pedestal run for α

8:09 #3523 LED run for α

8:21 #3524 α Run (50,000 events)
load HV set for CR

8:32 #3525 pedestal run for CR

8:34 #3526 LED 1&5 flash for CR

8:47 #3527 CR run

16:14. Stop the RUN #3527.
Loading HV set file for α.

16:15. #3528. Pedestal RUN for α.

16:16. #3529. LED calibration RUN for α, with ascal setting.

16:40 #3530 α
load HV set for CR

16:50 #3531 pedestal for CR

16:52 #3532 LED 1 & 5 [45 ~ 49]V for CR

17:04 #3533 CR

1/Jul/2002

0:18 stop 3533

load HV file for α

0:50 ~~#3534~~ #3534 pedestal for α (~~5,319~~ 5,001 events)

0:52 ~~#3535~~ #3535 LED 1 & 5 [45 ~ 49]V for α

1:05 ~~0:52~~ #3536 α run

HV file for CR loaded

1:20 ~~0:41~~ #3537 pedestal for CR (~~5,112~~ 5,091 events)

1:22 ~~0:42~~ #3538 LED 1&5 for CR [45-49]V

1:33 #3539 CR run

8:28 #3540 stopped

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HV file for α loaded

8:30 #3540 pedestal for α (5,022 evts)

8:31 #3541 LED 1&5 for α 545-549V

8:51 ~~8:43~~ #3542 α run

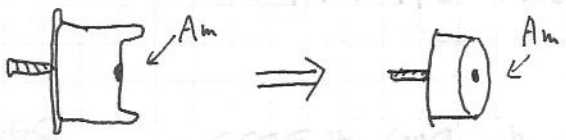
HV file for CR loaded

9:07 #3543 pedestal for CR (6,346 evts)

9:09 #3544 LED 1&5 for CR

9:20 #3545 CR run

16:00 change α soure in Yoshimura chamber & start to ~~evact~~ evacuate.



16:14 stop 3545 load HV file for α

16:16 #3546 pedestal for α

16:18 #3547 LED 1&5 545~549V for α

16:28 #3548 α load HV file for CR

16:38 #3549 pedestal for CR

16:40 #3550 LED 1&5 545-549V for CR

16:51 #3551 CR

02Jul2002

0:12 #3551 stopped

HV file for α loaded } #3552 failed

0:14 #3553 pedestal for α (5,012 evts)

0:15 #3554 LED 1&5 flash for α 545-549V

0:26 #3555 α run (50,000 evts)

HV file for CR loaded

0:35 #3556 pedestal for CR (5,091 evts)

0:37 #3557 LED 1&5 flash for CR 545-549V

0:48 #3558 CR run

8:10 Stop CR run #3558

Hv file for α loaded.

8:11 pedestal for α #3559

8:12 Led for α #3560

8:25 ~~Led~~ α #3561

Hv file for CR loaded

8:34 pedestal for CR #3562

8:35 Led for CR #3563 ややLedの出力不安定。光量が徐々に増加

8:48 CR #3564 → KEK page.

10:40 Yoshimura chamber He leak test $< 1.0 \times 10^{-10}$ Pam^3/sec
2.0×10^{-2} Pa O.K.

1 gal tank ~ 72 atm
fill with Xe of 2 atm

13:00 liquefaction finish

start gain setting

				gain
qe0050l1) qe0050pe)	upper lower	~~1200V~~ 1100V 800V	⇒	$2.6 \times 10^6 \times 2$ $5.2 \times 10^6 \times 2$

14:13 qe0051pe) qe0051l1)		1050V 750V	⇒	$1.7 \times 10^6 \times 2$ $4.8 \times 10^6 \times 2$
14:20 qe0052pe) qe0052l1)		950V 650V	⇒	$5.5 \times 10^5 \times 2$ $2.1 \times 10^6 \times 2$
14:26 qe0053pe) qe0053l1)		980V 600V	⇒	$3.0 \times 10^5 \times 2$ $2.8 \times 10^6 \times 2$ ↑ ADC input が逆だった
14:33 qe0054pe) qe0054l1)		900V 700V	⇒	$1.06 \times 10^6 \times 2$ $0.98 \times 10^6 \times 2$
14:38 qe0055pe) qe0055l1)		890V 710V	⇒	$0.97 \times 10^6 \times 2$ $1.09 \times 10^6 \times 2$
14:42 qe0056pe) qe0056l1)		895V 705V	⇒	$1.04 \times 10^6 \times 2$ $1.06 \times 10^6 \times 2$

TH upper / lower) ~~12a 12mV~~ 15 mV

14:54 qe0057pe
14:55 qe0057l1~l5
qe0057am

		gain	Nphe	ratio
	upper	$1.14\times10^6 \times2$	73	2.9
	lower	$1.17\times10^6 \times2$	211	
LEDの時間的な変化を補正		2.26×10^6	77	2.9
		2.27×10^6	223	

α a rate 10分で 441640 event → 736.1 Hz

25.15

15:40 qe0058pe
qe0058l1~l5
qe0058am

	gain	Nphe	ratio
upper	2.57×10^6	52	
lower	2.10×10^6	154	2.99

qe0059	pe	850 V	1.6×10^6
	l1	680 V	2.2×10^6
qe0060	pe	830 V	1.19×10^6
	l1	640 V	0.89×10^6
qe0061	pe	815 V	1.06×10^6
	l1	655 V	1.11×10^6
qe0062	pe	810 V	1.16×10^6
	l1	650 V	1.54×10^6
qe0063	pe	805 V	0.91×10^6
	l1	645 V	0.92×10^6
qe0064	pe	807 V	1.11×10^6
	l1	647 V	1.46×10^6

806V / 646V — Use this HV setting

16:32 qe0065pe
l1~l5
am

signalが小さいので lower PMTのみでtriggerをかけた
12 mV

gain	Nphe	ratio
1.00×10^6	31コ	3.0倍
1.23×10^6	93コ	
~~1.15×10^6~~	37	2.7
~~0.83×10^6~~	100	
1.15×10^6		

あまりうまくcalibrationできていない

07 July / 2002.

16:03. # 3564. stop.

HV set file for α, loaded.

16:04 # 3565. pedestal run for α.

16:06. # 3566. LED Calibration run for α.

16:12 # 3567. α.

HV set file for COSMIC, loaded.

16:22 # 3568. pedestal run for COSMIC.

16:28. # 3569. LED Calibration run for COSMIC.

16:39. # 3570. COSMIC. ⇒ page 150

17:30 qe0066 pe
l1 ~ l5
am

17:54 qe0068 pe
l1 ~ l5
am
0.94 × 10^6 41コ 3.23
1.29 × 10^6 133コ
(LED time dep corrected) → 0.88 × 10^6 44コ 4.3
0.95 × 10^6 192コ

19:00 qe0069 pe
l1 ~ l5
am
Calibration が無い.
0.98 × 10^6 64コ 5.13
1.00 × 10^6 329コ

19:20 qe0070 pe
l1 ~ l5
am
0.91 × 10^6 77コ 4.21
無
1.01 × 10^6 321コ
(LED time dep corrected) → 0.88 × 10^6 83コ 4.41
0.90 × 10^6 368コ

21:43 qe0071 pe
l1 ~ l5
am
0.87 × 10^6 130 3.7
0.96 × 10^6 483

22:31 qe0072 pe
l1 ~ l5
am
~~0.87 × 10^6 137~~
~~0.92 × 10^6~~ ~~3.7~~
~~0.96 × 10^6 483~~
0.87 × 10^6 137
0.89 × 10^6 526 3.8

23:25 qe00073 pe 0.84×10^6 122 3.4
l1~l5 0.86×10^6 418
am

Change HV setting to (808 V / 648 V)

23:48 qe00074 pe 0.85×10^6
l1~l5 0.95×10^6

qe00075 pe (812 V 0.96×10^6 / 649 V 0.94×10^6)
l1~l5

3/Jul/2002

0:15 qe00076 pe (814V 0.98×10^6 108 / 651V 1.01×10^6 380) 3.5
l1~l5
am ← Use this setting for 1×10^6 gain study

---

from Page 149

0:20 #3570 CR run stopped
HV file for α loaded
0:20 #3571 pedestal for α (4.981 evts)
0:23 #3572 LED 1 & 5 flash for α
0:33 #35734 α run (49,899 evts)
45
HV file for CR loaded
0:56 #35745 pedestal for CR (5.039 evts)
1:09 ~~#3576~~ #3575 LED 1.5 flash for CR
1:21 #35767 CR run

Go to page 153

Am lower 123 ch
pedestal 111
500keV = 111 + 11.4 ~ ~~112 ch~~ 122 / 123 ch

0:55 qe00078 am LED 0.5 MeV 相当 100 Hz
0:57 qe00079 am 500 Hz
0:59 qe00080 am 1 kHz
1:00 qe00081 am 5 kHz
} 閾値

Relative QE Measurement Result for 1.0×10^6 Gain

		Gain	Npe	Ratio
~~1:~~ 1:09	qe0082pe, l1~l5. am	Previous 0.92×10^6	113	3.11
		New 0.95×10^6	351	
	lower (pedestal	111 ch	↳ 3.3 ph/ch	
	& peak	223 ch		

~~10ph = 3ch~~

~~0.5MeV 相当 ⇒ 114ch~~

1:22	qe0083 am	LED 100 Hz	0.5 MeV	まちがい
1:23	qe0084 am	LED 500 Hz	0.5MeV	
1:24	qe0085 am	LED 1kHz	0.5MeV	
1:26	qe0086 am	LED 5kHz	0.5MeV	
1:28	qe0087 l1	LED 500Hz	0.5MeV	

Flash LED to simulate background for rate dependence study

0.5 MeV 相当 (30ph) ⇒ 120 ch

①

1:30	qe0088 l1	LED	500Hz	0.5MeV
			36ph (LED yield)	
1:30	qe0089 am	LED	100Hz	0.5MeV
	(N2 入れ)		244ch	437 ph
1:35	qe0090 am	LED	500Hz	0.5MeV
			241.5 ch	429 ph
1:36	qe0091 am	LED	1kHz	0.5MeV
			241.2 ch	428 ph
1:38	qe0092 am	LED	5kHz	0.5MeV
			238.8 ch	420 ph
1:47	qe0093 am	LED	10 kHz	0.5MeV
			231.0 ch	395 ph
1:49	qe0094 am	LED	5kHz	0.5MeV
			231.7 ch	397 ch
1:51	qe0095 am	LED	1kHz	0.5MeV
			238.1 ch	418 ph
1:52	qe0096 am	LED	500Hz	0.5MeV
			240.2 ch	425 ph
1:54	qe0097 am	LED	100Hz	0.5MeV
			240.8 ch	427 ph
1:58	qe0098 am	LED	500 Hz	0.5MeV
			240.1 ch	425 ph
1:59	qe0099 am	LED	1kHz	0.5MeV
			239.5 ch	423 ph
2:00	qe0100 am	LED	5kHz	0.5MeV
			238.7	420 ph
2:03	qe0101 am	LED	10kHz	0.5MeV
			234.5	406 ph

2:10	qe0102am	LED	100 Hz 235.6 ch	0.5MeV 410 ph
2:11	qe0103am	LED	500 Hz 238.9 ch	0.5MeV 420.7 ph
2:13	qe0104am	LED	1kHz 238.6 ch	0.5MeV 420 ph
	qe0105am	LED	5KHz 237.9 ch	0.5MeV 417 ph
	qe0106am	LED	10kHz 231.3 ch	0.5MeV 396 ph
2:24	qe0107am	LED	100 Hz 238.3	0.5MeV 419 ph
2:26	qe0108am	LED	500 Hz 238.0	0.5MeV 418 ph
2:27	qe0109am	LED	1KHz 237.0	0.5 MeV 414 ph
2:29	qe0110 am	LED	5KHz 236.4	0.5MeV 413 ph
2:30	qe0111 am	LED	10KHz 230.2	0.5MeV 392 ph

1MeV (60ph) ⇒ 131ch

(2)

2:37	qe0112l1	LED	500Hz 133.1ch	1MeV 73 ph (LED yield)
2:38	qe0113am	LED	100Hz ~~234.8ch~~ 235.6 ch	1MeV 410 ph
2:39	qe0114am	LED	500Hz 235.5ch	1MeV 409 ph
2:41	qe0115am	LED	1KHz 236.2	1MeV 412ph
2:42	qe0116am	LED	5KHz 233.2	1MeV 402ph
2:44	qe0117 am	LED	10KHz 221.4	1MeV 363.2ph

5MeV (300 ph) ⇒ 201 ch

(3)

2:54	qe0118l1	LED	500Hz 205.3 ch	5MeV 310 ph (LED yield)
2:55	qe0119am	LED	100Hz 231.1 ch	5MeV 395 ph
2:56	qe0120am	LED	500Hz 232.0	5MeV 398 ph
2:58	qe0121 am	LED	1kHz 230.6	5MeV 393ph
2:59	qe0122 am	LED	5kHz 207.7	5MeV 318ph
3:01	qe0123am	LED	10kHz 181.4	5MeV 232 ph

Adjust the gain to ~3.0×10^6.

(860V
690 V)

7:10 ~~#~~ qe0124pe. l1~l5 1.58×10^6
1.87×10^6

(900V
720V

7:18 qe0125pe, l1~l5 2.42×10^6
2.55×10^6

(930 V
750 V

(3.05 $\times10^6$
3.33 $\times10^6$

qe0126pe. l1~l5

(925V
745V

7:29 qe0127pe, l1~l5 (3.26 $\times10^6$
3.81 $\times10^6$

(920
740 qe0128pe l1~l5 2.62×10^6
2.92×10^6

7:45 923 V qe0129pe l1~l5 2.85×10^6
742 V 3.13×10^6

924 V qe0130pe l1~l5 2.86×10^6
741 V 3.03×10^6

930V)
741V)

From P150

8:09 #3577 CR run stopped
~~#3578~~ HV file for α loaded
8:09 #3578 pedestal for α (5104evts)
8:10 #3579 LED 1&5 flash for α 545-4917
8:22 #3580 α run
HV file for CR loaded
#3581 pedestal for CR
#3582 LED 1&5 flash for CR 545-4917
#3583 CR run

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Relative QE Measurement Result for 3.0×10^6 Gain

8:54

		Gain	Npe	Ratio
qe0131 pe	Previous	3.17×10^6	120 ±	3.6
lin 5 am	New	3.07×10^6	431 ±	

0.5 ph/ch × 2 = 1.0 ph/ch

0.5 MeV = 60 ph = 60 ch

1.0

~ 171 ch

①

9:02	qe0132le	LED	500 Hz 170.5 ch	0.5 MeV 61 ph (LED yield)
9:03	qe0133am	LED	100 Hz 560 ch	0.5 MeV 457 ph
9:05	qe0134am	LED	500 Hz 560.0 ch	0.5 MeV 457 ph
9:06	qe0135am	LED	1 kHz 559.2 ch	0.5 MeV 456 ph
9:08	qe0136am	LED	5 kHz 556.7 ch	0.5 MeV 454 ph
9:09	qe0137am	LED	10 kHz 545.4	0.5 MeV 442 ph

2 MeV ~ ~~240~~ 120 ph ~ 120 ch

~ 231 ch

②

9:21	qe0138le	LED	100 Hz 234.9 ch	1 MeV 126 ph (LED yield)
9:24	qe0139am	LED	100 Hz 556.4 ch	1 MeV 453 ph
9:26	qe0140am	LED	500 Hz 553.7 ch	1 MeV 451 ph
9:27	qe0141am	LED	1 kHz 551.2 ch	1 MeV 448 ph
9:29	qe0142am	LED	5 kHz 544 ch	1 MeV 441 ph
9:30	qe0143am	LED	10 kHz 525.7 ch	1 MeV ~~442~~ 422 ph

10 MeV ~ 600 ph ~ 600 ch

711 ch

③

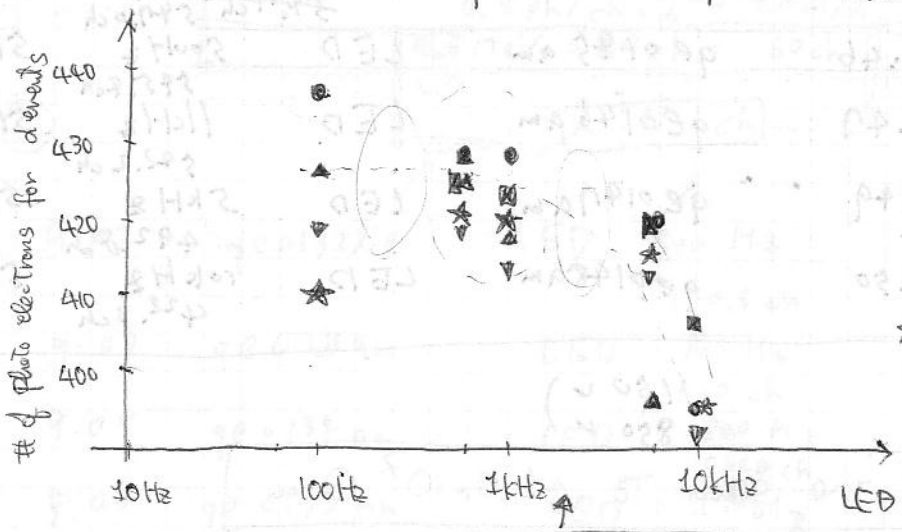
9:42	qe0144le	LED	100 Hz 722 ch	514eV (LED yield) 623 ph
9:44	qe0144am	LED	100Hz ~~541 ch~~ 547.0 ch	5MeV 444 ph
9:46	qe0145am	LED	500Hz 545.4 ch	5MeV 442 ph
9:47	qe0146am	LED	1kHz 542.2 ch	5MeV 439 ph
9:49	qe0147am	LED	5kHz 492.8 ch	5MeV 389 ph
9:50	qe0148am	LED	10kHz 422.3 ch	5MeV 317 ph

1150 V)
850 V)

Adjust the gain to ~1.0×10^7 Gain

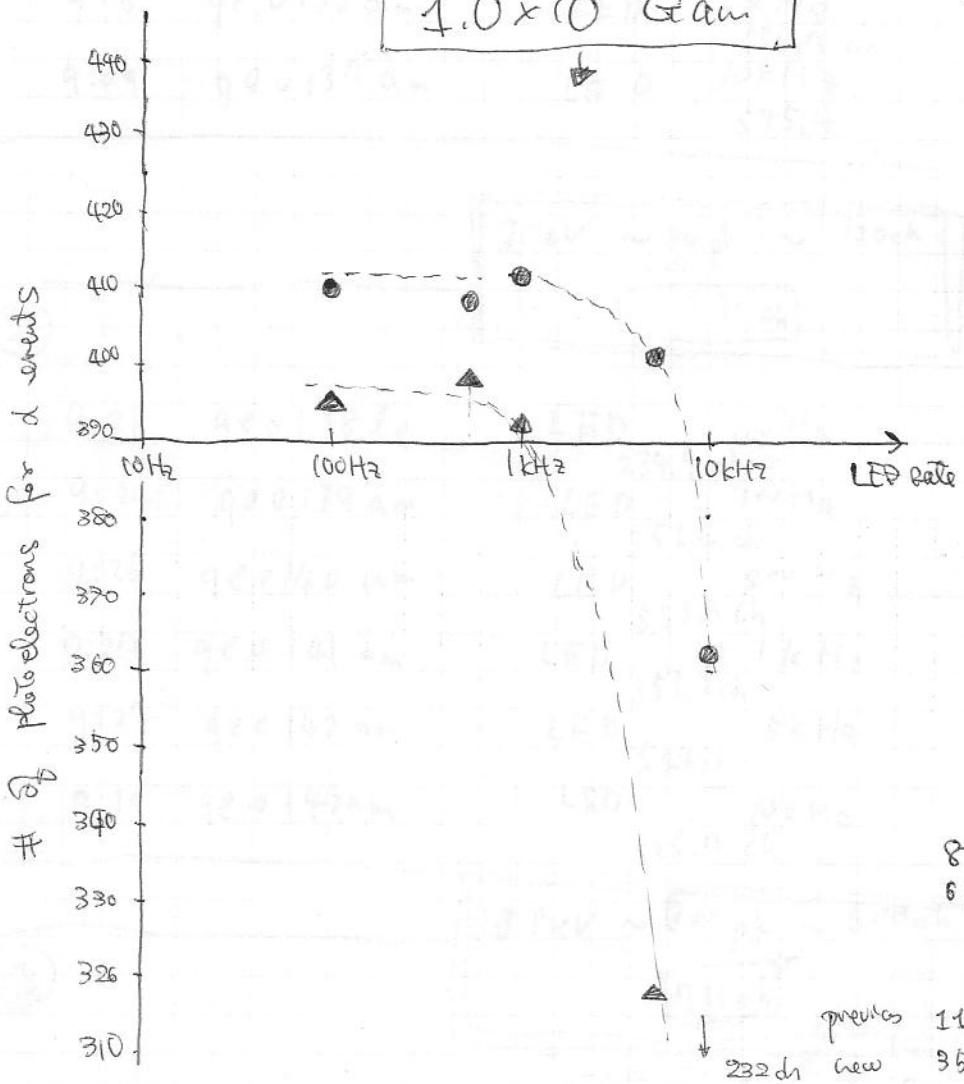
3 July 2002

New PMT with Al grid rate dependance Study



LED yield : 36 photo electrons (1)

1.0×10^6 Gain



LED yield : 60 photo electrons (2)

LED yield : 300 photo electrons (3)

HV setting

814V : previous PMT

651V. : new PMT

α peak position

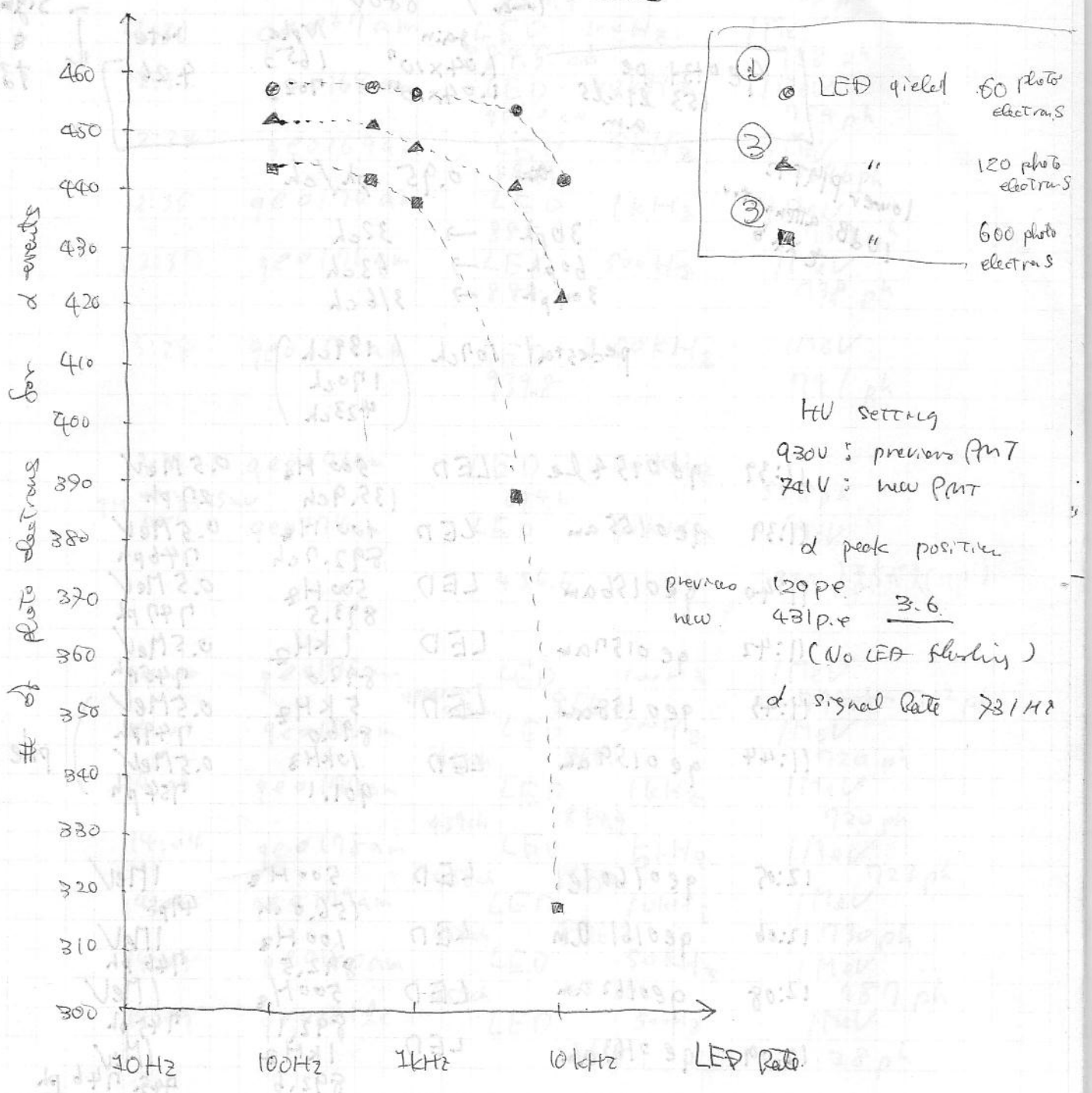
previous 113 p.e.

new 351 p.e. 3.11

(No LED flashing)

α signal Rate 73 Hz

3.0×10^6 Gain



HV setting
930V : previous PMT
741V : new PMT

α peak position
previous 120 p.e.
new 431 p.e. 3.6
(No LED flashing)

α signal Rate 73/Hr

11:31 HV setting upper) 1080V
lower) 880V

	gain	Nphe	rate
qe0~~131~~ pe 153 l1~l5 am	1.04×10^{7}	165ch	4.26
	1.04×10^{7}	702ch	

gain計算の時は sigma/mean を pol2 fit するように変更

lower PMTに 10dB attenuator を入れる

~~0~~ 0.95 ph/ch

30ph → 32ch
60ph → 63ch
300ph → 316ch

pedestal 107ch (139ch, 170ch, 423ch)

11:39	qe0154le	LED	500 Hz	0.5 MeV	
			135.9ch	27 ph	
11:39	qe0155am	LED	100 Hz	0.5 MeV	
			892.7ch	746ph	
11:40	qe0156am	LED	500 Hz	0.5 MeV	
			893.5	747 ph	
11:42	qe0157am	LED	1 kHz	0.5MeV	
			892.0	745ph	
11:43	qe0158am	LED	5 kHz	0.5MeV	pile up?
			896.0	749ph	
11:44	qe0159am	LED	10kHz	0.5MeV	
			901.1	754 ph	

12:05	qe0160le	LED	500 Hz	1MeV	
			156.0 ch	47ph	
12:06	qe0161 am	LED	100 Hz	1MeV	
			892.5	746 ph	
12:08	qe0162 am	LED	500Hz	1MeV	
			892.1	745ph	
12:09	qe0163am	LED	1kHz	1MeV	
			892.6	~~745~~ 746 ph	
12:11	qe0164am	LED	5kHz	1MeV	pile up?
			898.3	751	
12:12	qe0165am	LED	10kHz	1MeV	
			909.3	762 ph	

veto gate width 40 nsec → ~~50~~ 600nsec

Time	Run	Source	Frequency / ch	Energy / ph
12:30	qe0166 le	LED 500Hz	154.9	1MeV 45ph
12:31	qe0167am	LED 100Hz	884.5 ch	1MeV 738 ph
12:32	qe0168am	LED 10kHz	901.0 ch	1MeV 754ph
12:34	qe0169am	LED 5kHz	891.1	1MeV 746ph
12:35	qe0170am	LED 1kHz	885.3	1MeV 739 ph
12:37	qe0171am	LED 500Hz	884.2	1MeV 738 ph
13:28	qe0172am	LED 50kHz	939.8	1MeV 791 ph
13:31	qe0173am	LED 100kHz	694.6	558ph
TH up (low) → 25mV	qe0174am	LED 50kHz	456.6	1MeV 332) まちがえ(up)
14:00	qe0175am	LED 100Hz	upperpart 453ch 856.6	1MeV ~~772ph~~ 712ph
14:01	qe0176am	LED 500Hz	458ch 865.1	1MeV 720 ph
14:03	qe0177am	LED 1kHz	459ch 864.9	1MeV 720 ph
14:04	qe0178am	LED 5kHz	458ch 868.0	1MeV 723 ph
14:06	qe0179am	LED 10kHz	458ch 876.2	1MeV 730 ph
14:07	qe0180am	LED 50kHz	457ch 935.6	1MeV 787 ph
14:09	qe0181le	LED 500Hz	136.8	1MeV 28ph
14:24	qe0182am	LED 100kHz		1MeV

LED veto の timing を早めた

Time	Run	Source	Frequency / ch	Energy / ph
14:30	qe0183am	LED 100kHz	932 ch	1MeV 783ph
14:33	qe0184am	LED 500kHz	503 ch	1MeV 376ph
14:36	qe0185am	LED 100kHz		1MeV

14:41 qe0187 pe eq~l5 am 5.63×10^6 1.10×10^7

0.90 ph/ch

300 ph ~ 333 ch

107 + 333 = 440ch

14:51	qe0188le	LED	500Hz	5MeV
		438.8ch		
14:52	qe0189am	LED	100Hz	5MeV
		864.6 ch		
14:54	qe0190am	LED	500Hz	5MeV
		866.2		
14:55	qe0191am	LED	1kHz	5MeV
		870.4		
14:56	qe0192am	LED	5kHz	5MeV
		916.1		
14:58	qe0193am	LED	10kHz	5MeV
		943.0		
14:59	qe0194am	LED	50kHz	5MeV
		568.8		
15:00	qe0195am	LED	100kHz	5MeV
		365.3		

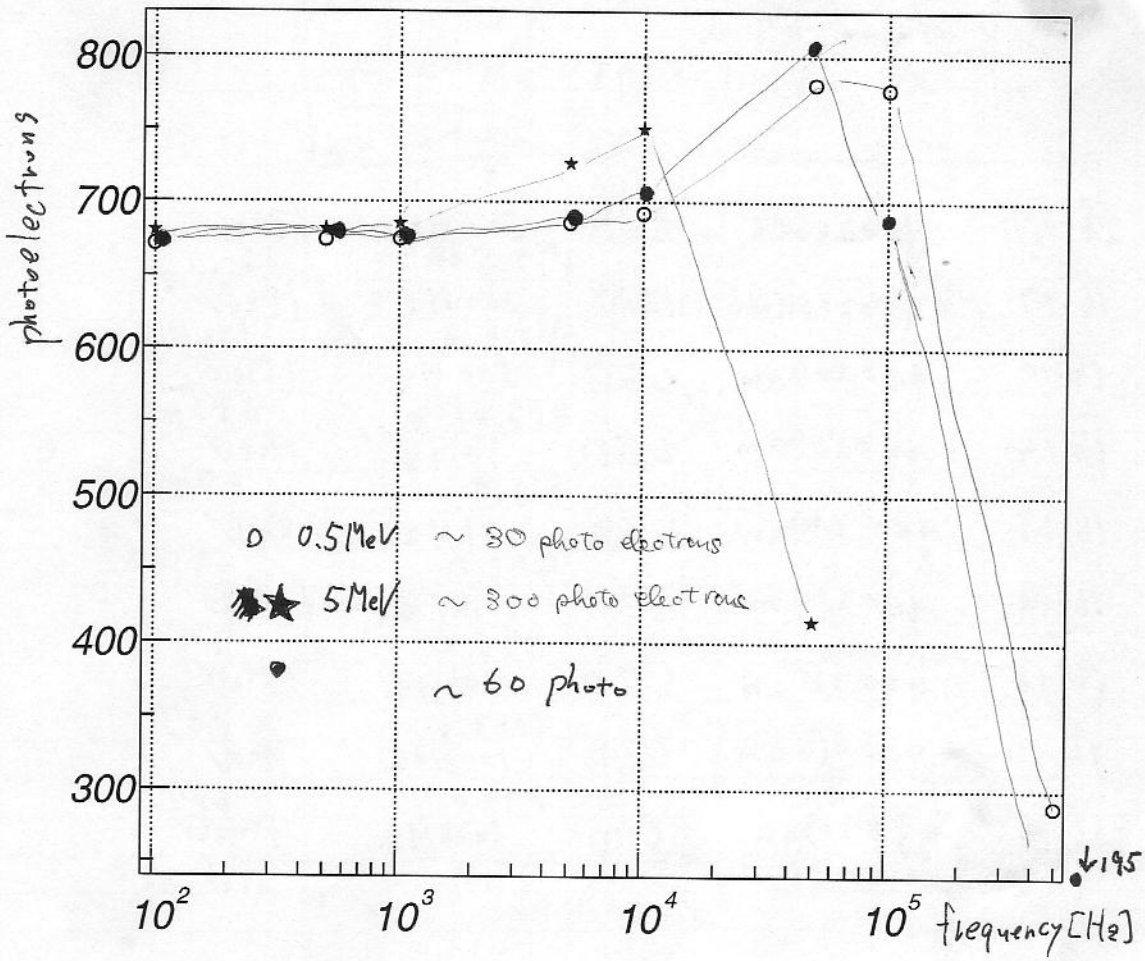
30 ph ~ 33 ch

107 + 33 = 140 ch

15:02	qe0196le	LED	500Hz	0.5MeV
		147.8		
15:03	qe0197am	LED	100Hz	0.5MeV
		854.6		
15:04	qe0198am	LED	500Hz	0.5MeV
		858.2		
15:06	qe0199am	LED	1kHz	0.5MeV
		858.9		
15:07	qe0200am	LED	5kHz	0.5MeV
		871.0		
15:09	qe0201am	LED	10kHz	0.5MeV
		878.4		
15:10	qe0202am	LED	50kHz	0.5MeV
		977.0		
15:11	qe0203am	LED	100kHz	0.5MeV
		973.0		
15:13	qe0204am		500kHz	0.5MeV
		428.7		

Summary of ge0189 ~ ge0204

1.10×10^7 Gain



HV setting
1080 V : previous
880 V : new
α peak position
165 pe
702 pe — 4.26
(No LED flashing)
α rate
731 Hz

- HV. (Gain) vs # of photoelectrons for a given
- 1×10^7 setting, changing LED digitized from 30 ~ 300 p.e. with fixed repetation Rate. 100, 500, and 100 Hz

---

From 153 page.

16:14. # 3583 stop
HV set for α
16:16. # 3584 pedestal (α)
16:17. # 3585. LED (α)
16:28. # 3586. α.
HV set for COSMIC.
16:39 # 3587 pedestal (COSMIC)
16:41 # 3588 LED (COSMIC)
16:52. # 3589. COSMIC run RUN.

60ph — 67 ch
107+67 = 174 ch

16:07	qe0205le	LED	500 Hz 175.5 ch	1MeV 61.5 ph
16:09	qe0206am	LED	100 Hz 860.6 ch	1MeV 676.5 ph
16:10	qe0207am	LED	500 Hz 868.1	1MeV 683 ph
16:12	qe0208am	LED	1kHz 866.9	1MeV 682
16:13	qe0209am	LED	5kHz 876.7	1MeV 691
16:14	qe0210am	LED	10kHz 893.2	1MeV 706
16:16	qe0211am	LED	50kHz 1002.0	1MeV 803
16:17	qe0212am	LED	100kHz 872.6	1MeV 687
16:19	qe0213am	LED	500kHz 324.4	1MeV 195 ph

16:39	qe0214le	LED ~~859.1~~	100Hz	60ph
16:41	qe0214am	LED 859.1 ~~858.1~~	100Hz	60ph
16:45	qe0215le	LED ~~855.4~~	100Hz	30ph
16:47	qe0215am	LED 858.1	100Hz	30ph
	qe0216le	LED	100Hz	300ph
	qe0216am	LED 855.4	100Hz	300ph
	qe0217am	LED 862.7	500Hz	300ph
16:56	qe0217le	LED	500Hz	300ph
	qe0218le	LED	500Hz	60ph
16:59	qe0218am	LED 859.1	500Hz	60ph
17:03	qe0219le	LED	500Hz	30ph
17:04	qe0219am	LED 856.7	500Hz	30ph

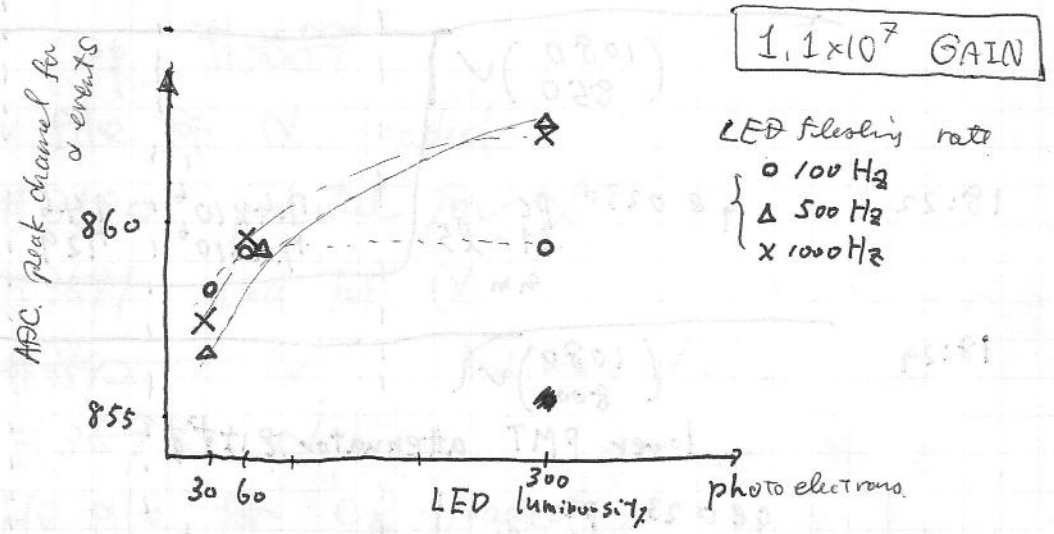
17:06 qe0220am LED 1kHz 30ph
859.4
qe0220le LED 1kHz 30ph

17:10 qe0221le LED 1kHz 60ph

17:11 qe0221am LED 1kHz 60ph
859.6

17:14 qe0222le LED 1kHz 300ph

17:15 qe0222am LED 1kHz 300ph
862.2



150ph ~ 167ch ⇒ 107 + 167 = 274ch

17:45 qe0223le LED 500Hz ~150ph
~~853.9~~

17:46 qe0223am LED 100Hz ~150ph
853.9

17:48 qe0224am LED 500Hz ~150ph
855.3

qe0225am LED 1000Hz ~150ph
856.5

LN2 注入 2" 1.6 atm → 1.1 atm まで下げた.

~~17:~~ 18:00 qe0226am LED 1000Hz ~150ph
864.9

18:01 qe0227am LED 500Hz ~150ph
859.5

18:03 qe0228am LED 100Hz ~150ph
858.8

18:05 qe0228le LED ~~1000Hz~~ 500Hz ~150ph

651V - 1×10^6
880V - 1×10^7

H.V. upper (1080) / lower 900

		gain	Nphe	ratio
18:13	qe0229 l1~l5 pe	7.4×10^6	148	4.7
	am	1.3×10^7	693	
	(1080 / 850) V			
18:22	qe0230 pe l1~l5	7.4×10^6	146	5.0
	am	7.2×10^6	729	
18:29	(1080 / 800) V			
	lower PMT attenuator をはずす			
	qe0231 pe l1~l5	7.2×10^6	150	5.04
	am	3.7×10^6	758	
	(1080 / 750) V			
18:38	qe0232 pe l1~l5	7.2×10^6	151	4.24
	am	2.3×10^6	639	
18:46	(1080 / 700) V	6.8×10^6	158	4.24
	qe0233 pe l1~l5	1.0×10^6	671	
	am			
18:54	(1080 / 700) V	6.87×10^6	156	4.36
	qe0234 pe l1~l5	1.02×10^6	682	
	am			

19:00 (1080 / 650) V 6.69×10^6 / 0.87×10^6 162 / 361 2.23

qe002~~4~~5 pl
l1~l5
am

4/July/021

0:05 stop #3589
HV file for α loaded.
0:06 #3590 pedestal for α
0:07 #3591 Led for α.
0:20 ~~#3592 α~~ Failure!
0:21 #3593 α
HV file for CR loaded.
0:30 #3594 pedestal for CR.
0:32 ~~#3595 Led for CR~~ Failure
0:40 #3596 ~~α~~ Led for CR
0:55 #3597 CR
9:04 stop #3597
HV file for α loaded.
9:06 #3598 pedestal for α.
9:07 #3599 Led for α

Ledのqsumにstepが出ている。
run#3591のときにも同様の
ことが起きていた。
原因は確認出来ず今回はこのままdaqを続ける。

9:20 #3600 α
HV file for CR loaded.
9:30 #3601 pedestal for CR
9:33 #3602 Led for CR

9:44 #3603 CR

18:11 stop 3603

18:12 load HV file for α

#3604 pedestal for α

18:13 #3605 LED 1&5 {45~49}V for α

18:25 #3606 α

load HV file for CR

18:34 #3607 pedestal for CR

18:35 #3608 LED 1&5 {45~49}V for CR

18:48 #3609 CR

5/July/02'

0:12. stop #3609

Hv file for α was loaded.

0:14 pedestal for α. #3610.

0:15 Led for α. #3611

0:27 α #3612.

Hv set for CR loaded.

0:37 pedestal for CR #3613

0:39 Led for CR #3614

0:52 CR #3615

8:19. stop CR run #3615

load Hv file for α

8:21 pedestal for α #3616.

8:22 Led for α #3617

8:25 α #3618

load HV file for CR.

8:45 pedestal for CR #3619
8:46 Led for CR #3620 → HV error!, Pailue
8:49 Led for CR #3621.
8:01 CR. #3622.

14:50 HV error found @ BT9 (BT9 disabled)
⇒ pause #3622

14:52 #3622 resumed after enabling BT9

16:09 #3622 stopped (LPCR5 series finished)

16:11 #3623 pedestal for LED #1.5 flashing run (5,052evts)
16:13 #3624 LED 1&5 flash 945-4945V
16:43 #3625 LED 2&6 flash 945-4945V
16:55 #3626 LED 3&7 flash 945-4945V (LED 7 is not inverted)
17:15 #3627 LED 4&8 flash 945-4945V

HV file for α loaded.

17:28 #3628 pedestal for α run (5.031evts)
17:30 #3629 LED 1&5 flash 945-4945V
17:42 #3630 α run
---------- keep HV settings for α
17:53 #3631 LED 2&6 flash 945-4945V
18:05 #3632 LED 3&7 flash 945-4945V (LED 7 is not inverted)
18:19 #3633 LED 4&8 flash 945-4945V

DAQ for LPCR5 finished

20:15 Swich all HV channel off
20:20 Xe recovery started.
20:30 fill N_2 gas in outer vessel @ ~0.2 atm

21:00 turn on heater in the chamber @ 40V

21:10 → 55V

6/Jul/2002

22:40 heater 20V → 30V

23:20 " 30V → 40V

7/Jul/2002 ← 3:30 almost finished recovery (inner vessel pressure 0.02 atm)

12:00 finish ~~stop~~ recovery

fill { inner vessel / outer vessel } with N_2 gas { @ 1 atm / @ 0.5 atm

purification evacuation start.

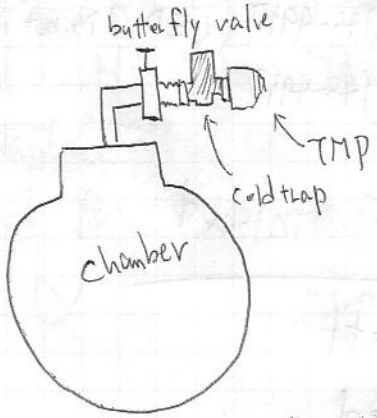
12:55 purification line 3.1×10^{-2} Pa

09/Jul/2002.

16:50, diaphragm pump rejected from the line due to RGA. (2.5×10^{-3} Pa @ Purification line.)

17:10. 44×10^{-4} Pa.

add a cold trap between the chamber and TMP



21:00 He leak test around cold trap $< 4 \times 10^{-9}$ mbar ℓ/sec

start evacuation ~4.9×10^{-1} Pa, outer vessel 7.0e-1 Pa

15 / Jul / 2002

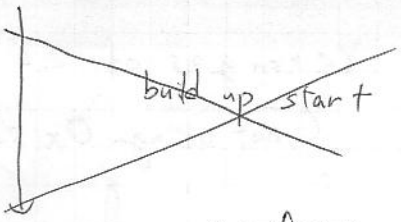
12:30 inner vessel 3.6×10^{-2} Pa
outer vessel 1.5×10^{-1} Pa
purification line 2.3×10^{-2} Pa

heat exchanger. circulation pump close

12:49 rga 0019 only purification line (except heat exchanger circulation pump)
rga 0020

Connect chamber and purification line

rga 00021 purification line + chamber
rga 000 22



purification line 4.0×10^{-4} Pa
rga0023

13:45 rga00024

14:05 inner vessel build up test

time		Press
0		3.7×10^{-2} Pa
1		1.7×10^{-1}
1.5		2.1
~~3~~	2	
~~5~~	3	2.9
~~7~~	5	3.7
~~10~~	7	4.2
~~15~~	10	4.9
~~20~~	15	5.6
	20	5.9
	30	

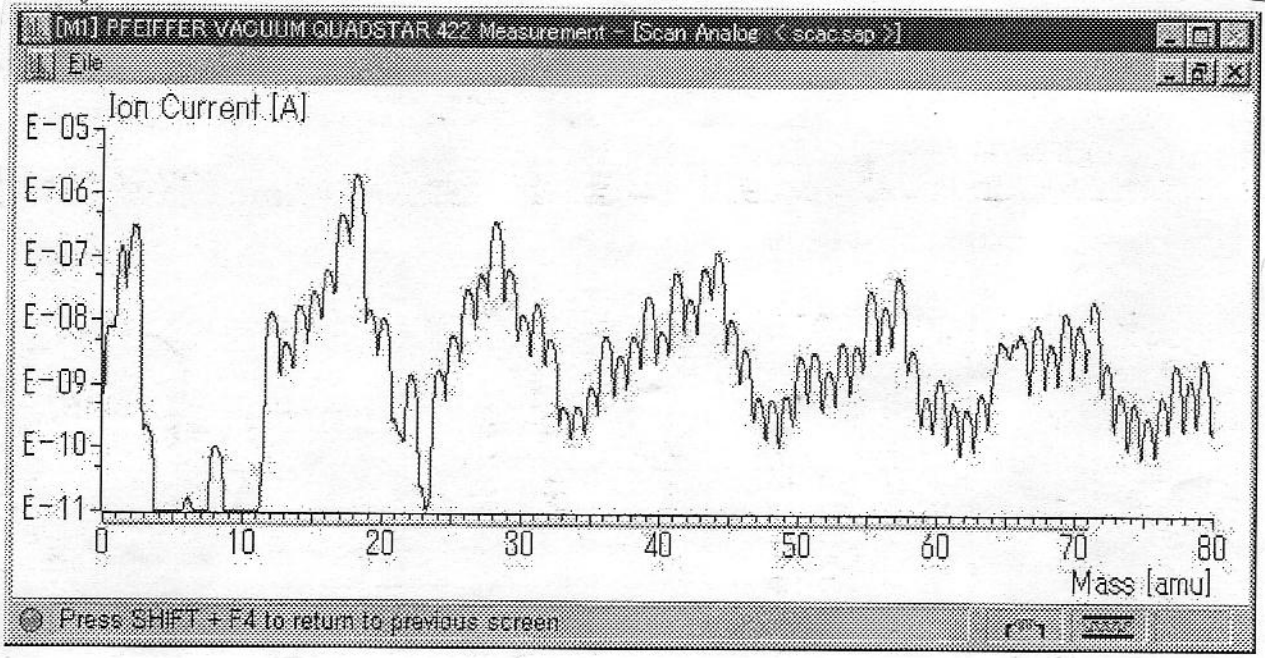
build up かけなおし

Time	Press
0	3.9×10^{-2}
1	1.8×10^{-1}
1.5	
2	2.5
3	3.0
~~4~~ 6	4.0
~~7~~ 8	4.6
10	5.0
15	5.8
20	5.8
24	6.7
43	1.1×10^{0}
56	1.5
64	1.8

16:45 fill chamber Xenon gas of 2.0 atm
(not using Oxisorb) (only getter)

17:10 pre-cooling start (LN2 refrigerator pressure setting (0.2 MPa 0.1 MPa

lga0019



purification line

rga 0020

[M1] PFEIFFER VACUUM QUADSTAR 422 Measurement - [MultColTab]

File

Measurement Number:			14	Process --- 12:46:55	Process --- 12:47:18
Nbr	Type	Ident	Unit		
0	Part.Pres	TOTAL	mbar	3.473E-06	3.455E-06
1	Part.Pres	Ar	mbar	1.014E-08	1.011E-08
2	Part.Pres	CO2	mbar	1.140E-07	1.144E-07
3	Part.Pres	H2	mbar	1.665E-07	1.657E-07
4	Part.Pres	H2O	mbar	2.477E-06	2.463E-06
5	Part.Pres	CxHy	mbar	2.667E-07	2.656E-07
6	Part.Pres	N2 / CO	mbar	4.178E-07	4.148E-07
7	Part.Pres	O2	mbar	2.125E-08	2.121E-08
8	Part.Pres	He	mbar	5.105E-12	5.622E-12
9					

Press SHIFT + F4 to return to previous screen

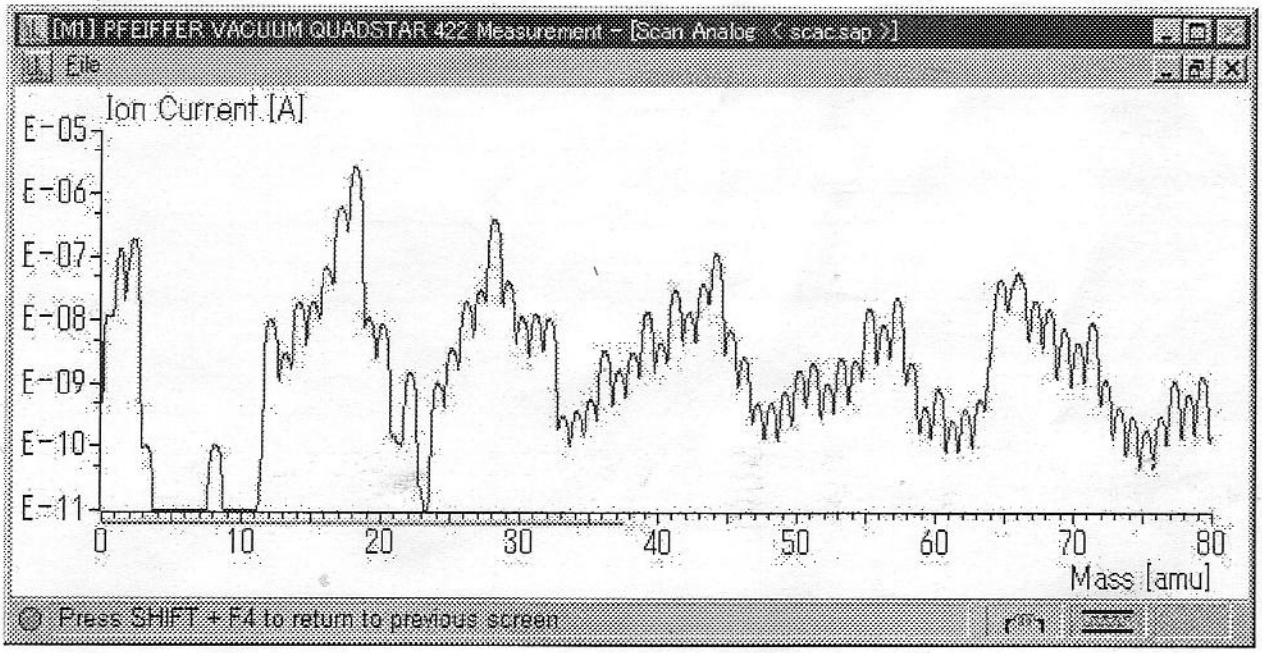
Turi-line

↑

↓

Turi-line + chamber

rga 0021



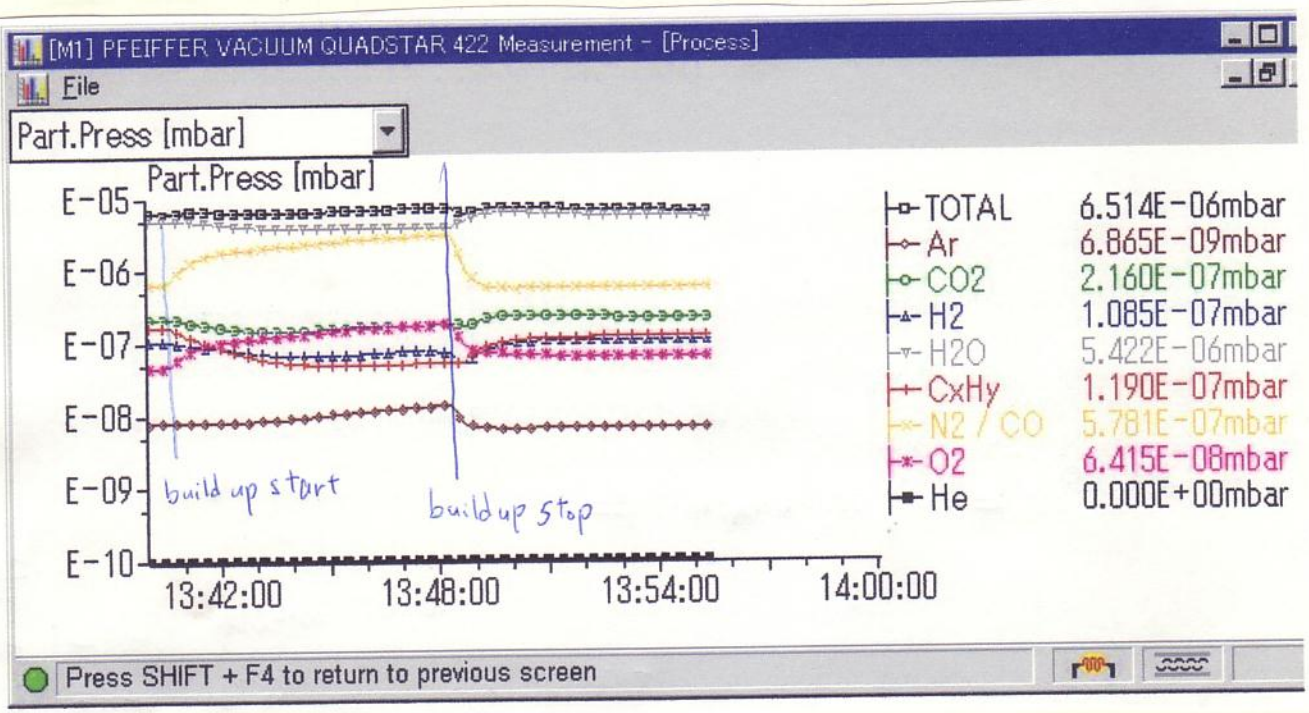
rga 0022

[M1] PFEIFFER VACUUM QUADSTAR 422 Measurement - [MultColTab]

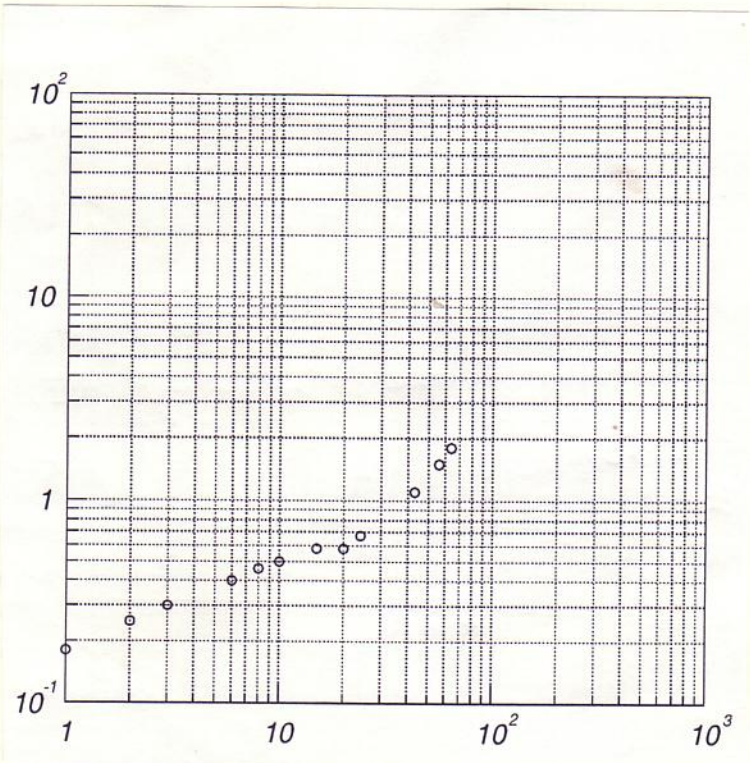
File

Measurement Number:			16	Process --- 13:16:06	Process --- 13:15:43
Nbr	Type	Ident	Unit		
0	Part.Pres	TOTAL	mbar	6.323E-06	6.323E-06
1	Part.Pres	Ar	mbar	8.290E-09	8.318E-09
2	Part.Pres	CO2	mbar	1.793E-07	1.795E-07
3	Part.Pres	H2	mbar	1.042E-07	1.036E-07
4	Part.Pres	H2O	mbar	5.210E-06	5.209E-06
5	Part.Pres	CxHy	mbar	1.406E-07	1.413E-07
6	Part.Pres	N2 / CO	mbar	6.352E-07	6.367E-07
7	Part.Pres	O2	mbar	4.528E-08	4.525E-08
8	Part.Pres	He	mbar	2.460E-11	2.447E-11
9					

Press SHIFT + F4 to return to previous screen



purification line + chamber



22:40 pressure setting → (0.05~~MPa~~ atm (gauge)
0.001~~MPa~~ atm (gauge)

16/July/2002

14:00 start liquefaction

18/July/2002

9:00 liquefaction finished → press set (0.351MPa atm (gauge).
0.30Ma atm (gauge).

refrigerator set 163 K

8:29 load ~~HV~~ HV file hvdata_26_Jun_2002/LXe-1E6-for-alpha_new.hv

⇓

HV error (pstmp 14)

L24 (hv 118): demand voltage is ~980V but measured V is 3000V and measured current is -25 μA

switched off L24 and wrote new HV file
"hvdata_18_Jul_2002/LXe-1E6-for-alpha-new.hv"
= /LXe-1E6_new.hv

~~X~~

LPCR6

8:58 # 3634 pedestal for α ⇒ all channel o.k.

9:01 # 3635 LED 1 & 5 for α {45~49}V

9:12 # 3636 α

9:45 HV error

L24 demanded HV = 0 but measured = 3000 V.

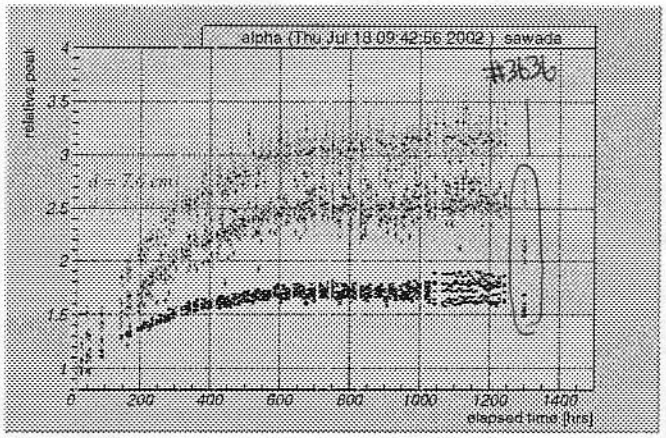
L24 plug off

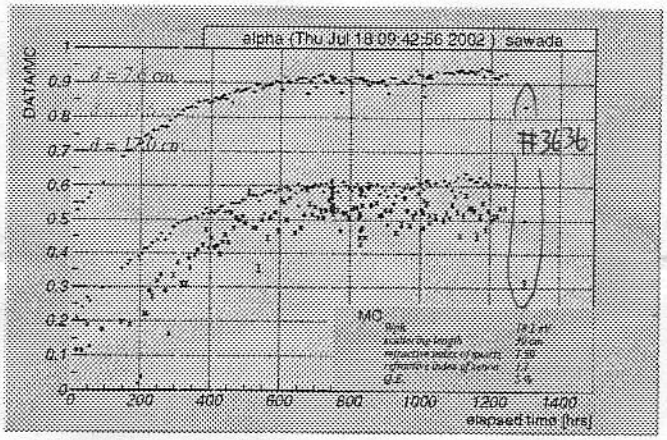
⇒ ~~それでも~~ Measured V = 3101 V, Measured Current = -29 mA という表示。
もちろん Demand = 0 V だが。

10:23 #3637 pedestal for α

10:~~25~~27 #3638 ~~α~~ LED 1&5 for α {45-49}V

10:38 #3639 α





⇒ Corresponds to "$\lambda_{abs} \simeq 30cm \sim 40cm$"

~~#3640~~

11:34 #3640 pedestal for α

11:35 #3641 LED 1&5 for α 545-499V

11:46 #3642 α

12:30 #3643 pedestal for α

12:38 #3644 LED 1&5 for α 545-499V

12:51 #3645 α

13:42 #3646 pedestal for α

~~13:48~~ 14:00 #3647 LED 1&5 for α 545-499V

14:11 #3648 α

15:12 #3649 ~~pedestal for α~~

15:~~14~~18 #3650 ~~LED 1&5 for α 545-499V~~

#3651 α

HV error が多発するので
(はるく様子見

HV setting changed; L8(HV8-6) 1069V → 1019V

overwrite "LXe-1Eb. for-alpha.newdv"

cosmic ray and α run every 8 hours from now

16:06 #3649 pedestal for α

16:08 #3650 LED 1&5 for α 545-499V

16:49 #3651 α

16:28 #3652 pedestal for CR } HV file for CR loaded

16:30 #3653 LED 1&5 for CR 545-499V

16:41 #3654 CR run (1st CR run start)

18/Jul/2002.

19:24. #3654 Paused, because of HV error.

Check the HV supply-frame via Web. ➡ "HV 5-2" is disabled.
Enabling this channel via web. ➡ OK. ↳ L14 (ADC#80.)

19:28. Resumed.

19/Jul/2002

0:17 #3654 Stopped

HV file for α loaded

0:18 #3655 pedestal for α

0:20 #3656 LED 1-5 for α, 45-49V

0:36 #3657 α

HV file for CR loaded

0:44 #3658 pedestal for CR

0:46 #3659 LED 1-5 for αCR, 45-49V

0:59 #3660 CR

08:06. #3660, stoped.

HV file for "α" loaded.

08:08. #3661. pedestal run for α.

08:09. #3662. LED calibration run for α. with usual setting.

08:23. #3663. α.

HV file for "COSMIC" loaded.

08:33 #3664. pedestal run for COSMIC.

08:34 #3665. LED calibration run for COSMIC.

08:46. #3666. COSMIC.

16:17 #3666 stopped (440 events)

load HV set for α

16:19 #3667 pedestal run for α

16:21 #3668 LED calibration run for α, 45-49V