E299

E299 実験ノート#1

・counter dump GR

索　引

~~・counter check ~~ ~~w BLD~~ ← ~~wire chamber~~ (DPC)

数	摘　要	頁数	摘　要	頁数	摘　要

(trigger を入れればよい)

次の exp へ.

・D° ダクトの crazy connection.

・D°FC と S.CFC の sum のつなぐ current dat.

・D° ラインの真空線表

・rate 表. (グラフや、必要な情報量, 1uA 毎たりの cps)

2007.10.1　　前の実験で　　民・足・伊藤・沖田

○ 散乱槽を外した　（ダクト管破損の為）

GR → 53 φ3°

LAS → 43 13°

○ GR を ~27° に回転

（壁のダクトへのビームラインが残っているので、0° まで行けない）

○ (α,α′) 実験に使用して残っていた GR 架台上の FC を外して退避する

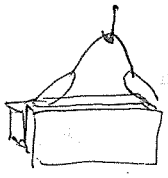
FC用架台 (α,α′)用を吊って 片付ける

○ GR 出口フランジを標準のものから 0° 用（Y開口大）に付け替える

ボルト M20 長さ 55(or 60) × 24本 が欲しい。ワッシャ、スプリングワッシャも

標準フランジは 返却

○ VDC 位置　E200 のマジックの印に合わせる



2台同時に吊ってあちらへ移せる

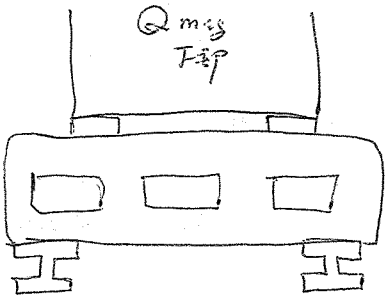
○ GR 抽出器架台

回転を　0.8 deg　(マイナス⊖)
前後を　0 deg
の印に合わせる　→ see E282 log vol 1. p18.

○ MWPC　移動なし
(E200 の印)

○ ダクト 仮通し　GR 出口から MWPC と出口方向 (4本) すべり通って

○ Pump Q　架台に置く。架台の穴はデフォルト　ボルト



架台 — 上部の穴 (3つのうち) ボルトを使う

H鋼 -0.8°の印に合わせる

10/2. WVから、pumpの電源を返却させる。

つながっていた電源は、4、5、6、7
緑 赤、白黒 の順

背面の ~~太いケーブル~~ 太い電源ケーブルは、

赤が＋、青がマイナスでした。

インターロック（冷却水） 黒（INT1）P
入力端子 白（INT1）R3

インターロック、太いケーブル共に、（p.p'）用のものを使用する。
（WVの方、WVに置いてある）

電源配線は、支柱のところへ、

ede ーラックへ配線。 { red, white, black.

greenは earth. → 右下の E3って所につなぐ。
↑
延長コードみたいなのがあるので それを使っている。

冷却水 OK.

0度 ダンプブロック解体

ブロックを外すには、22のアイボルトが必要。
22のアイボルトは、1組しかなさそうなので、散逸しないようにすべし。
↑
テープを張っておいた。

0度 セオドライト設置。 (H.M)

E249のスーク(2005.6)の位置に立てる。

- QM6D-W2 のケガキ線(マジック跡)
- 散乱槽前の3連Q のケガキ線。

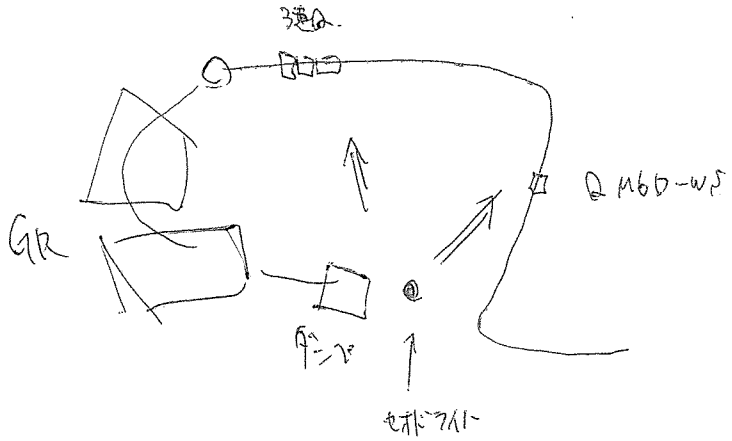
に合うようにアライメント。

レーザーで高さがビームラインになるように確認しつつ、水平を出していく。
ウインドウのデジタル表示は、ほぼ水平にならないと数値表示をしてくれない!

・3連Q の高さと水平を出して
↳ QM6Dで確認すると、5.5mmずれる。
↓
もう一回やり直しれ!?

途中でやれる。

10/9、 喰セオドライト設置。（抜け、松崎）

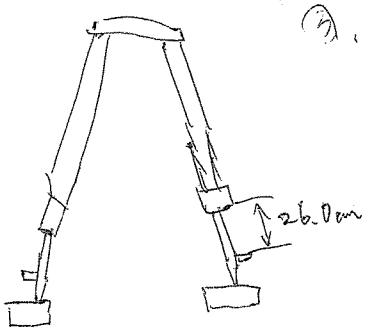


この2箇所でビームラインの高さにアライメントする

手順 ① E249、2005.6.29の印にライトを立てる。

② 3脚の足先を、①の印から62.0cmの同心円上にくるようにする。
また三脚の踏みぎりから、オレンジの止め具の下までの長さを ~~26.0cm~~ 27.5cmにしておく。

③、水平を確認する。



④、Qの高さを見て、3つあるジャッキを調整
高さを合わせる方向にする。

⑤ ③へもどる。

⑥ おわり。

水平は、最初にわいので大体合わせる。
次に精度のある方で合わせる。
90°回転して、もう一度合わせる。

最終的には、3連Qと、QM6Dとで、1mm未満の精度で合わせた。
0.2mm未満。 おわり
（セオドライトのマーカーとケガキつ）

BCP 作業 (為重)

- BCP 1, 2. 左右上下のミニチを. 17°, 70.5° の set に設置した。

- BCP1, 2の標的にて 50 μm t のアラミドを設置した。

作業後
- BCP 1, 2 の真空引きを開始した。以上

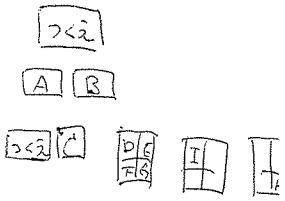
- Q1FC α用→p用に変更
  絶縁チェック. FC/Viewer movement check.
  ~~Camera~~

- Target 確認
  希土類 ^{24}Mg 2.5 mg/cm² 松原管理 Ⓐ
  ^{40}Ca 11.8 mg/cm² 阪口 : Ⓘ

  Sieve slit用 ^{58}Ni 100.1 mg/cm² Ⓐ
  ^{208}Pb 100 mg/cm² Ⓐ

  Elastic用 (^{24}Mg コレ? ← もガラ
  (^{24}Mg 50 μm? mg/cm²? もあり. 吳井管理?) Ⓑ ← こっちを elastic に.

  その他 ^{12}C 2.2 mg/cm² K藤田管理. Ⓔ
  SiO_2 28 μm) 管理者不明 Ⓒ
  400 μm Ⓒ 京大グループ (エリイさん)
  ^{nat}Si 1.86 mg/cm² Y藤田管理 (やぶれ) Ⓑ
  (11.27 mg/cm² Ⓒ
  厚み不明 Ⓒ
  40.8 mg/cm² Ⓑ
  2.42 mg/cm² Ⓑ)



~~FP viewer について~~.

・FP出口に テフロンのジグを取り付けて、
そこを0度ダクトのゼーム軸とした。
(セオドライトを0点調整)。

このジグの鉛直方向に下に延ばして、ダンプ下の床に
けがき線をつける。

~~ここでの7月実験のけがき線とは、センチずれて在にいってしまった、ミコリ。~~

~~再度ジグで確認、やっぱりズレてない~~
~~区ってけがき線をマジックで書く。~~

・FP viewer のアライン。

position = 2.534 V

rotation = ~~0.000 V~~ 0.70 V

がゼーム軸とぴったり重なる。

・その後、FP台車を前進させる。
(台車の車輪のところに0度測定用にあわせる)

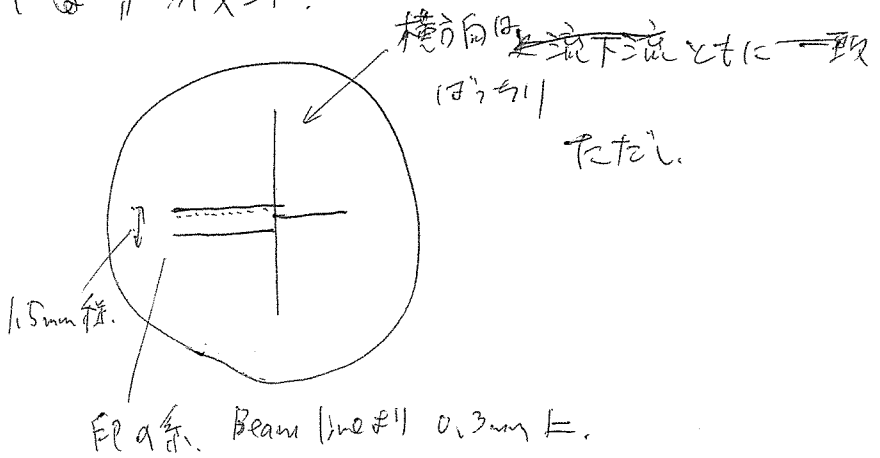
☆FP viewer は、GR出口フランジ側からのぞくと、
アルミ板に十字目盛のみが書いてあるように見える。
しかし、上流側には、ZnSが塗ってあるので心配しなくていい
(カメラは上流側から見ます)。

セオドライトの使い方を間違ってた。

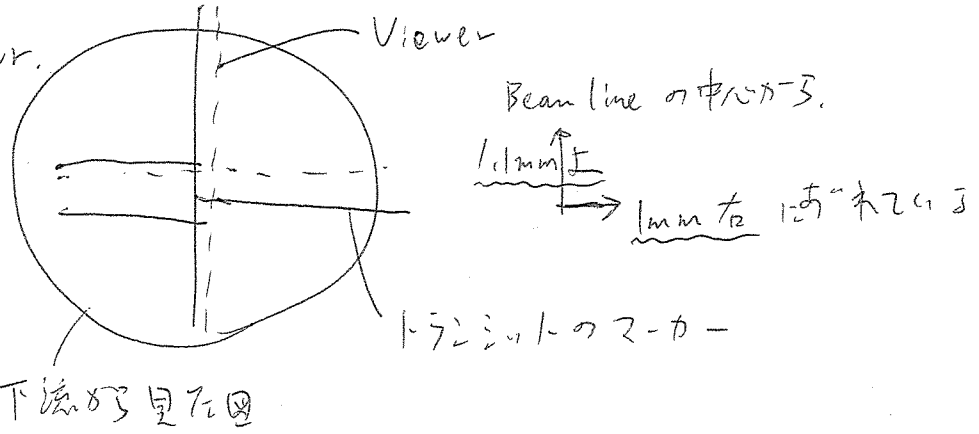
↳ 2009年7月とコンシステント。

(FP viewerのpotentialは、合ってる)。

ダンプQアライメント。

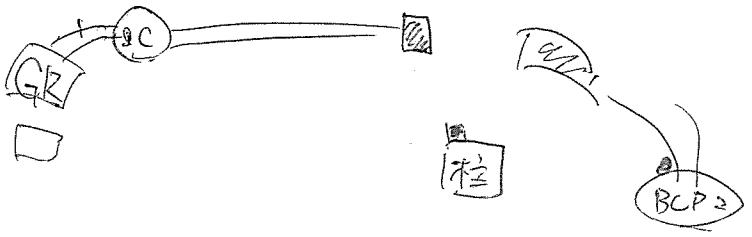


前viewer。



10/9　秋宗ビームモニタアライン（為重）

- レベル設置

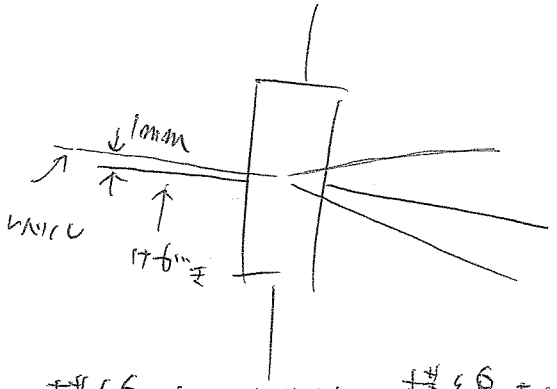


- レベルの高さを、西実験室　北東中央よりの柱、BCP2直下のスティアリングで合わせた。

  GRは0度に設置されていたため、Dの高さはレベル直下のQ底、影で見ることができなかった。

- 左右は、GRに 水平30mrad × 垂直20mrad のスリットをinstallし、そのけがき線に合わせた。

そのとき、



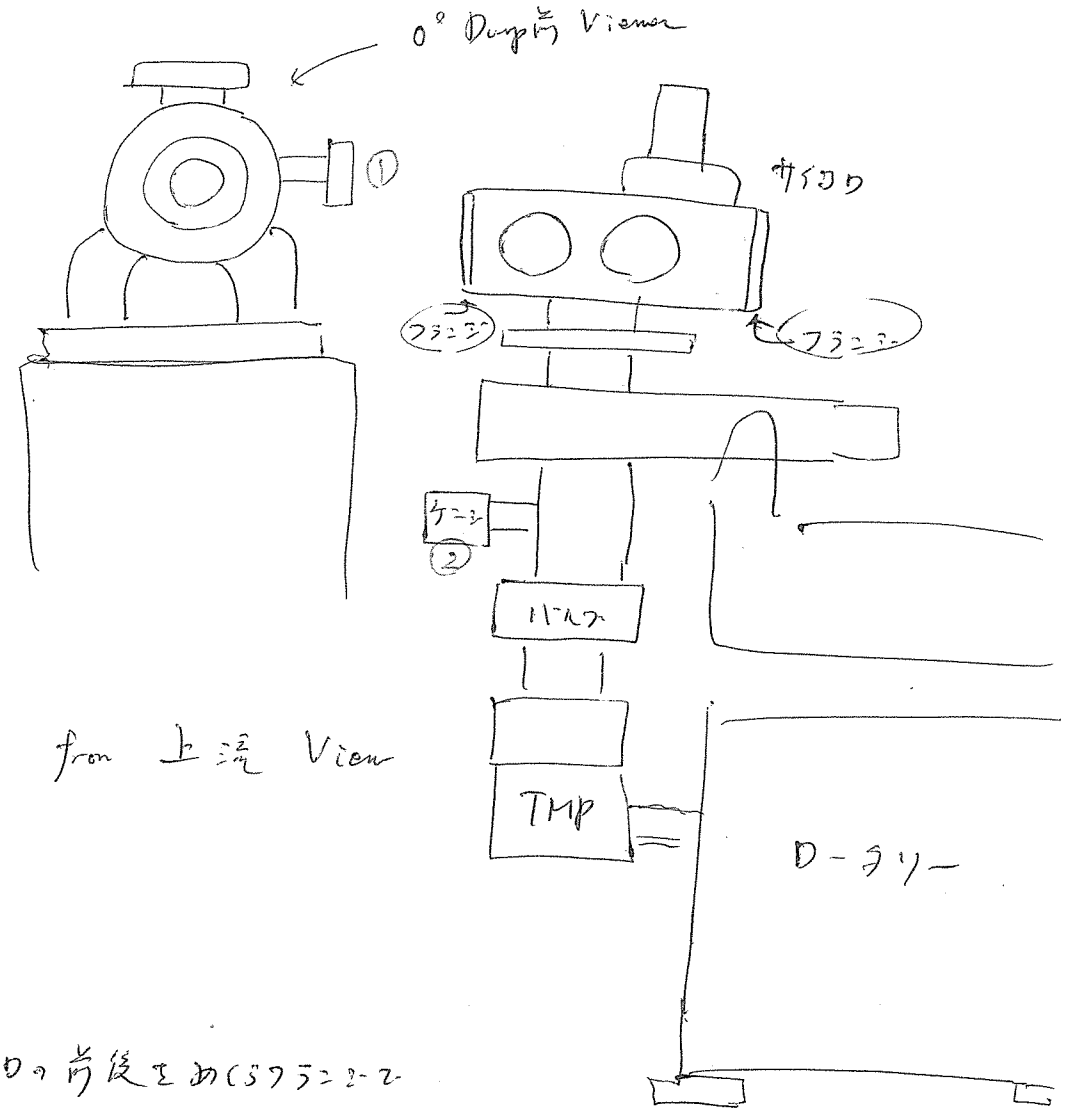
スリットの横線が、レベルの横線より　1mm 下にあった。
~~[illegible]~~ 正249 ヒグリート P89のように。

Akimune slit アライン（シン4の先端がレベルの線に合わせた）
wsdevでソフトリミットがかかるため1回はモーターを手で回した

Left	4.311 V	UP	4.308 V
Right	4.354 V	Down	4.404 V

10/10　　民井，H薩田

(α,α′)用 FC架台 (真空ポンプ付きの)を
0° Beam Dump 前に移動して 真空ポンプとして使用する



サイコロの前後をあらかじめフランジで
ふさいだ。

ポンプ単体とサイコロを引いて真空度 check

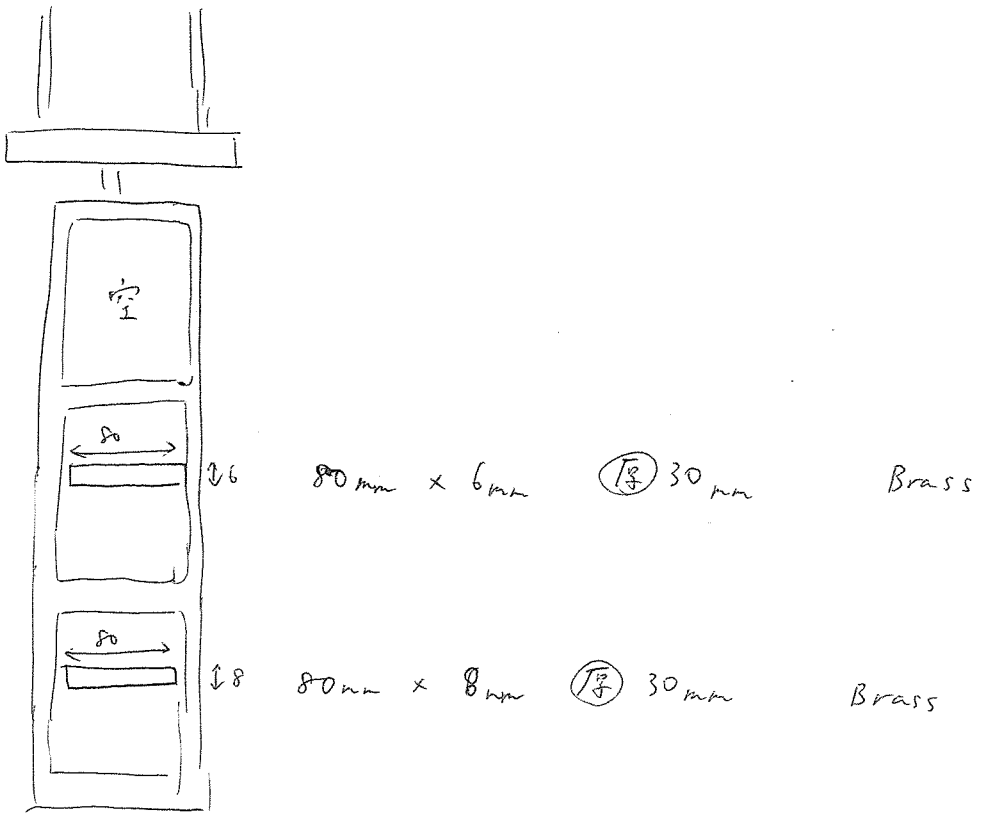
10/10 21:00　　$\sim 3.6\times10^{-1}$ Pa

0°ダクトとつなぎ、
半日引いて 3×10^{-1} Pa

- アルコールでのリーク箇所はみつからず
- 真空度は E282 vol I p32 の値より少し悪いが
  ひどく悪いわけではない

			GRとの	GR
10/11	12:00	5.9×10^{-2} Pa	(バルブ 閉)	1.0×10^{-5} Torr
	〃	3.7×10^{-2} Pa	(〃 開)	1.3×10^{-5} 〃

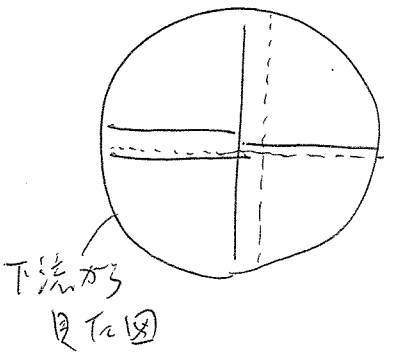
10/10　スリットの付替　（関村，石川，加藤）



10/10.　GR 焦点面 - Dump 間 Beam line ~~ダクト~~建設.　（松原・民井・藤田・坂本）

E　Logbook #　P.　を参考にした.
最下流から目視にて ダクトの中心点をアライン しつつ. Beam line を建設.
Beam Dump まで設置.（アライン前）

Dump前 viewer. 位置読み.



Beam line 上り.

1.1mm 右

1.0mm 下

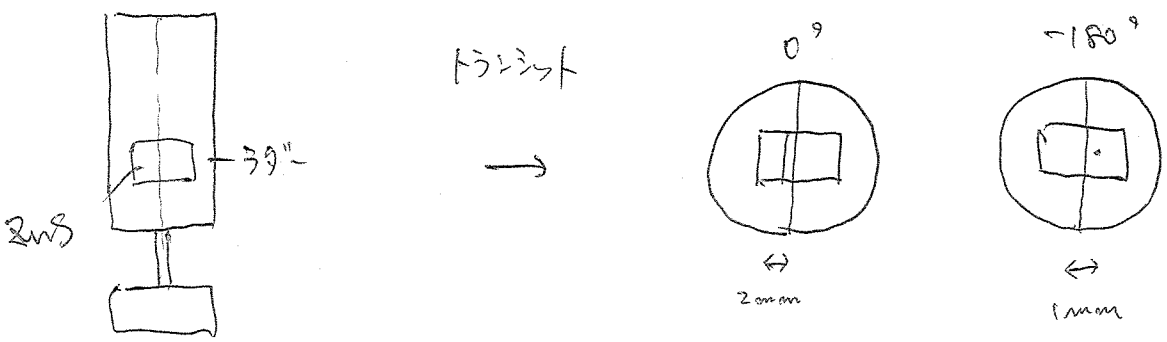
} にずれている

Q⇔viewer 間ダクト接続により
0.6mm 右 に変化.

/10 target 岡村、加藤、石川

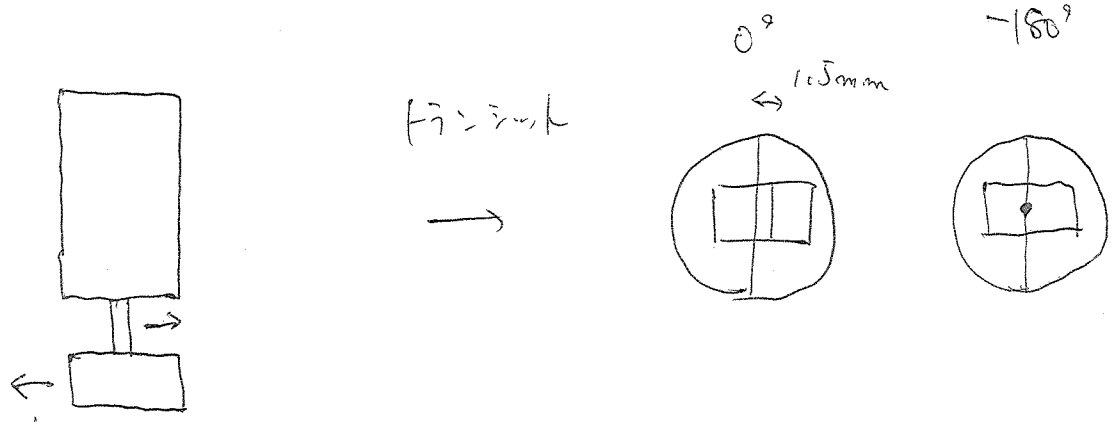
rotation 3.401
position 3.325
(ZnS)

はじめ



ZnSの中心が ~0.5mmずれている。

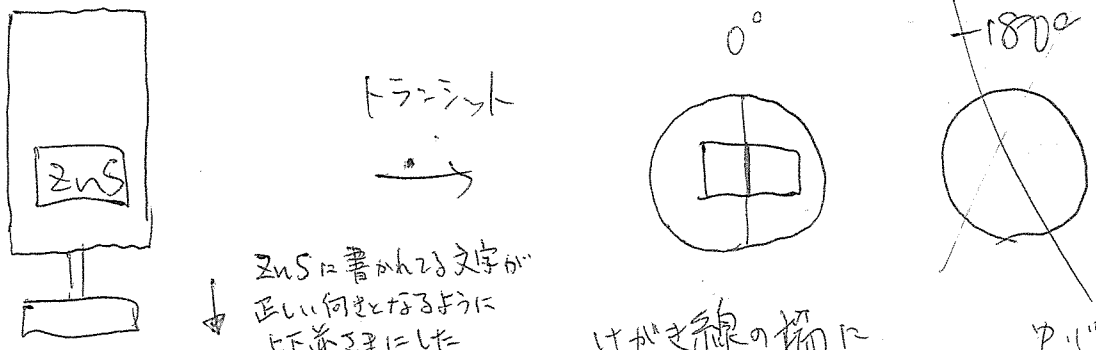
次に



棒と土台を上のトランシットのずれがなくなる方向へ極力動かした。

次に

10/10 17:00 時点



ZnSに書かれてる文字が正しい向きとなるように上下逆さまにした

ZnSを取り外し、上下逆さまにしてはめ直した。

⇒ ZnSとラダーの中心が合った。
但し、上下にすきまが少しある。

けがき線の端にトランシットの線がある。

中心軸は信頼

◎ 回転軸は E282 の target log p35 −90° の再現を確認

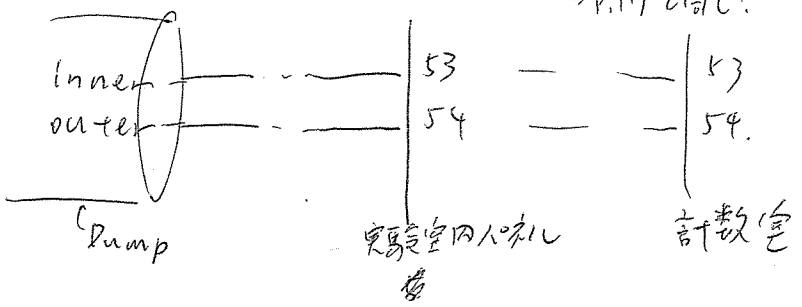
0° Duct FCまでつなぐ

Q5 F3流の真空 check

	start 0分		
rotary pump	~2分	$8.6\times10^{+2}$ Pa	
	~3分	2.6×10^{2} Pa	turbo pump on
TMP + rotary	~5分	1.8×10^{1} Pa	TMP 40%
	~6分	5.2×10^{0} Pa	60%
	7分	3.6×10^{0} Pa	80%
	8分	3.0×10^{0} Pa	100%
	10分	2.5×10^{0} Pa	

E282の値 ~1.4×10^{0} Pa と比べておかしくない と判断

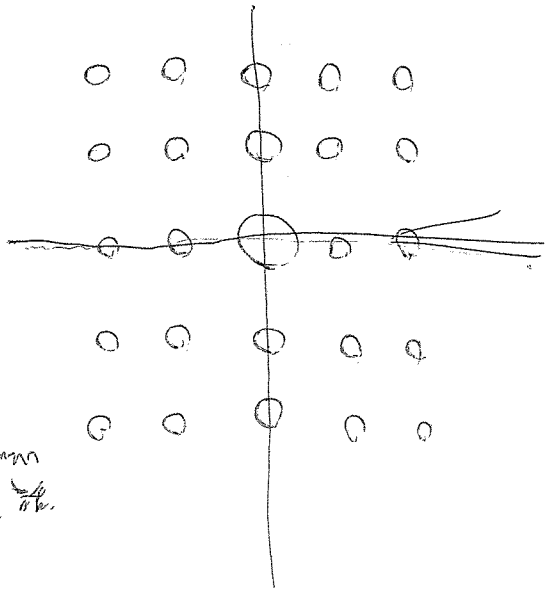
Beam Dump 配線 & 絶縁チェック. →P.17と同じ.



	inner	outer	
Open	∞ Ω	∞ Ω	ⓐ 計数室
50Ω	88.0Ω	88.0Ω	〃
short	38.0Ω	37.8Ω	〃
~~short~~			
50Ω	52.0Ω	—	ⓐ 実験室内
50Ω	88 Ω	—	ⓐ 地下通路パネル

⇒ 実験室→地下通路パネルのケーブルに折れる

シーブスリットアライメント.



上下は、
けがき線分、
低い

↑

フィラゲージ 1.2mm
使った上げの話.

左右はO.K.

上下は、けがき線分、
シーブスリットが低い

↗

これでもフィラゲージ(0.3mm)を、
4枚重ねした結果(計1.2mm)
(もともとが1mm以上違ってた)
低くかった

また、フィラゲージのスペーサのおかげで
スリット取付の上の取付ボルトのボスが逃げまでしかいらない.

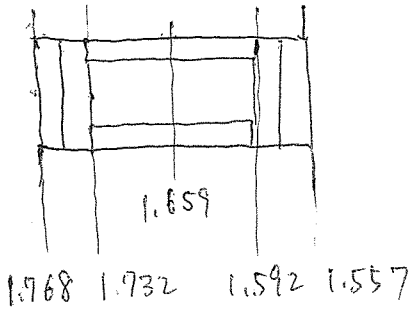
再現性もいいでしょう.

だから 11月には、1.3mmくらい削っておけばいいのか.

10/10　散乱槽　FC・　　岡村・加藤・石川

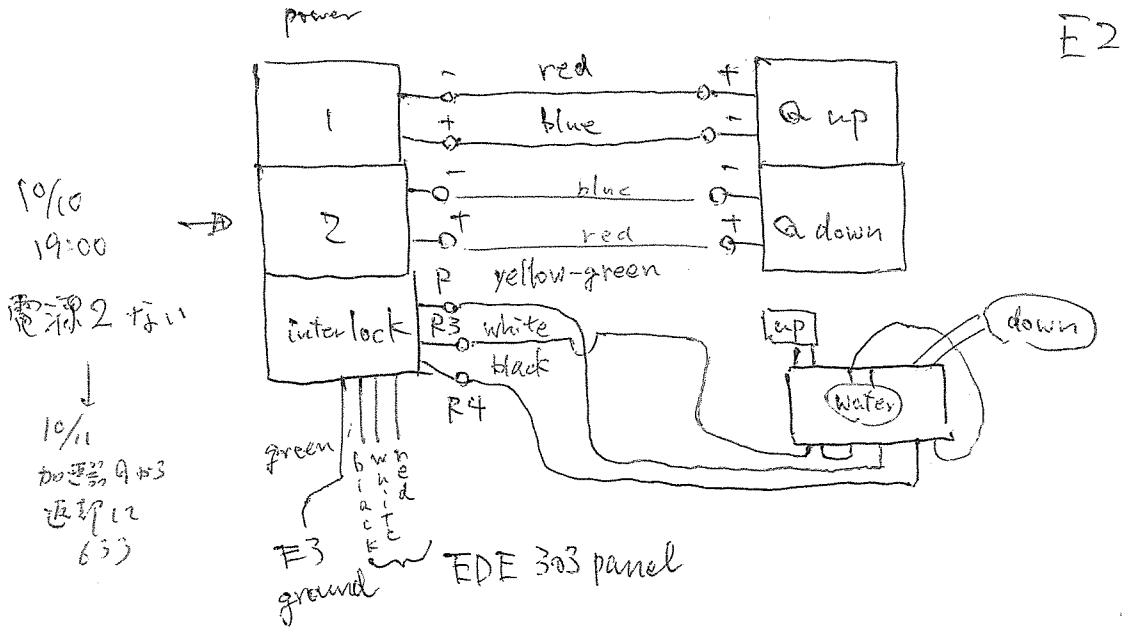
E 282 log より center 1.659 V → 再現

望遠鏡



position

10/10　Q 電源配線　　長井・石川



E282 log と同じ

事後 10/11 配線

10/11 12:30 test で 30A 流す (上・下流とも)

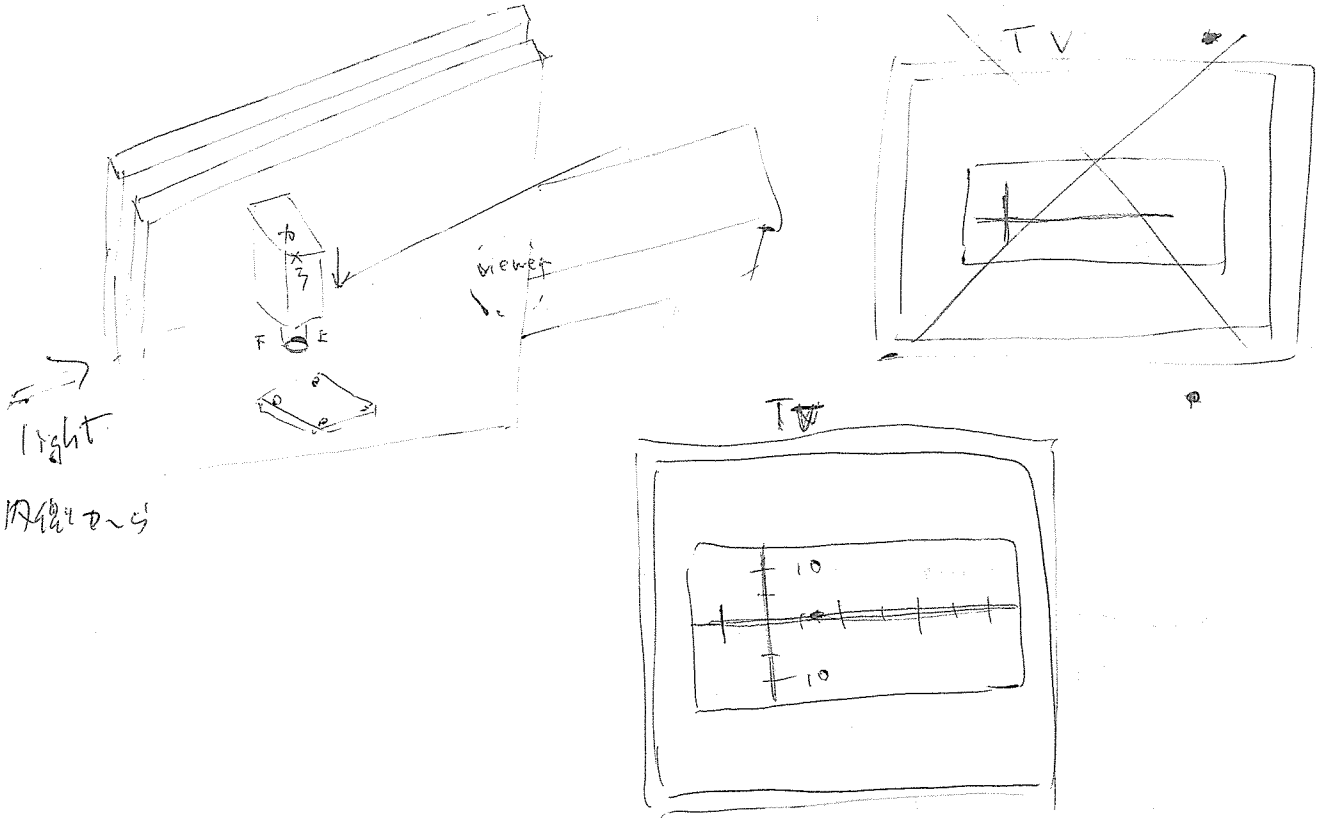
(イニシャロック OK
Manual 設定 OK
remote は 明日

OASIS 上の WFmag-e249 を setup した
→ remote 制御 OK

10/10　0度ビームダンプ　エレクトロンスウィーパー　励磁テスト　民井 須田・石川

CC　3.5A (14.7V) で十分励磁される.

10/10 ・Focal plane viewer の確認

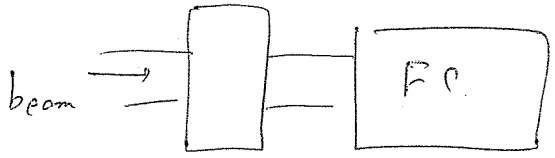


・0°　Qマグネット viewer の確認

・ダンプ前の viewer の確認

Beam Dump　　民・池 坂口聡，石川

- Electron Sweeper in Beam Dump



Nikusui 電源 ○ (18V, 5A)

17V　3.5A を流す

↳ limit の値. actual は 16.2V

- FC 絶縁 check

メガオーム　絶縁 OK (真空状態 ~10^{-1} Pa)

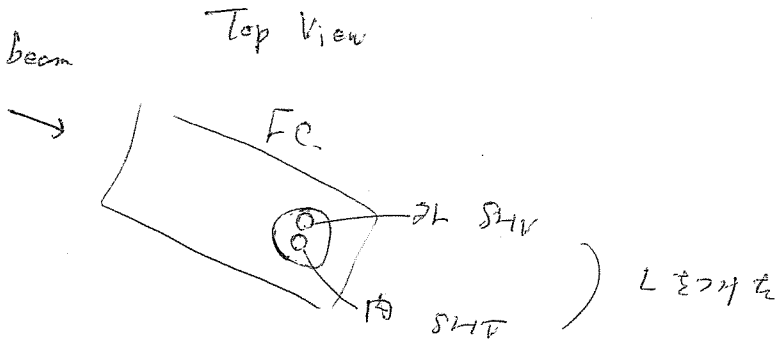
- FC cable 配線

	両定盤 南東柱パネル		地下共同溝		計測室
FC内 — 53	————	53	53	————	53
FC外 — 54	————	54	54	————	54

cable の対応 check

計測室で 50Ω を示す

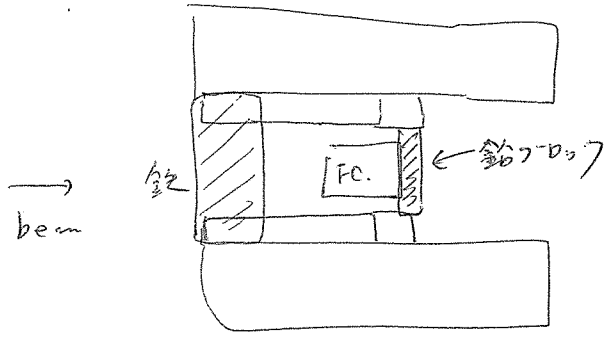
両定盤室で測って ~85Ω



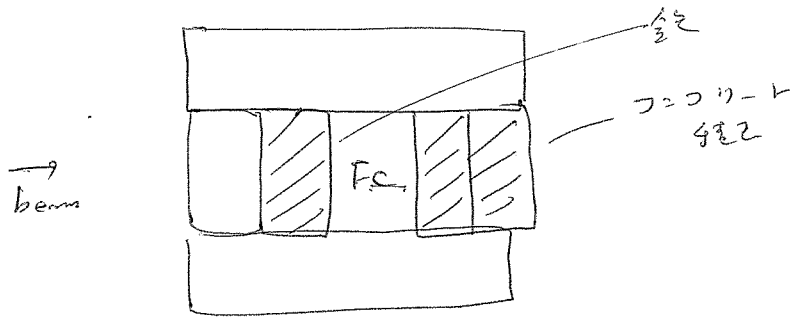
Beam Dump を積む

Top View

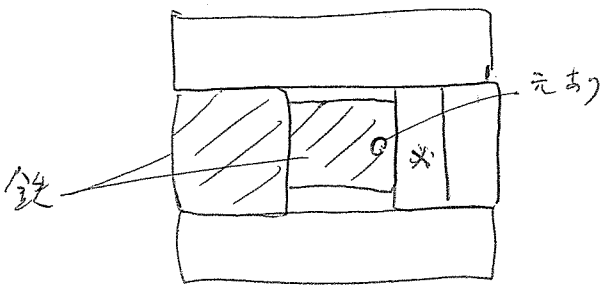
①



②



③



④ ※のコンクリートを外して FCの配線を上部元から行うか（鉛ブロックも一部外す）積み直し

上記の手順は良くない　下流のコンクリートは最後に積むべし

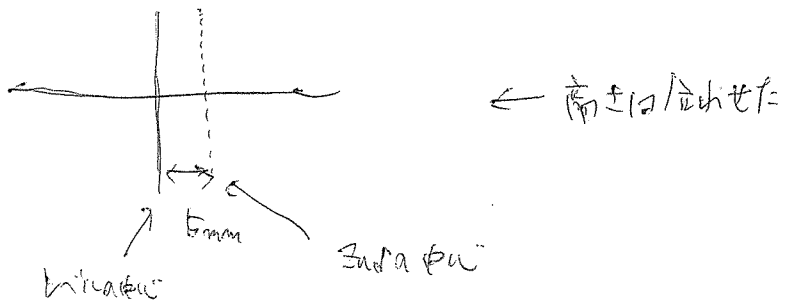
ice target アライメント

(juzo, satoshi, matsubara)

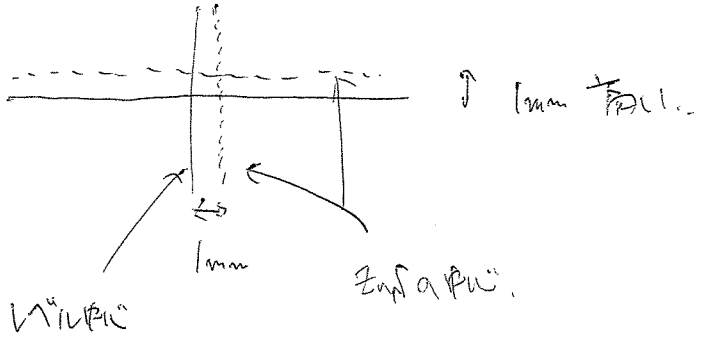
- 下に Ail target ×2 を入れると、
  ice target は 下側から 2つ使用可能

- ice ladder の 一番下に level を入れて レベルで確認
  (基準点は Ail ladder で確認)

- ice ladder 正面から見ると

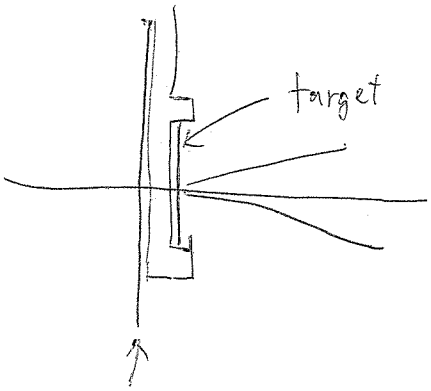


ice ladder を 180° 回転



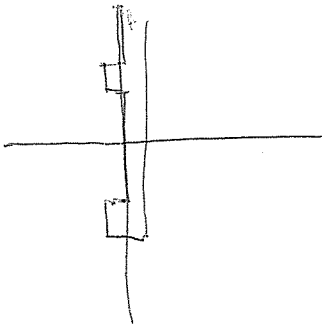
- つまり ice ladder の中心が 3mm ずれている。

90° 回転.



ここがレベルゲン. ラダーの厚み分くらいずれている.

反対に 90° 回転



ちょうど target の本来の位置にある.
OK.

> telnet ntsrw 7003

10/11

氷標的の ~~[illegible]~~ 合わせ方

> h-　　← 方向を決める（－は上方向）
> mc　　← 手動動、
コメントが出る。
CCW limit switch.　　← 上側のリミットスイッチで止まる。
~~[illegible]~~
> h+　　← 下方向
> d ****　　← 手動動する step 数を入れる。
> mi　　← 手動動力

おわり

一番下の target	30000	← step数。
真ん中の 〃	38100	

☆ のできダクトの下のバルブと、その下のダクトの接合のしかたが悪かったのでボルトを外してつなぎ直した

↓

正面から見ると、レベルのセンターとZ軸のセンターが4mmずれ。
（レベルが左にある）

1回転だと、ちょうどぴったり

（⇒、再結合で直る方向に1mmずれた）

⑨ 冷やした状態での再現性
1mmの精度で o.k
(P23)

⑧ P.21 の方法での再現性 o.k.

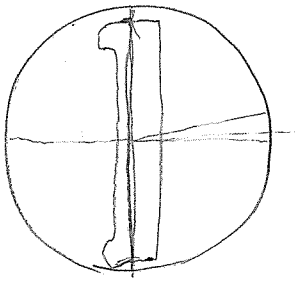
⑦ 氷標的インストール時の、はめあいフランジから外しての再現性 o.k.

☆

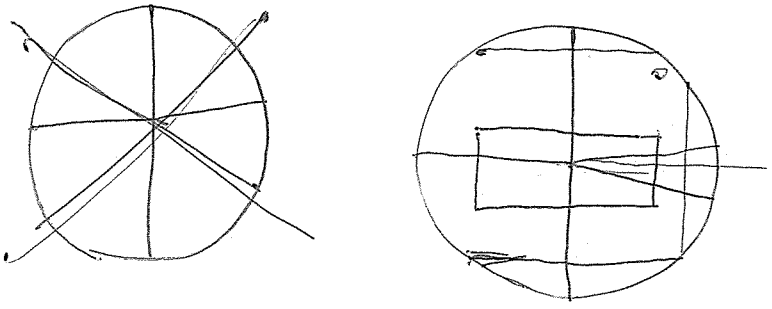
15:30 ☆新デューリー ほぼ満タンで (1日経過) 36.00kg
↓
フタ込みで
37.72kg

↓
16kg まで o.k か。

17:00



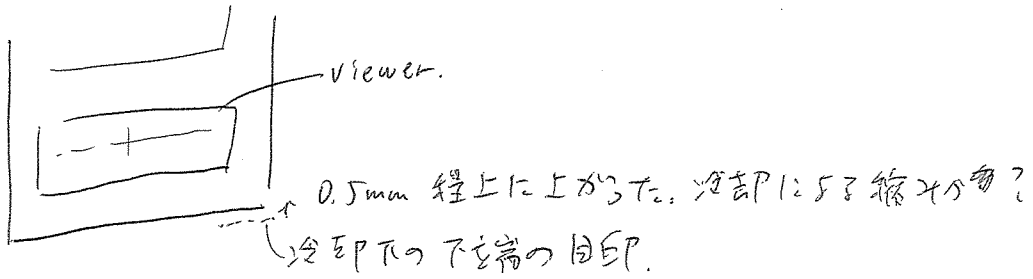
ラダーを正しい位置から反時計回りに90°回した。レベルで見た図。
ほぼ縦横ともに中央にきてる。ただし、中央をけがき線などで確認はしてない



90° 時計回りに回して、正しい位置に戻した。
ターゲット中心が、レベルの線より、ゃゃ低い。

10/11 標的冷却テスト.

ice target を冷却. ~~[illegible]~~ ~
(TC 1: ~-200℃, TC2: -170℃)
散乱槽カメラで冷却前との位置の差を読む.



氷 target インストール.

- ターゲットラダーをひきあげる. クレーンの準備.
- ~~バルブをつぎとじる~~
- 窒素用 ~~[illegible]~~ 配管を 真空掃きしておく、バルブとじる.
- 散乱槽バルブ 2つとじる.
- ロータリーへ続くところで 配管をはずして、~~[illegible]~~ ブランクフランジをつける.
  (ラダーのチャンバのみ真空、他は大気)

すべてのバルブをとじたら

- はめあいフランジを外す. (はめあい部のリークを忘れない)
- クレーン移動.
- 標的やグローブ袋の用意.
- 袋をとりつける. (リークあける)
- N_2を、はめあいフランジ側のチャンバ(+袋)に流してグローブ袋内の大気を、置換する.

・ラダー~~の~~の止め具をゆるめておく。

・ラダーチャンバ側のバルブをゆっくりあける（中は真空なので~~注~~注意）

・~~（すばやく）~~ 大バルブもあけて、ラダーを降ろす。

・（すばやく）標的マウント作業

・ターゲット引き上げで、すべてのバルブを閉じる。

・ゲロブ袋はずす

・クレーンで~~移動~~、とりつけ。

・ブランクフランジをはずして、ロータリーに~~[illegible]~~つなぐ。
→~~真空にする~~

・ラダーチャンバなどのバルブをすべてあけて、真空にする。
（散乱槽とはつながない）

・配管バルブをすべて閉じて、散乱槽のバルブをあける。

・ラダーを降ろす。

おわり。（～30分）

3.8×10^{-2} Pa. S.C. vacuum.

テストで取り付けた ice target.

しばらくすると 氷が小さくなってる

標的取り付け作業テスト.

- 作業にかかる時間は 20分くらい.
- はめあいフランジをはずす時にリークができていないことが多い!?
- N_2 leak を作業直前だけになるようにする.
- 温度は −140°C くらいまで上昇.

デューティー 30、10 kg.

GR-VDC　PAがなかった物（ケーブル番号）

X1-2 (C2), X1-12 (C12)
U1-2 (B2), U1-13 (A12)

X2-12 (E12), U2-13 (F12)
U2-2 (D2), U2-3 (D3)

LASの　U1-15, U2-15
V1-14, V1-15, V2-14, V2-15
V1-2, V1-3

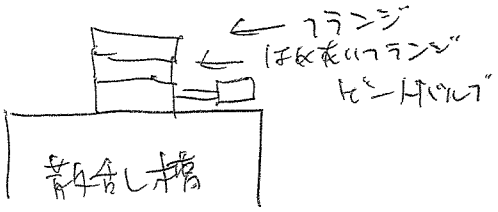
をGRに移す。

LASの抜けた所には、特に故障と書かれていない物もしくはTESTではO.Kと書かれた物、6台及び発振音叉と書かれてる物2台を差している。

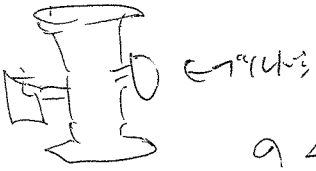
（U1-1 → V1-2, V1-1 → V1-3に移して、
発振音叉2台はU1-1, V1-1に入れた。）

10/11 Yosui

[illegible] [illegible] Ace ladder 時の コ→ target frame ladder は.

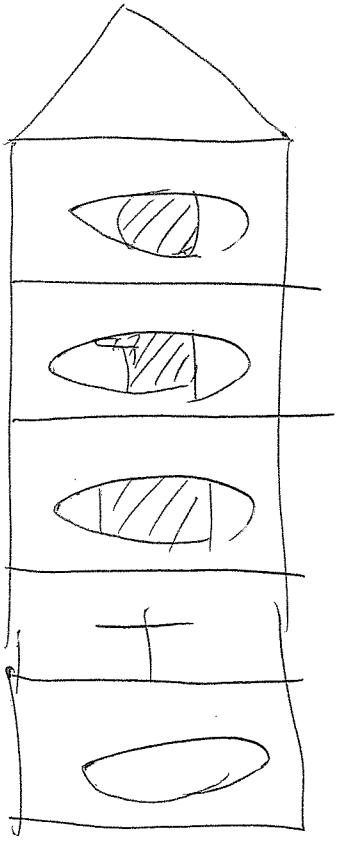


の状態で 脚を入れて インストールする
(そんなに難しくない)



の状態でカバーをつけた状態では
入れられないので注意.

立ち上げ時のラダー.



^{nat}Si 中心 2.42 (not 修論用)

^{12}C 30 mg/cm²

^{197}Au 168 mg/cm²

ZnS

Blank.

LASは 59.98 deg くらい
(真空が濡れたので)

S.C.F.Cは、 ~~position~~ rotation = 1.690 (昨日は1.659) → P.15.
(ちょっとLASよりに)

position = 4.397 ← standard.

にした

10/12 ッ.00すぎ.
西宋馬飼室開ける.

5:45. ビーム準備完了

10/12 6:00 detector setting up start

GR VDC Cathode −5.6 kV
Potential −0.3 kV

~~FC Position~~ ~~1.511 V~~
target Carbon 30mg/cm² GR 8°

'07/10/12 06:04

reset|Actual)			Current(Preset|Actual)	Status	PS	NMR	FB
	mT	93.06	93.10 A				
	mT	18.0	17.90 A				
	mT	8.4	8.40 A				
	mT	0	0.02 A				
	mT	0	0.02 A				
1.24	810.345 mT	215.7781E	215.47 A				
1.24	810.293 mT	407.1881S	406.72 A				
	82.154 mT		8.00 A				
	mT		8.50 A				
	-39.646 mT		10.00 A				
	mT		0.00 A				
	mT		0.00 A				

elastic ^{12}C at 8°.

D1, D2 ON 95%
⟹ δ10.24 mT

ycle 10 sec. Hcopy Queue acc2424 eXit

SCU3C 2007/10/12 ION S: Neomafios AVF P:P E: 53.3 MeV F: 15.416773 MHz COURSE: WS_S
4:18:39 MODE: UNPOL RING P:P E: 300.0 MeV F: 15.416773 MHz GROUP: Matsubara

RING VACCOL BT DIAG RF AVF SPU Ver

Beam Monitor (Three Wire Profile Monitor for AVF)

Disp Range (100.00 nA)
Measure
Disp

Current Pos. ( )

0.20 uA PROB_DIN 04:17:11

Disp Range (0.20 uA)
Measure
Disp

(860.00 mm) (910.00 mm)

Current Pos. (910.81 mm)

<< Start Pos. (860.00 mm) Move Range (50.00 mm) Beam Current Range (1.000 uA) >>

Start Pos. | IN <-- | OUT --> | Move Range | Upper Pic | Lower Pic | (INT) X | Y | (DEF) Z

Set | Range | Stop | PROB DefIn | PROB PHS | PROB DEE | Save | Recall | Store | Main

04:18:35.027 : 計測正常終了。

RPH32010 Controller for GR+FPP

/Frame 0\/Frame 1\

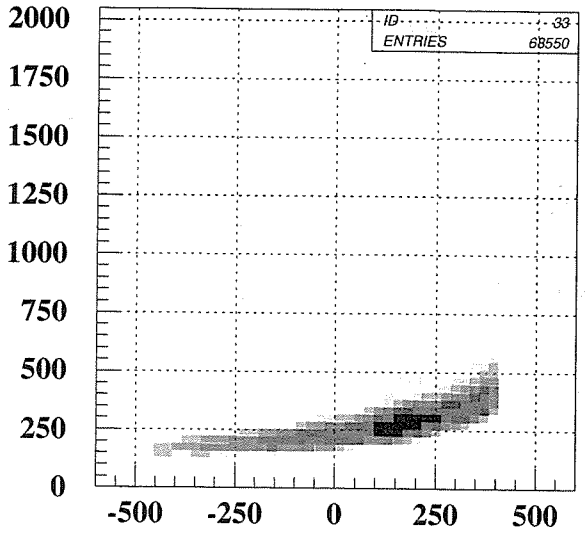
Channel: Preset & True Voltage (Z=zero, R=restore)

1:	1650	1650	▲ Z	9:	0	0	▲ Z	17:	0	0	▲ Z	25:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
2:	1700	1700	▲ Z	10:	0	0	▲ Z	18:	0	0	▲ Z	26:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
3:	1830	1830	▲ Z	11:	0	0	▲ Z	19:	0	0	▲ Z	27:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
4:	1870	1870	▲ Z	12:	0	0	▲ Z	20:	0	0	▲ Z	28:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
5:	0	0	▲ Z	13:	0	0	▲ Z	21:	0	0	▲ Z	29:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
6:	0	0	▲ Z	14:	0	0	▲ Z	22:	0	0	▲ Z	30:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
7:	0	0	▲ Z	15:	0	0	▲ Z	23:	0	0	▲ Z	31:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
8:	0	0	▲ Z	16:	0	0	▲ Z	24:	0	0	▲ Z	32:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R

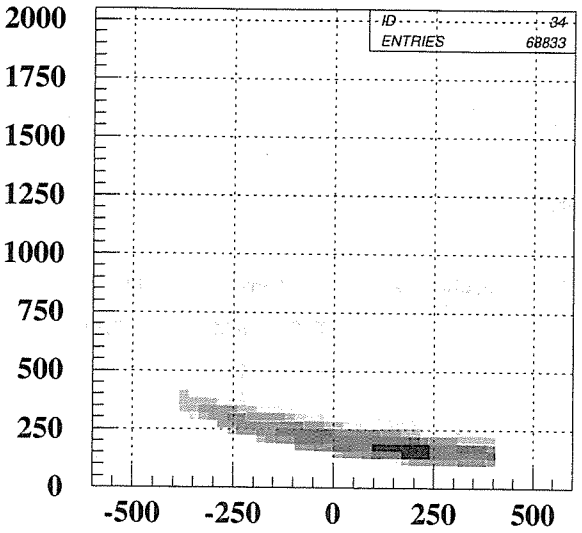
HV ON Set All Update Set Common 0

HV All ON HV All OFF Read File Write File Update All Hcopy Queue acc2424 eXit

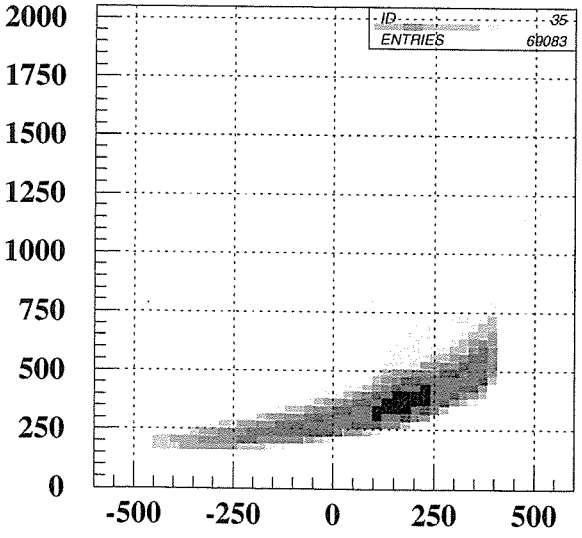
2007/10/12 09.55



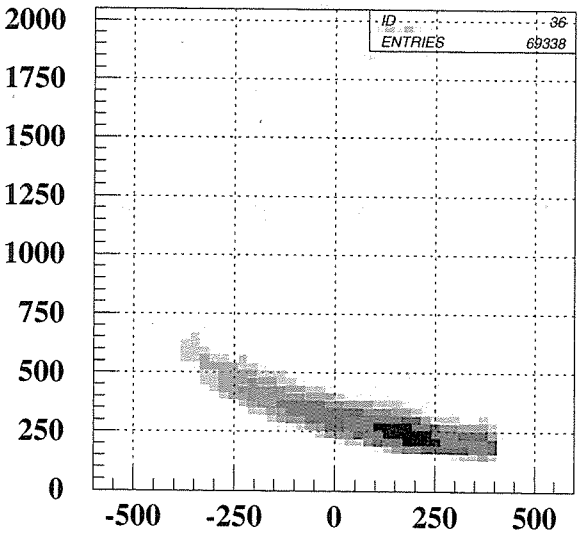
GXADC1LG GR ADC 1L vs X



GXADC1RG GR ADC 1R vs X



GXADC2LG GR ADC 2L vs X



GXADC2RG GR ADC 2R vs X

FC → 1,700　　5° 程度 LAS に近ずき（3° カバーしている）

RUN 1001　　white spectrum　　GR 8°　　^{12}C　30mg/cm^2

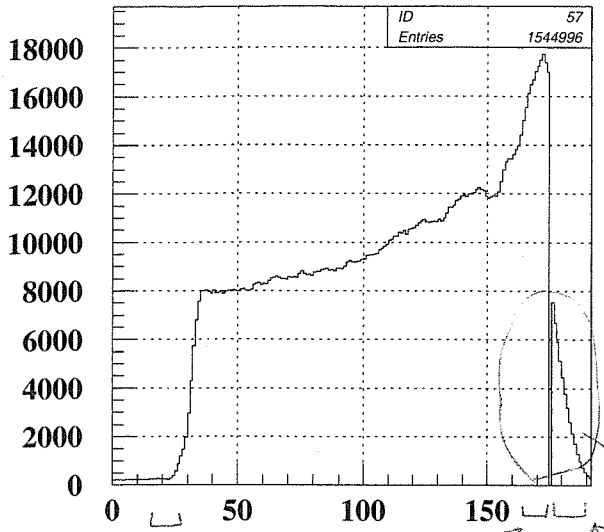
WS Magnet Controller　　'07/10/12 10:21

/WS\/PIS\

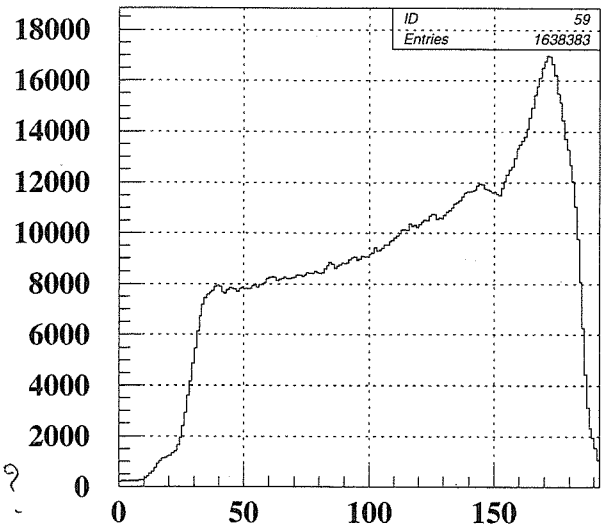
Magnet		Field(Preset|Actual)			Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1				mT	97.025	97.10 A				
GR SX				mT	18.772	18.70 A				
GR Q2				mT	8.767	8.80 A				
GR MQ				mT	0	0.02 A				
GR MS				mT	0	0.02 A				
GR D1		844.782	844.792	mT	224.18059	223.96 A				
GR D2		844.782	844.784	mT	421.99631	421.56 A				
GR DSR		0	20.314	mT	0.0	0.05 A				
LAS Q				mT		8.40 A				
LAS D			-39.646	mT		10.00 A				
GR DQ1				mT		0.00 A				
GR DQ2				mT		0.00 A				

Update　update Cycle 10 sec.　Hcopy　Queue acc2424　eXit

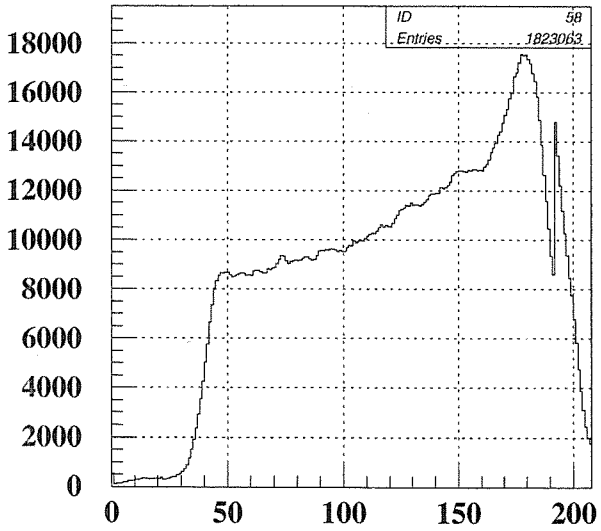
2007/10/12 10.26



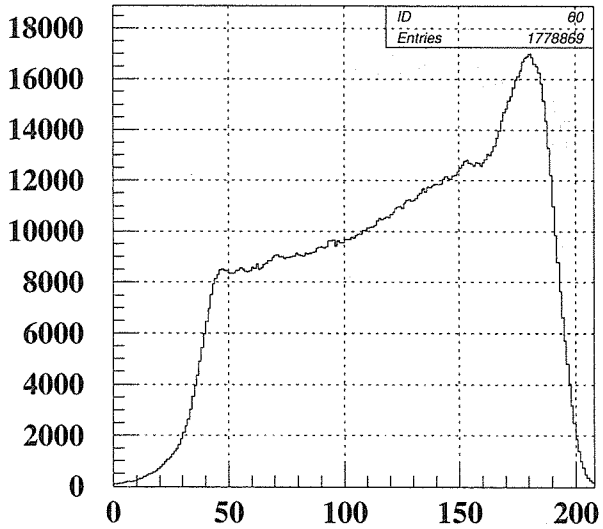
GWIREX1 GR WIRE X1



GWIREX2 GR WIRE X2



GWIREU1 GR WIRE U1

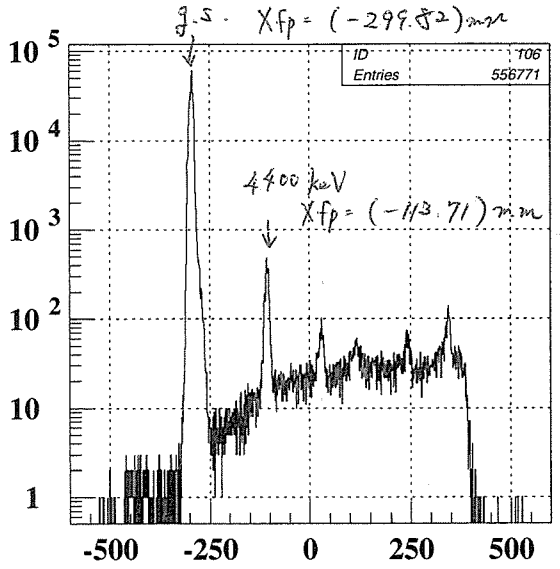


GWIREU2 GR WIRE U2

夜. 10/12 10:50

^{12}C の エネルギー較正.

$$\frac{4400\,\mathrm{keV}}{(-113.71)-(-299.82)} = 23.64\ \mathrm{keV/mm}$$



Run. 1002 ^{12}C ~~elastic~~ δ-dep.
energy calibration

WS Magnet Controller '07/10/12 11:02

/WS\/PIS\

Magnet	Field(Preset)	Field(Actual)		Current(Preset)	Current(Actual)		Status	PS	NMR	FB
GR Q1			mT	97.025	97.10	A				
GR SX			mT	18.772	18.70	A				
GR Q2			mT	8.767	8.80	A				
GR MQ			mT	0	0.02	A				
GR MS			mT	0	0.02	A				
GR D1	889.244	889.249	mT	236.31471	236.07	A				
GR D2	889.244	889.248	mT	444.78664	444.20	A				
GR DSR	0	20.404	mT	0.0	0.05	A				
LAS Q			mT		8.40	A				
LAS D		-39.646	mT		10.00	A				
GR DQ1			mT		0.00	A				
GR DQ2			mT		0.00	A				

Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

Target Change $^{12}C \rightarrow$ ~~[illegible]~~ ^{197}Au 1.68 mg/cm^2.

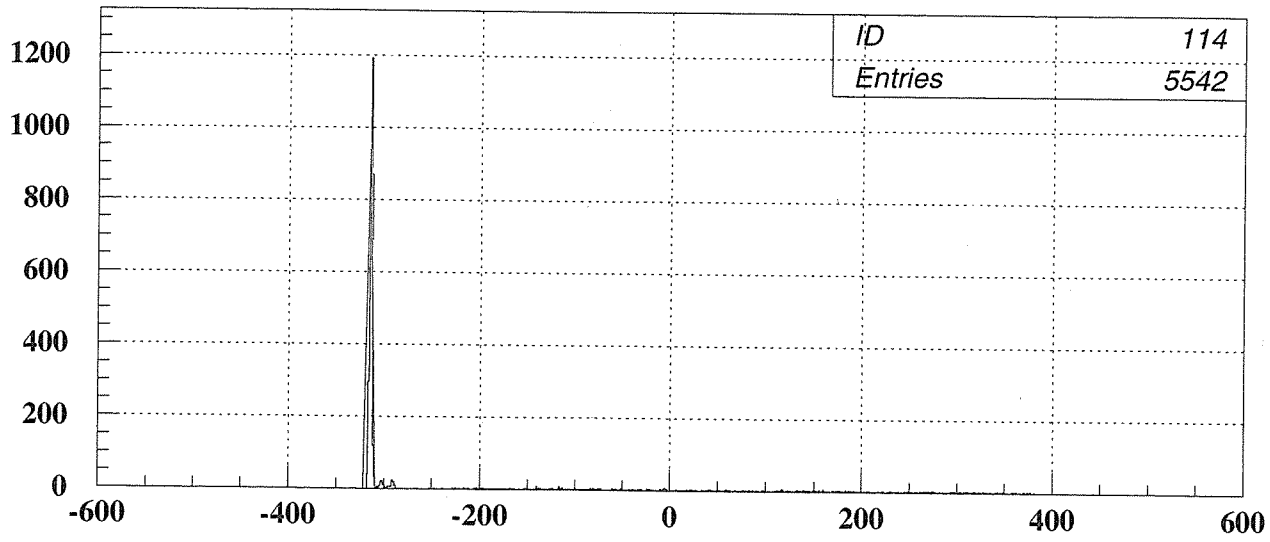
beam調整なしで. software correction のみで. → x-y

~70keV

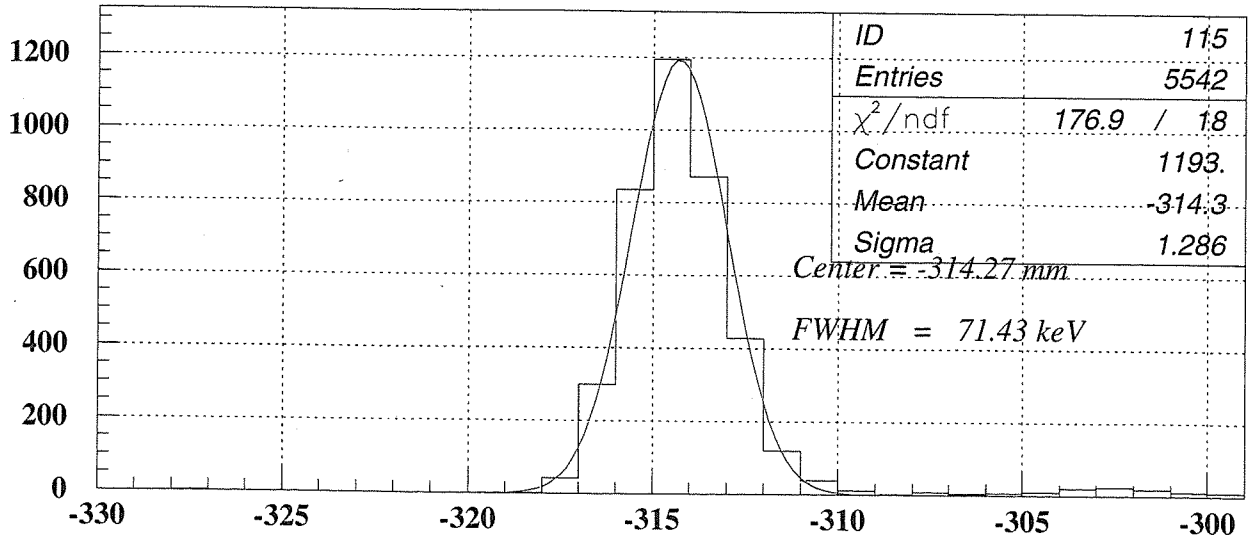
θの +1° ~ +2° くらいを使うと. resolution よく見える
(とることができる)

^{197}Au の elastic
beam tuning 前の Resolution

2007/10/12 11.35

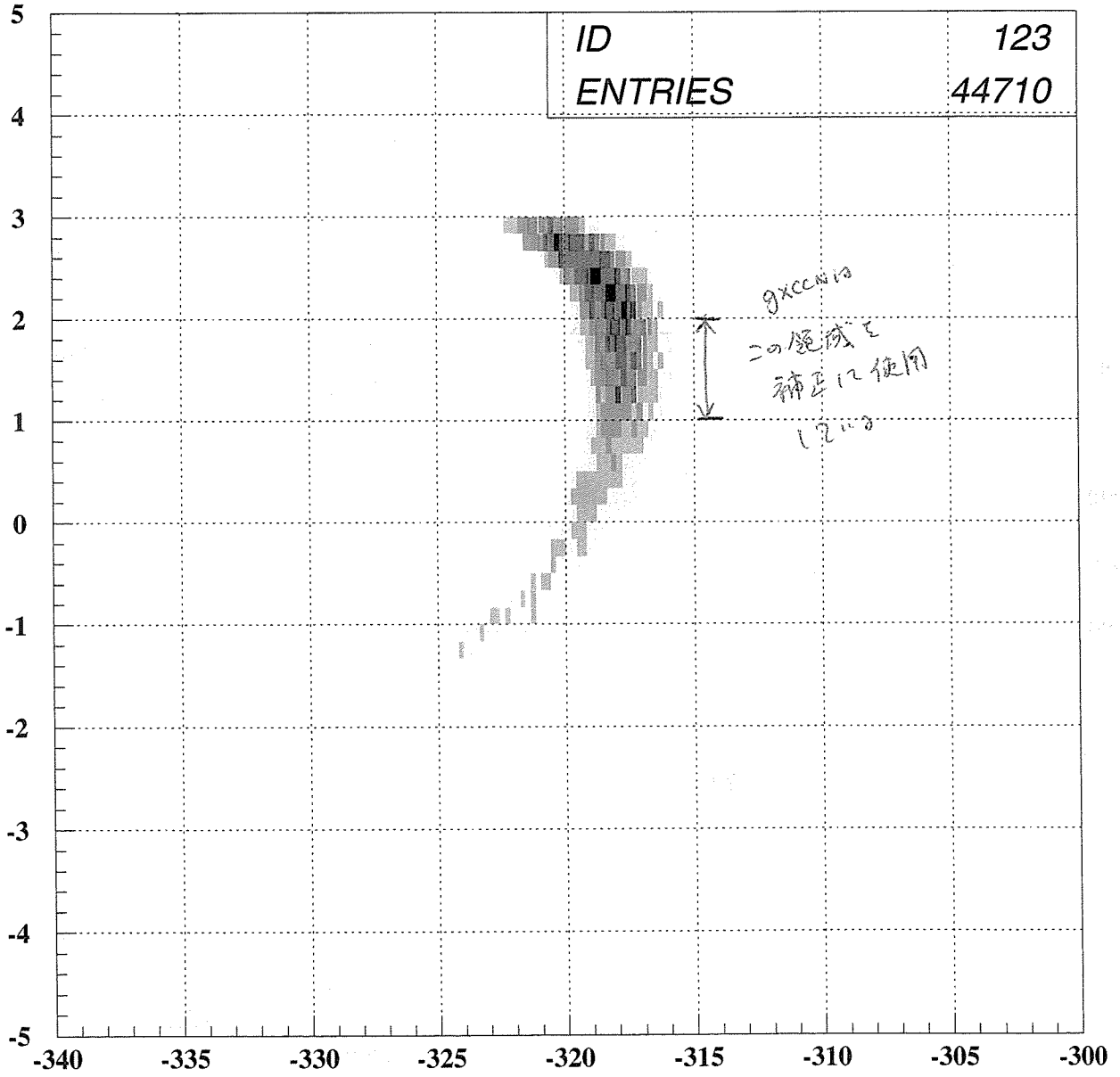


GXN GR X Narrow

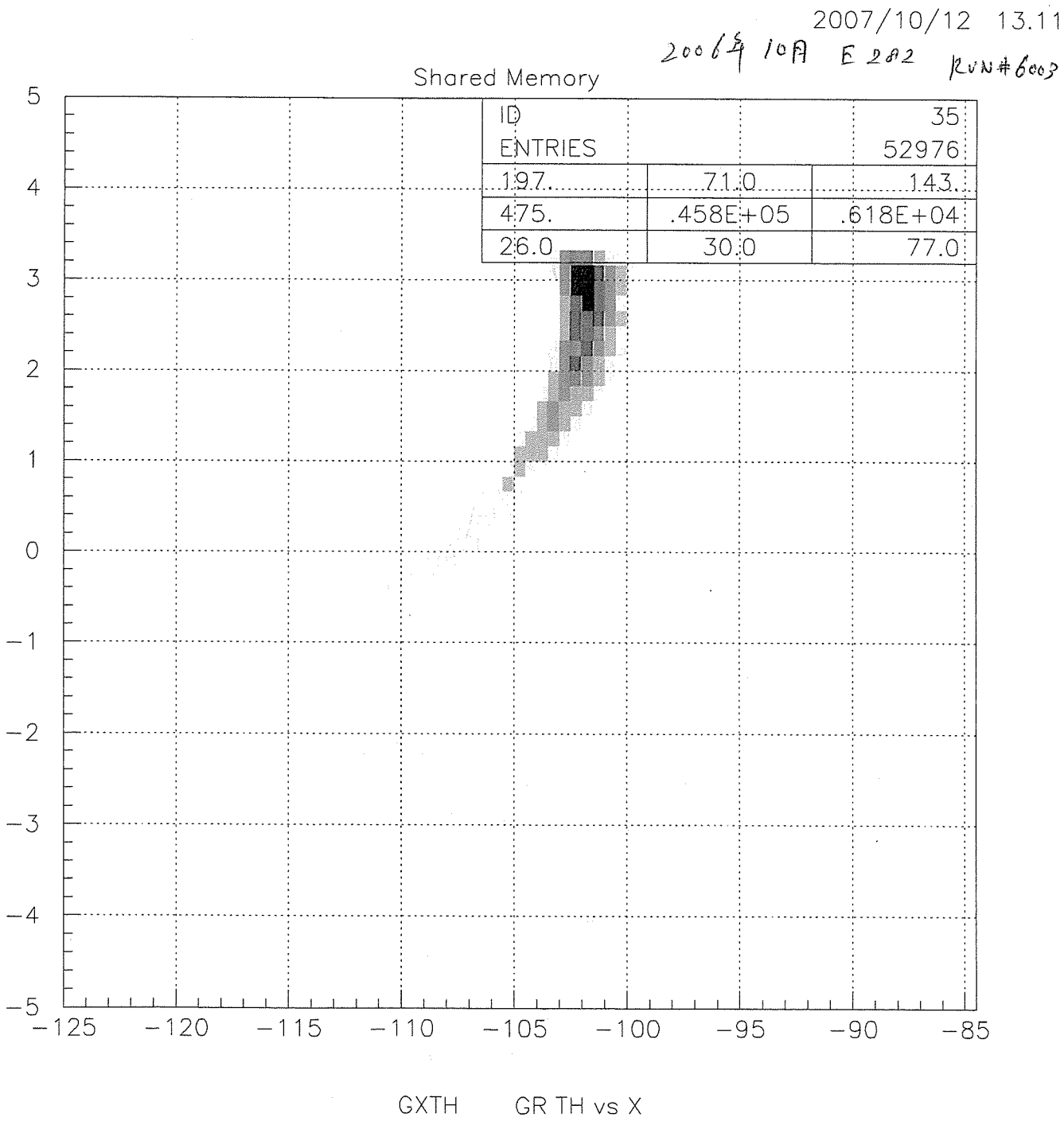


2007/10/12 13.08

on-line E299



GXTH GR TH vs X


2007/10/12 13.11
2006年 10月 E 282 RUN#6003
Shared Memory
ID 35
ENTRIES 52976
197. 71.0 143.
475. .458E+05 .618E+04
26.0 30.0 77.0
5
4
3
2
1
0
−1
−2
−3
−4
−5
−125
−120
−115
−110
−105
−100
−95
−90
−85
GXTH GR TH vs X

19:30

引き続き分解能調整中
見い時ビ
50 ~60 keV 付近

21:30 ビーム調整後 約60 keV

Yのゲートを -5 ⇔ 0 としたところ
約50 keV になった。

(注) 散乱角8°でYが効く ← つまりこグネット起
X-Yが曲がっている

WS Magnet Controller

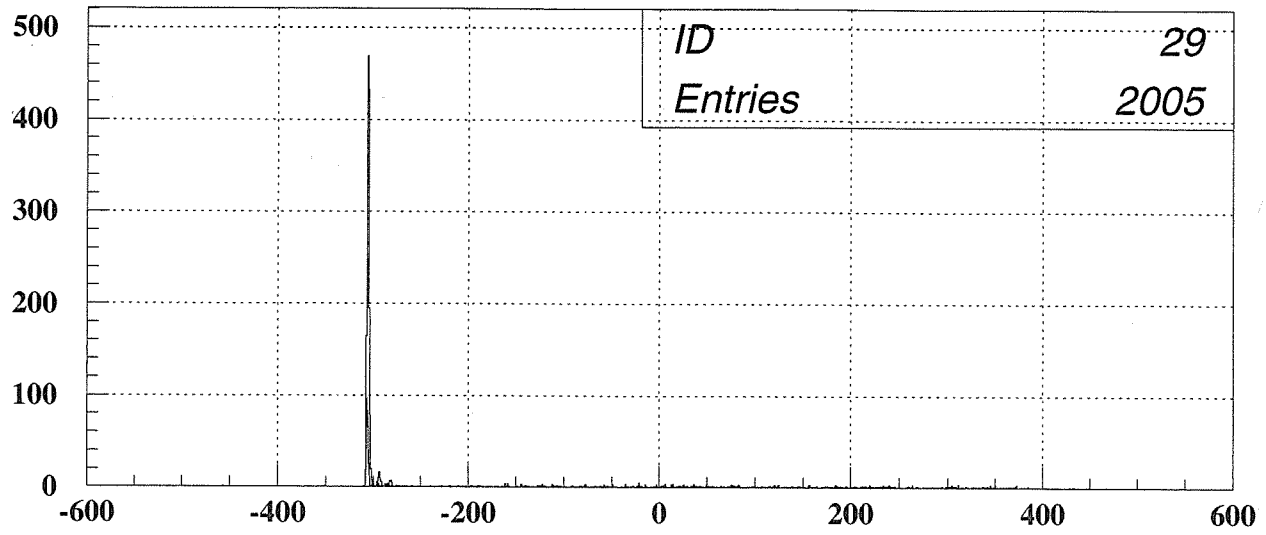
'07/10/12 19:11

/WS\/PIS\

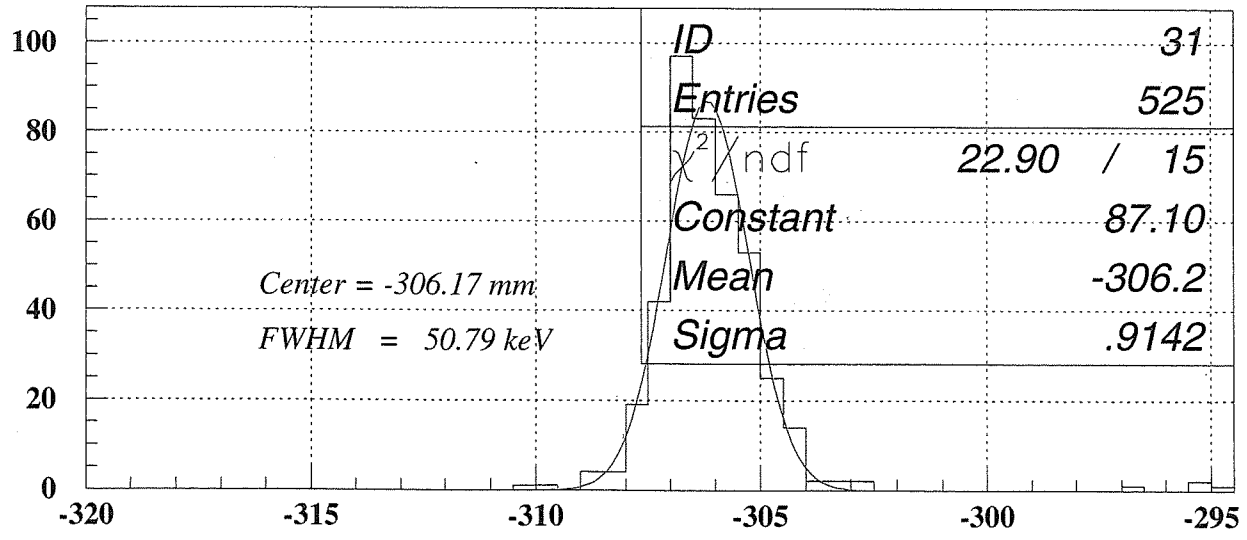
Magnet		Field(Preset|Actual)			Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1				mT	97.025	97.10 A				
GR SX				mT	18.772	18.70 A				
GR Q2				mT	8.767	8.80 A				
GR MQ				mT	0	0.02 A				
GR MS				mT	0	0.02 A				
GR D1		889.244	889.229	mT	236.31546	236.07 A				
GR D2		889.244	889.237	mT	444.77401	444.45 A				
GR DSR		0	20.314	mT	0.0	0.05 A				
LAS Q				mT	218.20	8.50 A				
LAS D			-39.646	mT	280.60	10.00 A				
GR DQ1				mT		0.00 A				
GR DQ2				mT		0.00 A				

Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

2007/10/12 21.26

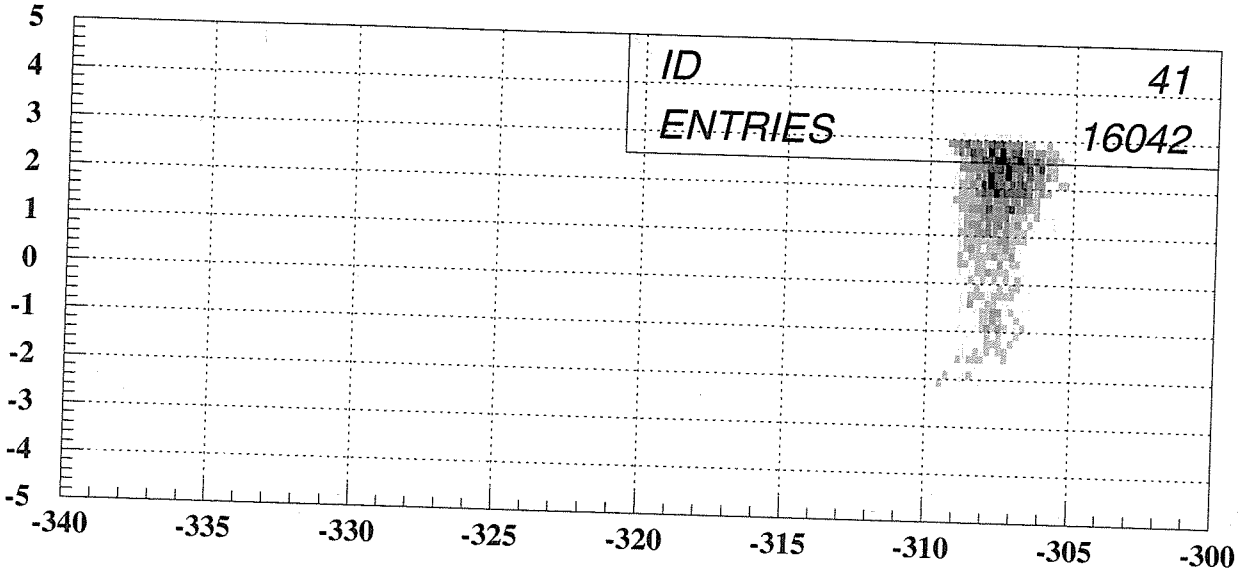


GXN GR X Narrow

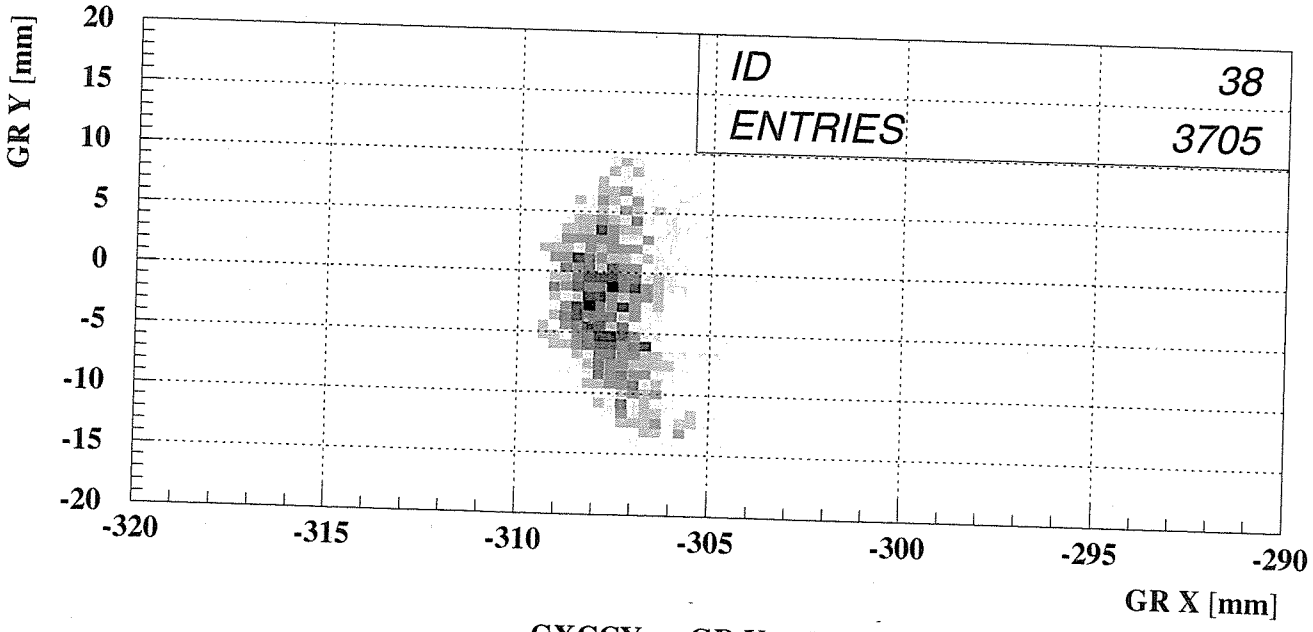


GXCCNG GR XCC Narrow (Y-Gate)

2007/10/12 21.28



GXCCTH GR TH vs XCC



GXCCY GR Y vs XCC

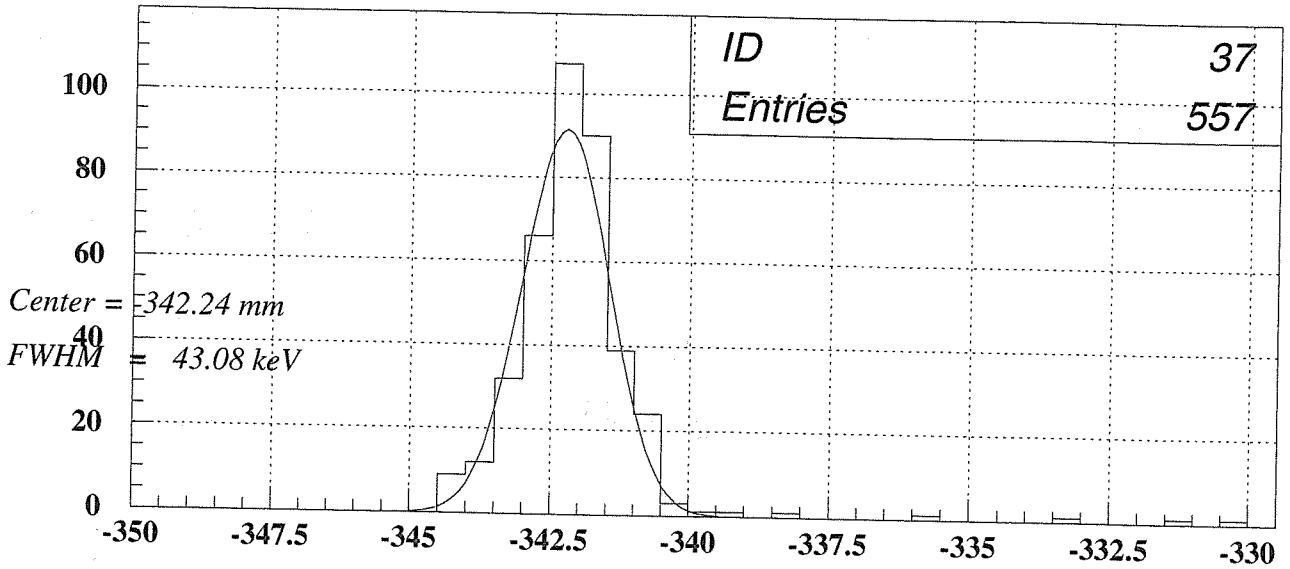
XとYの相関がつよいため

Yでgateをかけることにする [-5,0]

gxccn → gxccng

10~15% 線量減少する

~55keV

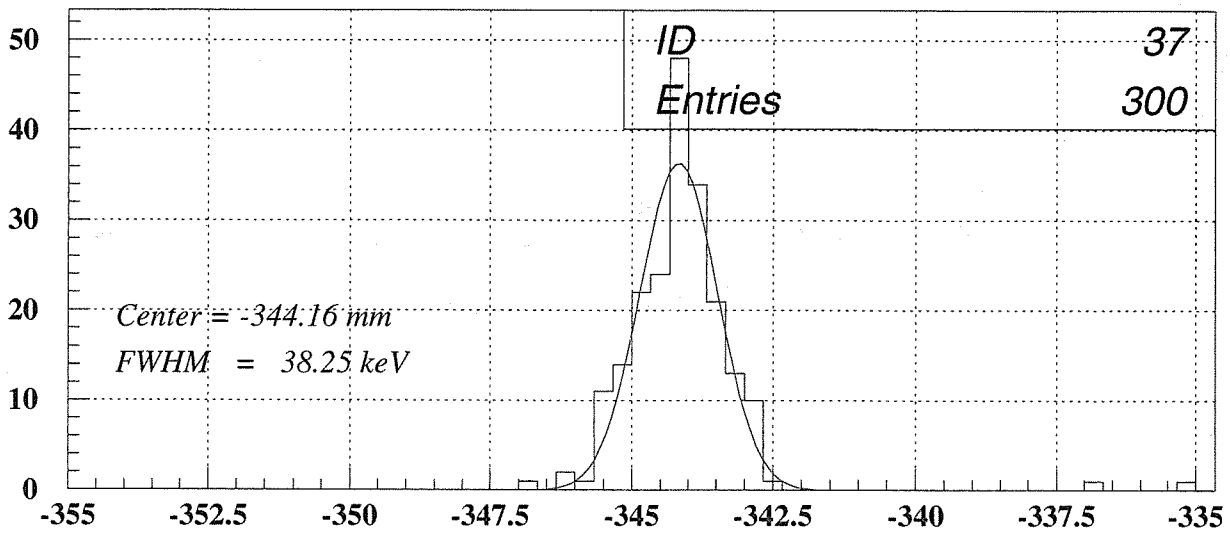


GXCCNG GR XCC Narrow (Y-Gate)

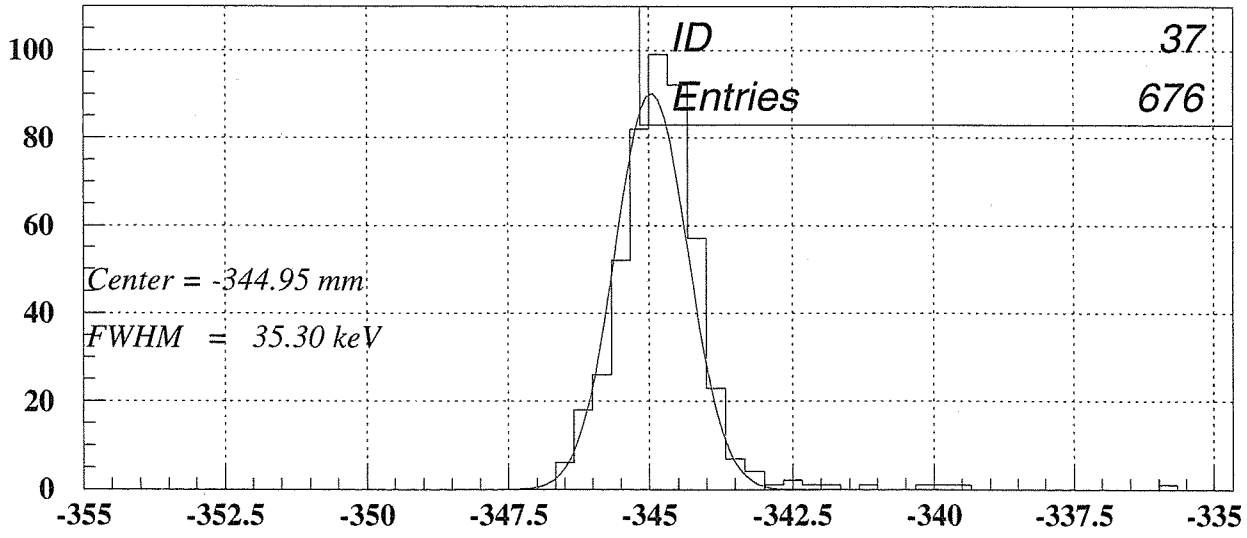
↑

TRIM 36 と CAVITY 3 Vol を振った
ターゲットが変わったかもしれないが、Beam量と分解能も
良くなった (55 → 43 keV)

2007/10/12 23.13



GXCCNG GR XCC Narrow (Y-Gate)



GXCCNG GR XCC Narrow (Y-Gate)

↑
この paw の絵を. achroma_tune_1.ps → 2つ共に表示
として保存.

Run 1003, adiabatic の tuning. 197Au 1.68 mg/cm²

～35 keV くらい

(1回の tuning のみ保存!

Run 1004. 複数回の tuning を保存.

(いい時で 32 keV くらいを達成)

ここで 調整 stop 0:00

西東馬家へ. ・GR を 0度へ、ダクトつなぐ.

・RF の トリガーが来ていない

(・run controler がダメなこと.
・target in の条件がないこと
BLP

run controler が直れば直る理論 → この2つの原因のため → 回路調整でのりきる.
後日のための メモあり 重要!!

・BLP target の in/out を計数字でできるようにした.

具体的には. Murata 2ch の前に入る前の NIM − TTL 変換の直前に何らかの NIM 信号が入るようにした

HTT の

(今回は、ラック上、足いのに 2ch ともメモれた)

先は、Murata の ch 2 と 4 ⇒ BLP (1, 2 の target) → 次へ.

Maruta さんは、赤いランプがつくと target/viewer は IN.

1ch
2ch ⇒ BLP viewer.

2ch
4ch ⇒ BLP target.

LAS 立ち上げ

LAS, VPL. cathode −5.3 kV
pot −0.3 kV

LAS 磁場設定.
E249 を参考にした.

WS Magnet Controller '07/10/13 03:05

/WS\/PIS\

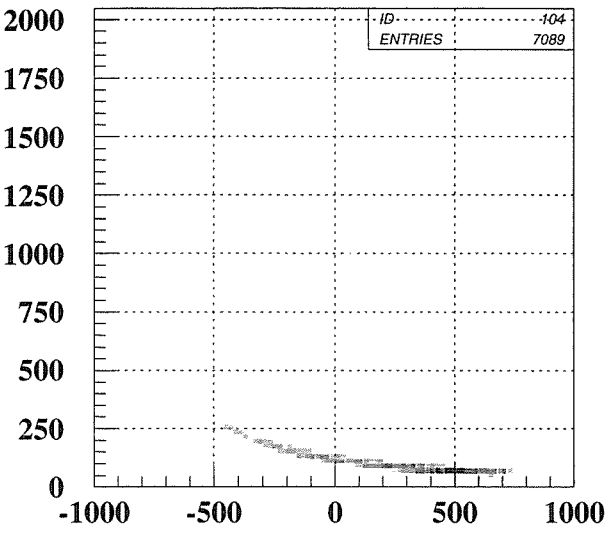
Magnet	Field(Preset|Actual)			Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1			mT		97.10 A				
GR SX			mT		18.70 A				
GR Q2			mT		8.80 A				
GR MQ			mT		0.02 A				
GR MS			mT		0.02 A				
GR D1		889.328	mT		236.07 A				
GR D2		889.456	mT		444.20 A				
GR DSR		20.314	mT		0.05 A				
LAS Q			mT	218	217.70 A				
LAS D	-748	-747.663	mT	279.05834	278.70 A				
GR DQ1			mT		9.20 A				
GR DQ2			mT		9.20 A				

Update update Cycle 10 sec. Hcopy Queue rcc2424 eXit

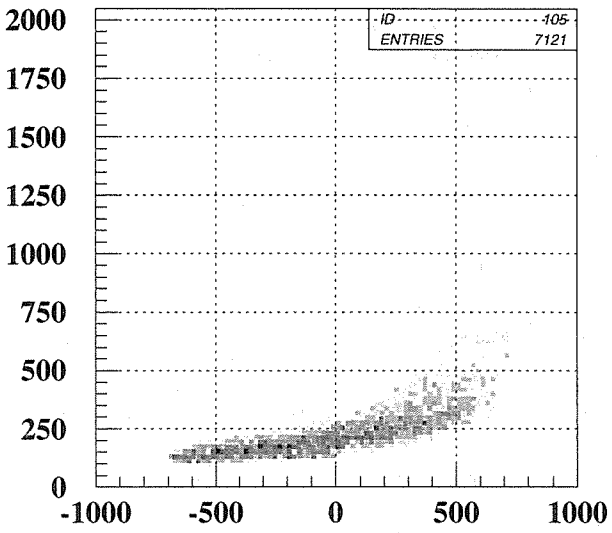
:15

LAS scint!. H.V. 設定.

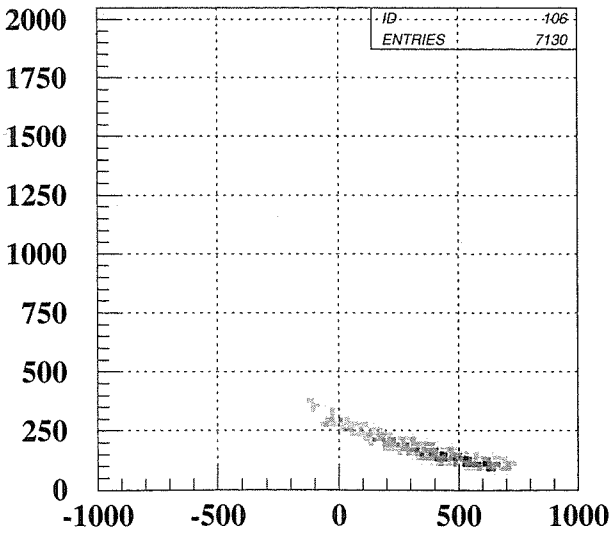
2007/10/13 03.13



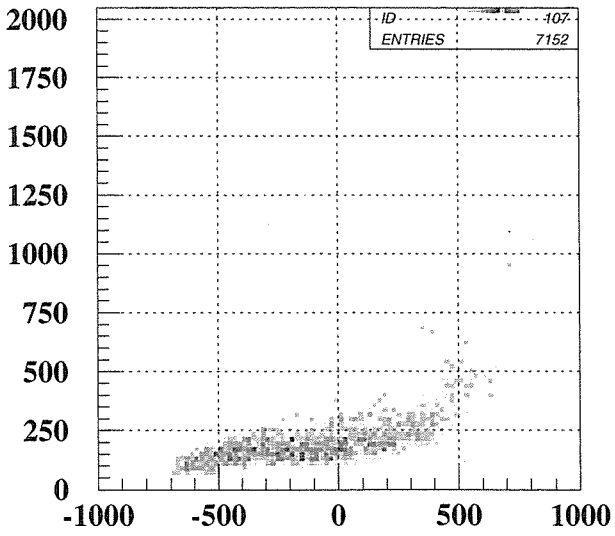
LXADC2LG LAS ADC 2L vs LAS_X



LXADC2RG LAS ADC 2R vs LAS_X



LXADC5LG LAS ADC 5L vs LAS_X



LXADC5RG LAS ADC 5R vs LAS_X

E282 P.45 と同じ同様. O.K.

RPH32010 Controller for LAS

Frame 0

Channel: Preset & True Voltage (Z=zero, R=restore)

1:	0	0	▲ Z	9:	2290	2199	▲ Z	17:	0	0	▲ Z	25:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
2:	57	57	▲ Z	10:	2290	2331	▲ Z	18:	0	0	▲ Z	26:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
3:	1950	1950	▲ Z	11:	69	69	▲ Z	19:	0	0	▲ Z	27:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
4:	2020	2066	▲ Z	12:	0	0	▲ Z	20:	0	0	▲ Z	28:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
5:	0	0	▲ Z	13:	0	0	▲ Z	21:	0	0	▲ Z	29:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
6:	0	0	▲ Z	14:	0	0	▲ Z	22:	0	0	▲ Z	30:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
7:	0	0	▲ Z	15:	0	0	▲ Z	23:	0	0	▲ Z	31:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
8:	0	0	▲ Z	16:	0	0	▲ Z	24:	0	0	▲ Z	32:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R

HV OFF | Set All | Update | Set Common | 0

HV All ON | HV All OFF | Read File | Write File | Update All | Hcopy | Queue | acc2424 | eXit

LAS ライン チェック

V2 の 1ch が 完全に 歯抜け. → V2-8 のプリアンプ

↓

悪いダイオードが つかない?

~~V2-8~~ V2の 7と8を入れかえたりしてみると

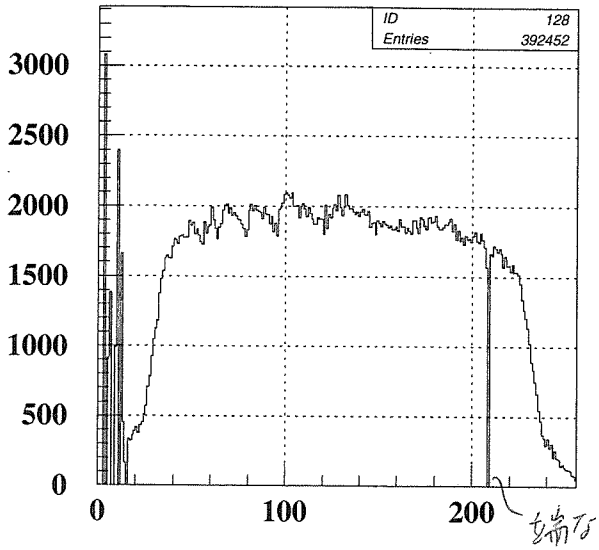
余計ひどくなった. (発振)

メーカーと、プリアンプカード自体を入れ換えてみた.

↓

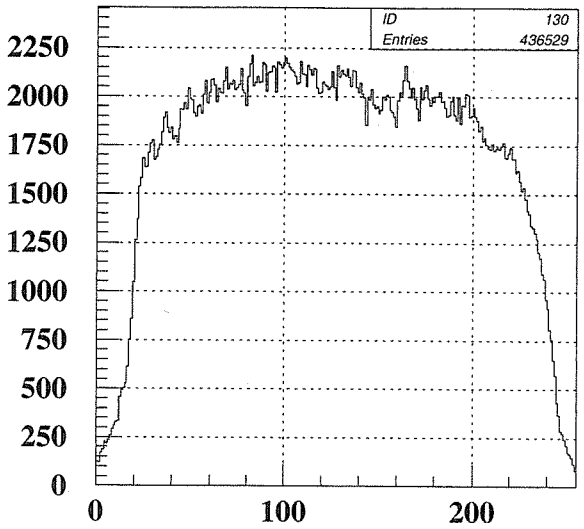
結局、歯抜けは直らず.

2007/10/13 04.34

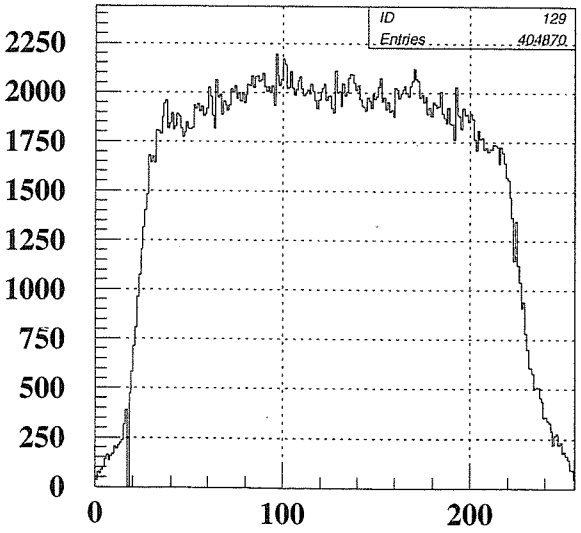


端なので
気にしない.

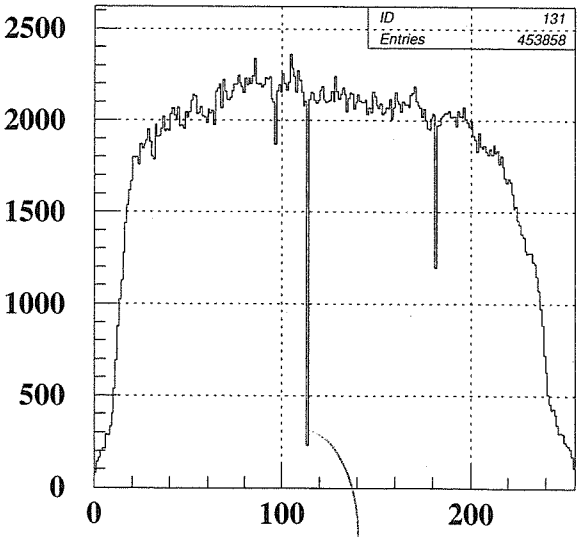
LWIREU1 LAS WIRE U1



LWIREU2 LAS WIRE U2



LWIREV1 LAS WIRE V1

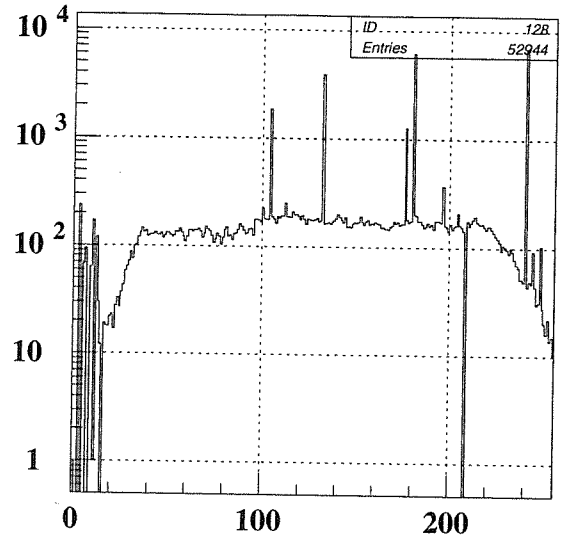


LWIREV2 LAS WIRE V2

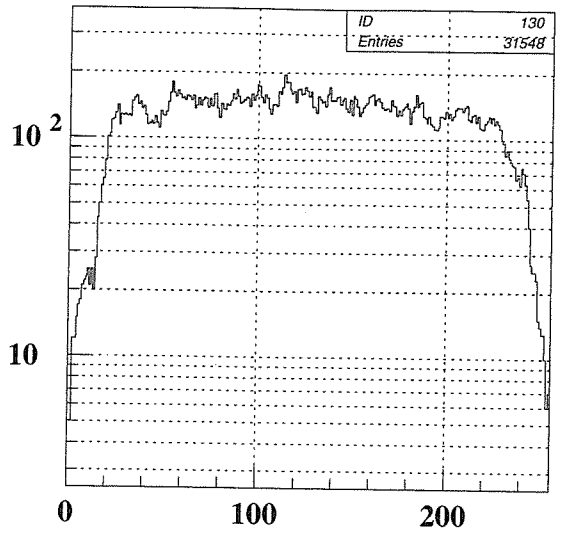
112ch目. こっちは127chで.
同じ Pcos.

死亡 chが変わったので望み有.

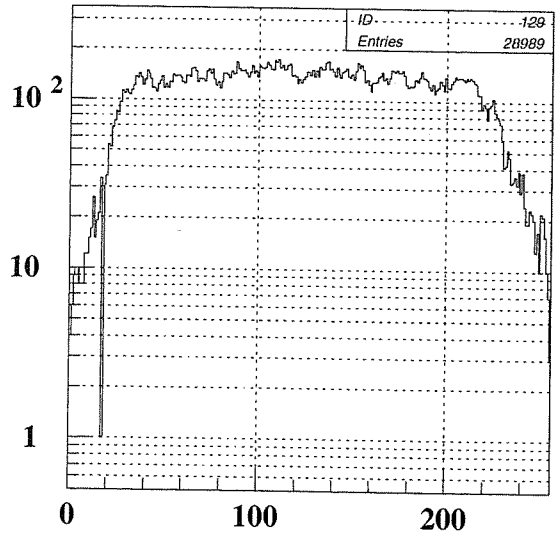
2007/10/13 05.40



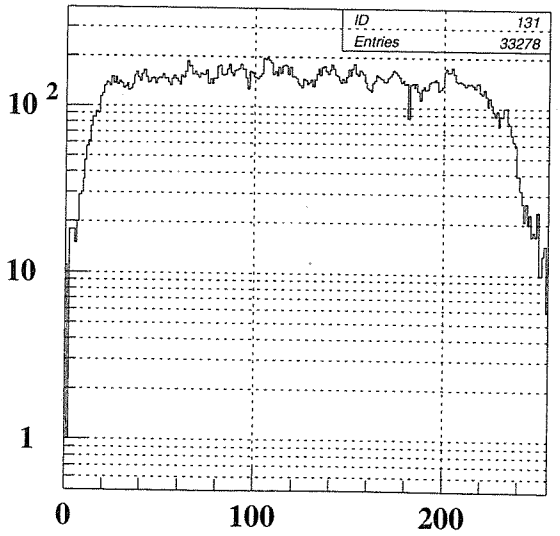
LWIREU1 LAS WIRE U1



LWIREU2 LAS WIRE U2



LWIREV1 LAS WIRE V1



LWIREV2 LAS WIRE V2

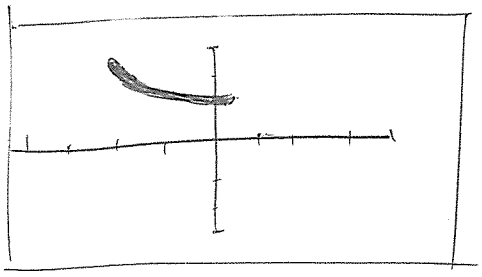
- V2-8 の PL03 と V2-1 ← 忘れた。 の PL03 を交換。V2-8の歯抜け復旧。
- V2-17 へ移動済の PL03 の赤LED はつかなくなります。
  (前回の交換 (P.47) 時に threshold を切り忘れていたらしい。
  その影響で PL03 が死んだ可能性が有る。)
- V1 が発振しているが気にしない方針で。 → threshold を上げ下げしても → pl

上図右下を見た限りでは正しく動作しているので
threshold のみが死んでいる。

LAS collimator. 2.615V へ.

動きにくい (consoleから制御が効かないことがある.)
実験室で復旧すべし. (LASの回路ラックにあるハブの電源cableを抜き差し)

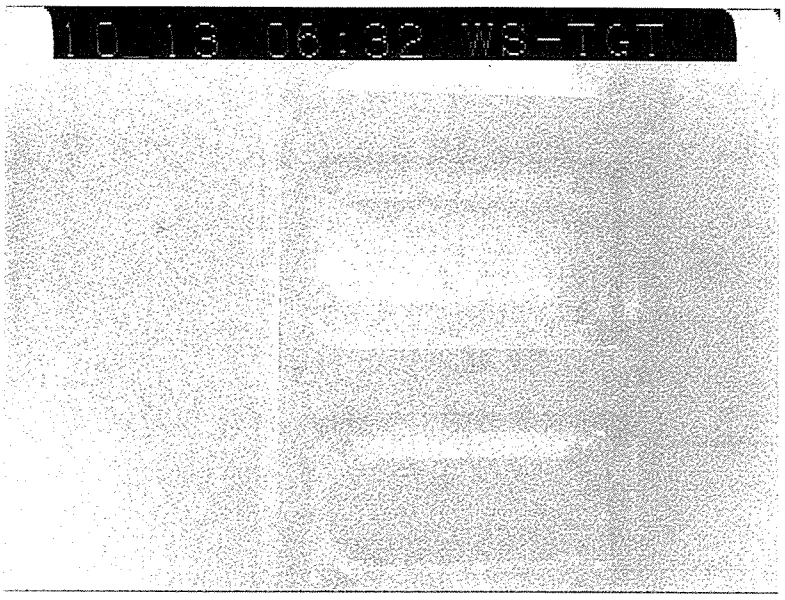
Beam spot の check. @S.C.



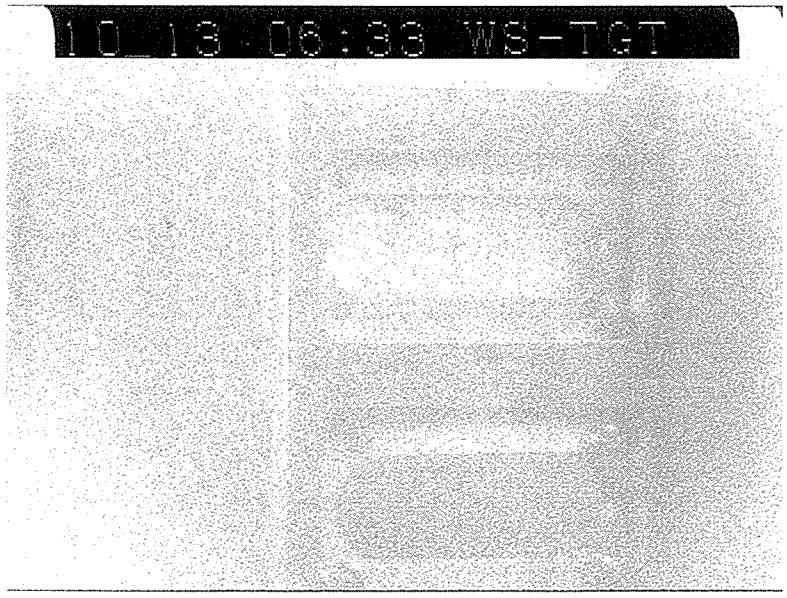
・数mm上にいる
・X方向に5mm以上の広がり.
X-Y面内で傾いている.

→ 調整をしてもらう. (6:00すぎ〜)
次頁に結果.

6:40



調整後、
Viewerの中心に穴が開いているので少しずらして spot の形を check.



1mm ずらしが.

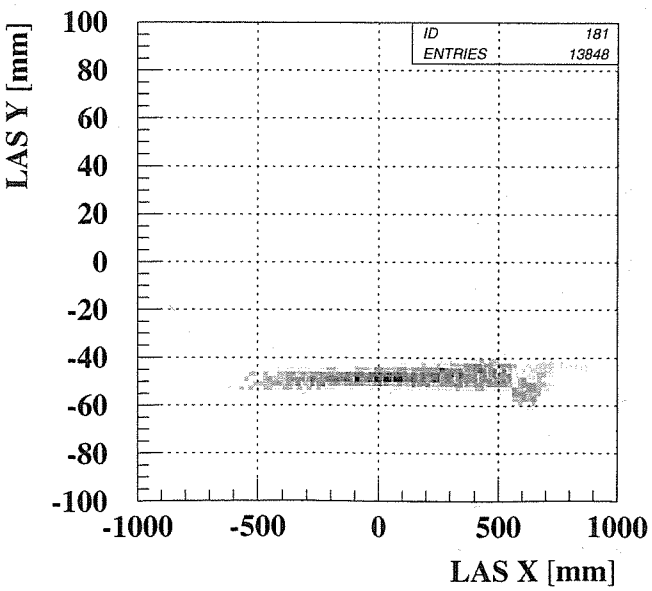
Target を viewer → IC.

LAS VDC の UI 右半分が発振.
threshold を OFF / ON. → 復旧した.

7/08. LASD の ~~AAL~~ NMR が読めなくなっている
↓
wsmag -e249 を立ち上げ直したら直った

ビームを tune したので、もう一度 LAS collimator の調整.

すぐに LAS collimator 用の通信駆動部が
詰まって、かたまる → 操作できない.
(電源 on / off で動くようにはなる)
ミーティング



LXY LAS Y vs X

→ x を -50 ~ 50 で gate をかけて
fitting
⇓
y = -48.2925 が beam position.

LAS collimator = 2.607 V

BLP立ち上げ. (H.V を E282を参考にして set)

V2.2 を copy.

online / offline analysis ができない.
解析はしているようだが(?) PAW で hist が見えない.
Raw data を確認.
↳ FERA が3台. 16ch ずつ正しく鳴っている.

v2.6 の blpana を使っても hist 見えず. 11/13 9:20

v2.4, v2.5 で解析できた! 10:00
↳ v2.5 を使用することにする.
"Block inconsistency" という error が必ず出る

ADC の 9, 10 ch に極めて細い peak.
↳ Pulser が入っていたので撤去.

正しく解析できるようになったので. ADC, TDC を合わせる.

1:	1350	1350	▲Z	9:	1420	1420	▲Z	17:	0	0	▲Z	25:	0	0	▲Z
	<untitled>		▼R		<untitled>		▼R		<untitled>		▼R		<untitled>		▼R
2:	1080	1080	▲Z	10:	1090	1090	▲Z	18:	0	0	▲Z	26:	0	0	▲Z
	<untitled>		▼R		<untitled>		▼R		<untitled>		▼R		<untitled>		▼R
3:	1470	1470	▲Z	11:	1420	1420	▲Z	19:	0	0	▲Z	27:	0	0	▲Z
	<untitled>		▼R		<untitled>		▼R		<untitled>		▼R		<untitled>		▼R
4:	1080	1080	▲Z	12:	1090	1090	▲Z	20:	0	0	▲Z	28:	0	0	▲Z
	<untitled>		▼R		<untitled>		▼R		<untitled>		▼R		<untitled>		▼R
5:	1250	1250	▲Z	13:	1330	1330	▲Z	21:	0	0	▲Z	29:	0	0	▲Z
	<untitled>		▼R		<untitled>		▼R		<untitled>		▼R		<untitled>		▼R
6:	1200	1200	▲Z	14:	1110	1110	▲Z	22:	0	0	▲Z	30:	0	0	▲Z
	<untitled>		▼R		<untitled>		▼R		<untitled>		▼R		<untitled>		▼R
7:	1300	1300	▲Z	15:	1205	1205	▲Z	23:	0	0	▲Z	31:	0	0	▲Z
	<untitled>		▼R		<untitled>		▼R		<untitled>		▼R		<untitled>		▼R
8:	1220	1220	▲Z	16:	1140	1140	▲Z	24:	0	0	▲Z	32:	0	0	▲Z
	<untitled>		▼R		<untitled>		▼R		<untitled>		▼R		<untitled>		▼R

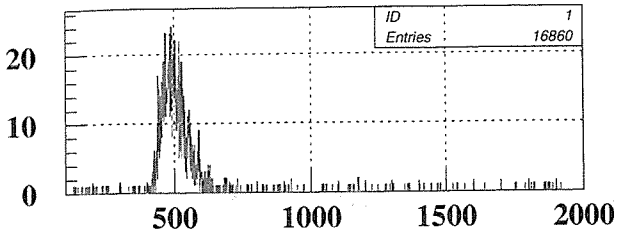
HV OFF　Set All　Update　Set Common　0

← HV BLP

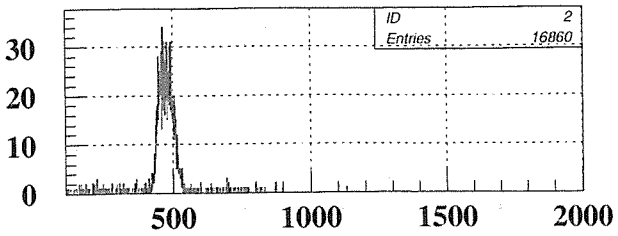
↳ E282 の設定ファイルを set.

BLP ADC gain check. ① >exec blp-t#cv1

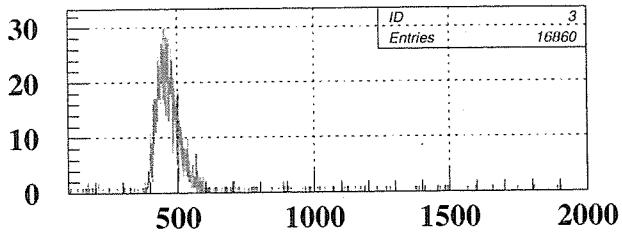
2007/10/13 10.37



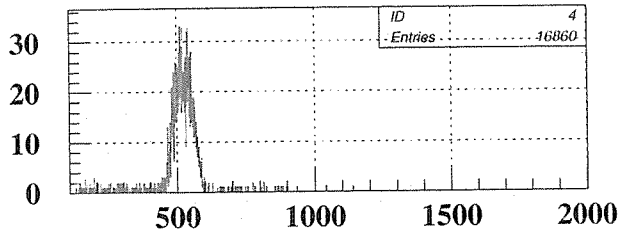
ADC CH1



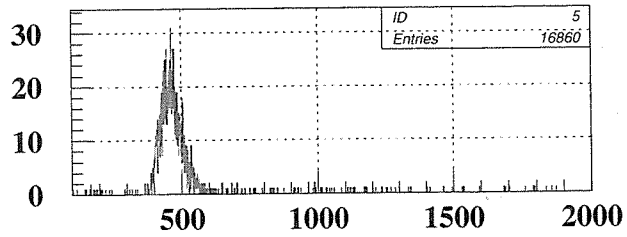
ADC CH2



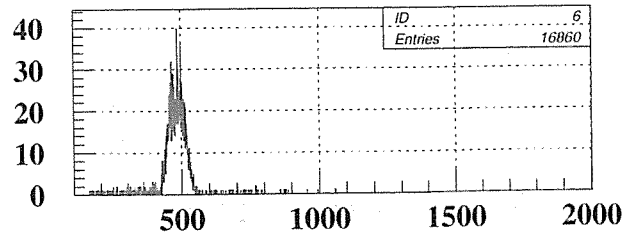
ADC CH3



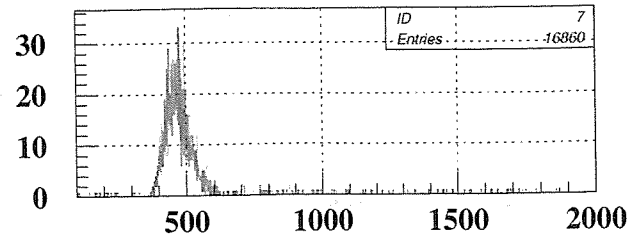
ADC CH4



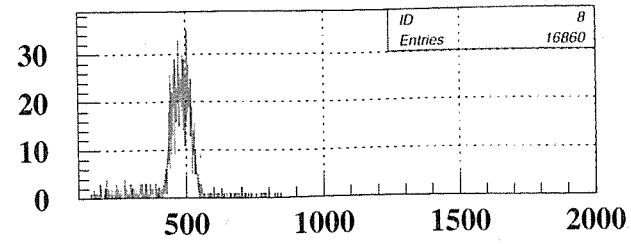
ADC CH5



ADC CH6



ADC CH7

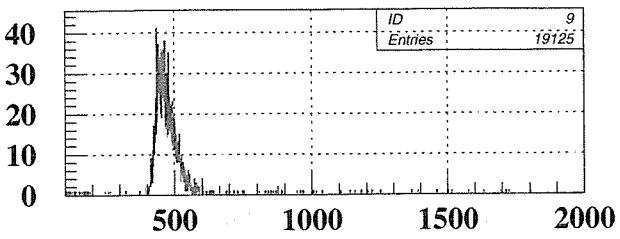


ADC CH8

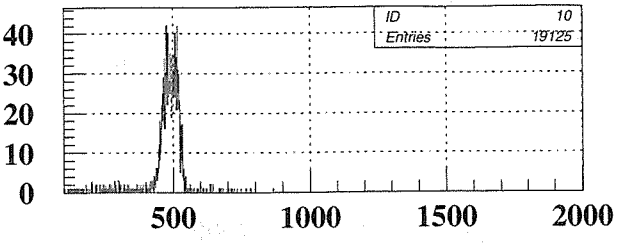
E282から変更なしでほぼgainが揃っている. → ~~そのまま~~のH.V.設定はE282のままでO.K.

BLP ADC gain check ②.

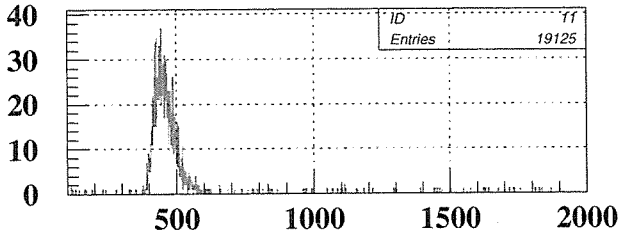
2007/10/13 10.37



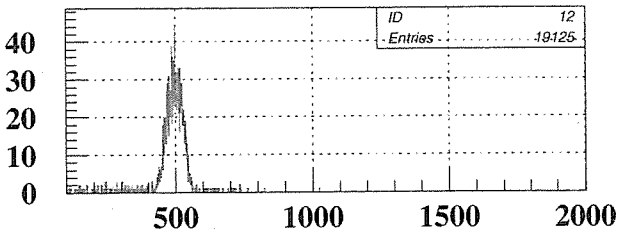
ADC CH9



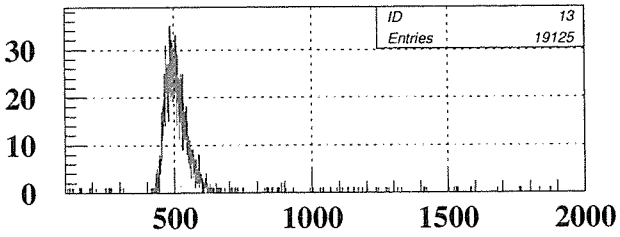
ADC CH10



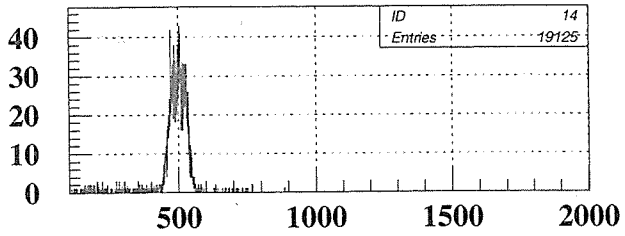
ADC CH11



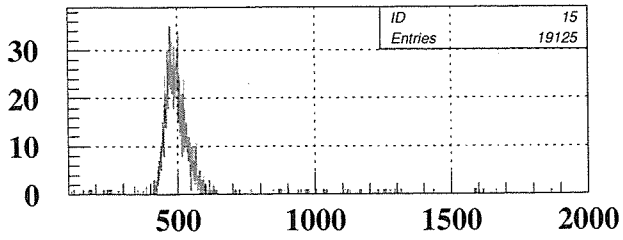
ADC CH12



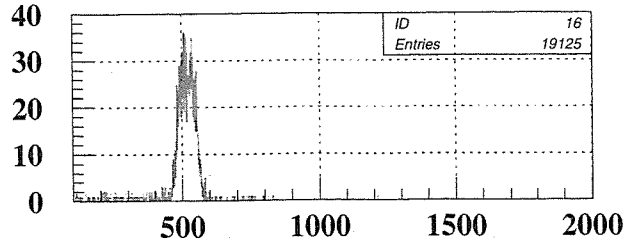
ADC CH13



ADC CH14



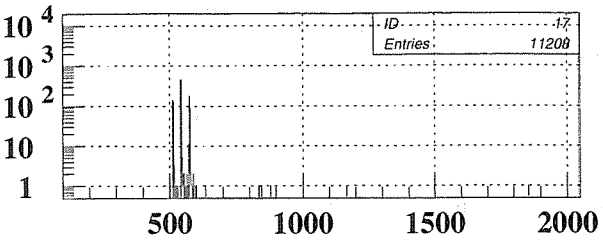
ADC CH15



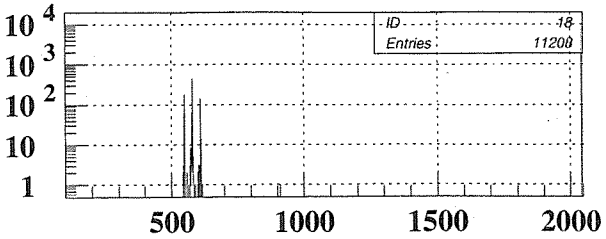
ADC CH16

BLP TDC ~~gain check~~ adjustment. ①.

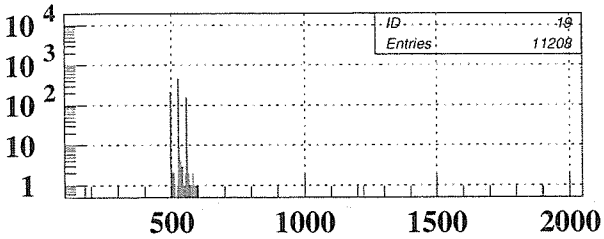
2007/10/13 10.59



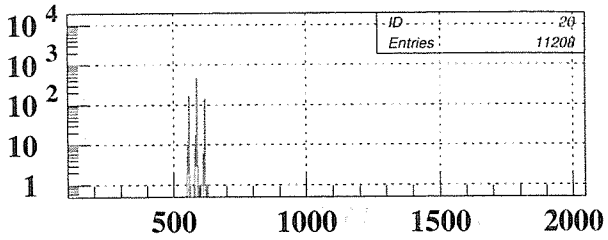
TDC CH1



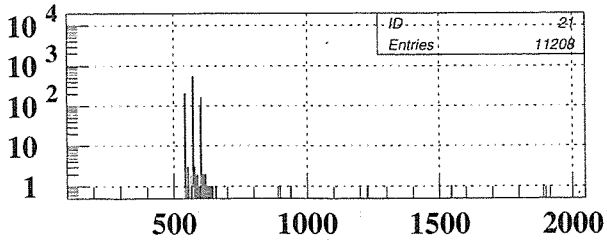
TDC CH2



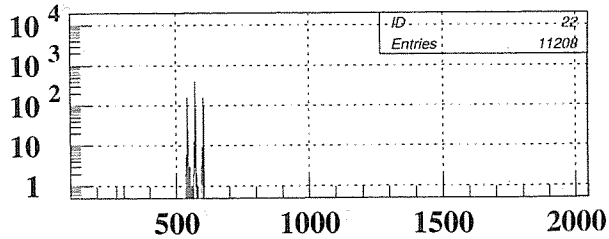
TDC CH3



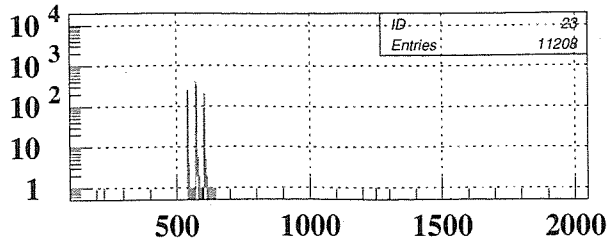
TDC CH4



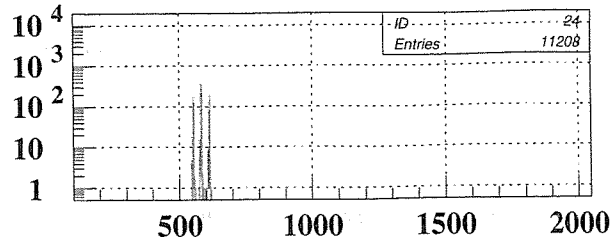
TDC CH5



TDC CH6



TDC CH7

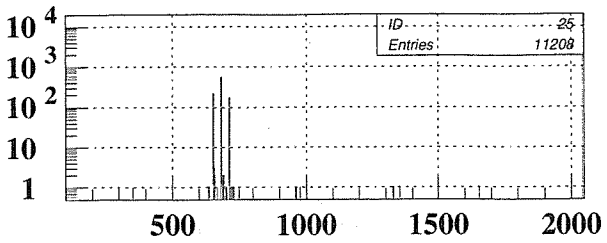


TDC CH8

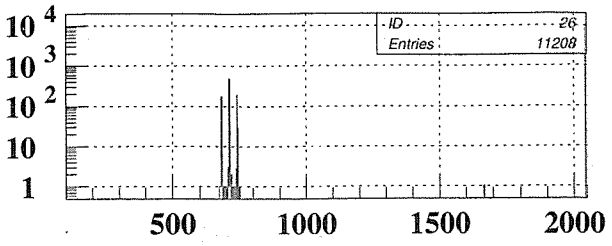
RF TDC の delay を 18ns に設定.
偶数 channel の ovf は coincidence の相殺鳴った event と考えられる. → 正常.
E282 LogNote #1 P48, 49 の TDC spectra も. 0〜1900 ch しか見ていないので、
この時も ovf していたと予想される.

BLP TDC adjustment ②.

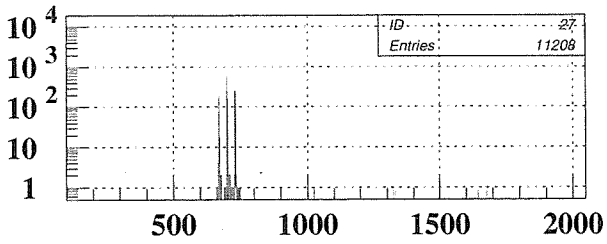
2007/10/13 11.00



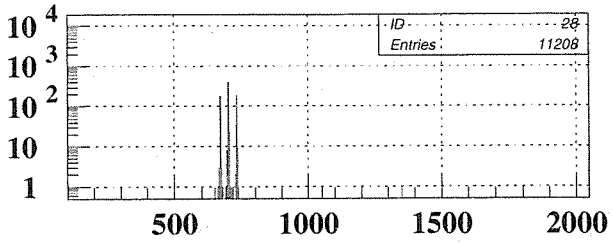
TDC CH9



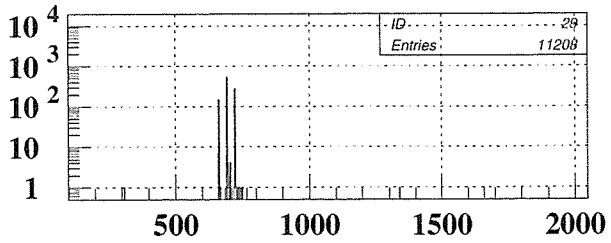
TDC CH10



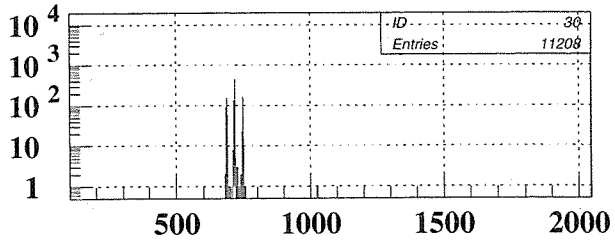
TDC CH11



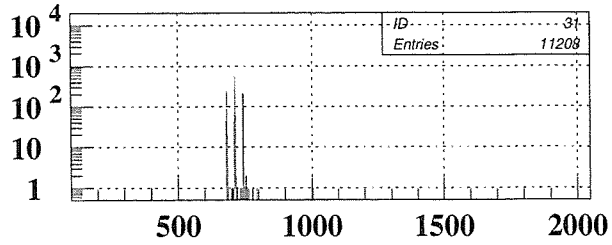
TDC CH12



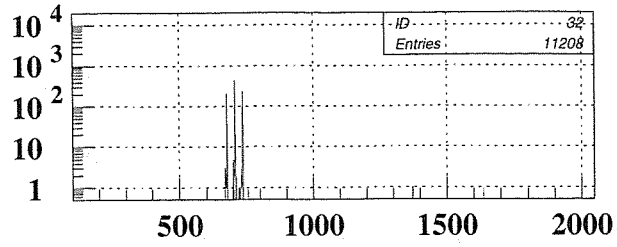
TDC CH13



TDC CH14



TDC CH15



TDC CH16

BLP を5台に増す。 11:05

frc 02 & frc 03 用の NFS サーバーとして使用していたノートPC (ws-note 2) が死亡. (Operating System not found) 11:00 → 12:50 復旧

oasis を全て (rarp, bootparam, nfs) のサーバーにした.

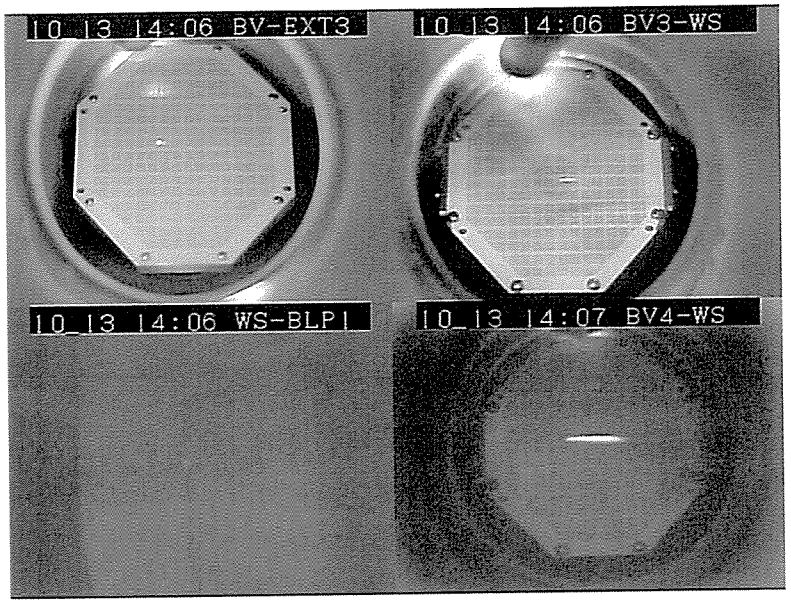
の度ウインゼェーター.

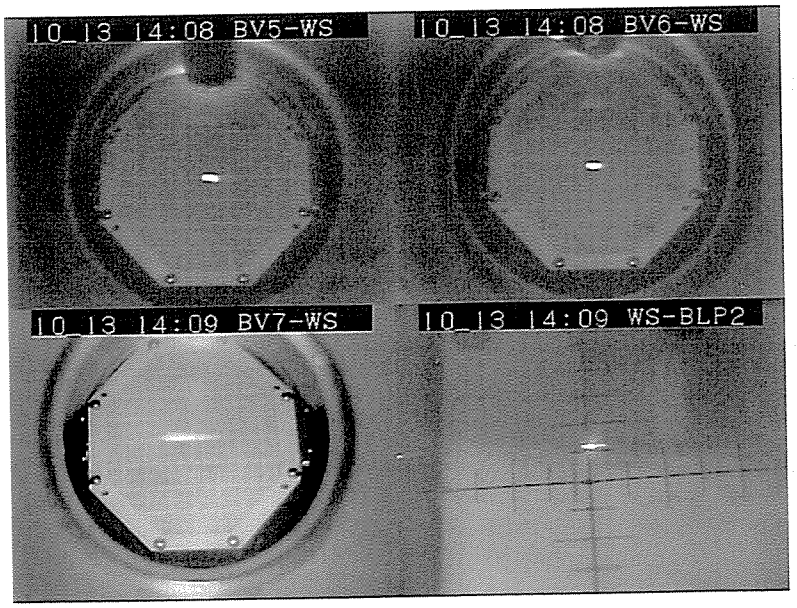
- BLP の hata or viewer と排他的に使用する.
- ~~の~~ チューニング時は, Murata 240 の ch 2, 4 に入れる.
  (ch 2, 4 は BLP target!)
- 測定時は, ch 1, 3 を, ~~hata~~ の度 viewer として使用する.
  (ch 1, 3 は, BLP target!)

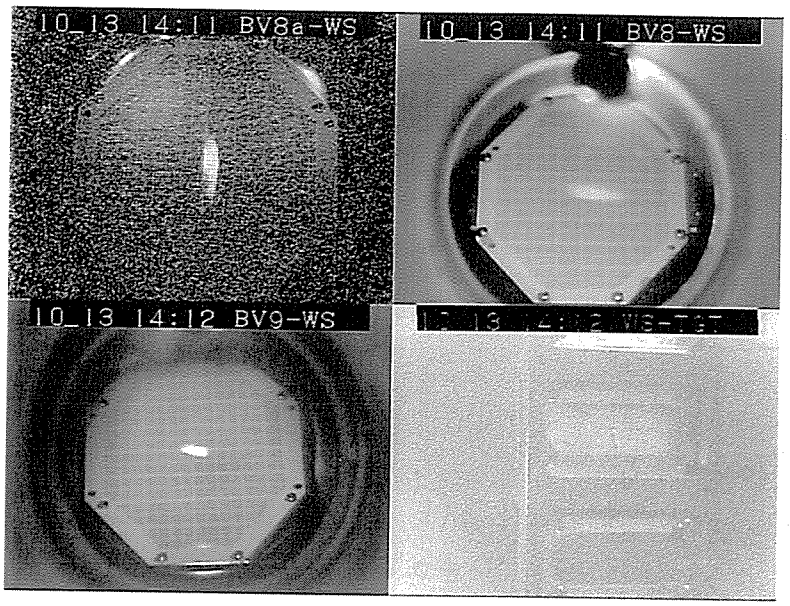
実験室~~など~~に侵入しようとしたため, 安全のため, ゼーム落とる.

復旧が 13:50 頃すぎ

ビーム調整. 14:10 終了.







磁場の値(14:20)を記録. (0度ビーム通しの前)

'07/10/13 14:11

Preset|Actual)	Current(Preset|Actual)	Status	PS	NMR	FB
mT	97.10 A				
mT	18.70 A				
mT	8.80 A				
mT	0.02 A				
mT	0.02 A				
889.341 mT	236.07 A				
889.458 mT	444.20 A				
20.314 mT	0.05 A				
mT	217.70 A				
-747.966 mT	280.10 A				
mT	9.20 A				
mT	9.20 A				

8°用設定のまま?

NMR読めていない
GPIB - ENET の
不整合

Cycle 10 sec. Hcopy Queue acc2424 eXit

web site より

akimune slit.

ビーム軸上

left	−	4.311
right	−	4.354
up	−	4.308
down	−	4.404

P.9より

そこから10mm.

$y = 4.2938 - 5.0130\,e^{-2} \times d$.
$y = 4.2093 - 5.0260\,e^{-2} \times d$
$y = 4.2170 - 5.0250\,e^{-2} \times d$.
$y = 4.3313 - 5.0630\,e^{-2} \times d$.

10mm分動かすと.

↳ ∴ left = 4.311 − 5.0130 e⁻² × 10
= 3.8097 V.

left	=	3.8097 V.	(Hitch 11
right	=	3.8514	12
up	=	3.8055	9
down	=	3.8977.	10)

e249では Akimune 引計には
すべて1550Vをかけない

- trc03が落ち右巻、固定設置で立ち上がり
  結果WIRE の display が見えない（起動時は見える）ので、
  計数管の tulip を交換して trc のコントールとした
- GR TDC
  X1 ヨ175を1ch 歪抜けに対処する為に
  X1面プリアンプ 2枚目を11枚目と交換
  X1面 5 12枚目と U1面12枚目のケーブルが逆転していたので直す
- LAS TPC 1号目
  異常があったので、threshold 11Vを → 13Vに上げ → 11Vに戻した。

WS Magnet Controller

'07/10/13 14:43

/WS\/PIS\

Magnet	Field(Preset|Actual)			Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1			mT	90.1	90.20 A				
GR SX			mT	18.3	18.20 A				
GR Q2			mT	8.5	8.50 A				
GR MQ			mT		0.02 A				
GR MS			mT		0.02 A				
GR D1	870	870.018	mT	230.96269	230.78 A				
GR D2	870	870.009	mT	434.71622	434.13 A				
GR DSR	80	89.739	mT	9	9.03 A				
LAS Q			mT		217.70 A				
LAS D		-747.966	mT		280.10 A				
GR DQ1			mT	50	50.00 A				
GR DQ2			mT	65	65.10 A				

Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

← 0度用, initial 磁場 setting.

(E282 #1 の P.75
~~E~~ 4
E249 #2 の ~~P~~ P.75)

~~1600~~ 用 4ターンの左右,

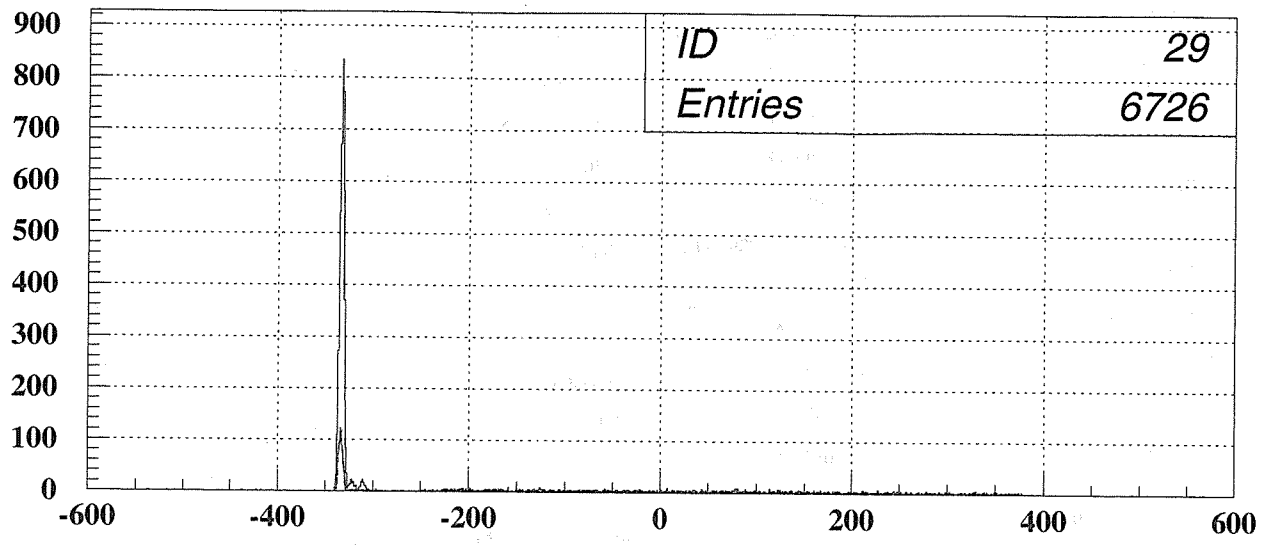
GR 0° → 90°

elastic の磁場に戻す → p60の通

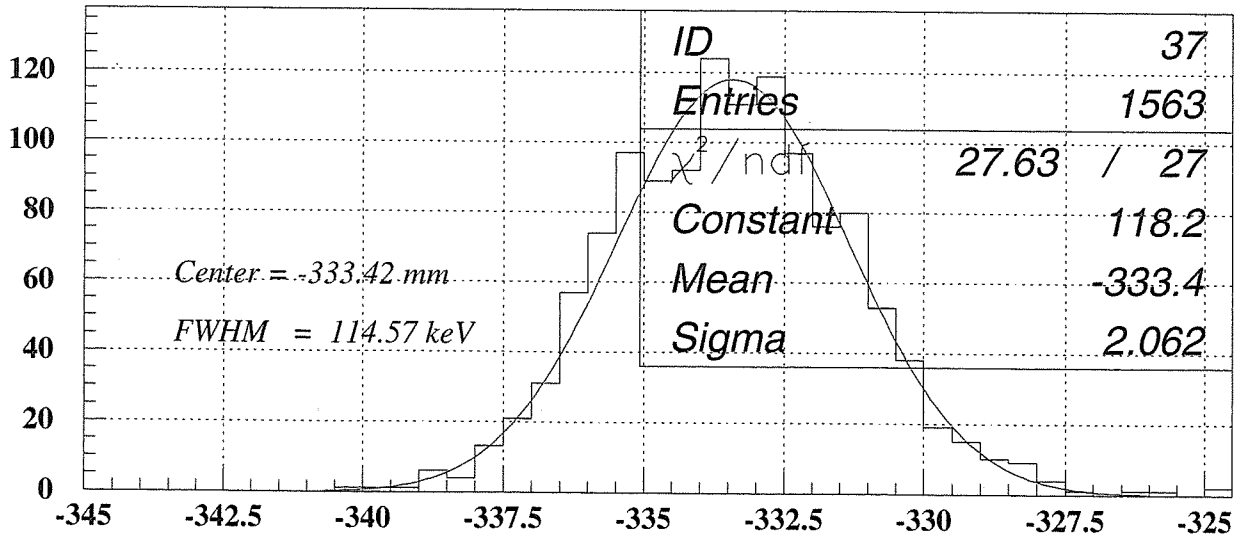
16:00. 用 4ターン elastic 115 keV → 次ページ

frc ϕ6 立上げ
rarp, bootparam は oasis (vine3.2)
nfs は ccdev (vine4.1)
default gateway が設定されない?
/etc/ default router に書く
plute から run_ctrl 起動できた

2007/10/13 16.05



GXN GR X Narrow



GXCCNG GR XCC Narrow (Y-Gate)

→ 分解能が非常に悪くなっているので 再調整する

ATT - RING への光量が悪くなったし
RING の上下に傾きを持って与えていた
必要性の調整 稲田氏記

根本的に事実上
ほぼ分解能が悪くなって

16:50

45-50 keV 付近で調整中

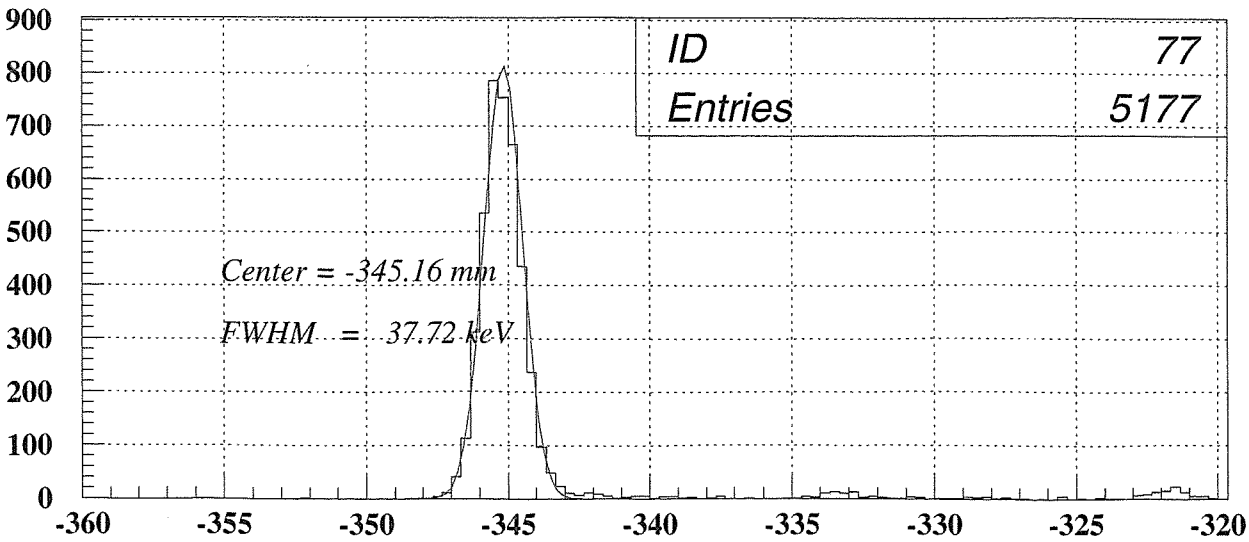
18:00 35-37 keV 付近に達する ~5nA

AVF-FT が効きはじめている

→ beam量が増える. resolutionは悪くなる

run 1005 ^{197}Au (p, p$_0$) Achromatic

~37 keV



GXCCNG GR XCC Narrow (Y-Gate)

17/13 18:05

WS Magnet Controller '07/10/13 18:02

/WS\/PIS\

Magnet		Field(Preset|Actual)			Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1				mT	97.1	97.20 A				
GR SX				mT	18.7	18.60 A				
GR Q2				mT	8.8	8.80 A				
GR MQ				mT		0.02 A				
GR MS				mT		0.02 A				
GR D1		889.341	889.334	mT	236.35281	236.07 A				
GR D2		889.341	889.348	mT	444.79223	444.20 A				
GR DSR		80	20.314	mT	0	0.05 A				
LAS Q				mT		217.70 A				
LAS D			-747.965	mT		280.10 A				
GR DQ1				mT	50	50.00 A				
GR DQ2				mT	65	65.10 A				

Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

GR 8° → 0°.

Aがトつないだ後、計算室へ

F ~~[illegible]~~. 0° FCと SC, FC の和をとるようにした

・CIは.

・0° viewer を BLP の target の in/out で

動くようにした (Murata の

ch 224

・GR HT おしです.

0度ダクト通し.

19:00. まず第入口ポット check.

サイクロトロンを上から
Beam Line の軸がずれているので調整する

確認. ・FP viewer は上流から見ている. (P.16.)

・Q viewer, dump viewer は ~~下流から見ている~~ (E2P2#1の~~上~~ P77)
下流から見る 上流から見る

① ビーム 0.1nA で FP viewer で beam を見る

→ DSR を振って beam を catch (水平方向)

鉛直方向の調整はできない (ビーム入口ポットを動かす)

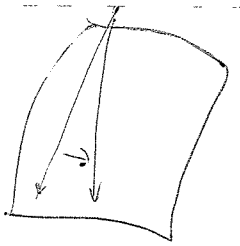
大体真中へ. (高さはおいといて)

② FP viewer の ~~ビ~~ ビリビリ 円側 をかする位置を保持しつつ,
Q viewer, dump viewer へ beam が入る D1, D2, DSR の
~~値を~~ 変えていく
(FP viewer を基準にして, ビーム 角度を変える).

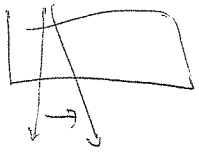
D1, D2 を上げつつ, DSR を下げる. —Ⓐ

FP から外向きにして, 内向きを (Ⓐの逆) する.

(いや Ⓐ が内向きでないかな)



D1, D2 [illegible]



DSR [illegible]

0° FC calibration

	0° FC	BS3
1.	4·0	4·0
2.	4·1	4·2
3.	4·2	4·4
4.	4·0	4·1
5.	4·4	4·2

WS Magnet Controller

'07/10/13 19:48

/WS\/PIS\

Magnet	Field(Preset|Actual)				Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1			mT		90.1	90.20 A				
GR SX			mT		18.3	18.20 A				
GR Q2			mT		8.5	8.50 A				
GR MQ			mT			0.02 A				
GR MS			mT			0.02 A				
GR D1	872	874.741	mT		232.2	232.04 A				
GR D2	872	873.026	mT		436.0	435.64 A				
GR DSR	80	35.395	mT		2	2.04 A				
LAS Q			mT			217.70 A				
LAS D		-747.966	mT			280.10 A				
GR DQ1			mT		50	50.00 A				
GR DQ2			mT		65	65.10 A				

Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

K62と同じ

0度用のinitial 磁場

WS Magnet Controller

'07/10/13 20:25

/WS\/PIS\

Magnet	Field(Preset|Actual)				Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1			mT		90.1	90.20 A				
GR SX			mT		18.3	18.20 A				
GR Q2			mT		8.5	8.50 A				
GR MQ			mT			0.02 A				
GR MS			mT			0.02 A				
GR D1	872	873.324	mT		231.9	231.62 A				
GR D2	872	871.062	mT		435.2	434.64 A				
GR DSR	80	119.844	mT		13.5	13.54 A				
LAS Q			mT			217.70 A				
LAS D		-747.966	mT			280.10 A				
GR DQ1			mT		50	50.00 A				
GR DQ2			mT		65	65.10 A				

Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

原

ダクトを通る磁場

(実際282と違
ずれている)

final.

20:30 ハロー フリー キャーキャンプ 開始

まず、 1nA あたり、 ~~[illegible]~~

[illegible] cps くらいに。 (< 100 cps)

ファイル(F) 編集(E) 表示(V) 端末(T)

rate3

0	BLP CLK req :	9.619 kcps
1	BLP CLK live :	9.619 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	0.000 kcps
5	Akimune Down :	0.000 kcps
6	Akimune Left :	0.000 kcps
7	Akimune Right :	0.000 kcps
8	Beam Monitor1 :	28.406 kcps
9	Beam Monitor2 :	7.968 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	49.239 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

rate1

0	Beam Intensity	4.233 nA
1	GR event request	28.406 kcps
2	GR event live	7.968 kcps
3	LAS eventRequest	0.092 kcps
4	LAS event live	0.004 kcps
5	GR clock reqest	9.619 kcps
6	GR clock live	2.778 kcps
7	GR Single	7.968 kcps
8	GR Single Sample	7.968 kcps
9	LAS Single	0.004 kcps
10	LAS SingleSample	0.004 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	7.972 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	7.971 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 28.049 percent
Trig.(LAS) live : 4.124 percent
Clock live : 28.875 percent

調整開始時

・磁場をふった時の rateの安定性も確認。

22:20 ハロー フリー 調整中

~ 9 kcps / 3nA

ハローフォー調整中磁場

WS Magnet Controller '07/10/13 20:57

/WS\/PIS\

Magnet		Field(Preset|Actual)			Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1				mT	90.1	90.20 A				
GR SX				mT	18.3	18.20 A				
GR Q2				mT	8.5	8.50 A				
GR MQ				mT		0.02 A				
GR MS				mT		0.02 A				
GR D1		872	873.202	mT	231.85	231.62 A				
GR D2		872	871.336	mT	435.4	434.89 A				
GR DSR		80	119.852	mT	13.5	13.54 A				
LAS Q				mT		217.70 A				
LAS D			-747.966	mT		280.10 A				
GR DQ1				mT	50	50.00 A				
GR DQ2				mT	65	65.10 A				

Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

← FP-BUとTAMIQの中心を通る様に調整

WS Magnet Controller '07/10/13 22:16

/WS\/PIS\

Magnet		Field(Preset|Actual)			Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1				mT		90.20 A				
GR SX				mT		18.20 A				
GR Q2				mT		8.50 A				
GR MQ				mT		0.02 A				
GR MS				mT		0.02 A				
GR D1			869.980	mT	230.9	230.64 A				
GR D2			870.170	mT	434.7	434.13 A				
GR DSR			132.788	mT	15	15.04 A				
LAS Q				mT		217.70 A				
LAS D			-747.965	mT		280.10 A				
GR DQ1				mT		50.00 A				
GR DQ2				mT		65.10 A				

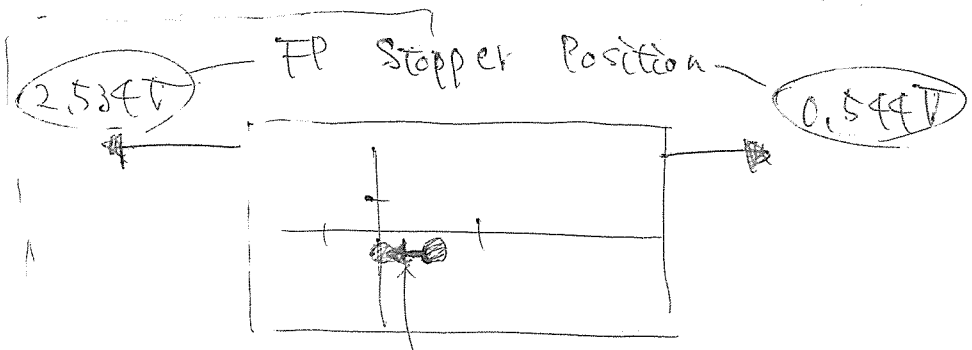
Update update Cycle 10 sec. Hcopy Queue rcc2424 eXit

← D1, D2の磁場が同じになる様にしつつ B.Q.が減る様にD1とD2とDSRの比を調整して Beamはやや外側を通る様に

22:50 ~~[illegible]~~ 9kcps / 3nA

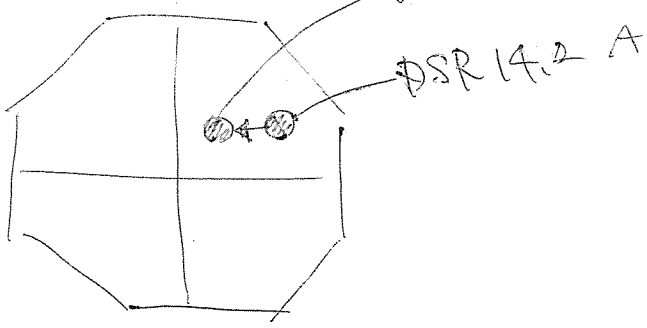
ATF → RINR の Beam 軸を見直す。

10/14
(0:05 TAMI-Q, GR-DUMP へビーム輸送のとき
FP Stopper Position 0.544T.)



GR-FP-BV ---- GR の D1, D2 を強くすると
ビームスポットが矢印の向きに移動

GR TAMI-Q.



(preset)

10/14日

とーぶ。よくわからないが。
D1 = 230.4A.
D2 = 434.4A.
DSR = 13.3A

だと、5nA で 4nA で 8kcps くらいだった。

ビームのダイト通し.

D1とD2の比は1にて ~~FP~~ これを保持しつつ、FP viewerの位置を決め、
DSRで下流の位置をよくする.

・この時、beamは1nAくらいで、数kcpsを目指す.
・実際はハローが多いので5倍のcurrentにしても、
or trigger rateは、5倍になるわけではない.

GR
5:00頃 D1, D2, DSRの調整を頼まれる.(operatorになから)

4nAで600cps.くらい.

再調整するも、改善せず.

$$\begin{cases} D1 = 230.77A \\ D2 = 434.13A \\ DSR = 12.52A \end{cases}$$

4nAで600cps.

8:00 もう一度SASにtuningを頼む.

8:00頃 ATF FT ~~落ちる~~
落とす (trigger rateが落ちるので)

10/14 ~~10:00~~ 9:45 実験室入室。

・AT子の FT が鳴りっぱなしになった。

・立ち上げ直したので、resolution も確認しなおすため、

GR ぴ → ぷ へ回転。

ダクト外す。

WS Magnet Controller '07/10/14 10:00

/WS\/PIS\

Magnet		Field(Preset|Actual)		Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1			mT		90.20 A				
GR SX			mT		18.20 A				
GR Q2			mT		8.50 A				
GR MQ			mT		0.02 A				
GR MS			mT		0.02 A				
GR D1		868.809	mT	230.6	230.37 A				
GR D2		869.983	mT	434.7	434.39 A				
GR DSR		112.125	mT	12.5	12.52 A				
LAS Q			mT		217.70 A				
LAS D		-747.966	mT		280.10 A				
GR DQ1			mT		50.00 A				
GR DQ2			mT		65.10 A				

late update Cycle 10 sec. Hcopy Queue acc2424 eXit

0度ハローチューニング時の磁場

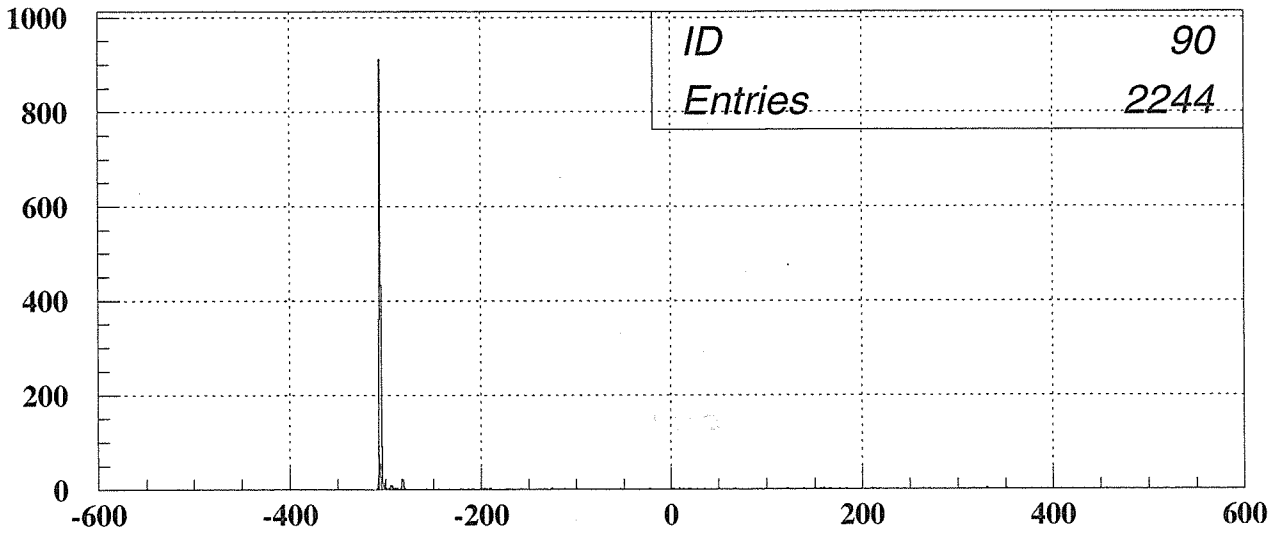
終了

10:00 ～ ビーム再トランスポート.

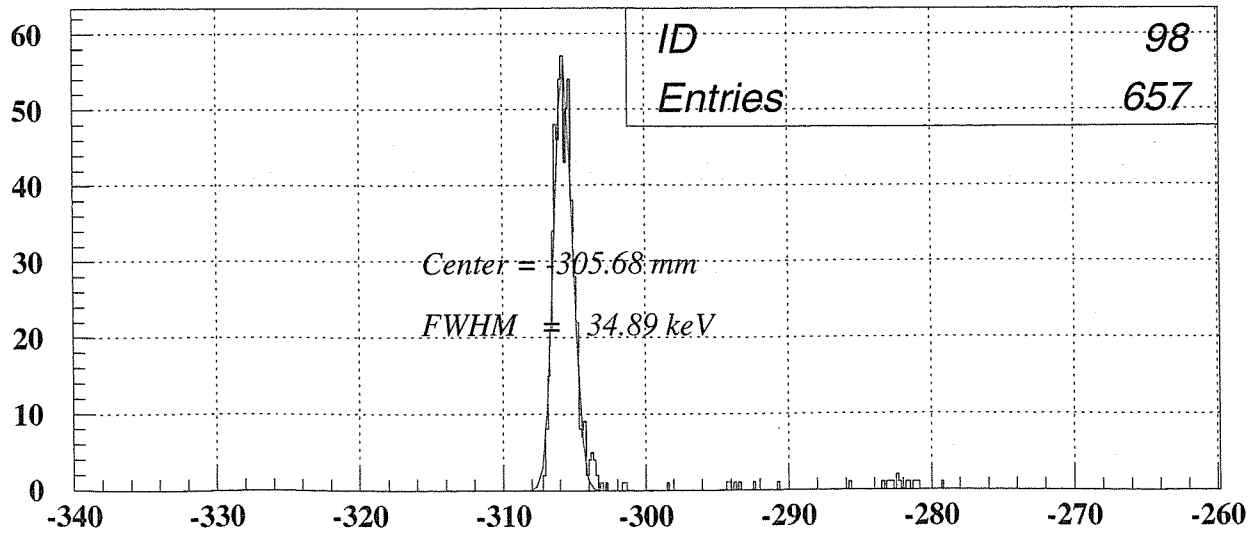
しかし ATF等の状態はあまり安定してない模様.

PIJ の電圧(!?)がすぐ変動する.

2007/10/14 11.51

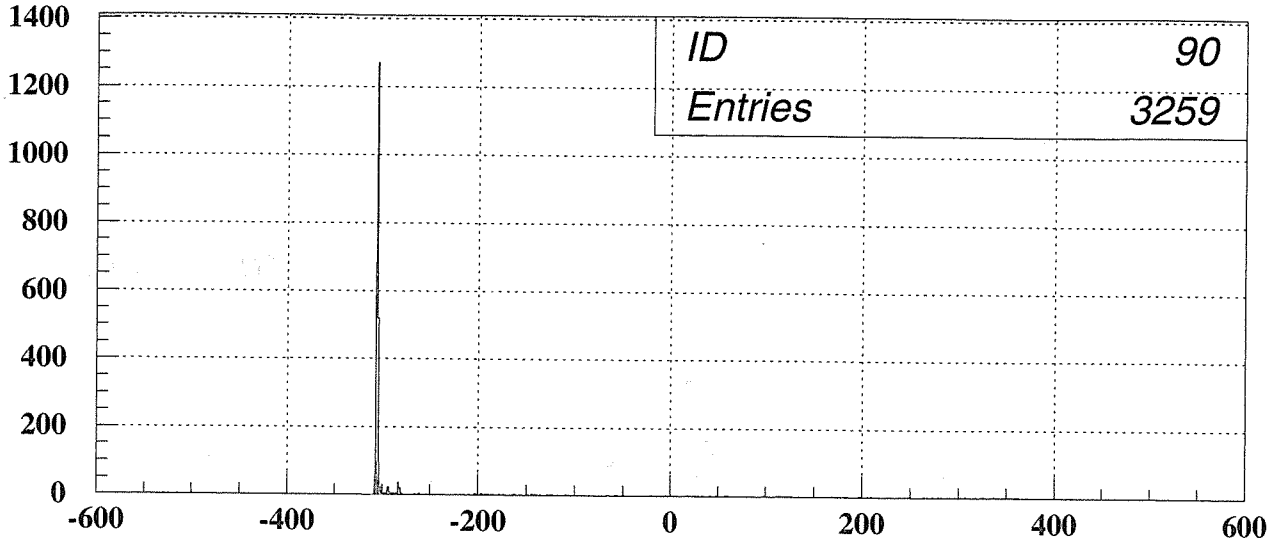


GXN GR X Narrow

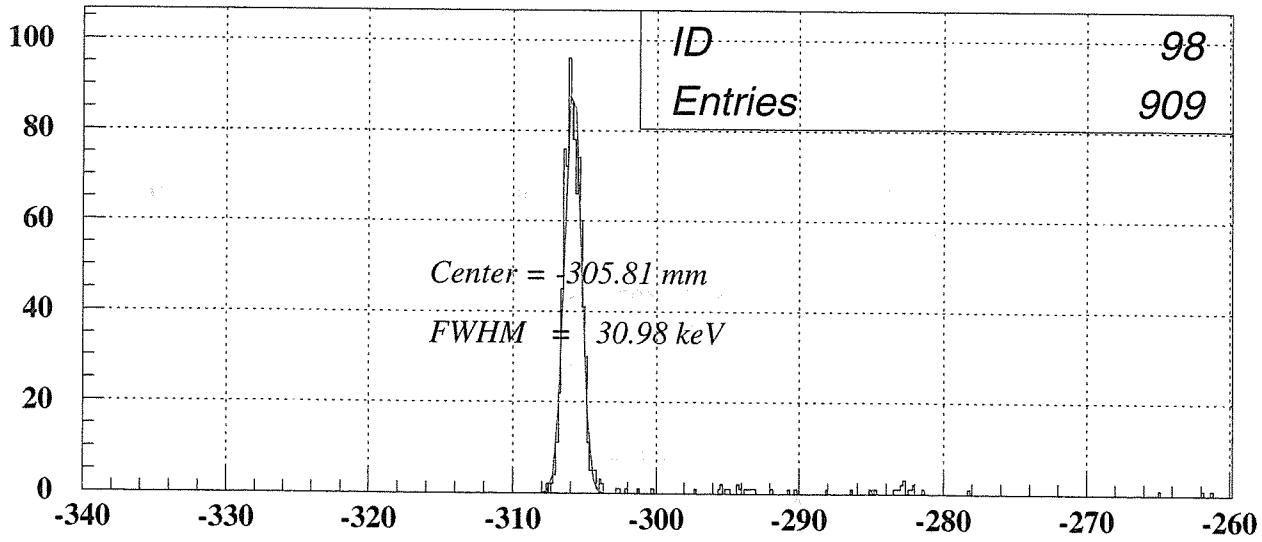


GXCCNG GR XCC Narrow (Y-Gate)

2007/10/14 11.54



GXN GR X Narrow



GXCCNG GR XCC Narrow (Y-Gate)

RUN 1006 $^{197}Au(p,p_0)$ at 8° Achromatic Transport after tuning

WS Magnet Controller '07/10/14 12:02

/WS\/PIS\

Magnet	Field(Preset|Actual)			Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1			mT	97.1	97.10 A				
GR SX			mT	18.7	18.60 A				
GR Q2			mT	8.8	8.80 A				
GR MQ			mT		0.02 A				
GR MS			mT		0.02 A				
GR D1	889.341	889.328	mT	236.36658	236.07 A				
GR D2	889.341	889.347	mT	444.82242	444.45 A				
GR DSR		20.136	mT	0	0.05 A				
LAS Q			mT		217.70 A				
LAS D		-747.968	mT		280.10 A				
GR DQ1			mT		50.00 A				
GR DQ2			mT		65.10 A				

Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

FC ϕ_{rot} = 1.732T.

12:20. achromatic tuning 終了

西入室、GR出口 → 0° ダクトつなぐ.

・緊急用の ~~[illegible]~~ runcontrol が使えないため、BLP用の回路も元に戻す (at GR出口).

~~[illegible]~~ 13:05 0度ダクト ビーム通し開始

(FC 1st = 1.9T)

WS Magnet Controller '07/10/14 13:04

/WS\/PIS\

Magnet	Field(Preset|Actual)		Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1		mT	90.1	90.20 A				
GR SX		mT	18.3	18.20 A				
GR Q2		mT	8.5	8.50 A				
GR MQ		mT		0.02 A				
GR MS		mT		0.02 A				
GR D1	868.785	mT	230.6	230.37 A				
GR D2	870.166	mT	434.7	434.13 A				
GR DSR	111.893	mT	12.5	12.52 A				
LAS Q		mT		217.70 A				
LAS D	-747.969	mT		280.10 A				
GR DQ1		mT		50.00 A				
GR DQ2		mT		65.10 A				

Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

0° ビーム通しの初期設定 (P.73も参考にした)

・ビーム通し

① FP viewer, Q viewer, dump viewer,
すべての center を通るように磁場設定.

② Q viewer, を抜き差しして trigger rate に変化のないことを確認.

③ 磁場を切り変えて. trigger rate を check
安定性確認.

WS Magnet Controller

/WS\/PIS\ '07/10/14 13:29

Magnet		Field(Preset|Actual)		Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1			mT	90.1	90.20 A				
GR SX			mT	18.3	18.20 A				
GR Q2			mT	8.5	8.50 A				
GR MQ			mT		0.02 A				
GR MS			mT		0.02 A				
GR D1		870.908	mT	231.3	231.06 A				
GR D2		871.076	mT	435.20	434.64 A				
GR DSR		87.865	mT	8.7	8.76 A				
LAS Q			mT		217.70 A				
LAS D		-747.969	mT		280.10 A				
GR DQ1			mT		50.00 A				
GR DQ2			mT		65.10 A				

Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

最終版

秋峯、エニタ 仮軸、 (p.61) ←を見る

beam軸から 10mm外にセット。

rate1

0	Beam Intensity	4.100 nA
1	GR event request	2.090 kcp
2	GR event live	0.000 kcp
3	LAS eventRequest	0.007 kcp
4	LAS event live	0.000 kcp
5	GR clock reqest	9.725 kcp
6	GR clock live	0.000 kcp
7	GR Single	0.000 kcp
8	GR Single Sample	0.000 kcp
9	LAS Single	0.000 kcp
10	LAS SingleSample	0.000 kcp
11	GR & LAS COIN	0.000 kcp
12	ALL accept Event	0.000 kcp
13	Reject event	0.000 kcp
14	GR3377stop(TEND)	0.000 kcp
15	LAS-reject	0.000 kcp

Trig.(GR) live : 0.000 percent
Trig.(LAS) live : 0.000 percent
Clock live : 0.000 percent

rate3

0	BLP CLK req :	9.726 kcps
1	BLP CLK live :	0.000 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	0.042 kcps
5	Akimune Down :	0.161 kcps
6	Akimune Left :	0.039 kcps
7	Akimune Right :	0.156 kcps
8	Beam Monitor1 :	2.090 kcps
9	Beam Monitor2 :	0.000 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	15.038 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

RUN NUM 9999 B.I. Range 6 nA
RUN START 2007-Oct-14 12:03:46
NOW 2007-Oct-14 13:29:18

チューニング関係

WS Magnet Controller '07/10/14 13:17

/WS\/PIS\

Magnet	Field(Preset|Actual)		Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1		mT	90.1	90.20 A				
GR SX		mT	18.3	18.20 A				
GR Q2		mT	8.5	8.50 A				
GR MQ		mT		0.02 A				
GR MS		mT		0.02 A				
GR D1	871.096	mT	231.3	231.06 A				
GR D2	871.079	mT	435.20	434.89 A				
GR DSR	87.954	mT	8.7	8.76 A				
LAS Q		mT		217.70 A				
LAS D	-747.969	mT		280.10 A				
GR DQ1		mT		50.00 A				
GR DQ2		mT		65.10 A				

Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

WS Device Controller '07/10/14 14:07

/WS\/CHAMBER\/GR\/LAS\

Device: Preset & Actual Values (Manual Operation Buttons)

Yasuda Left		1.325 V	OUT			IN
Yasuda Right		1.756 V	OUT			IN
Yasuda Up		1.575 V	OUT			IN
Yasuda Down		1.800 V	OUT			IN
Uchida Left		0.772 V	OUT			IN
Uchida Right		0.768 V	OUT			IN
Shinbara Left		0.772 V	OUT			IN
Shinbara Right		0.768 V	OUT			IN
Akimune Left	3.8097	3.812 V	OUT			IN
Akimune Right	3.8514	3.853 V	OUT			IN
Akimune Up	3.805	3.821 V	OUT			IN
Akimune Down	3.8977	3.913 V	OUT			IN

Update Cycle 5 sec. Hcopy Queue acc2424 eXit

← 秋吉さんが入れた状態

WS Magnet Controller '07/10/14 14:11

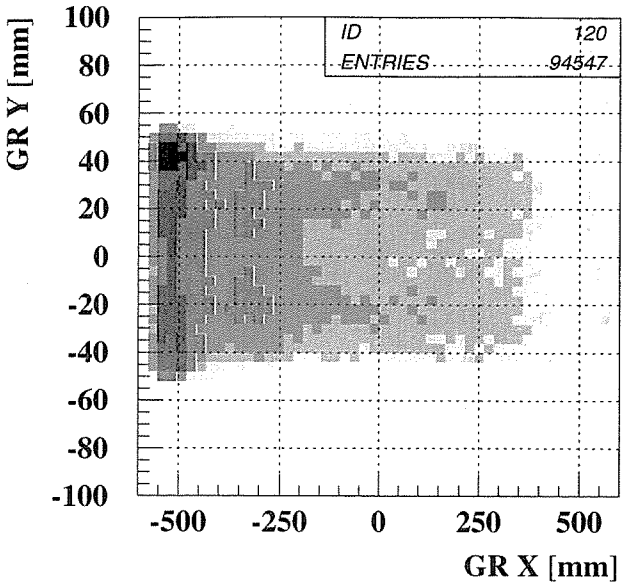
/WS\/PIS\

Magnet	Field(Preset|Actual)		Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1		mT	90.1	90.20 A				
GR SX		mT	18.3	18.20 A				
GR Q2		mT	8.5	8.50 A				
GR MQ		mT		0.02 A				
GR MS		mT		0.02 A				
GR D1	870.910	mT	231.3	231.06 A				
GR D2	871.077	mT	435.20	434.64 A				
GR DSR	87.954	mT	8.7	8.76 A				
LAS Q		mT		217.70 A				
LAS D	-747.970	mT		280.10 A				
GR DQ1		mT		50.00 A				
GR DQ2		mT		65.10 A				

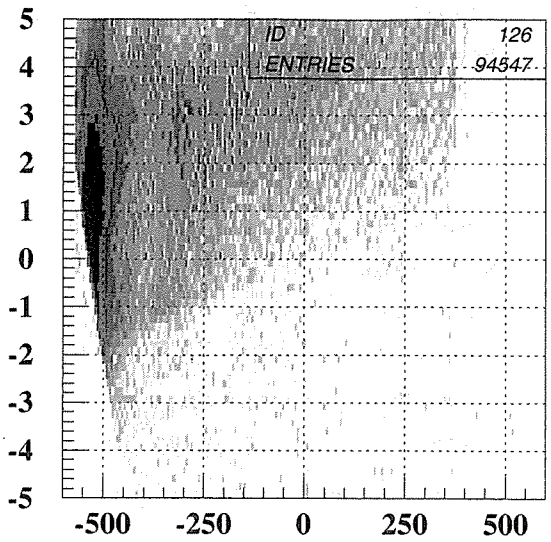
Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

← GRの通信をかえてみた(D2とDSR)が B.G rate は ~@150ps/m, で変わらず

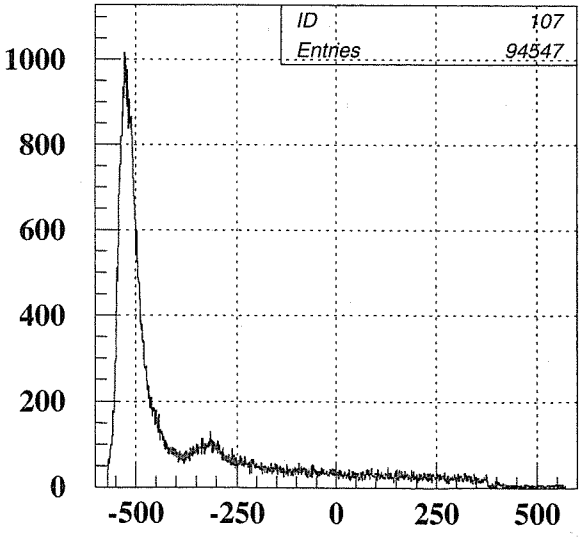
2007/10/14 14.16



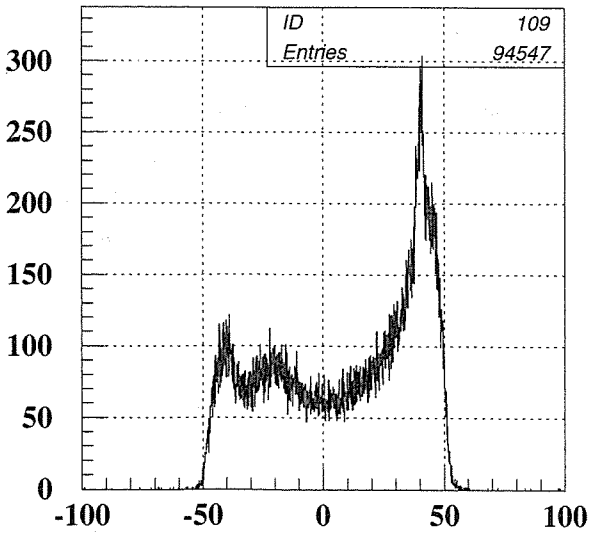
GXY GR Y vs X



GXTH GR TH vs X



GX GR X



GY GR Y

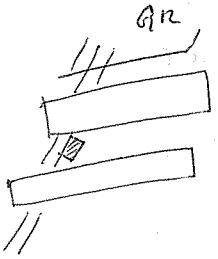
blank target BG [illegible] tuning中

17:00　ATF の Dee Voltage を下げて調整しなおすことに決定

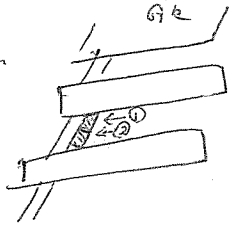
18:00　西実験室　作業　40kV → 35kV
　　← 言われた　　← 以前使っていた値

VDC とターゲットの付きの鉛ブロックを check

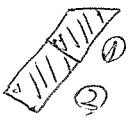
右の棒に結んであった
鉛を下の棒に変更
(鉛2つ　1つは削ってある)



かつ鉛ブロックが倒れない
棒にワイヤーバンドで
ターゲットに結びつけた



①は削ってある



19:45　Satta, Cham の FC を Set する

これまでの Beam 調整のときに FC が入っていなかった
↓
入れておかないと Scintillator に悪影響をおよぼす可能性あり

20:20　Resolution check のための 0° → 80°

西実験室入室

0°, 20:17

			Preset|Actual)		Current(Preset|Actual)	St
		mT		95.1	95.10	A
		mT		18.3	18.20	A
		mT		8.5	8.50	A
		mT			0.02	A
		mT			0.02	A
D1	870.914	mT		231.3	231.06	A
D2	871.190	mT		435.20	434.64	A
DSR	87.865	mT		8.7	8.76	A
		mT			217.70	A
	-747.967	mT			280.10	A
		mT			50.00	A
		mT			65.10	A

ycle 10 sec. Hcopy Queue a

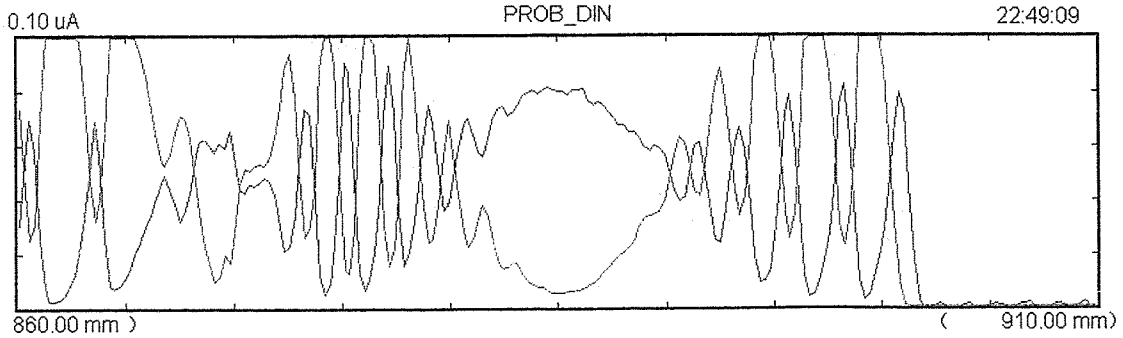
8°, 20:23

			Preset|Actual)		Current(Preset|Actual)	Status
		mT		95.1	95.20	A
		mT		18.3	18.20	A
		mT		8.5	8.50	A
		mT			0.02	A
889.341		mT			0.02	A
341	889.265	mT		236.52783	236.21	A
341	888.021	mT		444.84602	444.20	A
	21.653	mT		0	0.05	A
889.341		mT			217.70	A
	-747.968	mT			280.10	A
		mT			50.00	A
		mT			65.10	A

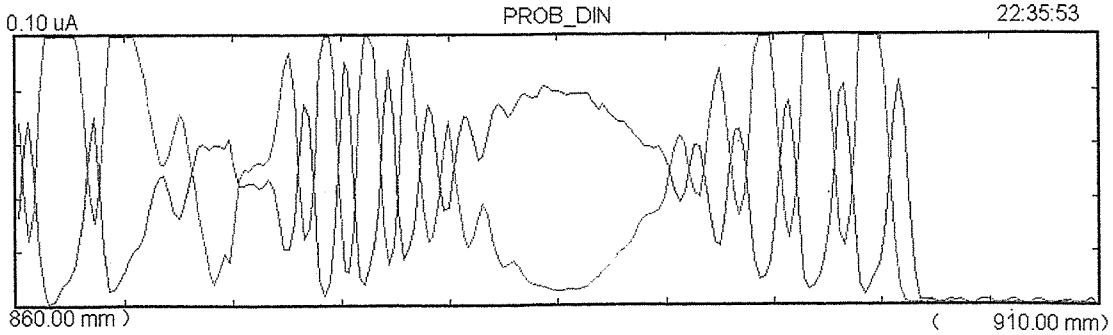
20:30 ターゲットをAuにして、Resolutionを良くする様にビーム調整。2成分有、resolution上がらず。

22:50 AVF再調節。Dee電圧40kVにもどす。下図のような、良好なターンセパレーションが得られた

SCU3C 2007/10/14 ION S: Neomaflos AVF P:P E: 53.3 MeV F: 15.416773 MHz COURSE: WS_S
22:50:38 MODE: UNPOL RING P:P E: 300.0 MeV F: 15.416773 MHz GROUP: Matsubara



Current Pos. (910.81 mm)



23:15 RINGの所まで加速器の調節終了

3/15
0:00〜　197Au　1.68 mg/cm².

achroma beam tuning 開始.

2:00　ΔE〜50keV

3:00　ΔE〜50keV変わらず.

gaccth の前 TH-NAR gateの範囲を,
+1.0〜+2.0 ⟹ 0.5−1.5 に変更
(ちょっと悪くみえていたため)

それでも,分解能は特に変わらず

5:00.　ΔE〜43keV くらいまで,

RFが揺れているのが,beamの分解能に効いているみたい
(稲田さん)

分解能の追求は一旦ストップして,
前もってハロー の原因を追求してみる

6:05　ΔE〜64keV

ビームの軸が今まで通っていなかったので
修正した.　(稲田さん)

WS Magnet Controller '07/10/15 06:39

WS PIS

Magnet	Field(Preset|Actual)		Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1		mT		95.20 A				
GR SX		mT		18.20 A				
GR Q2		mT		8.50 A				
GR MQ		mT		0.02 A				
GR MS		mT		0.02 A				
GR D1	889.361	mT		236.07 A				
GR D2	889.336	mT		444.20 A				
GR DSR	20.314	mT		0.05 A				
LAS Q		mT		217.70 A				
LAS D	-747.971	mT		280.10 A				
GR DQ1		mT		50.00 A				
GR DQ2		mT		65.10 A				

Update update Cycle 10 sec Hconv Queue acc2424 eXit

8° でかた座
の調整のとき

under focu
-5%

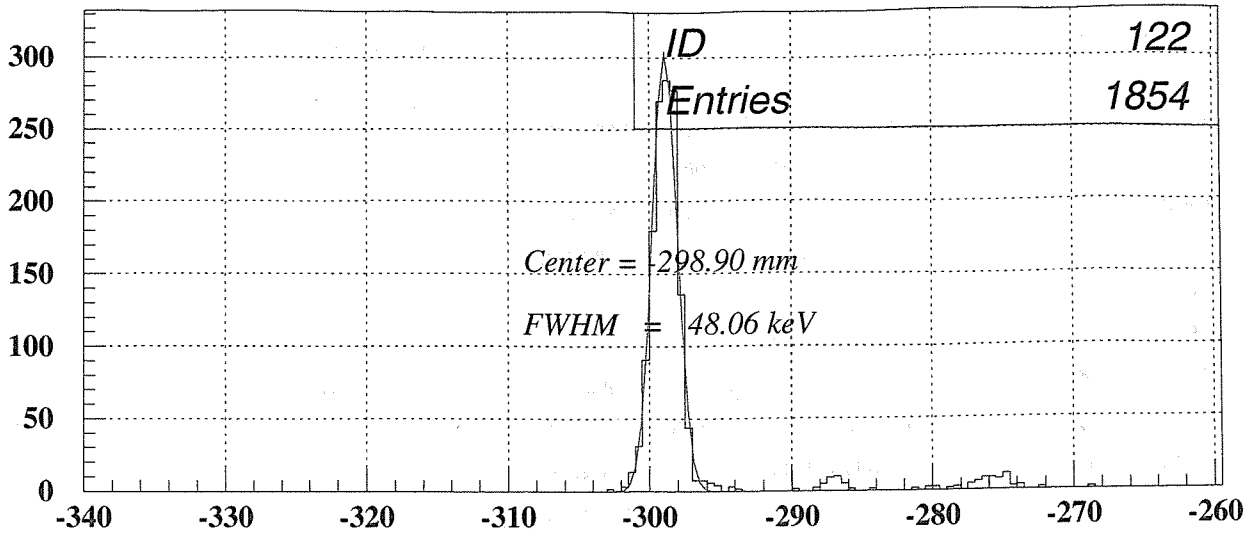
WS Magnet Controller '07/10/15 06:41

WS PIS

Magnet	Field(Preset|Actual)		Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1		mT	90.1	90.10 A				
GR SX		mT	18.3	18.20 A				
GR Q2		mT	8.5	8.50 A				
GR MQ		mT		0.02 A				
GR MS		mT		0.02 A				
GR D1	871.770	mT	231.3	231.06 A				
GR D2	872.480	mT	435.20	434.89 A				
GR DSR	87.508	mT	8.7	8.76 A				
LAS Q		mT		217.70 A				
LAS D	-747.970	mT		280.10 A				
GR DQ1		mT		50.00 A				
GR DQ2		mT		65.10 A				

Update update Cycle 10 sec Hconv Queue acc2424 eXit

0° でのビーム面
調整の開始



GXCCNG GR XCC Narrow (Y-Gate)

7:00頃 西実験室 入室.

GR 8° → 0° へ 回転.

ビームダクト設置

Beam Transport 確認

BV7 や BV9 の像も小さい

±5mm? ±5mm?

~±10mm

WS Magnet Controller

'07/10/15 07:40

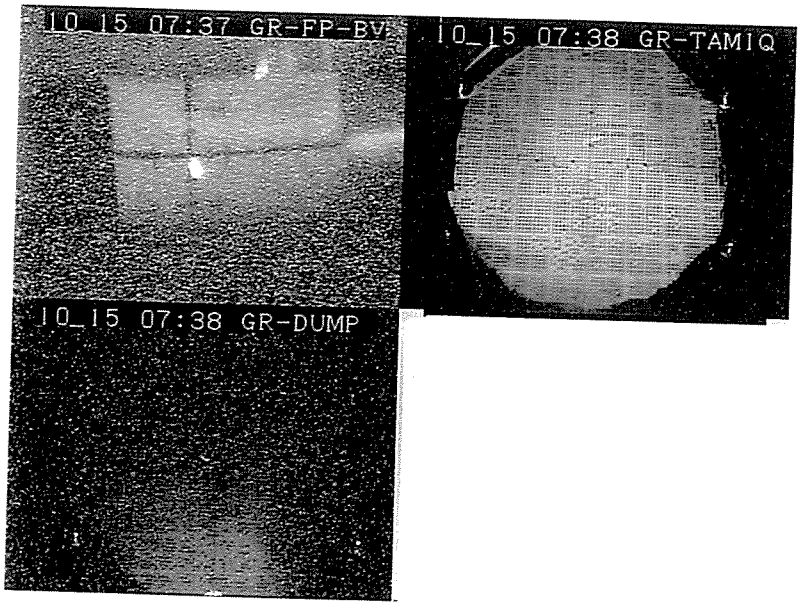
/WS\/PIS\

Magnet	Field(Preset|Actual)		Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1		mT	90.1	90.20 A				
GR SX		mT	18.3	18.20 A				
GR Q2		mT	8.5	8.50 A				
GR MQ		mT		0.02 A				
GR MS		mT		0.02 A				
GR D1	870.091	mT	230.95	230.64 A				
GR D2	870.082	mT	434.60	433.88 A				
GR DSR	101.843	mT	11.4	11.44 A				
LAS Q		mT		217.70 A				
LAS D	-747.971	mT		280.10 A				
GR DQ1		mT		50.00 A				
GR DQ2		mT		65.10 A				

Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

0° に Beam を 当てた (Beam 強さ 0.5nA)

Trigger 65cps / 0.5nA (調整中)



8:15　西実験室　入室

GR の VDC 後の シンチ の間に
アブソバー を追加
↑
5mm Al

元々 入っていたものは (~1 mm Al) ⇐

Trigger rate
~ 180cps / 2.3nA

RUN 1007　~~28Si 24~~ 197Au (p, p') 0deg Achrom.
↑ 標的設定 ミス

RUN コメントは 28Si になっているが
実際は 197Au だった

RUN 1008 ^{28}Si (p,p') 0° Achromatic Mode

GR 磁場 under-focus ⇒ normal-focus mode に変更

RUN中 GR VDC Cathode 落ちる

その他 設定変更あり

normal focus mode

WS Magnet Controller '07/10/15 08:50

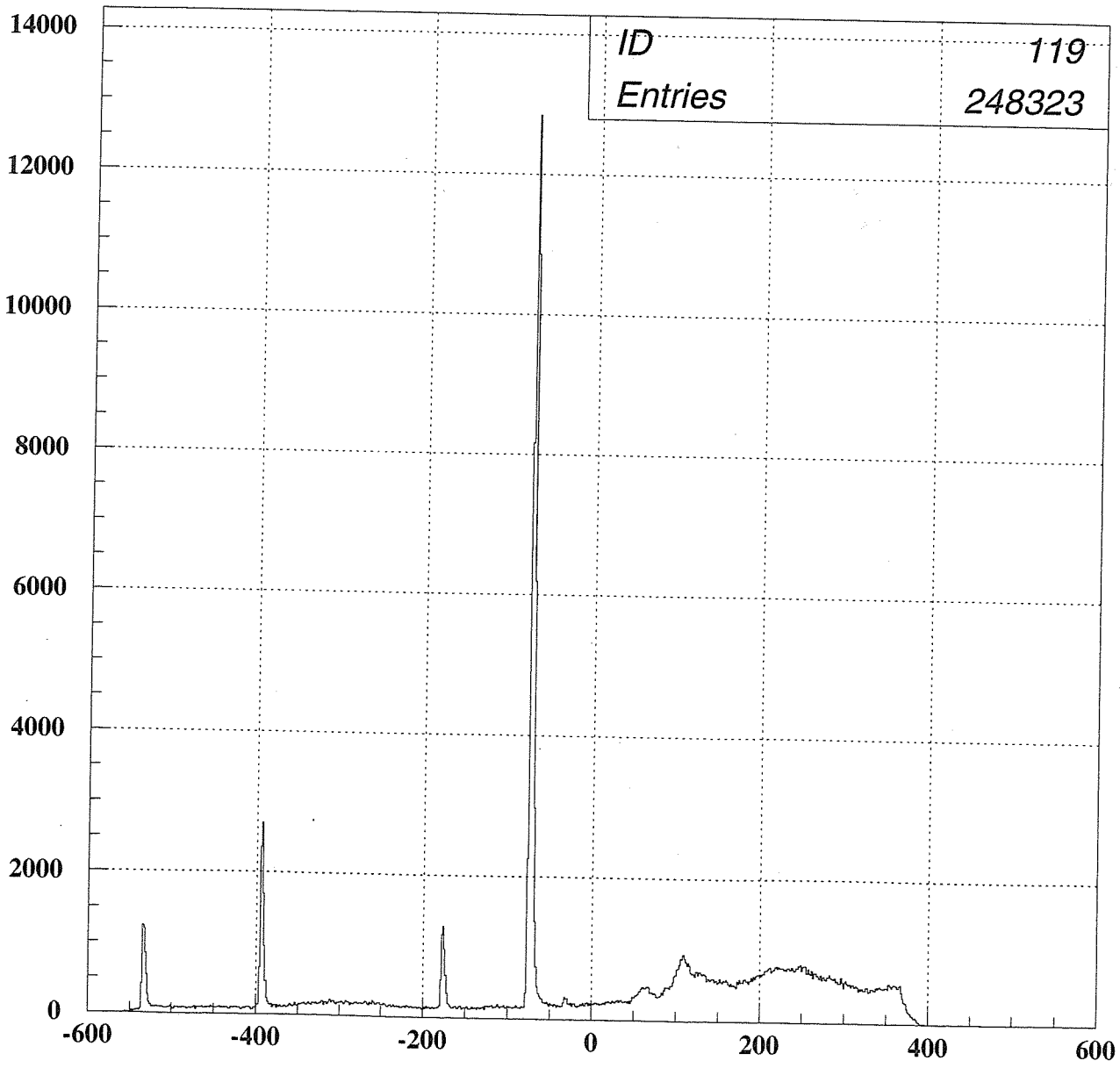
/WS\/PIS\

Magnet		Field(Preset|Actual)		Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1			mT	94.9	95.00 A				
GR SX			mT	18.3	18.20 A				
GR Q2			mT	8.5	8.50 A				
GR MQ			mT		0.02 A				
GR MS			mT		0.02 A				
GR D1		870.092	mT	230.95	230.64 A				
GR D2		870.083	mT	434.60	433.88 A				
GR DSR		101.845	mT	11.4	11.44 A				
LAS Q			mT		217.70 A				
LAS D		-747.971	mT		280.10 A				
GR DQ1			mT		50.00 A				
GR DQ2			mT		65.10 A				

Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

RUN 1009 $^{12}C(p,p')$ 0° Achromatic, normal focusing

2007/10/15 09.58



GXCG GR XC (Y,TH-Gated)

Run 1010 $^{12}C(p,p')$ 0° Achromatic Mode
G.Raiden : under focus mode

not so much difference from the previous spectrum

WS Magnet Controller '07/10/15 10:05

/WS\/PIS\

Magnet	Field(Preset|Actual)		Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1		mT	90.1	90.20 A				
GR SX		mT	18.3	18.20 A				
GR Q2		mT	8.5	8.50 A				
GR MQ		mT		0.02 A				
GR MS		mT		0.02 A				
GR D1	870.092	mT	230.95	230.64 A				
GR D2	870.082	mT	434.60	434.13 A				
GR DSR	101.845	mT	11.4	11.44 A				
LAS Q		mT		217.70 A				
LAS D	-747.972	mT		280.10 A				
GR DQ1		mT		50.00 A				
GR DQ2		mT		65.10 A				

Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

Run 1011. $^{28}Si(p,p')$. 0°. Ach. Start 10:25.
2.42 mg/cm²

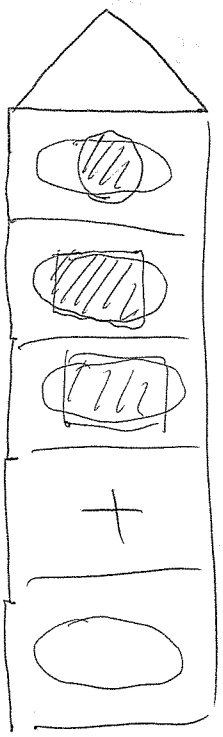
FC rotation = 2.0V ← 1.8V から B.G が入る
標的を設置された粒子が

11:00
※ We decide to move to dispersive BT mode

target 交換

- ^{12}C を外し
  SiO_2 6.2 mg/cm^2 (28 μm) をマウント.

- Au target が破れていたので、張り直した。
  厚さは 1.68 mg/cm^2.



^{nat}Si 2.42 mg/cm^2

SiO_2 6.2 mg/cm^2 (28 μm)

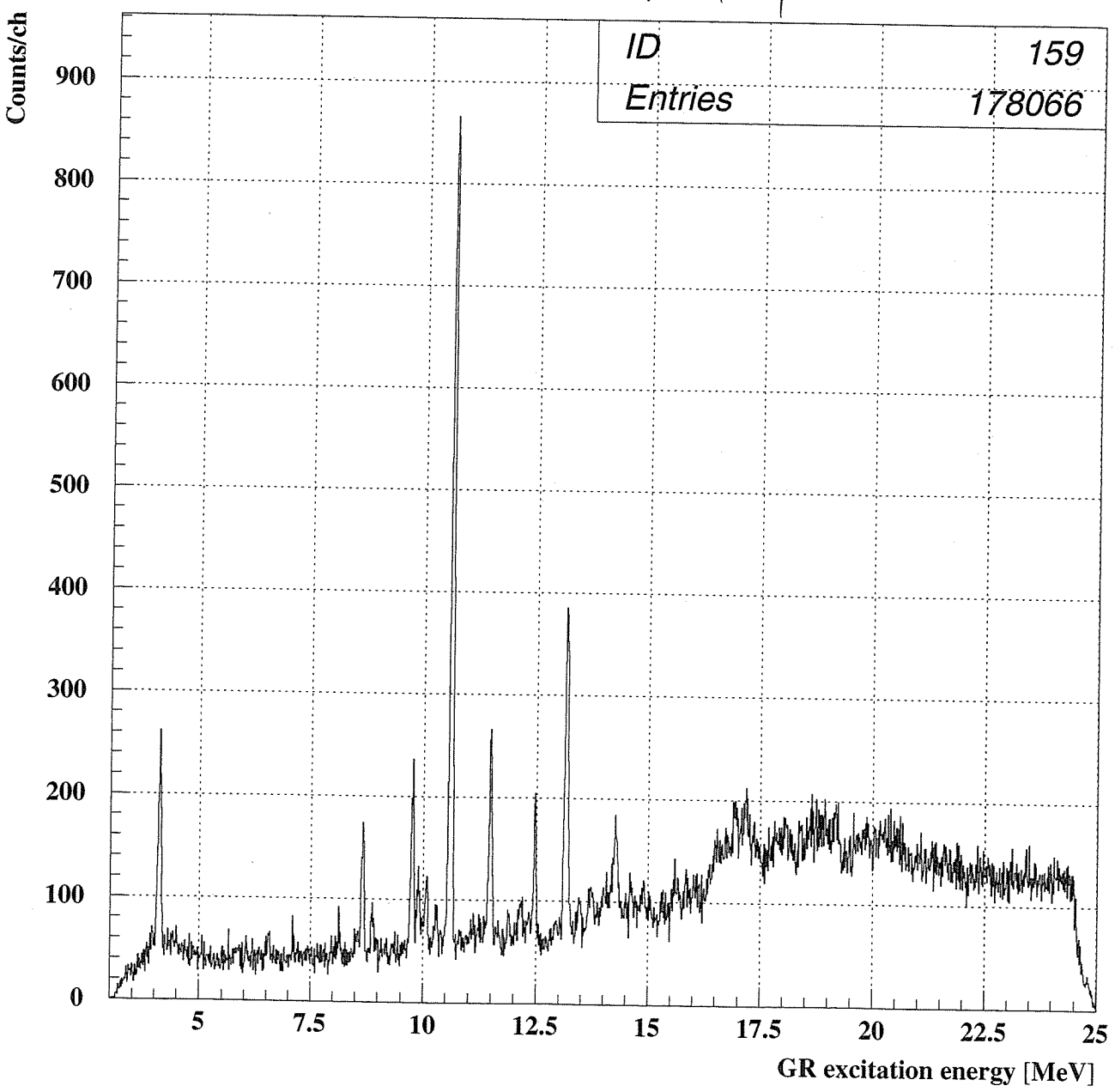
^{197}Au 1.68 mg/cm^2

ZnS

Blank

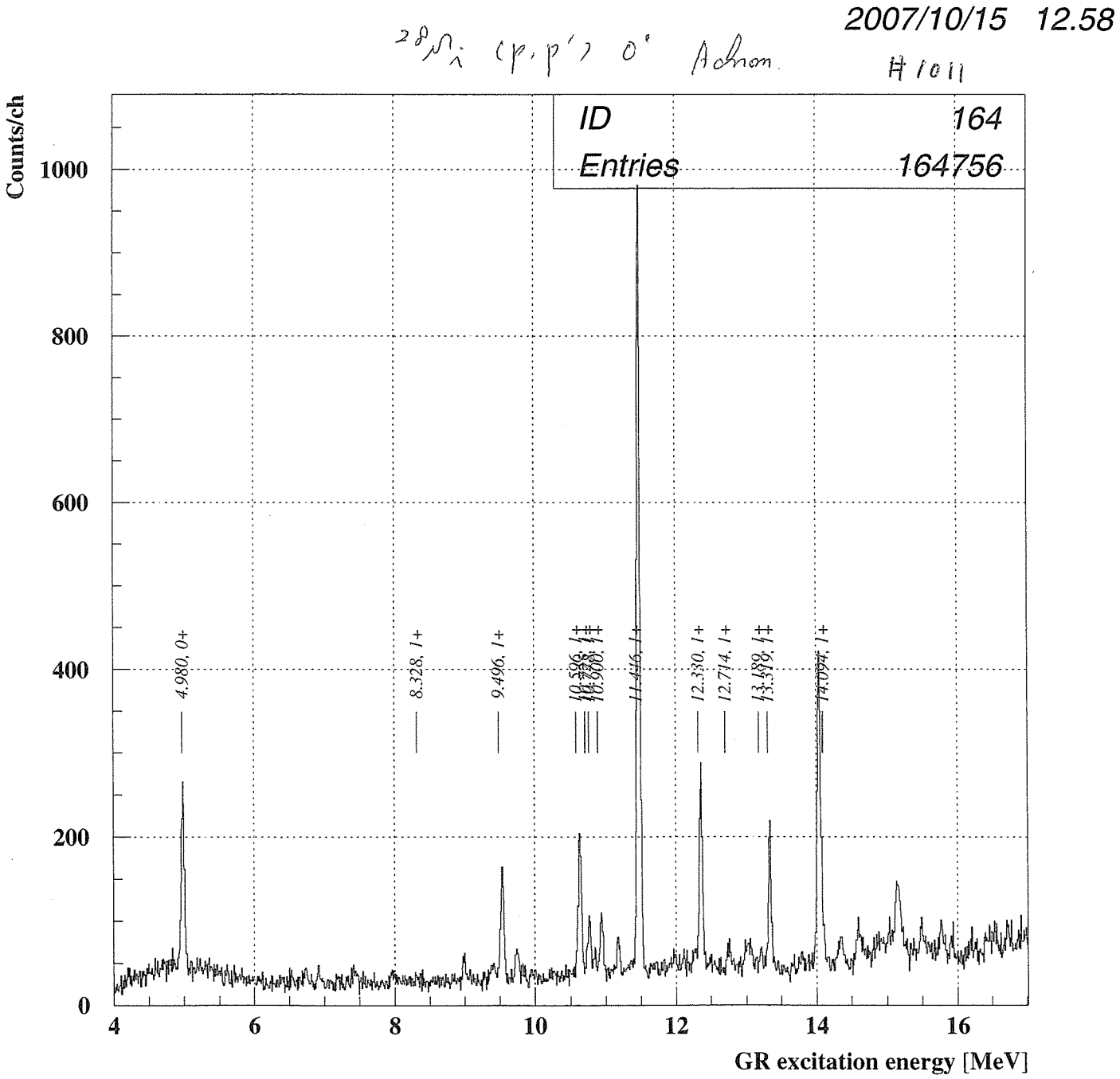
2007/10/15 12.19

RUN 1001



GEXG GR excitation energy (Y,TH-gated)

Calibration ずれている see 右図



GEXCG GR excitation energy-c (CHI2-Gated)

13:00 Dispersive Mode transport 終了

0° に通して見る

Trigger rate
20 kcps / 0.5nA

→ ATF の RF が落ちた

14:00 、 WS Beam Line Transport 再 check

、 0° に通す (放電 slit が入っていたので出す)

14:40 、 ATF Dee Voltage がずれていたので
Dee Voltage を合わせた後、再度 WS Beam Transport を
合わせる

15:00 0° に再度通す

~ 180 cps / 2nA

- Beam量が最大 ~ 2nA
- ATF の Dee Voltage の調整がちょくちょく必要

BV - TAMIQ で見て 10秒に1度程度ひげが出る
Cavity #2 のリップルと完全に相関している
→ 電力 feedback を交換したので、aging に時間を要している という見解 (加速器G)

WS Magnet Controller '07/10/15 13:08

/WS\/PIS\

Magnet	Field(Preset|Actual)			Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1			mT	90.1	90.20 A				
GR SX			mT	18.3	18.20 A				
GR Q2			mT	8.5	8.50 A				
GR MQ			mT		0.02 A				
GR MS			mT		0.02 A				
GR D1		869.932	mT	230.95	230.64 A				
GR D2		870.083	mT	434.60	434.13 A				
GR DSR		94.094	mT	11.4	10.53 A				
LAS Q			mT		217.70 A				
LAS D		-747.972	mT		280.10 A				
GR DQ1			mT		50.00 A				
GR DQ2			mT		65.10 A				

Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

WS Magnet Controller '07/10/15 14:57

/WS\/PIS\

Magnet	Field(Preset|Actual)			Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1			mT	90.1	90.10 A				
GR SX			mT	18.3	18.20 A				
GR Q2			mT	8.5	8.50 A				
GR MQ			mT		0.02 A				
GR MS			mT		0.02 A				
GR D1		869.314	mT	230.7	230.51 A				
GR D2		869.396	mT	434.20	433.63 A				
GR DSR		127.007	mT	14.3	14.34 A				
LAS Q			mT		217.70 A				
LAS D		-747.972	mT		280.10 A				
GR DQ1			mT		50.00 A				
GR DQ2			mT		65.10 A				

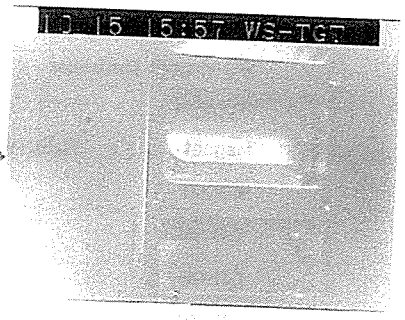
Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

RUN 1012　^{208}Pb (p,p')　0°　～2nA
2.42 mg/cm²　dispersion mode
(faint beam method の為)

900 cps /2nA

Q10 D↔M　y focus の Table

Q10 D	Q10M	
26.1	-41.67	Good y focus
26.3	-41.93	広い
5	-42.00	
7		
9		
27.1		
25.9	-41.50	
7	-41.39	
5	-41.10	



y方向の巾が小さくなるらしい (≒3mm?)
上流の transport をチェック
BV-EXT → 小さい
BLP1 → 効かないが Q 調整してもほとんどかわらず
Q8D で y focus をとろうとしたがこれも効かない
Q10 D 26.1, Q10M -41.67 に戻しても Good y focus を再現しない!

Q10U 26.1(A). Q10M −41.67(A)

faint beam で ・ΔE = 18keV.
・y方向の角度の FWHM 0.6〜0.7 ~~deg.~~ mm

Q M10UD	Q M10M	YFWHM
26.1	−41.67	0.65
	−41.17	大
	−41.57	
	−41.67	0.71

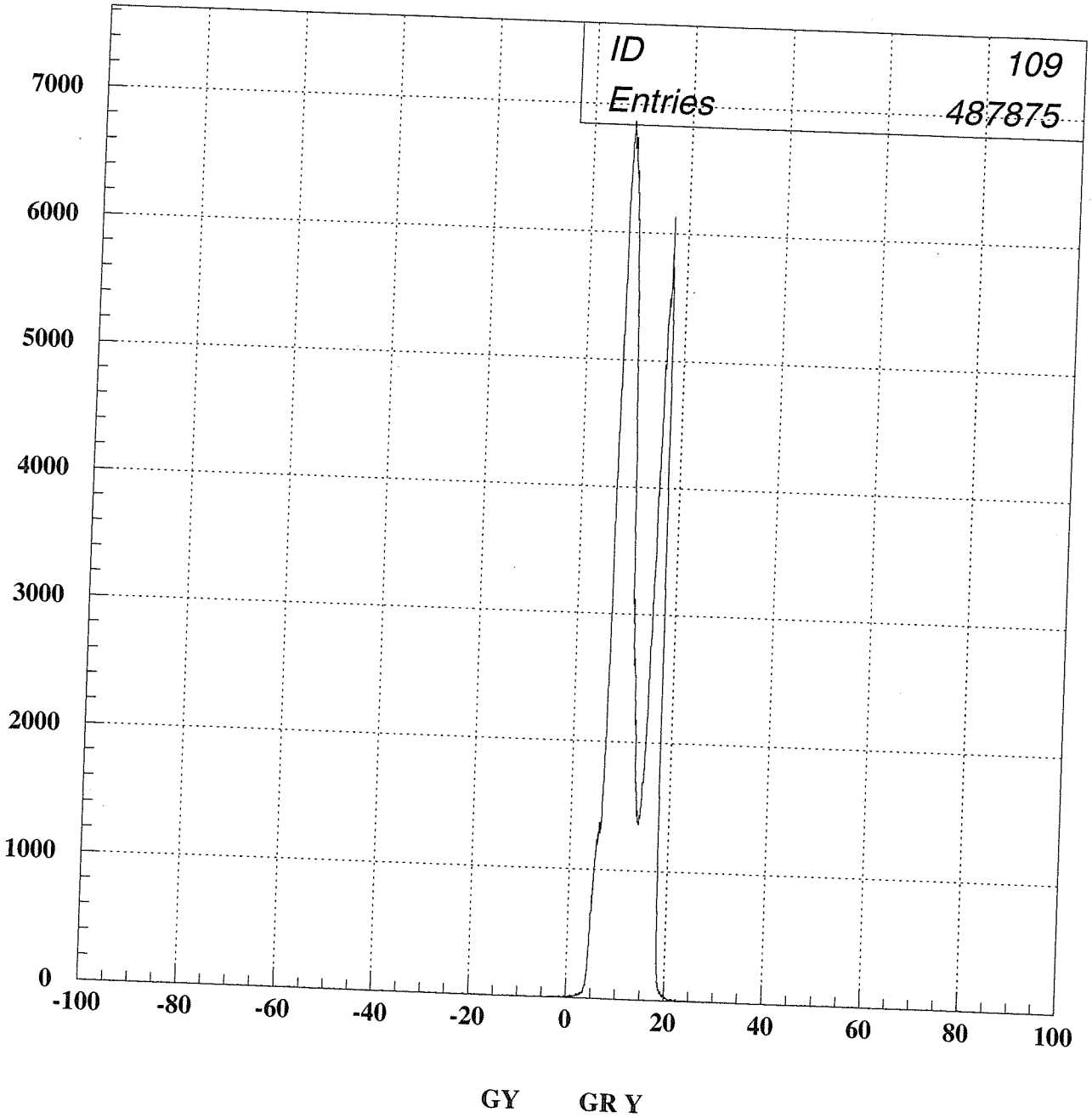
○ −41.67 から離れると GR の Y で 2本 peak に見える
→ 注意

ST10V で振ると GR−Y で形を保ったまま移動する

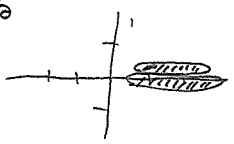
→ beam 焼損と考えられる

→ ZnS で 6 ぶく見ると 2層見える

2007/10/15 17.12



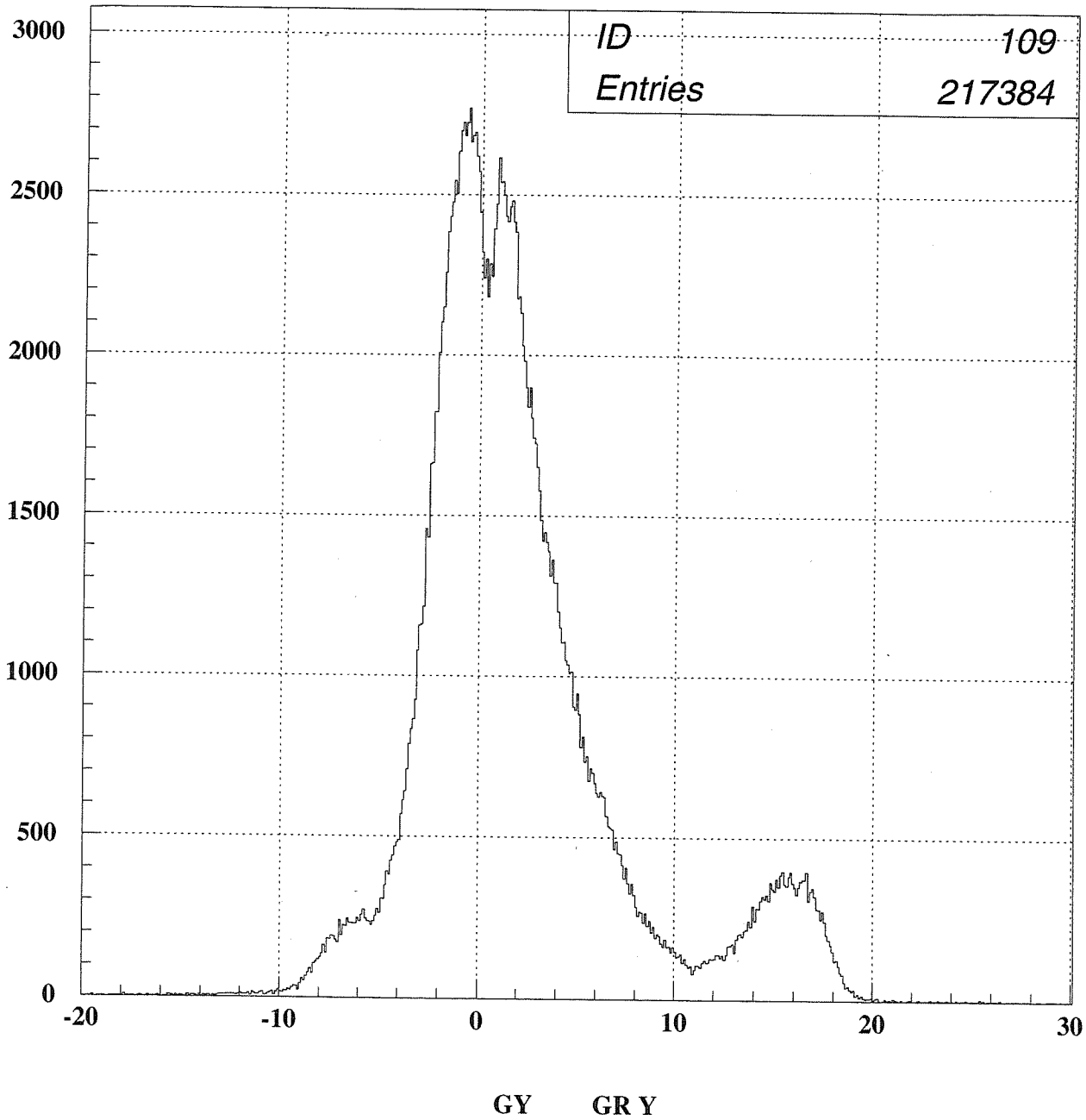
← そのSで beam spot をみると
y方向に2成分あるように
みえる



← 少し Center から
下に振った.

2007/10/15 17.47

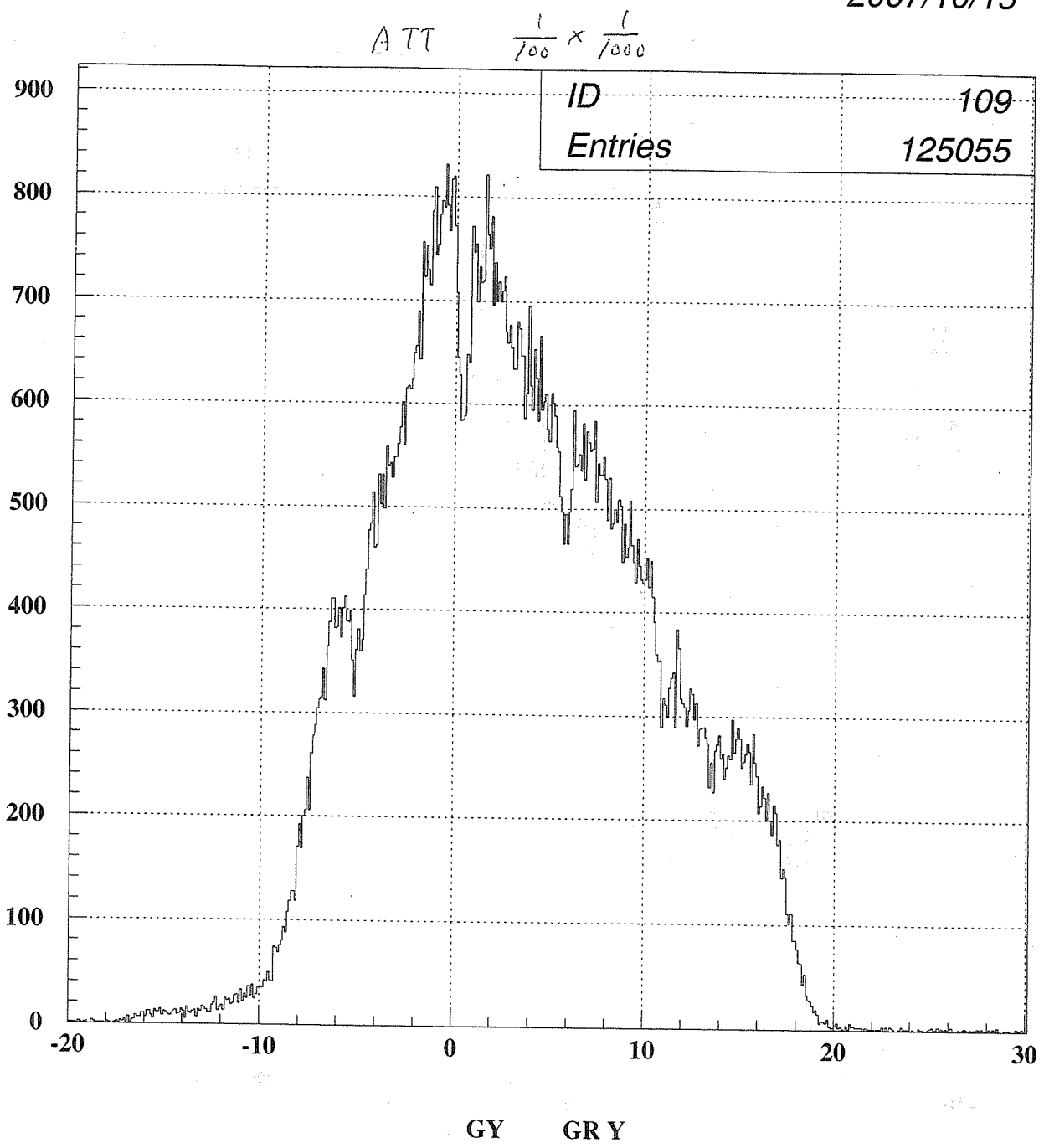
ATT $\frac{1}{10} \times \frac{1}{100} \times \frac{1}{1000}$



Attenuator を変えると形が変わる。
従って peak 構造がある様に見えるのは、Attenuator の穴の位置の反映と考えられる。→ 気にしなくて良い
（実験上）

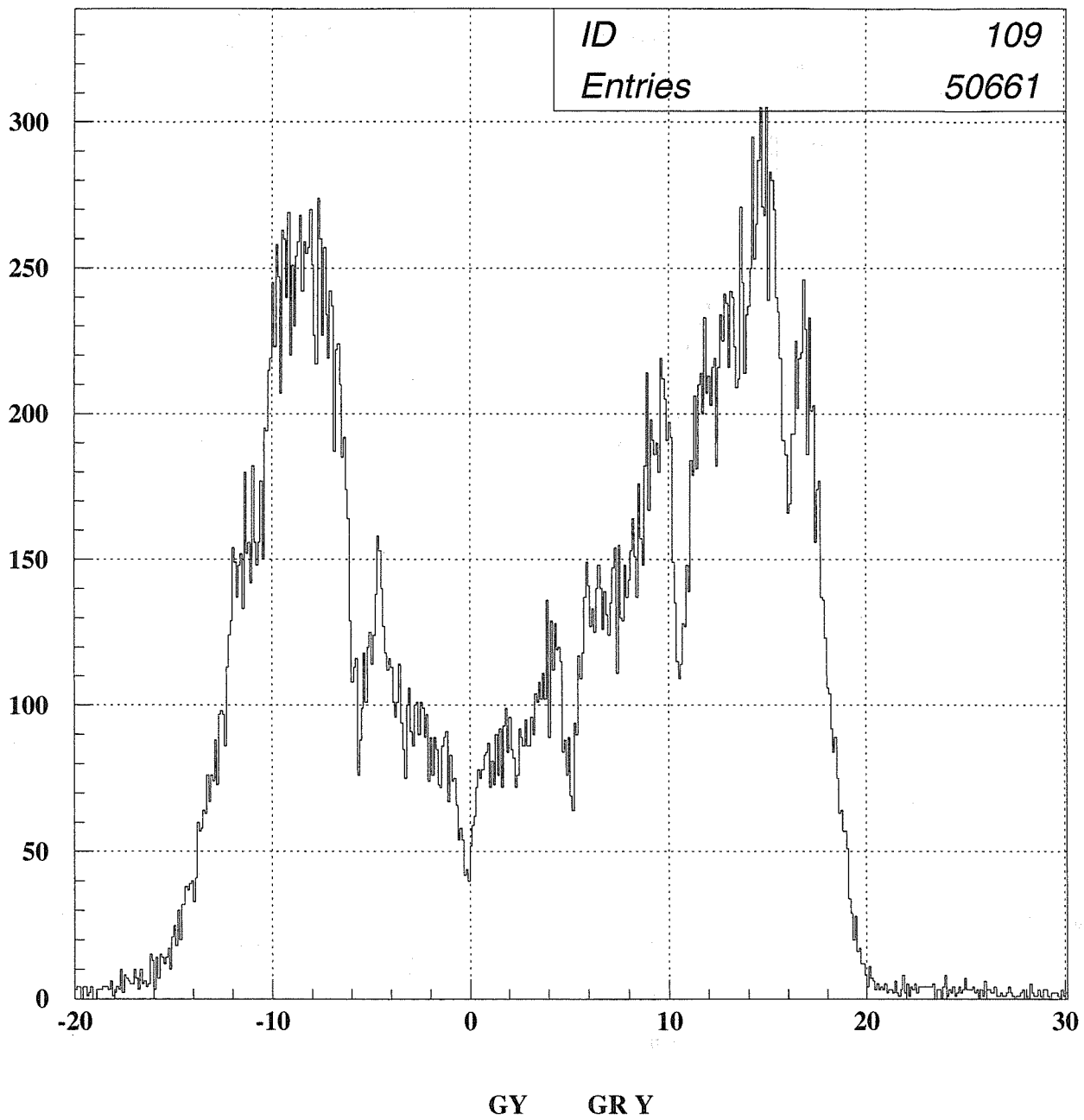
むしろ 標的上の Y-focus をカウンタで Y を見て合わせる目的には有用。

2007/10/15 17.48

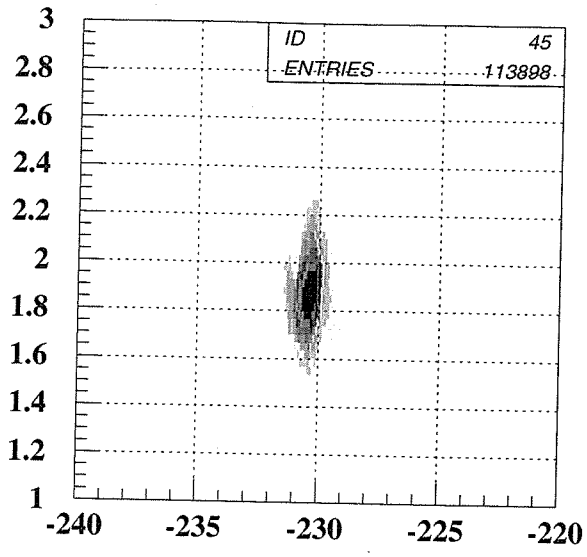


2007/10/15 17.50

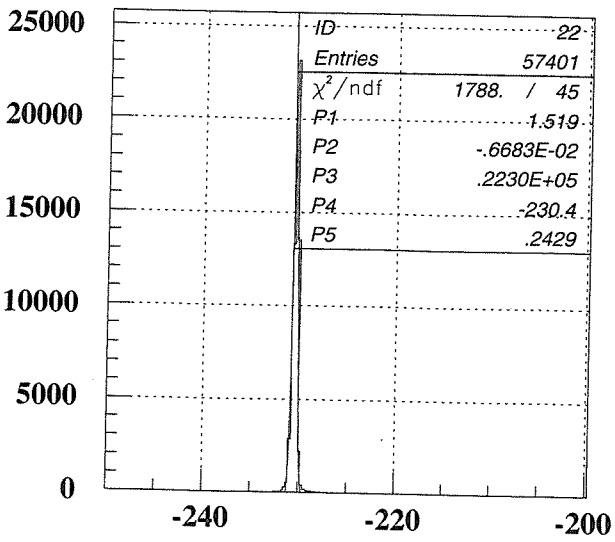
ATT $\frac{1}{10} \times \frac{1}{1000}$



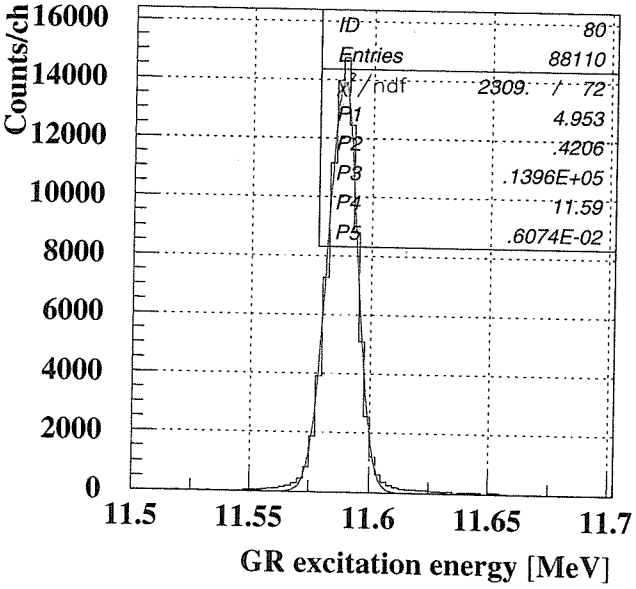
Q10 U/D (A)	Q10M (A)	Δx (mm) ~~ΔE (keV)~~	ΔE (keV)
26.~~[illegible]~~	−41.77	0.70	18.6
26.61	−42.12	0.99	18.5
25.61	−41.32	0.62	16.5
25.41	−41.11	0.62	17.7
25.21	−40.96	0.68	18.9
25.81	−41.52	0.59	15.9
26.01	−41.72	0.68	16.4
◎ 25.71	−41.42	0.57	14.3. → Best ⇐ これを使うことになる



GXTHS GR TH vs X Small Region



GX GR X



GEXCG GR excitation energy-c (CHI2-Gated)

QICS 2571

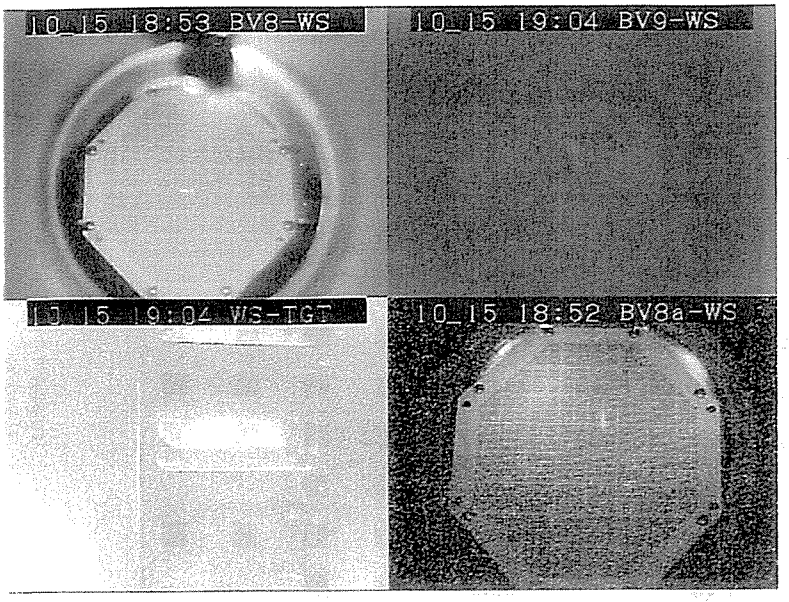
S Magnet Controller '07/10/15 18:28

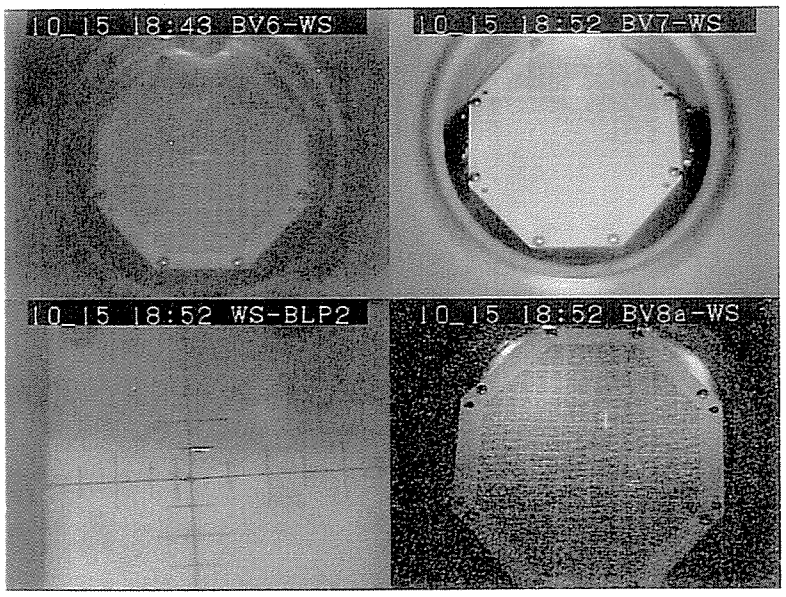
S\PIS\

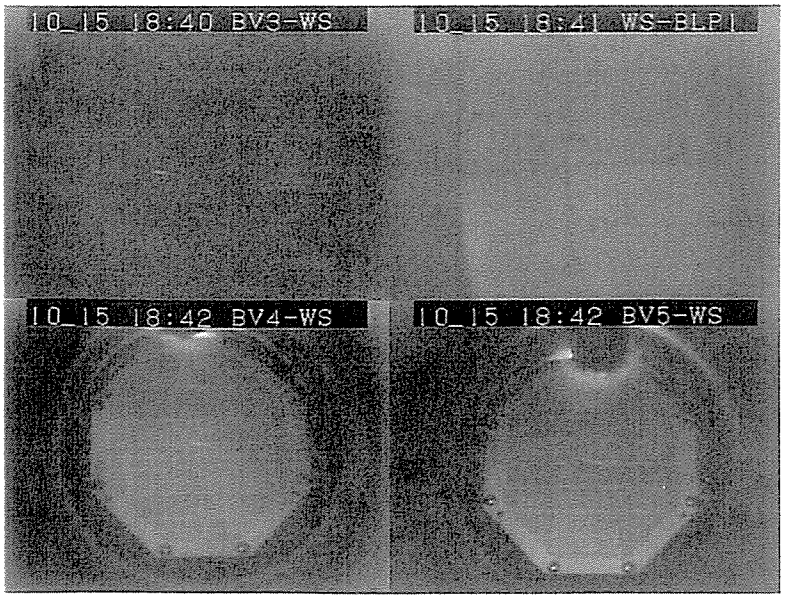
agnet	Field(Preset|Actual)			Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1			mT	92.181	92.20 A				
GR SX			mT	18.773	18.70 A				
GR Q2			mT	8.768	8.80 A				
GR MQ			mT		0.02 A				
GR MS			mT		0.02 A				
GR D1	889.309	889.320	mT	236.36664	236.07 A				
GR D2	889.309	889.300	mT	444.79492	444.45 A				
GR DSR		130.107	mT	14.63	14.67 A				
LAS Q			mT		217.70 A				
LAS D		-747.973	mT		280.10 A				
GR DQ1			mT		50.00 A				
GR DQ2			mT		65.10 A				

Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

Faint Beam Tuning で使った磁場.


10_15 18:53 BV8-WS
10_15 19:04 BV9-WS
10_15 19:04 WS-TGT
10_15 18:52 BV8a-WS


10_15 18:43 BV6-WS
10_15 18:52 BV7-WS
10_15 18:52 WS-BLP2
10_15 18:52 BV8a-WS


10_15 18:40 BV3-WS
10_15 18:41 WS-BLP1
10_15 18:42 BV4-WS
10_15 18:42 BV5-WS

dispersive の時、WS の extra の 3 以後しか触れない
(~~matching~~ では そこ以後しかさわってないから)
matching 以後は Q-mag 動かさないっぽいだね

19:20. target までのビームを軸出し後、
Blank で、1uA で 0°F.C まで通す。
↳ trigger rate が 300 cps/1uA.

・1.5uA で 150 cps くらい
でもこれは AOF Dee 電圧の max ではないので使えない
(2uA では 1000 cps over)

0度ダクト以後の磁場調整 (D1, D2, DSR) をしていなかったので ダメだっただけかもしれない
↓
faint beam で変えたので微調が必要。

もう一度 target までの軸出し確認をお願い

WS の
次は Dipole しかいじれない。
できるだけここ 再現性あるので
↓
・SAS では、スリット幅 (トリムコイル、AF 電圧) のみ
↑
長時間かけて drift するから
戻す。

7/10 以上のことをするには、
admmanに戻ってください。

WS Magnet Controller

'07/10/15 20:11

WS PIS

Magnet		Field(Preset|Actual)			Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1				mT	90.1	90.20 A				
GR SX				mT	18.3	18.20 A				
GR Q2				mT	8.5	8.50 A				
GR MQ				mT		0.02 A				
GR MS				mT		0.02 A				
GR D1		869.35	869.767	mT	230.87	230.64 A				
GR D2		869.35	869.805	mT	434.52	433.88 A				
GR DSR			109.805	mT	12.3	12.36 A				
LAS Q				mT		217.70 A				
LAS D			-747.972	mT		280.10 A				
GR DQ1				mT		50.00 A				
GR DQ2				mT		65.10 A				

Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

ゴ

測定中の viewer たち. (hatahata mode)

・Dump viewer — 入れっぱなし.

Murata 2ヶ所の 8ch へ. ~~大元も, 在2ヶ所 Dump viewer に~~

~~つないで, 実験室内用の 長 OUT へ~~

~~上 2 OUT へ 入れっぱなし~~

・~~現在~~ viewer のは.

Murata 2ヶ所の 2ch で. BLP 1 target として.

Lumi 出力から操作.

・BLP 1 とこの target.

Murata 2ヶ所 4ch で.

アバで つないで 4ch 接入.

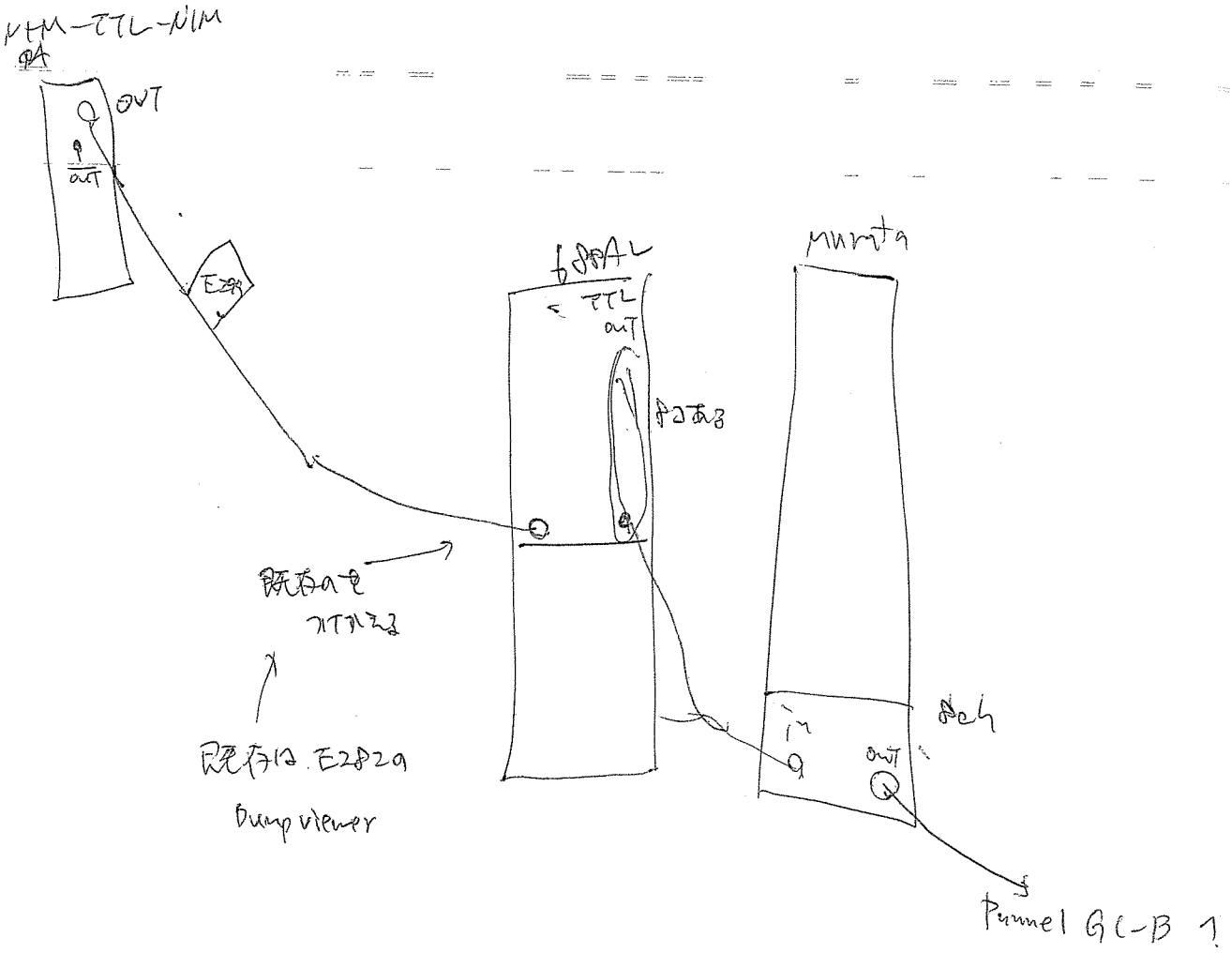
Murata の上流は, 左の 6ヶ所 AL. → 次

大元も, E299 Dump viewer で.

MWPC1 の HV の 前左の NIM-TTL-NIM の

OUT へ. (スイッチを $\overline{\text{OUT}}$ に入れっぱなしで Dump viewer は

入れっぱ)



手とめ、

- BLP1とBLP2のtargetは連動、
  BLP2 targetで動く、

- Q viewerは、BLP1 targetで動く、

- Dump viewerは、入りっぱ(手動)

hata hata 設定.

File Window Temp 07/10/15 20:45

Main | Change Set | check state | change pol

Spin UP/DOWN(1<T<999)	10	10	x0.1 sec	Refresh
Veto Time(>10)	30		msec	Refresh
AUTO HATA IN/OUT/NUE	10	99	20	Refresh

in out.

後に1000へ.

Inelastic 測定開始

情報が回転していた?

Run# 1013 Comment SiO2. 6.2mg/cm² ~~disp~~ 1st.

Date 10/15

Start 20:40.

Stop :

GR angle 0. deg

Beam current 2 nA

C.I. range 6 nA

Target

☐^{16}O mg/cm² (☐ice or ☐glass)

☐^{24}Mg mg/cm²

☐^{28}Si mg/cm²

☐^{32}S mg/cm² (☐99.9% ☐nat)

☐^{40}Ca mg/cm²

☑ SiO2 6.2 mg/cm²

VDC ☑ OK ☐ Tripped F.C. ☐~~0~~deg ☐Q1 ☐ SC rot. V

GR cath. -5.6 V, pot. A,B 0.3 V, LAS cath1. 5.3 V, cath.2 5.3 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= ℃ TC2= ℃

rate1

0	Beam Intensity	2.251 nA
1	GR event request	2.197 kcps
2	GR event live	2.069 kcps
3	LAS eventRequest	0.071 kcps
4	LAS event live	0.068 kcps
5	GR clock reqest	9.621 kcps
6	GR clock live	8.987 kcps
7	GR Single	2.069 kcps
8	GR Single Sample	2.069 kcps
9	LAS Single	0.068 kcps
10	LAS SingleSample	0.068 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	2.137 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	2.137 kcps
15	LAS-reject	0.000 kcps

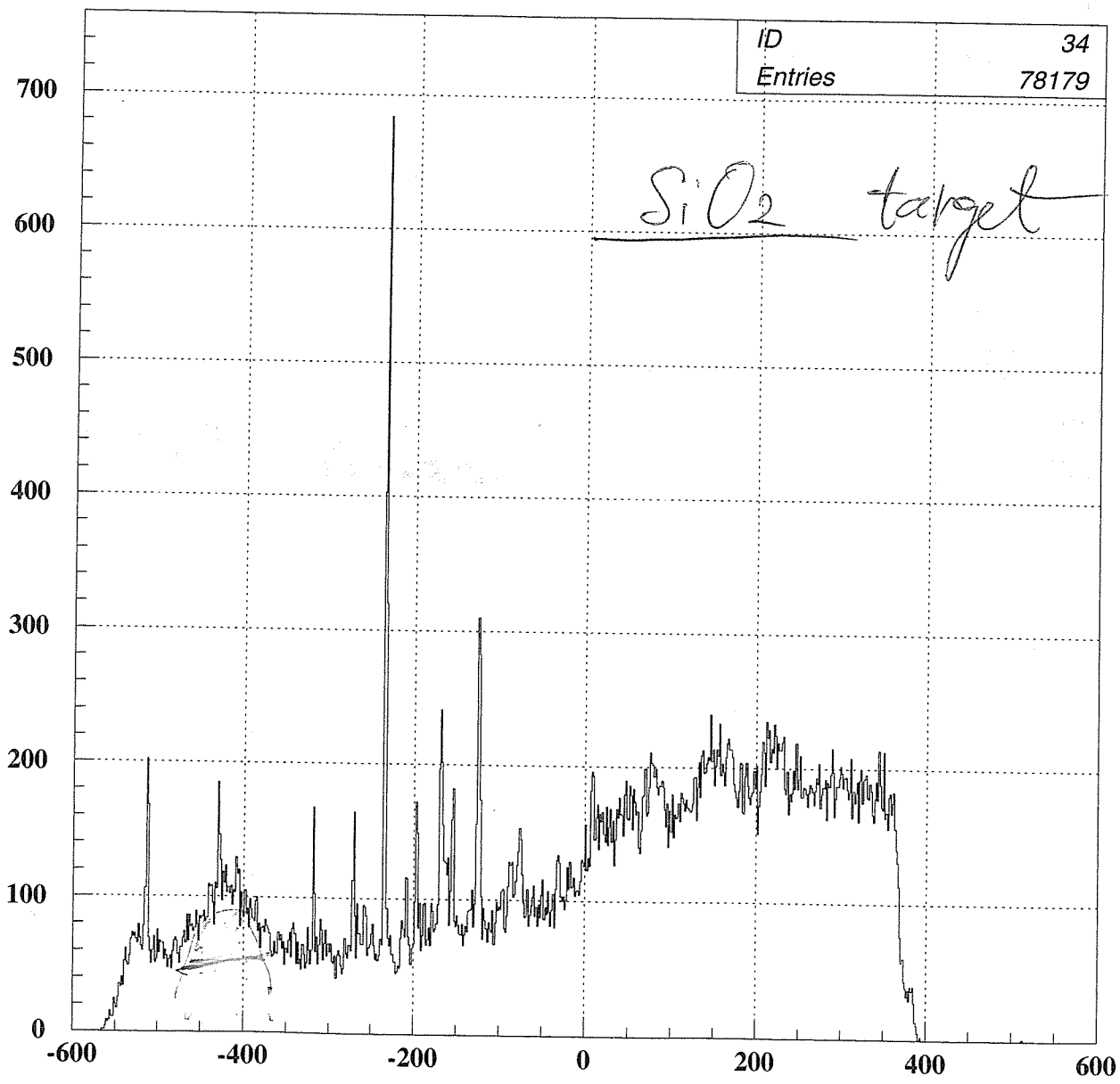
Trig.(GR) live : 94.192 percent
Trig.(LAS) live : 94.667 percent
Clock live : 93.408 percent

rate3

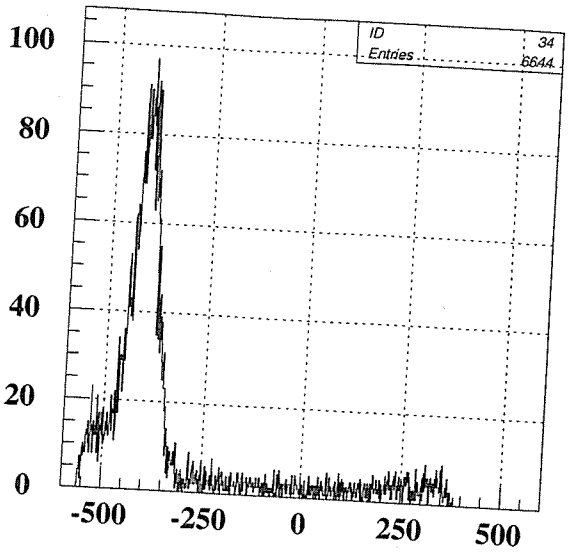
0	BLP CLK req :	9.622 kcps
1	BLP CLK live :	9.621 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	0.010 kcps
5	Akimune Down :	0.063 kcps
6	Akimune Left :	0.010 kcps
7	Akimune Right :	0.039 kcps
8	Beam Monitor1 :	2.197 kcps
9	Beam Monitor2 :	2.069 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	9.336 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler down
RUN NUM 1013 B.I. Range 6 nA
RUN START 2007-Oct-15 20:40:40
NOW 2007-Oct-15 20:46:28

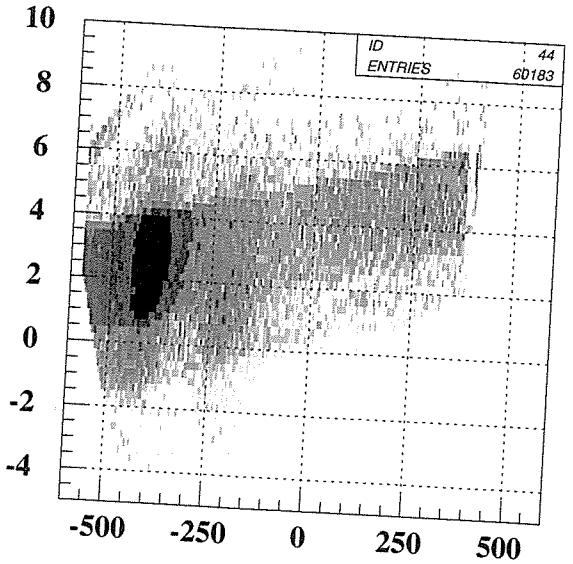
BLP1, BLP2 を入れはじめると 420ch 付近に
新たなBGが見えはじめた。(下図)。これは BLP's を入れた時の
data がもれ込んでいる為と考えられる。(次頁 左上)



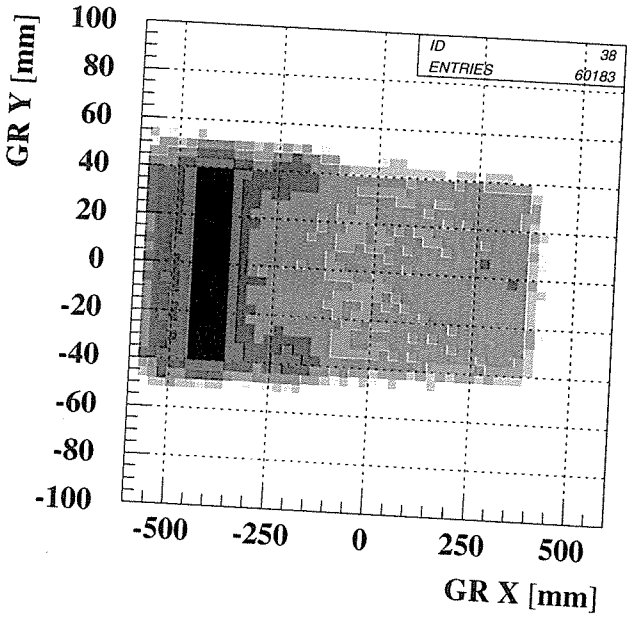
GXCG GR XC (Y,TH-Gated)



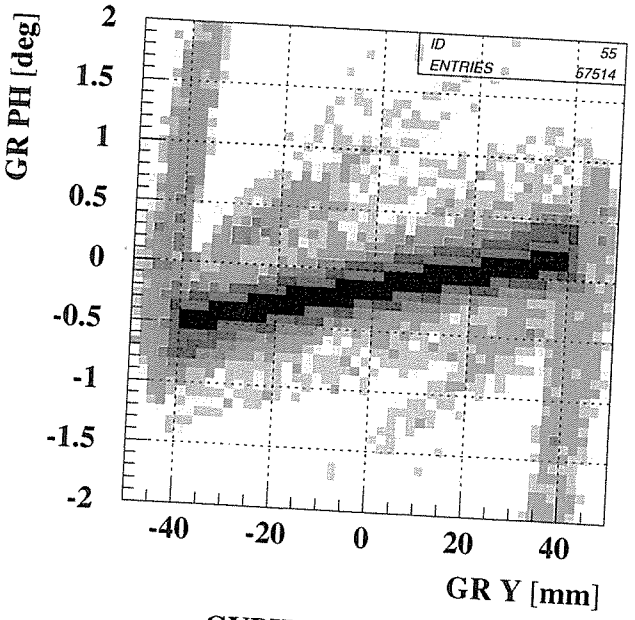
GXCG GR XC (Y,TH-Gated)



GXTH GR TH vs X



GXY GR Y vs X



GYPH GR Phi vs Y

⇑

BLP-IN のイベントを解析した。

一番上のを修論用に（1.8mg/cm²）

22:20　標的変更時

標的が45°ほど回転していたらしいことがわかって

3.40 1V に設定し直した　目視で確認
（2.77 になっていたもの）

P92の標的交換時は正しくBeamに垂直であった
（篠田氏談）

この後のどこかの時点で回転したと考えられる。
（wsdevには設定入力はされていなかった）

- BLPに送るRF1/1が計数室のvariable delayの接続不良でとまっていた → 対処

- MAIN DAQ Hafta-In時のデータをとるよう一部変更（計数室回路）

Run# 1014 Comment SiO_2 6.2mg/cm² 2nd.

Date 10 / 15

Start 22 : 39

Stop 0 : 35

GR angle 0 deg

Beam current 2 nA

C.I. range 6 nA

Target

☐ ^{16}O mg/cm² (☐ice or ☐glass)

☐ ^{24}Mg mg/cm²

☐ ^{28}Si mg/cm²

☐ ^{32}S mg/cm² (☐99.9% ☐nat)

☐ ^{40}Ca mg/cm²

☑ SiO_2 6.2 mg/cm²

VDC ☐ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☐ SC rot. V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= ~~℃~~ TC2= ℃

rate1

0	Beam Intensity	2.508 nA
1	GR event request	2.708 kcps
2	GR event live	2.463 kcps
3	LAS eventRequest	0.082 kcps
4	LAS event live	0.081 kcps
5	GR clock reqest	9.621 kcps
6	GR clock live	8.863 kcps
7	GR Single	2.463 kcps
8	GR Single Sample	2.463 kcps
9	LAS Single	0.081 kcps
10	LAS SingleSample	0.081 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	2.544 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	2.544 kcps
15	LAS-reject	0.000 kcps

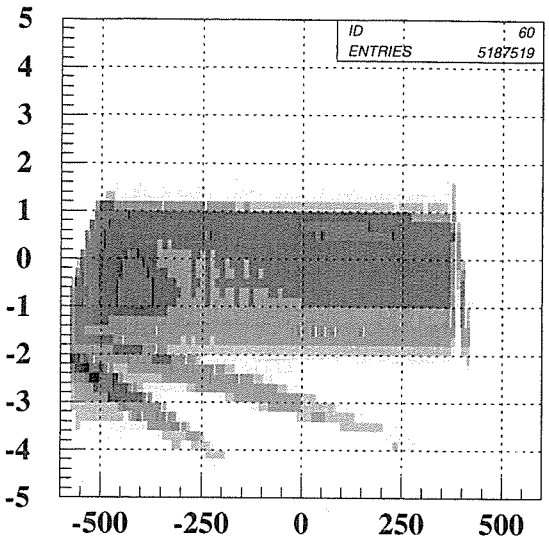
Trig.(GR) live : 90.928 percent
Trig.(LAS) live : 98.837 percent
Clock live : 92.121 percent

rate3

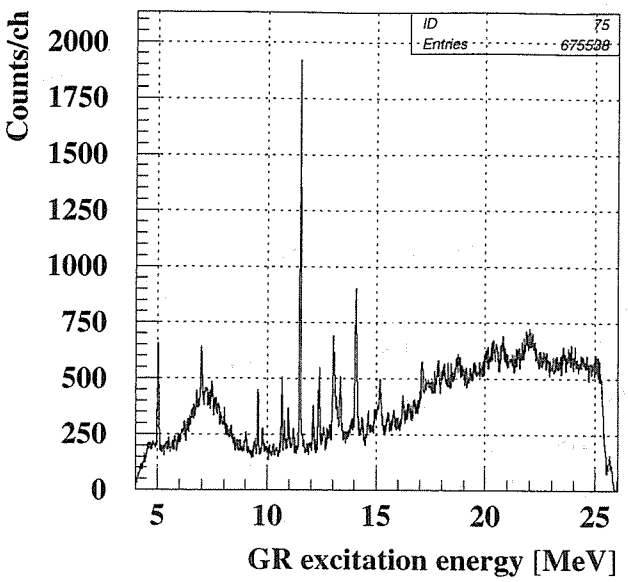
0	BLP CLK req :	9.620 kcps
1	BLP CLK live :	9.288 kcps
2	BLP Trig req :	1.074 kcps
3	BLP Trig live :	1.074 kcps
4	Akimune UP :	0.019 kcps
5	Akimune Down :	0.073 kcps
6	Akimune Left :	0.012 kcps
7	Akimune Right :	0.079 kcps
8	Beam Monitor1 :	2.608 kcps
9	Beam Monitor2 :	2.409 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	10.682 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler down
RUN NUM 1014 B.I. Range 6 nA
RUN START 2007-Oct-15 22:27:23
NOW 2007-Oct-15 22:28:11

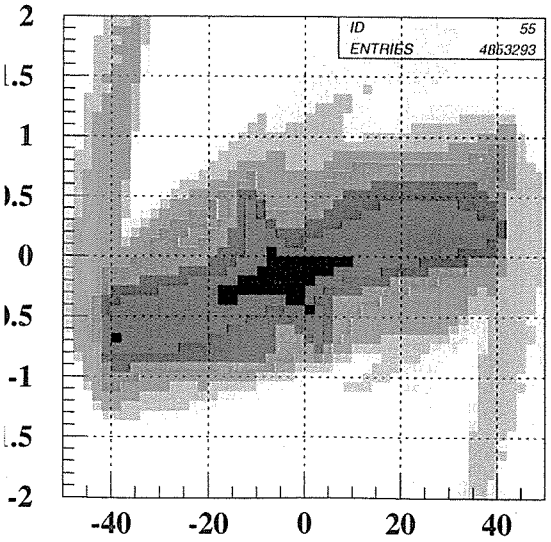
2007/10/16 00.33



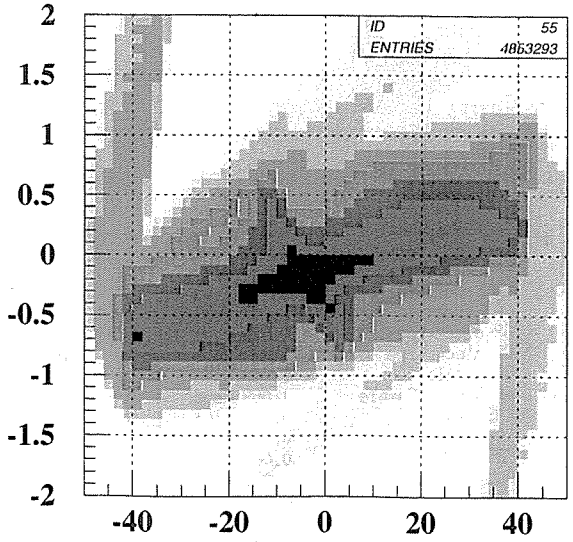
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



GYPH GR Phi vs Y

Run# 1015 Comment S. 1.86 mg/cm² 1st

Date 10/16
Start 0 : 36
Stop :
GR angle 0 deg
Beam current 2.5 nA
C.I. range 6 nA

Target
☐ ^{16}O mg/cm² (☐ice or ☐glass)
☐ ^{24}Mg mg/cm²
☑ ^{28}Si 1.86 mg/cm²
☐ ^{32}S mg/cm² (☐99.9% ☐nat)
☐ ^{40}Ca mg/cm²
☐ mg/cm²

VDC ☐ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☐ SC rot. V
GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V
GR event req. kcps accep. kcps ratio %
LAS event req. kcps accep. kcps ratio %
Print out? ☐histograms ☐rate table
Ice target temp. TC1= ℃ TC2= ℃

rate1

0	Beam Intensity	2.444 nA
1	GR event request	1.093 kcps
2	GR event live	1.059 kcps
3	LAS eventRequest	0.018 kcps
4	LAS event live	0.017 kcps
5	GR clock reqest	9.822 kcps
6	GR clock live	9.494 kcps
7	GR Single	1.059 kcps
8	GR Single Sample	1.059 kcps
9	LAS Single	0.017 kcps
10	LAS SingleSample	0.017 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	1.076 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	1.076 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 96.886 percent
Trig.(LAS) live : 94.737 percent
Clock live : 96.664 percent

rate3

0	BLP CLK req :	9.822 kcps
1	BLP CLK live :	9.482 kcps
2	BLP Trig req :	1.097 kcps
3	BLP Trig live :	1.097 kcps
4	Akimune UP :	0.019 kcps
5	Akimune Down :	0.064 kcps
6	Akimune Left :	0.012 kcps
7	Akimune Right :	0.043 kcps
8	Beam Monitor1 :	1.093 kcps
9	Beam Monitor2 :	1.059 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	8.892 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler up
RUN NUM 1015 B.I. Range 6 nA
RUN START 2007-Oct-16 00:36:38
NOW 2007-Oct-16 00:39:42

これはpolarized 試料.

2.37
23

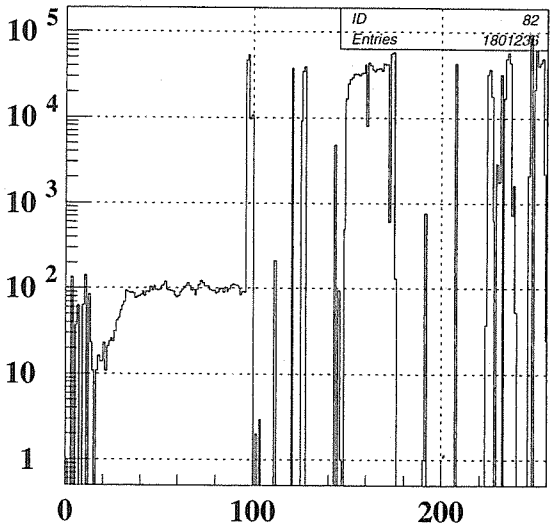
23
23
69
48
50

0:50.　　LASの U1 が 発振している.

LASのHVを落とし、現場で threshold on/off.
→ダメ.

11V → 13V → 11V にしてもダメ

10/16　1:32



発振こまらす!

LWIREU1　LAS WIRE U1

U1 threshold を 11V → 12V.

Run# 1016 Comment Si 1.86 mg/cm² 2nd

Date 10 / 16

Start 1 : 59

Stop :

GR angle 0 deg

Beam current 2.5 nA

C.I. range 6 nA

Target

☐ ^{16}O mg/cm² (☐ice or ☐glass)

☐ ^{24}Mg mg/cm²

☑ ^{28}Si 1.86 mg/cm²

☐ ^{32}S mg/cm² (☐99.9% ☐nat)

☐ ^{40}Ca mg/cm²

☐ mg/cm²

VDC ☐ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☐ SC rot. V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

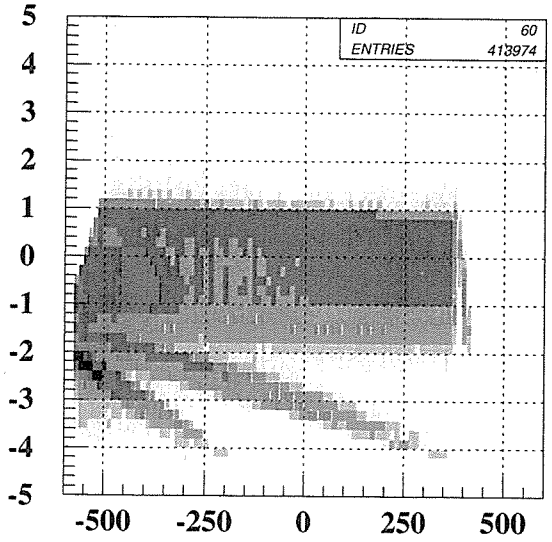
Ice target temp. TC1= ℃ TC2= ℃

これは20分で切れた

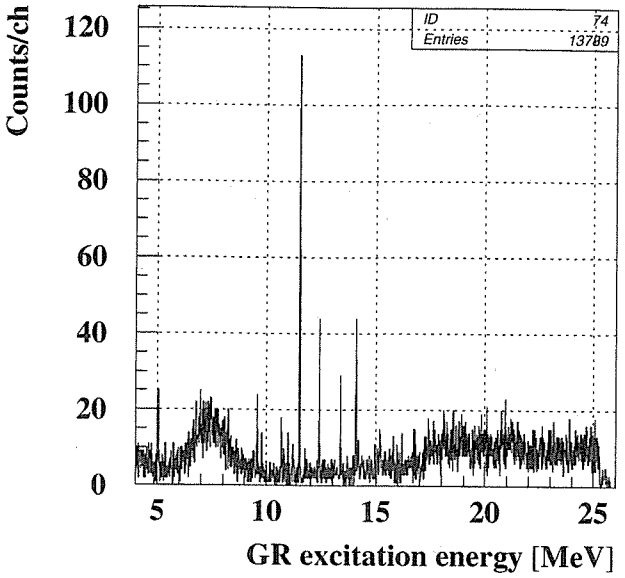
rate table なし

23²
23
64
46
50

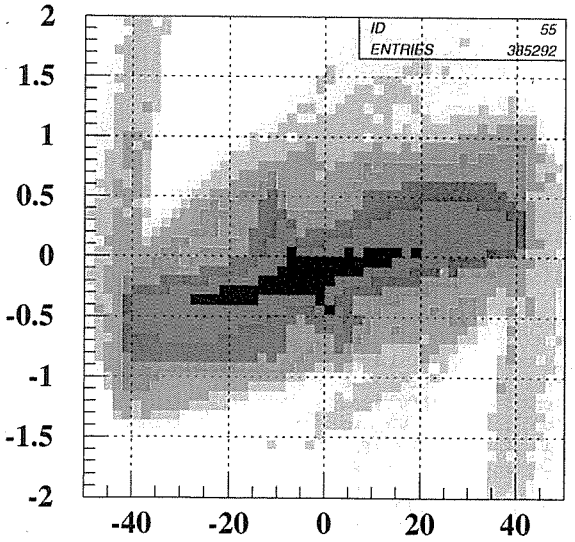
2007/10/16 02.22



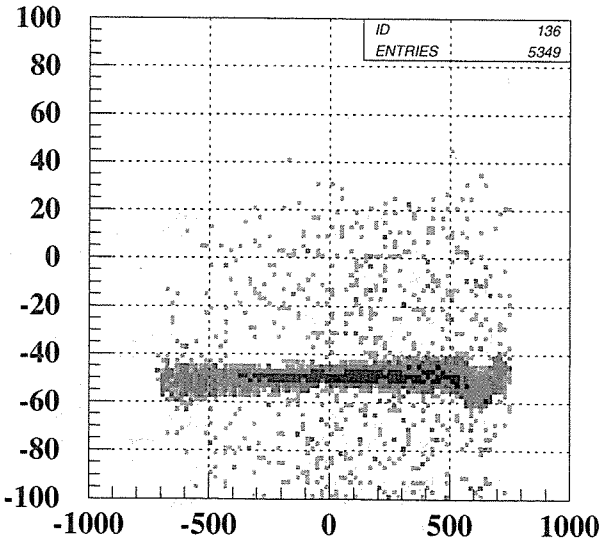
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

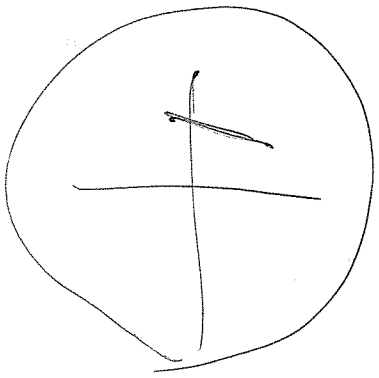
これ、ゼーム軸ずれしてもらう

50

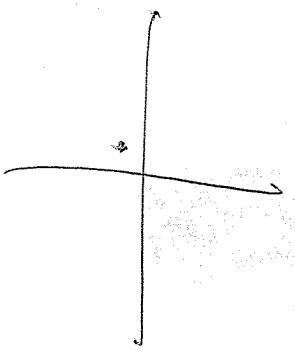
→ R

10/16. 2:55

Q



Dump.



結構いいかも。

rate1

0	Beam Intensity	2.489 nA
1	GR event request	0.361 kcps
2	GR event live	0.000 kcps
3	LAS eventRequest	0.007 kcps
4	LAS event live	0.000 kcps
5	GR clock reqest	9.750 kcps
6	GR clock live	0.000 kcps
7	GR Single	0.000 kcps
8	GR Single Sample	0.000 kcps
9	LAS Single	0.000 kcps
10	LAS SingleSample	0.000 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	0.000 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	0.000 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 0.000 percent
Trig.(LAS) live : 0.000 percent
Clock live : 0.000 percent

rate3

0	BLP CLK req :	9.749 kcps
1	BLP CLK live :	9.413 kcps
2	BLP Trig req :	1.089 kcps
3	BLP Trig live :	1.089 kcps
4	Akimune UP :	0.019 kcps
5	Akimune Down :	0.076 kcps
6	Akimune Left :	0.011 kcps
7	Akimune Right :	0.051 kcps
8	Beam Monitor1 :	0.361 kcps
9	Beam Monitor2 :	0.000 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	8.095 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler up
RUN NUM 1017 B.I. Range 6 nA
RUN START 2007-Oct-16 02:52:51
NOW 2007-Oct-16 02:55:00

Run# 1017 Comment ^{28}Si; 1.86 mg/cm^2 3rd.

Date 10/16

Start 2 : 58

Stop :

GR angle 0 deg

Beam current 2.5 nA

C.I. range 6 nA

Target

☐ ^{16}O mg/cm^2 (☐ice or ☐glass)

☐ ^{24}Mg mg/cm^2

☑ ^{28}Si 1.86 mg/cm^2

☐ ^{32}S mg/cm^2 (☐99.9% ☐nat)

☐ ^{40}Ca mg/cm^2

☐ mg/cm^2

VDC ☐ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☐ SC rot. V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= ℃ TC2= ℃

rate1

0	Beam Intensity	2.552 nA
1	GR event request	1.098 kcps
2	GR event live	1.068 kcps
3	LAS eventRequest	0.030 kcps
4	LAS event live	0.028 kcps
5	GR clock reqest	9.923 kcps
6	GR clock live	9.598 kcps
7	GR Single	1.068 kcps
8	GR Single Sample	1.068 kcps
9	LAS Single	0.028 kcps
10	LAS SingleSample	0.028 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	1.096 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	1.096 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 97.227 percent
Trig.(LAS) live : 93.548 percent
Clock live : 96.724 percent

rate3

0	BLP CLK req :	9.923 kcps
1	BLP CLK live :	9.580 kcps
2	BLP Trig req :	1.108 kcps
3	BLP Trig live :	1.108 kcps
4	Akimune UP :	0.014 kcps
5	Akimune Down :	0.073 kcps
6	Akimune Left :	0.010 kcps
7	Akimune Right :	0.036 kcps
8	Beam Monitor1 :	1.098 kcps
9	Beam Monitor2 :	1.068 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	9.111 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler down
RUN NUM 1017 B.I. Range 6 nA
RUN START 2007-Oct-16 02:58:24
NOW 2007-Oct-16 03:07:52

rate1

0	Beam Intensity	2.629 nA
1	GR event request	1.086 kcps
2	GR event live	1.047 kcps
3	LAS eventRequest	0.022 kcps
4	LAS event live	0.021 kcps
5	GR clock reqest	9.903 kcps
6	GR clock live	9.587 kcps
7	GR Single	1.047 kcps
8	GR Single Sample	1.047 kcps
9	LAS Single	0.021 kcps
10	LAS SingleSample	0.021 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	1.067 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	1.067 kcps
15	LAS-reject	0.000 kcps

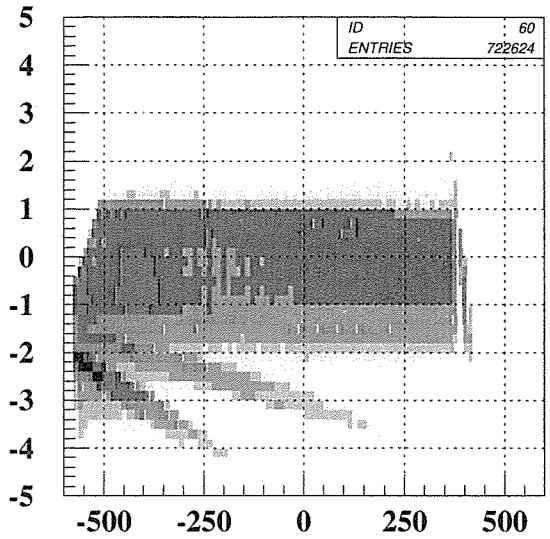
Trig.(GR) live : 96.390 percent
Trig.(LAS) live : 95.455 percent
Clock live : 96.813 percent

rate3

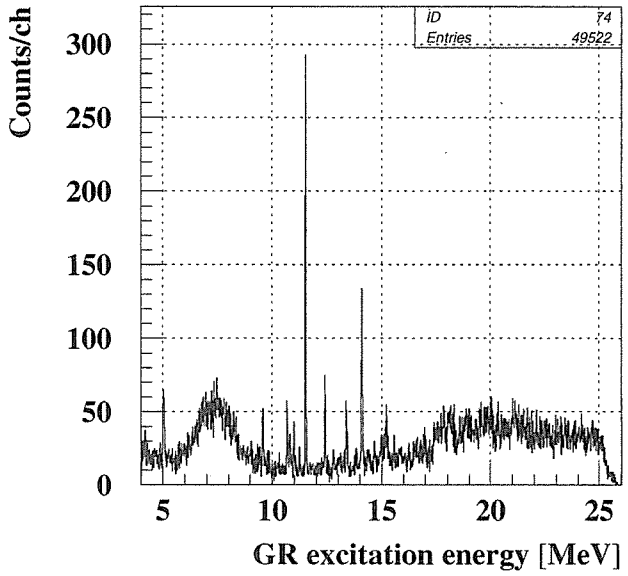
0	BLP CLK req :	9.903 kcps
1	BLP CLK live :	9.560 kcps
2	BLP Trig req :	1.106 kcps
3	BLP Trig live :	1.106 kcps
4	Akimune UP :	0.026 kcps
5	Akimune Down :	0.074 kcps
6	Akimune Left :	0.013 kcps
7	Akimune Right :	0.031 kcps
8	Beam Monitor1 :	1.086 kcps
9	Beam Monitor2 :	1.047 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	9.205 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler down
RUN NUM 1017 B.I. Range 6 nA
RUN START 2007-Oct-16 02:58:24
NOW 2007-Oct-16 03:10:25
scaler 0 ch Scal

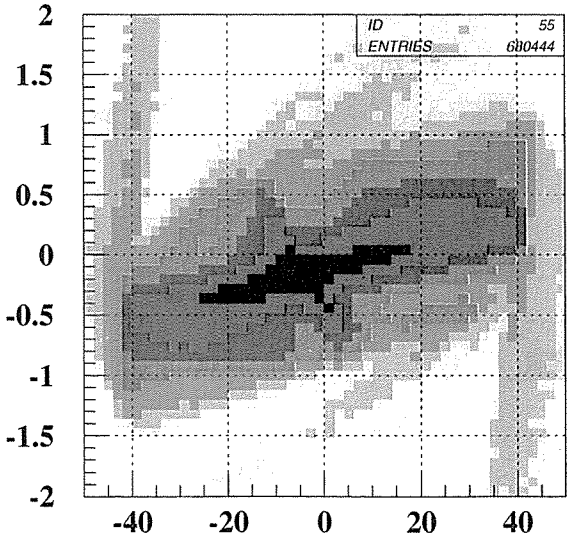
2007/10/16 03.35



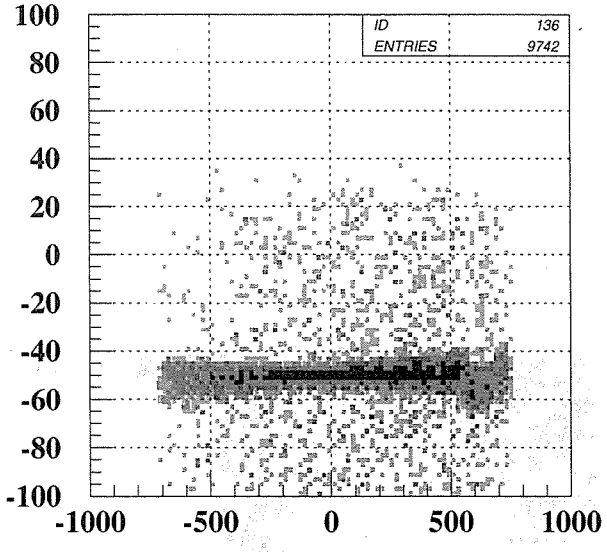
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



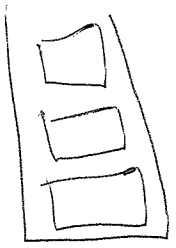
GYPH GR Phi vs Y



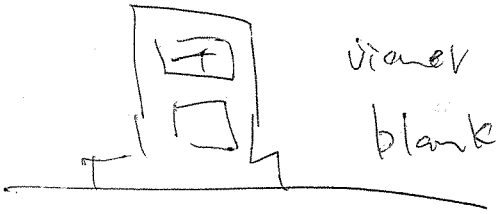
LXY LAS Y vs X

10/16　3:30 ― 氷標本準備

タンク ~~28.5kg 27.3kg~~ 28.20kg.



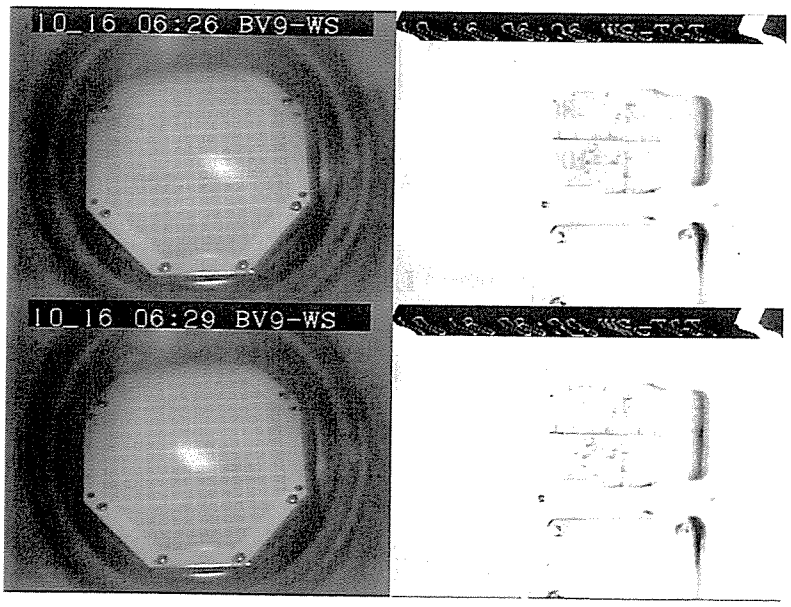
blank
ice
surface



viewer
blank.

Shockingな結末に!!
↳詳しくは標本log note.
簡単に言うと.
・ice が大部分欠落.
・ice が全部 〃 (?)

6:29　spot 確認



調整前

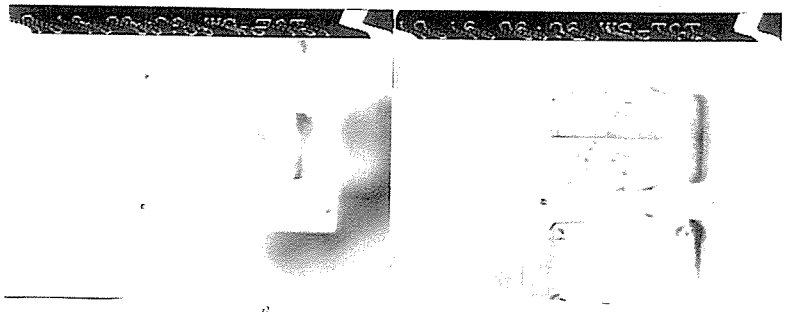
調整後

Sulfur target 入れる

~~Spot 確認~~ 6:38

ITS パルスモータ 30000 step down

^{32}S



低 ← → 高

次頁参照

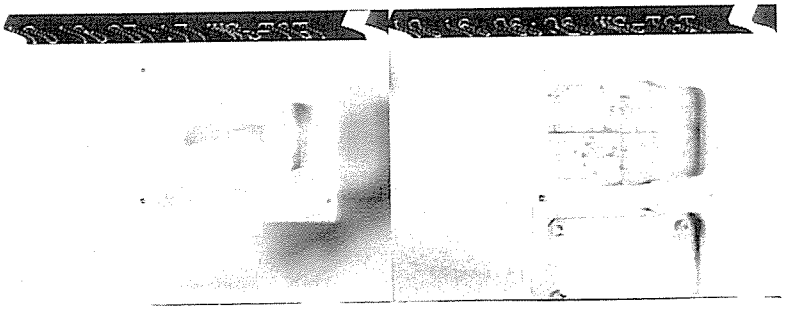
(左図(Beam spot)と比べて3.7mm程下がっている。

3.7mm → 856 step なので、30000−856 = ~~29144~~ 291 step

7:17. Sulfur を Beam line の高さに合わせた。パルスモータ ~~29144~~ 291 step down

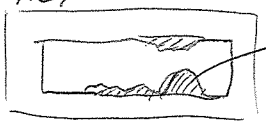
今後この値

^{32}S



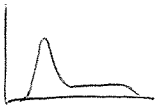
adjusted → ← adjusted

^{32}S の状況。



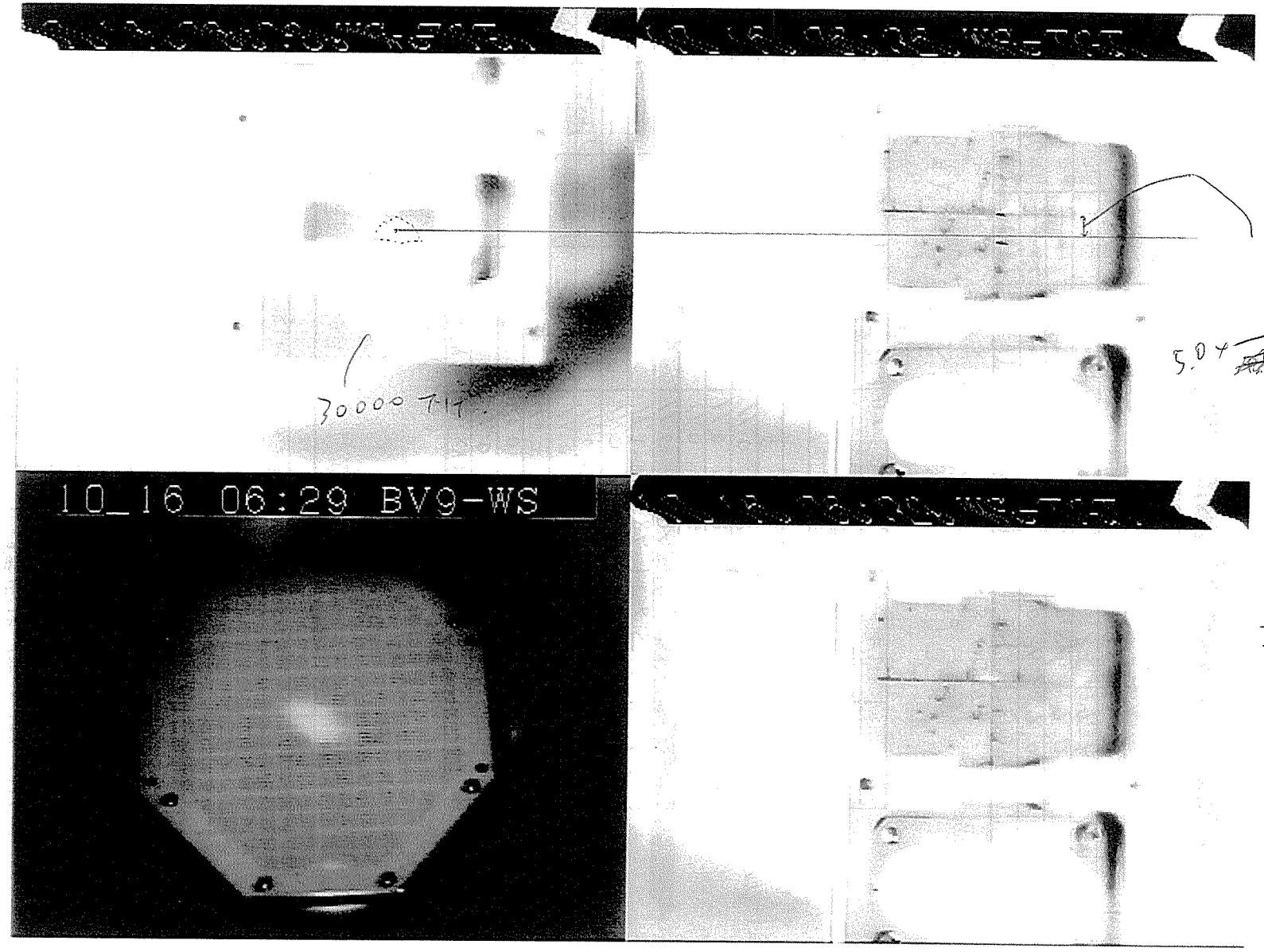
Sulfur の残りに何かが beam と ~~合っ~~ 当たっているもの

P114 と同様の B.G. と、$E_x > 15\,MeV$ に渡る flat な B.G. のみしか見えない。



± 3mm 程度で Target 高さを変えてみる。

→ ~~Flame~~ 周りのフレームに当たり、event rate 急増加する



$5.0 \times \frac{70}{9.5}$ mm

= 3.7mm

= 856 step

⇓

30000 − 856

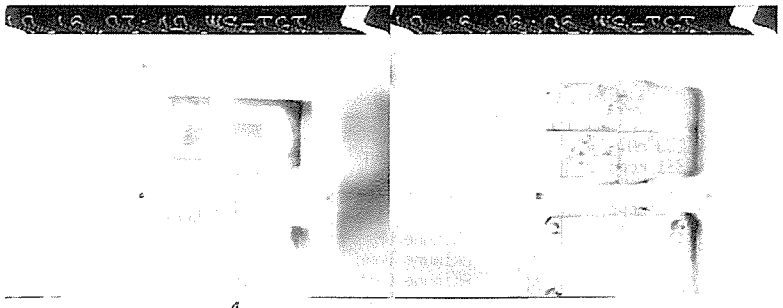
‖

29144 step

ナイ ゴウベし

7:40 ice target を見てみる。

ITS パルスモータ 38100 step down
loc

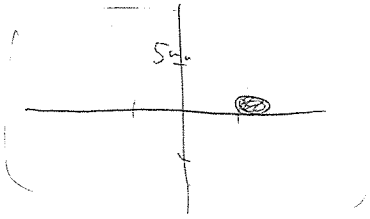


低 ― ― 高

いるのかな…?

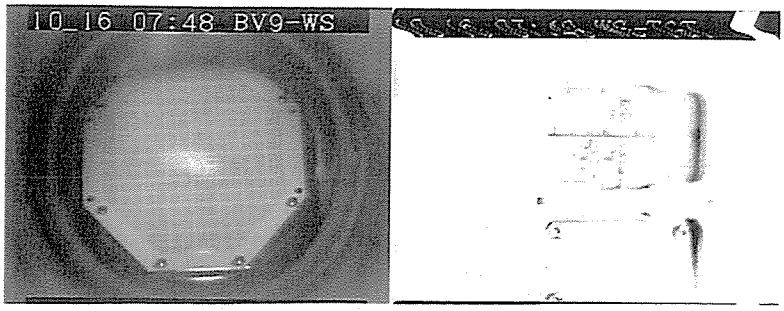
Spectrum は、Sulfur と同様に 良い みた。

~~8:00~~頃 Beam Spot 確認。
7:45 5mm 程(!) 右に大きくずれていた



調整してもらう、

} 調整後。



再び ice, Sulfur に try.
Rate を見ながら event を探してみる.

まず. blank target の rate を check. (7:56)

rate1

0	Beam Intensity	2.259 nA
1	GR event request	0.331 kcps
2	GR event live	0.318 kcps
3	LAS eventRequest	0.001 kcps
4	LAS event live	0.001 kcps
5	GR clock reqest	9.880 kcps
6	GR clock live	9.783 kcps
7	GR Single	0.318 kcps
8	GR Single Sample	0.318 kcps
9	LAS Single	0.001 kcps
10	LAS SingleSample	0.001 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	0.319 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	0.319 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 96.154 percent
Trig.(LAS) live : 100.000 percent
Clock live : 99.020 percent

rate3

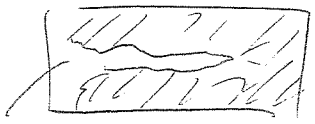
0	BLP CLK req :	9.880 kcps
1	BLP CLK live :	9.538 kcps
2	BLP Trig req :	1.103 kcps
3	BLP Trig live :	1.103 kcps
4	Akimune UP :	0.013 kcps
5	Akimune Down :	0.058 kcps
6	Akimune Left :	0.008 kcps
7	Akimune Right :	0.042 kcps
8	Beam Monitor1 :	0.331 kcps
9	Beam Monitor2 :	0.318 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	7.010 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler up
RUN NUM 1018 B.I. Range 6 nA
RUN START 2007-Oct-16 07:25:58
NOW 2007-Oct-16 07:54:35
scaler 1 ch Scal

LTS を 38100 step down. ice target へ.
→ rate の変動なし. target が落ちていると考えられる.
(or 溶けている)

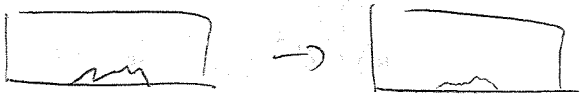
ice target の状況.

- マウント後.



真中に穴が生じていた.

- また. テスト時に ice target の欠片が小さくなっていく様も観測された.



↳ 溶けた可能性もある.
同様に

ITS を 29149 step down. Sulfur target へ.

rate に変動なし! 若干の希望.

rate1

0	Beam Intensity	2.305 nA
1	GR event request	1.608 kcps
2	GR event live	1.468 kcps
3	LAS eventRequest	0.034 kcps
4	LAS event live	0.031 kcps
5	GR clock reqest	9.903 kcps
6	GR clock live	9.439 kcps
7	GR Single	1.468 kcps
8	GR Single Sample	1.468 kcps
9	LAS Single	0.031 kcps
10	LAS SingleSample	0.031 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	1.500 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	1.500 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 91.286 percent
Trig.(LAS) live : 91.429 percent
Clock live : 95.318 percent

rate3

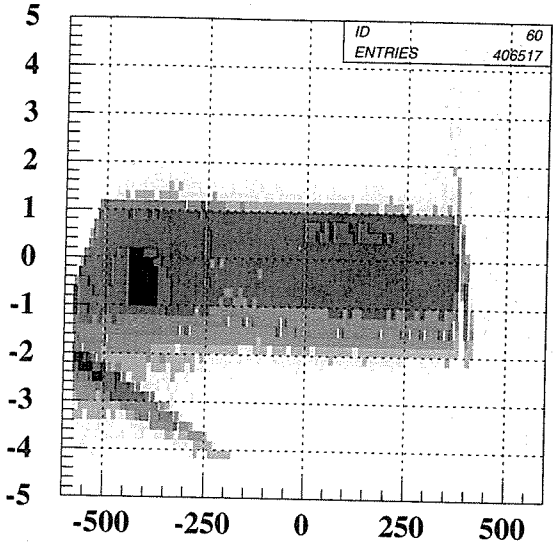
0	BLP CLK req :	9.901 kcps
1	BLP CLK live :	9.558 kcps
2	BLP Trig req :	1.106 kcps
3	BLP Trig live :	1.106 kcps
4	Akimune UP :	0.013 kcps
5	Akimune Down :	0.061 kcps
6	Akimune Left :	0.004 kcps
7	Akimune Right :	0.060 kcps
8	Beam Monitor1 :	1.621 kcps
9	Beam Monitor2 :	1.469 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	8.915 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler down
RUN NUM 1019 B.I. Range 6 nA
RUN START 2007-Oct-16 08:15:21
NOW 2007-Oct-16 08:15:53
scaler 0 ch Sca1

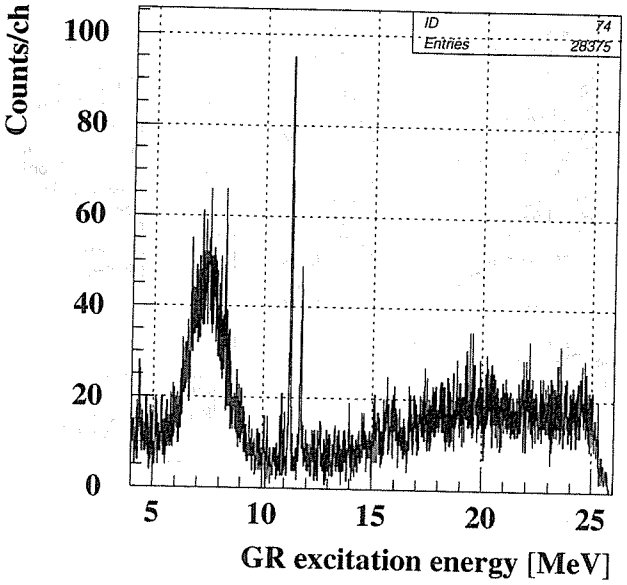
とりあえず とってみよう! (Run 1019)

run 1019.

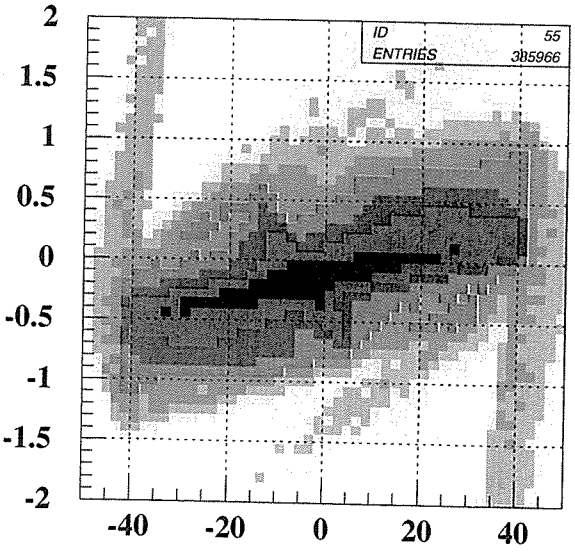
2007/10/16 08.37



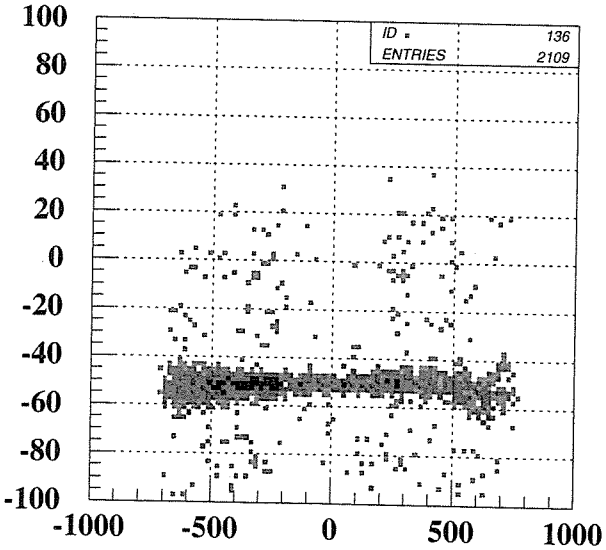
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)

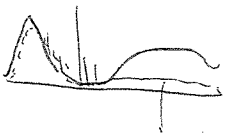


GYPH GR Phi vs Y



LXY LAS Y vs X

ピークが見えました！ 11MeV付近の強いピーク3本. 8MeV強の強いピーク etc. を identify.



Crawleyのデータと比較しても consistent.

5〜10 MeV の大きな B.G.（P. ~~[illegible]~~ 184）は BLP 起因ということなので、
BLP を入れずにデータを取得（Run 1020）
→ B.G. 消えず。 BLP を入れたことによる B.G. ではない

Run# 1019 Comment ^{32}S.

3
1020 は BLP なし。

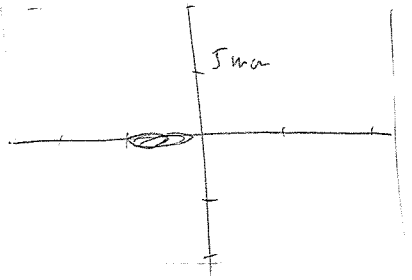
Date 10 / 16
Start 8 : 15
Stop :
GR angle 0 deg
Beam current 2.3 nA
C.I. range 6 nA

Target
☐ ^{16}O mg/cm² (☐ice or ☐glass)
☐ ^{24}Mg mg/cm²
☐ ^{28}Si mg/cm²
☑ ^{32}S 5.9 mg/cm² (☑99.9% ☐nat)
☐ ^{40}Ca mg/cm²
☐ mg/cm²

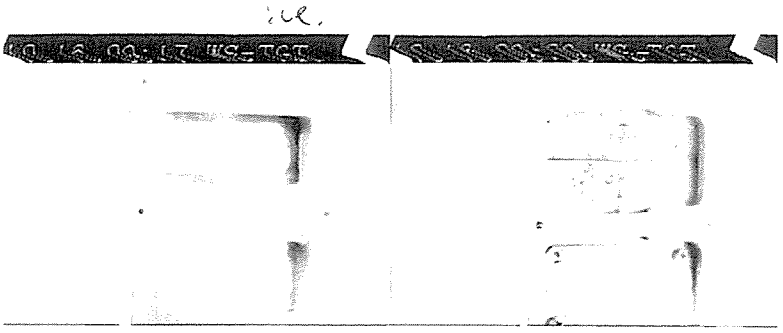
但し一部損傷
ログノートの写真参照

VDC ☑ OK ☐ Tripped F.C. ☑0deg ☐Q1 ☐ SC rot. V
GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V
GR event req. 1.0 kcps accep. 0.9 kcps ratio 90 %
LAS event req. 0.02 kcps accep. 0.018 kcps ratio 91 %
Print out? ☐histograms ☐rate table
Ice target temp. TC1= -187 ℃ TC2= -180 ℃

:00 Beam spot 確認。 25mm 程左にずれていた
調整してもらう。



adjusted →



← adjusted

:10 ice Target in (pulse 37244)

9:20 ice (を入れたはずの) target を blank target と見なして B.G. の spectrum の形状を評価. (Run 1021)

∵ { ・^{32}S と ice は同じフレーム
・ice target はなくなったと思われる. } ため

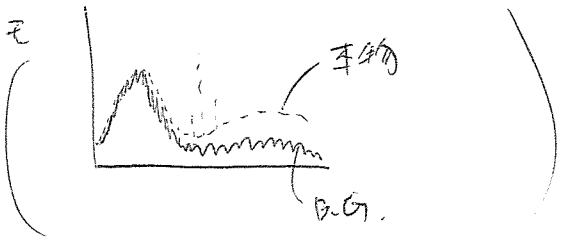
Run# 1021 Comment Blank (ice target の ice がなくなったもの)

Date 10 / 16
Start 9 : 20くらい
Stop 9 : 40
GR angle 0 deg
Beam current nA
C.I. range nA

Target
☐^{16}O mg/cm^2 (☐ice or ☐glass)
☐^{24}Mg mg/cm^2
☐^{28}Si mg/cm^2
☐^{32}S mg/cm^2 (☐99.9% ☐nat)
☐^{40}Ca mg/cm^2
☐ mg/cm^2

VDC ☐ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☐ SC rot. V
GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V
GR event req. kcps accep. kcps ratio %
LAS event req. kcps accep. kcps ratio %
Print out? ☐histograms ☐rate table
Ice target temp. TC1= −169 ℃ TC2= −110 ℃

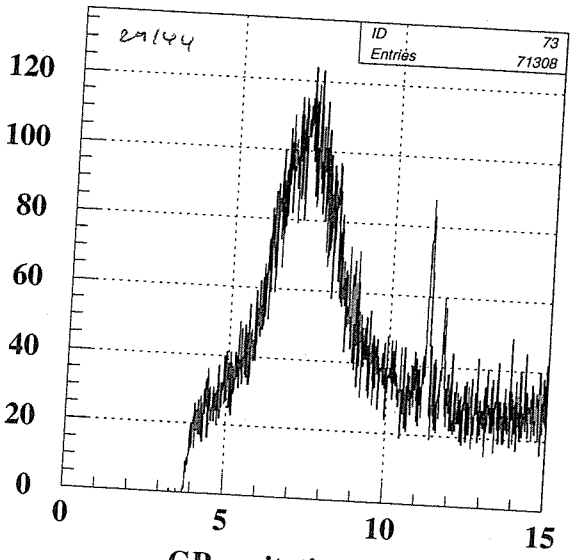
histogram の印刷が Run を止めた後にできない
のでメモ



9:50 Beam spot 確認.
5mm 程 左にずれているので、調整をお願いする.
すぐにずれてしまう様なので、長時間の測定には耐えられないか、
本格的な調整が必要?

^{32}S (enriched) は他に予備がないため、現在の標的でもう少しデータを貯めることにする. 最適な高さが合わないので、±1mm 程度上下に振って spectrum を比較してみたい.
→p.137〜139

^{32}S pos: 29144 step



GEX GR excitation energy

rate1 29144

0	Beam Intensity	3.053 nA
1	GR event request	2.024 kcps
2	GR event live	1.805 kcps
3	LAS eventRequest	0.047 kcps
4	LAS event live	0.041 kcps
5	GR clock reqest	9.790 kcps
6	GR clock live	9.243 kcps
7	GR Single	1.804 kcps
8	GR Single Sample	1.804 kcps
9	LAS Single	0.040 kcps
10	LAS SingleSample	0.040 kcps
11	GR & LAS COIN	0.001 kcps
12	ALL accept Event	1.844 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	1.844 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 89.176 percent
Trig.(LAS) live : 85.714 percent
Clock live : 94.407 percent

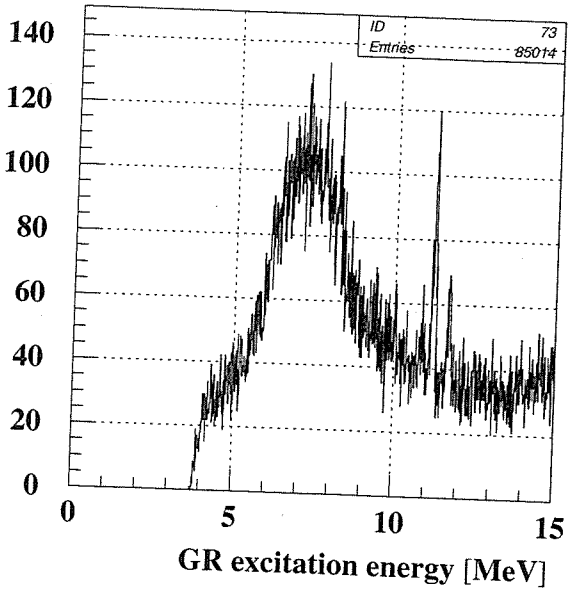
rate3

0	BLP CLK req :	9.791 kcps
1	BLP CLK live :	9.452 kcps
2	BLP Trig req :	1.093 kcps
3	BLP Trig live :	1.093 kcps
4	Akimune UP :	0.030 kcps
5	Akimune Down :	0.086 kcps
6	Akimune Left :	0.016 kcps
7	Akimune Right :	0.086 kcps
8	Beam Monitor1 :	2.024 kcps
9	Beam Monitor2 :	1.805 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	11.393 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler up
RUN NUM 1022 B.I. Range 6 nA
RUN START 2007-Oct-16 10:11:27
NOW 2007-Oct-16 10:12:13
scaler 1 ch Sca1

この間がいいか? → P.139.

28944



GEX GR excitation energy

rate1

0	Beam Intensity	3.326 nA
1	GR event request	2.558 kcps
2	GR event live	2.281 kcps
3	LAS eventRequest	0.071 kcps
4	LAS event live	0.058 kcps
5	GR clock reqest	9.913 kcps
6	GR clock live	9.218 kcps
7	GR Single	2.281 kcps
8	GR Single Sample	2.281 kcps
9	LAS Single	0.058 kcps
10	LAS SingleSample	0.058 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	2.339 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	2.339 kcps
15	LAS-reject	0.000 kcps

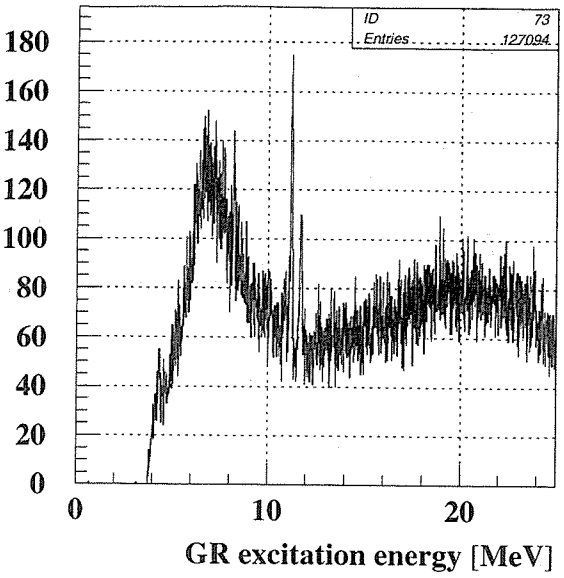
Trig.(GR) live : 89.183 percent
Trig.(LAS) live : 81.944 percent
Clock live : 92.993 percent

rate3

0	BLP CLK req :	9.912 kcps
1	BLP CLK live :	9.569 kcps
2	BLP Trig req :	1.107 kcps
3	BLP Trig live :	1.107 kcps
4	Akimune UP :	0.025 kcps
5	Akimune Down :	0.091 kcps
6	Akimune Left :	0.017 kcps
7	Akimune Right :	0.070 kcps
8	Beam Monitor1 :	2.558 kcps
9	Beam Monitor2 :	2.281 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	12.913 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler down
RUN NUM 1022 B.I. Range 6 nA
RUN START 2007-Oct-16 10:11:27
NOW 2007-Oct-16 10:16:58
scaler 0 ch Sca1

28744



GEX GR excitation energy

rate1

0	Beam Intensity	3.005 nA
1	GR event request	3.259 kcps
2	GR event live	2.923 kcps
3	LAS eventRequest	0.072 kcps
4	LAS event live	0.065 kcps
5	GR clock reqest	9.904 kcps
6	GR clock live	9.016 kcps
7	GR Single	2.922 kcps
8	GR Single Sample	2.922 kcps
9	LAS Single	0.064 kcps
10	LAS SingleSample	0.064 kcps
11	GR & LAS COIN	0.001 kcps
12	ALL accept Event	2.987 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	2.987 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 89.684 percent
Trig.(LAS) live : 90.411 percent
Clock live : 91.033 percent

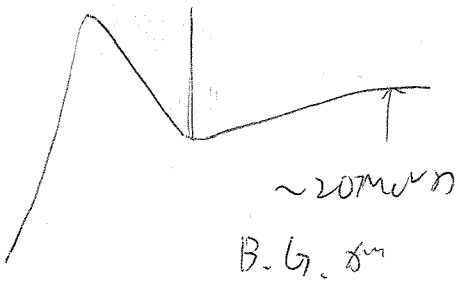
rate3

0	BLP CLK req :	9.903 kcps
1	BLP CLK live :	9.560 kcps
2	BLP Trig req :	1.106 kcps
3	BLP Trig live :	1.106 kcps
4	Akimune UP :	0.029 kcps
5	Akimune Down :	0.098 kcps
6	Akimune Left :	0.017 kcps
7	Akimune Right :	0.073 kcps
8	Beam Monitor1 :	3.282 kcps
9	Beam Monitor2 :	2.886 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	13.218 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler down
RUN NUM 1022 B.I. Range 6 nA
RUN START 2007-Oct-16 10:11:27
NOW 2007-Oct-16 10:18:47
scaler 0 ch Scal

29344

印刷忘れ



~20MeV の
B.G. が
多くなった。

rate1

0	Beam Intensity	2.754 nA
1	GR event request	0.274 kcps
2	GR event live	0.269 kcps
3	LAS eventRequest	0.010 kcps
4	LAS event live	0.010 kcps
5	GR clock reqest	9.907 kcps
6	GR clock live	9.824 kcps
7	GR Single	0.269 kcps
8	GR Single Sample	0.269 kcps
9	LAS Single	0.010 kcps
10	LAS SingleSample	0.010 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	0.279 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	0.279 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 98.208 percent
Trig.(LAS) live : 100.000 percent
Clock live : 99.168 percent

rate3

0	BLP CLK req :	9.908 kcps
1	BLP CLK live :	9.564 kcps
2	BLP Trig req :	1.107 kcps
3	BLP Trig live :	1.107 kcps
4	Akimune UP :	0.029 kcps
5	Akimune Down :	0.073 kcps
6	Akimune Left :	0.009 kcps
7	Akimune Right :	0.042 kcps
8	Beam Monitor1 :	0.274 kcps
9	Beam Monitor2 :	0.269 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	8.565 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler down
RUN NUM 1022 B.I. Range 6 nA
RUN START 2007-Oct-16 10:11:27
NOW 2007-Oct-16 10:22:13
scaler 0 ch Scal

^{32}S の pos: 29044 step

Best. に見える.
今後は 29144 でなく
29044 を使うべし。

ITS の pulse motor の
step数. for ^{32}S.

rate1

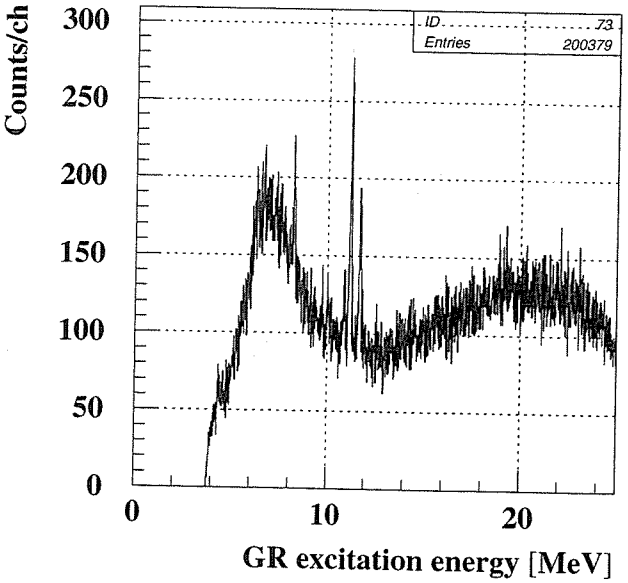
0	Beam Intensity	2.552 nA
1	GR event request	2.757 kcps
2	GR event live	2.471 kcps
3	LAS eventRequest	0.064 kcps
4	LAS event live	0.059 kcps
5	GR clock reqest	9.903 kcps
6	GR clock live	9.152 kcps
7	GR Single	2.471 kcps
8	GR Single Sample	2.471 kcps
9	LAS Single	0.059 kcps
10	LAS SingleSample	0.059 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	2.530 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	2.529 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 89.620 percent
Trig.(LAS) live : 92.308 percent
Clock live : 92.419 percent

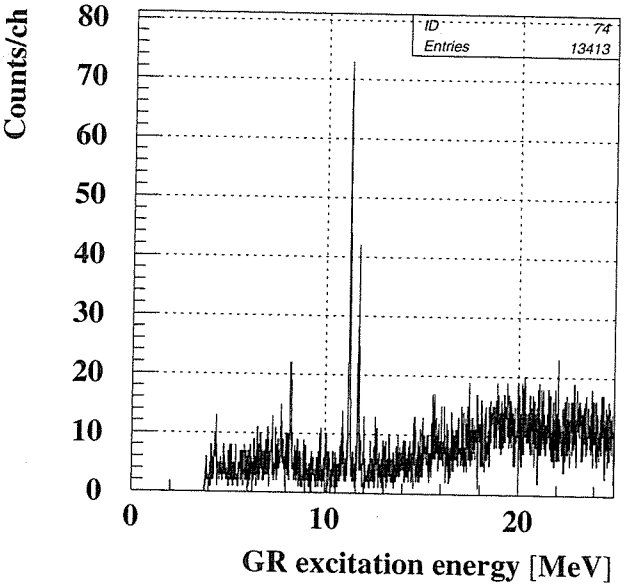
rate3

0	BLP CLK req :	9.903 kcps
1	BLP CLK live :	9.560 kcps
2	BLP Trig req :	1.106 kcps
3	BLP Trig live :	1.106 kcps
4	Akimune UP :	0.023 kcps
5	Akimune Down :	0.075 kcps
6	Akimune Left :	0.005 kcps
7	Akimune Right :	0.031 kcps
8	Beam Monitor1 :	2.757 kcps
9	Beam Monitor2 :	2.471 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	11.133 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler up
RUN NUM 1022 B.I. Range 6 nA
RUN START 2007-Oct-16 10:11:27
NOW 2007-Oct-16 10:25:37
scaler 1 ch Scal



GEX GR excitation energy



GEXG GR excitation energy (Y,TH-gated)

^{32}S

8.13 (1^+)
10.873 ($1^-, 2^+$)
11.14 (1^+)
11.62 (1^+)

identified.

Run# 1022 Comment ^{32}S (p,p') 99.9 % 0deg posi 29044

Date 10 / 16

Start 10 : 30

Stop 11 : 05

GR angle 0 deg

Beam current 2.1 nA

C.I. range 6 nA

Target

☐ ^{16}O mg/cm² (☐ice or ☐glass)

☐ ^{24}Mg mg/cm²

☐ ^{28}Si mg/cm²

☑ ^{32}S 5.9 mg/cm² (☑99.9% ☐nat)

☐ ^{40}Ca mg/cm² の欠片

☐ mg/cm²

VDC ☑ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☐ SC rot. V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☑rate table

Ice target temp. TC1= -172 ℃ TC2= -113 ℃

rate1

0	Beam Intensity	2.199 nA
1	GR event request	3.071 kcps
2	GR event live	2.788 kcps
3	LAS eventRequest	0.077 kcps
4	LAS event live	0.069 kcps
5	GR clock reqest	9.902 kcps
6	GR clock live	9.054 kcps
7	GR Single	2.788 kcps
8	GR Single Sample	2.788 kcps
9	LAS Single	0.069 kcps
10	LAS SingleSample	0.069 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	2.857 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	2.857 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 90.779 percent
Trig.(LAS) live : 88.608 percent
Clock live : 91.439 percent

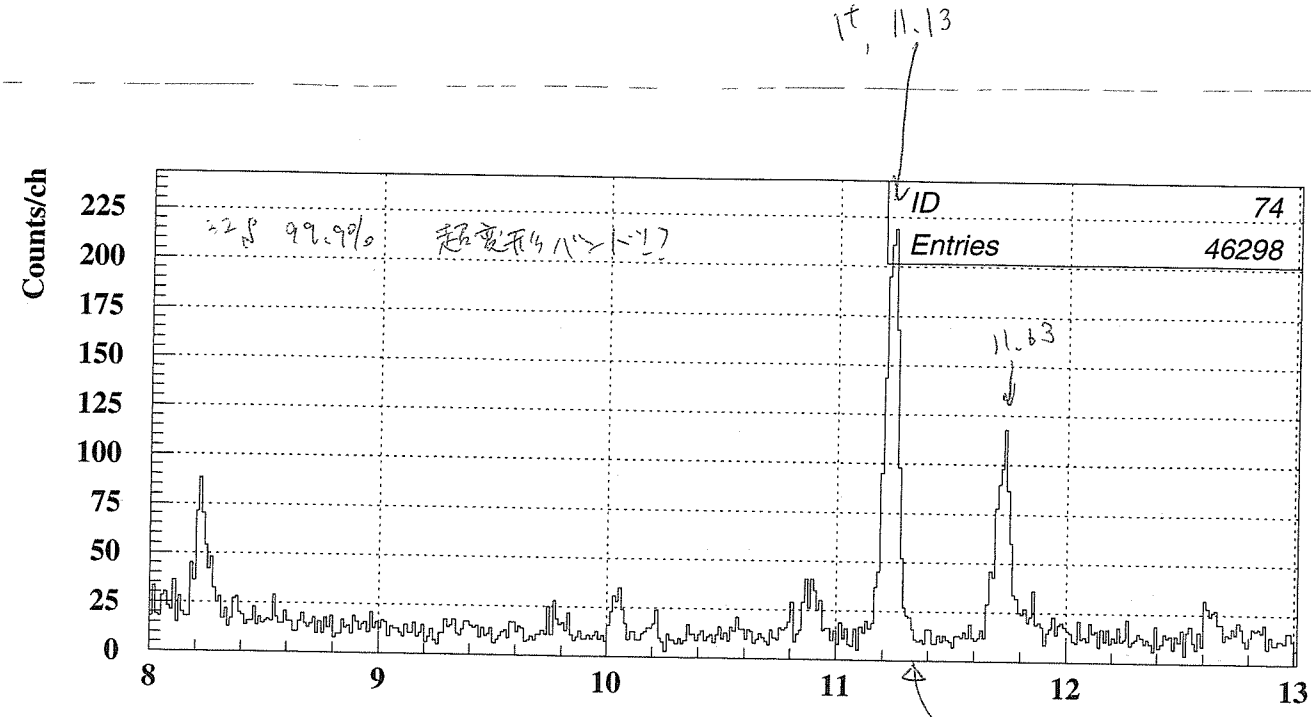
rate3

0	BLP CLK req :	9.903 kcps
1	BLP CLK live :	9.560 kcps
2	BLP Trig req :	1.105 kcps
3	BLP Trig live :	1.105 kcps
4	Akimune UP :	0.011 kcps
5	Akimune Down :	0.038 kcps
6	Akimune Left :	0.009 kcps
7	Akimune Right :	0.023 kcps
8	Beam Monitor1 :	3.071 kcps
9	Beam Monitor2 :	2.788 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	10.427 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler up
RUN NUM 1022 B.I. Range 6 nA
RUN START 2007-Oct-16 10:30:34
NOW 2007-Oct-16 10:32:37
scaler 1 ch Scal

target position:

^{32}S 29044 step で一通り data を取ります。



GEXG GR excitation energy (Y,TH-gated)

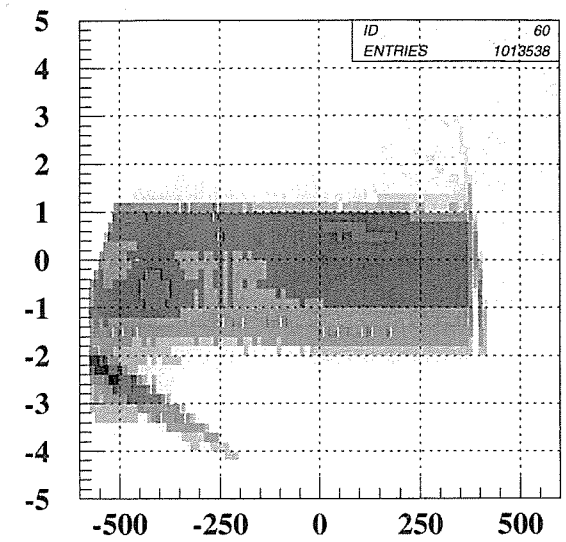
resolution ~ 85k

11:05 微妙に ~~resolution~~ B.G. 増えてきたので
runを切りかえることにする.

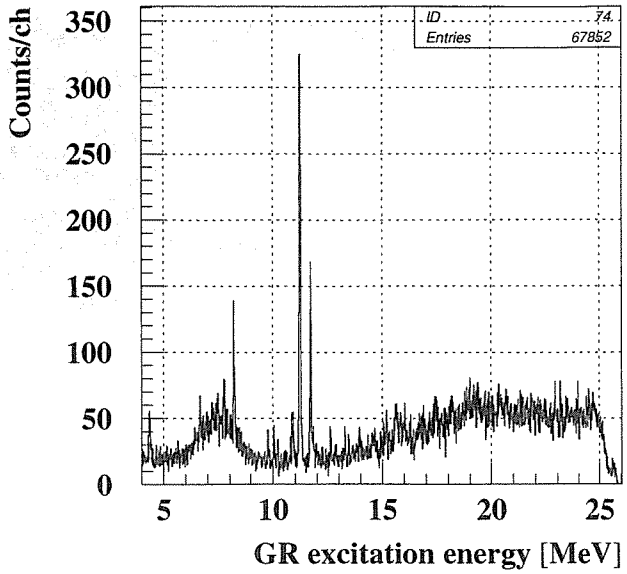
↓

B.G.がかなり多くなっていたので、~~[illegible]~~

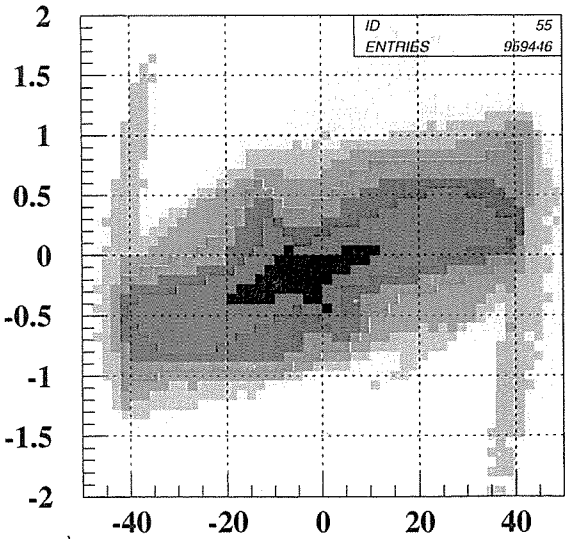
11:13 beam spotの確認. 3~4mm 右にずれていた.
→調整をお願いする.



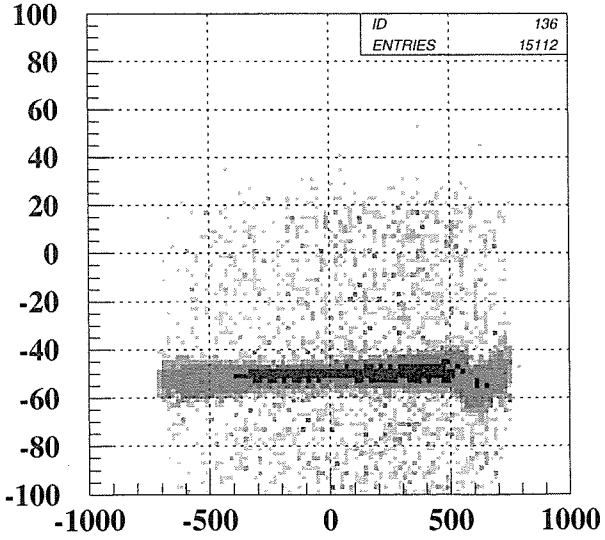
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)

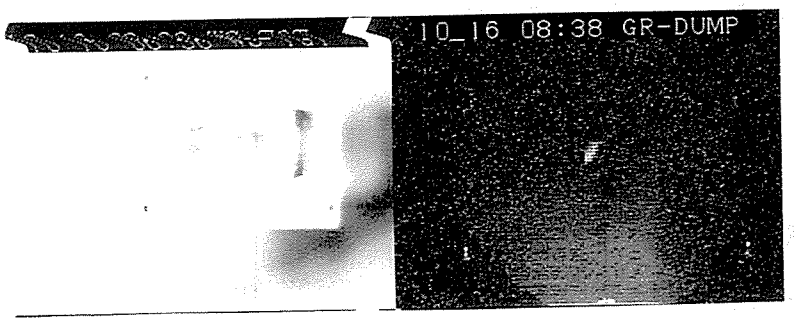


GYPH GR Phi vs Y



LXY LAS Y vs X

run 1022



粒子し煙の enriched surfur.

12:00 target 上手でなくなってしまいました

西入室、 nat surfur 2枚をインストール.

LN2 デュワーを交換.
(10.9L → 30kg).

13:45 終了.

ビーム軸出し.

加速管をもっと左に.

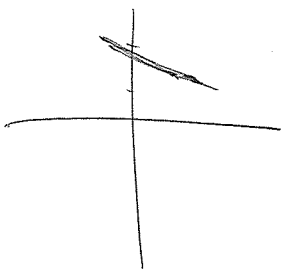
WS Magnet Controller '07/10/16 13:59

/WS\/PIS\

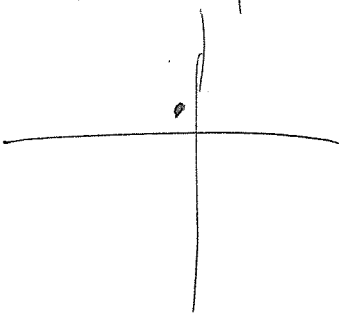
Magnet	Field(Preset|Actual)			Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1			mT		90.20 A				
GR SX			mT		18.20 A				
GR Q2			mT		8.50 A				
GR MQ			mT		0.02 A				
GR MS			mT		0.02 A				
GR D1		869.773	mT		230.64 A				
GR D2		869.814	mT		434.13 A				
GR DSR		109.804	mT		12.36 A				
LAS Q			mT		217.40 A				
LAS D		-747.970	mT		280.10 A				
GR DQ1			mT		50.00 A				
GR DQ2			mT		65.10 A				

Update | update Cycle 10 sec. | Hcopy | Queue acc2424 | eXit

0° Q



dump.



?

rate1

0	Beam Intensity	3.390 nA
1	GR event request	0.776 kcps
2	GR event live	0.000 kcps
3	LAS eventRequest	0.004 kcps
4	LAS event live	0.000 kcps
5	GR clock reqest	9.843 kcps
6	GR clock live	0.000 kcps
7	GR Single	0.000 kcps
8	GR Single Sample	0.000 kcps
9	LAS Single	0.000 kcps
10	LAS SingleSample	0.000 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	0.000 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	0.000 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 0.000 percent
Trig.(LAS) live : 0.000 percent
Clock live : 0.000 percent

rate3

0	BLP CLK req :	9.843 kcps
1	BLP CLK live :	9.502 kcps
2	BLP Trig req :	1.100 kcps
3	BLP Trig live :	1.100 kcps
4	Akimune UP :	0.029 kcps
5	Akimune Down :	0.096 kcps
6	Akimune Left :	0.022 kcps
7	Akimune Right :	0.119 kcps
8	Beam Monitor1 :	0.776 kcps
9	Beam Monitor2 :	0.000 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	11.078 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler up
RUN NUM 1023 B.I. Range 6 nA
RUN START 2007-Oct-16 14:01:19
NOW 2007-Oct-16 14:04:06
scaler 1 ch Sca1

hata hata 投入. (pc112 管理)

run controler aは動かない!?

frc ob 変. a /export/home/runctrl/usr. で

% hata wn out

とすれば ok.

14:12. 水標的中段に 1の hata.

(d 370244 で)

↑

step数.

(下段は. 29144)

WS Magnet Controller '07/10/16 14:44

/WS\/PIS\

Magnet	Field(Preset|Actual)		Current(Preset|Actual)	Status	PS	NMR	FB
GR Q1		mT	90.20 A				
GR SX		mT	18.20 A				
GR Q2		mT	8.50 A				
GR MQ		mT	0.02 A				
GR MS		mT	0.02 A				
GR D1	869.773	mT	230.64 A				
GR D2	869.814	mT	434.13 A				
GR DSR	109.804	mT	12.36 A				
LAS Q		mT	217.40 A				
LAS D	-747.970	mT	280.10 A				
GR DQ1		mT	50.00 A				
GR DQ2		mT	65.10 A				

Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

event request が 15kcps/2nA になったので Stop

Run# 1023 Comment ^{32}S (p,p') natural 0 deg #1

Date 10/16

Start 14 : 23

Stop :

GR angle 0 deg

Beam current 2.3 nA

C.I. range 6 nA

Target

☐ ^{16}O mg/cm^2 (☐ice or ☐glass)

☐ ^{24}Mg mg/cm^2

☐ ^{28}Si mg/cm^2

☑ ^{32}S 5.9 mg/cm^2 (☐99.9% ☑nat) #1

☐ ^{40}Ca mg/cm^2

☐ mg/cm^2

VDC ☐ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☐ SC rot. V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

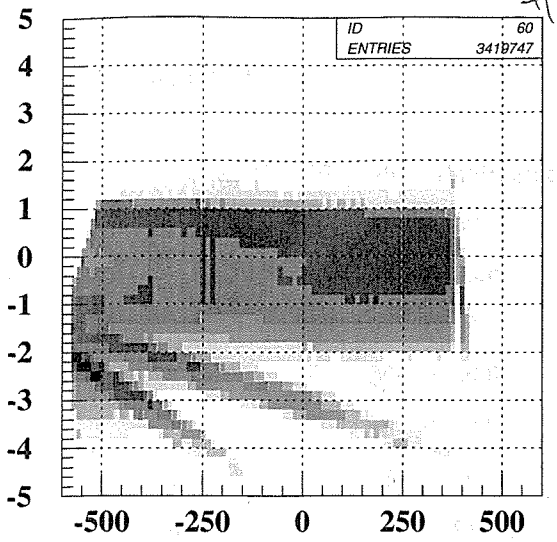
GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

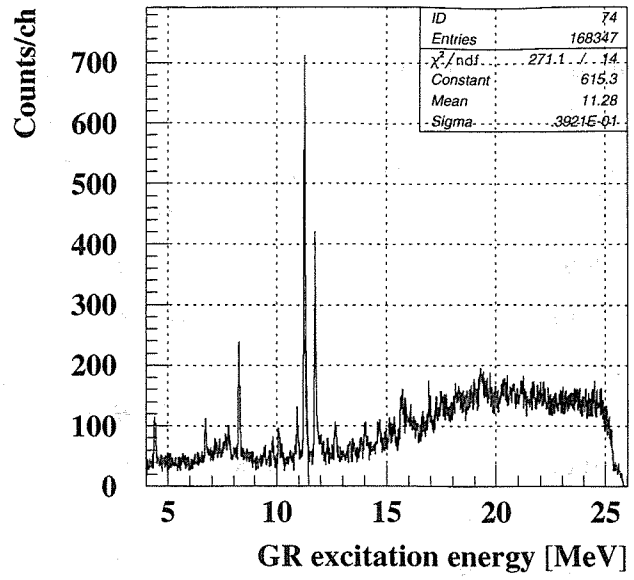
Print out? ☐histograms ☐rate table

Ice target temp. TC1= ℃ TC2= ℃

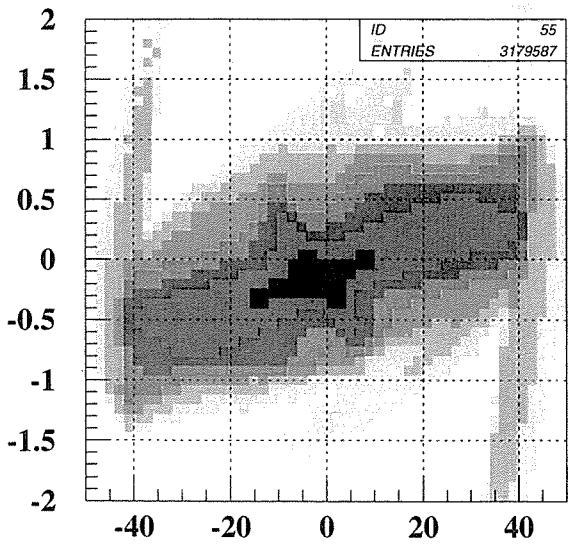
1023



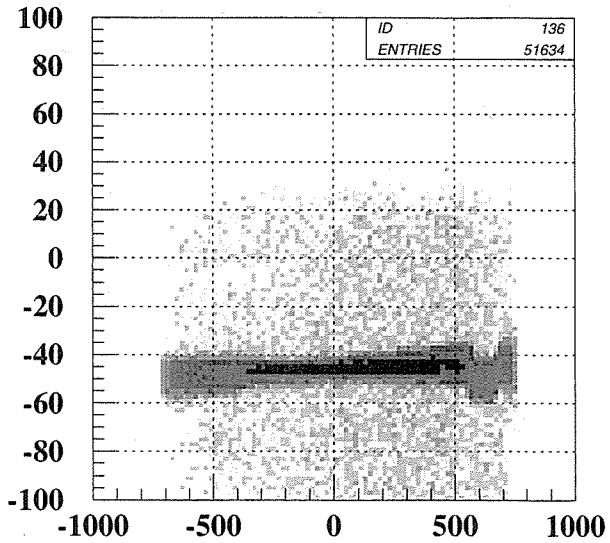
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)

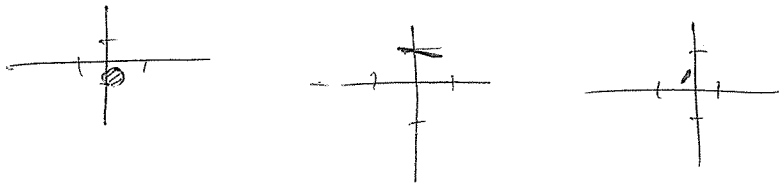


GYPH GR Phi vs Y



LXY LAS Y vs X

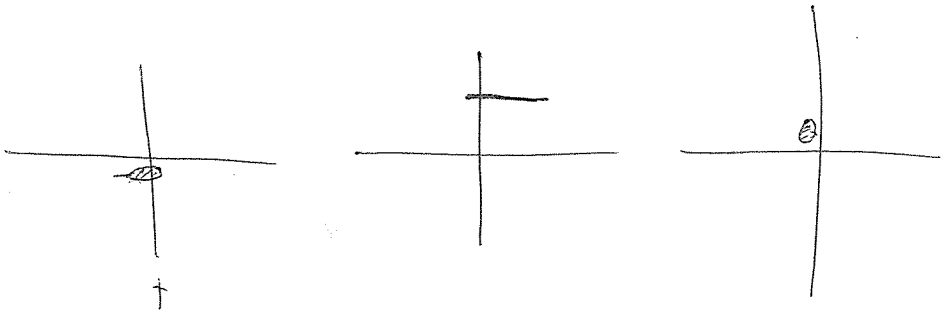
- ^{32}P で 15 kcps / 2nA
- Beam Spot を確認したが問題なし
- Blank target で 80 cps / 2nA ⇒ 非常に高い
- Blank で FP-BV, TAMIQ, Dump を確認



TAMIQ

9 ~300 cps / 2nA

- ^{32}P を入れる



少し左

左に tail を引いている

15:50.

テレビ画面上で ZnS の位置から, target のアライン

上段.	37044
下段.	29184

Run# 1024 Comment 5.9mg/cm² nat S ② step=29184 3rd

Date 10 / 16

Start 16 : 06

Stop 17 : 06

GR angle 0 deg

Beam current 1.9 nA

C.I. range 6 nA

Target

☐ ^{16}O mg/cm² (☐ice or ☐glass)

☐ ^{24}Mg mg/cm²

☐ ^{28}Si mg/cm²

☑ ^{32}S 5.9 mg/cm² (☐99.9% ☑nat) ②

☐ ^{40}Ca mg/cm²

☐ mg/cm²

VDC ☐ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☐ SC rot. V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

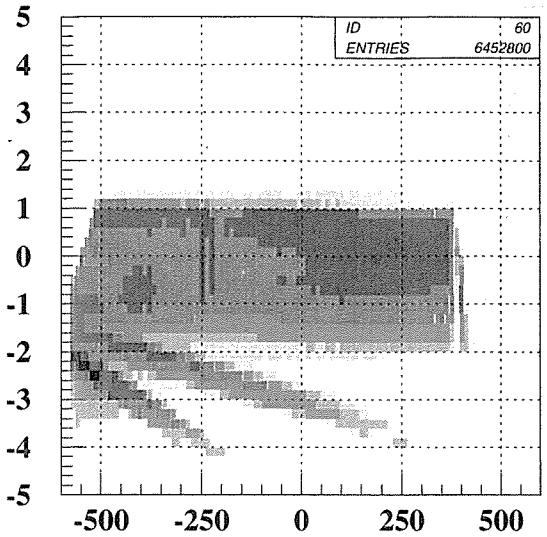
LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

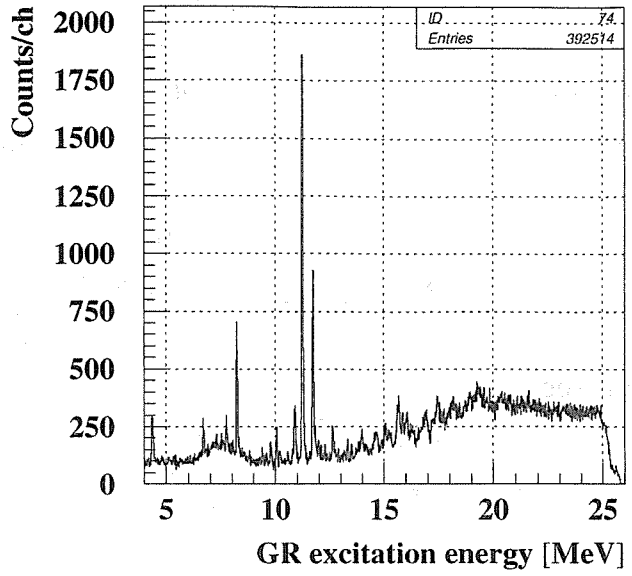
Ice target temp. TC1=-201 ℃ TC2= -123 ℃

#1024

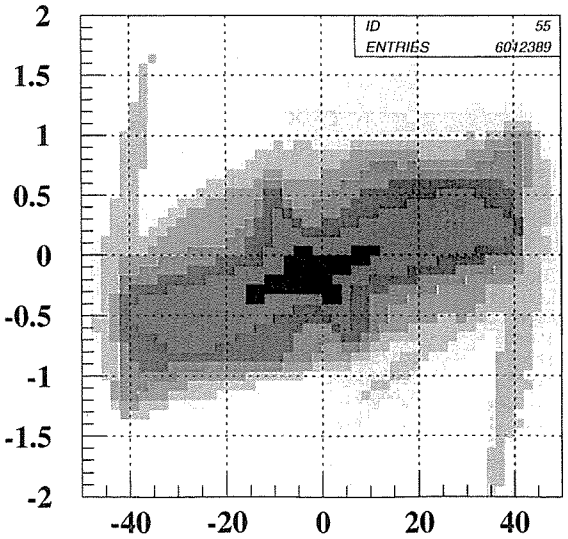
2007/10/16 17.06



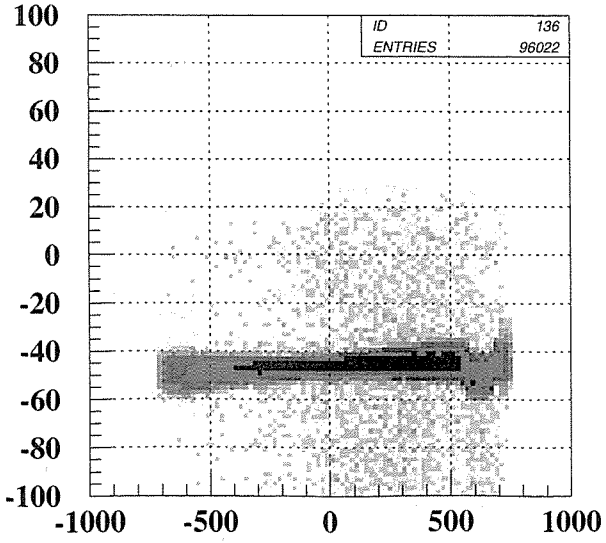
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

Run# 1025 Comment 5.9 mg/cm² wet S ② step = 29184 4th

Date 10 / 16

Start 17 : 07

Stop 18 : 08

GR angle 0 deg

Beam current nA

C.I. range 6 nA

Target

☐ ^{16}O mg/cm² (☐ice or ☐glass)

☐ ^{24}Mg mg/cm²

☐ ^{28}Si mg/cm²

☑ ^{32}S 5.9 mg/cm² (☐99.9% ☑nat) ②

☐ ^{40}Ca mg/cm²

☐ mg/cm²

VDC ☐ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☐ SC rot. V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= ℃ TC2= ℃

rate1

0	Beam Intensity	2.559 nA
1	GR event request	8.528 kcps
2	GR event live	6.479 kcps
3	LAS eventRequest	0.165 kcps
4	LAS event live	0.133 kcps
5	GR clock reqest	9.705 kcps
6	GR clock live	7.492 kcps
7	GR Single	6.479 kcps
8	GR Single Sample	6.479 kcps
9	LAS Single	0.133 kcps
10	LAS SingleSample	0.133 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	6.611 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	6.611 kcps
15	LAS-reject	0.000 kcps

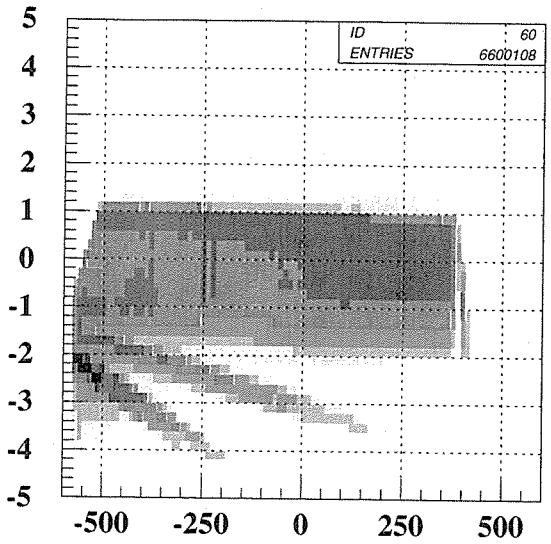
Trig.(GR) live : 75.966 percent
Trig.(LAS) live : 80.233 percent
Clock live : 77.197 percent

rate5

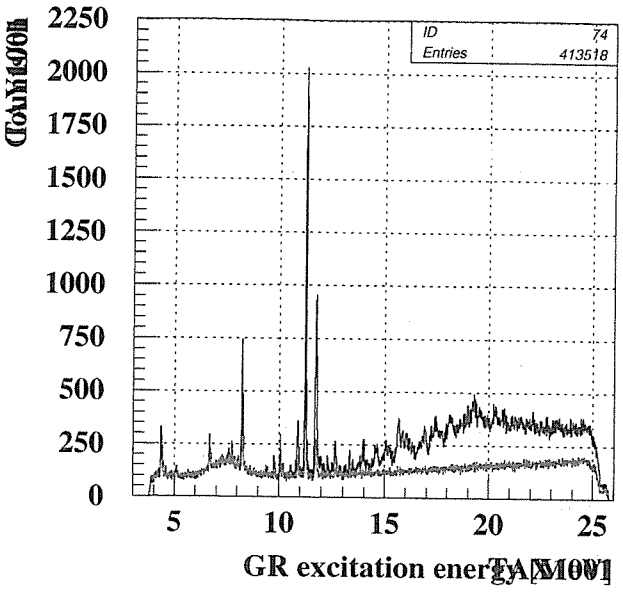
0	BLP CLK req :	9.704 kcps
1	BLP CLK live :	9.369 kcps
2	BLP Trig req :	1.084 kcps
3	BLP Trig live :	1.084 kcps
4	Akimune UP :	0.027 kcps
5	Akimune Down :	0.084 kcps
6	Akimune Left :	0.014 kcps
7	Akimune Right :	0.094 kcps
8	Beam Monitor1 :	8.528 kcps
9	Beam Monitor2 :	6.479 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	18.155 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler down
RUN NUM 1025 B.I. Range 6 nA
RUN START 2007-Oct-16 17:07:44
NOW 2007-Oct-16 18:06:43
scaler 0 ch Sca1

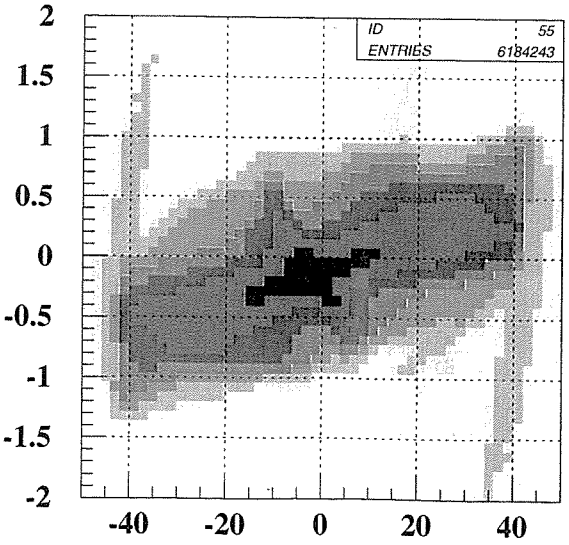
#1025



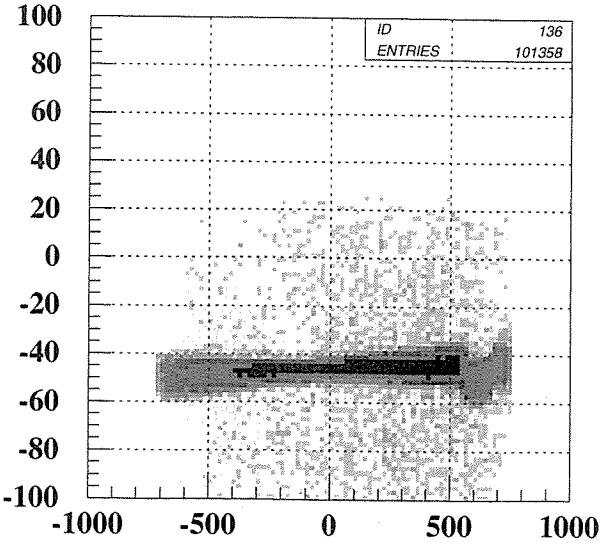
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

Run# 1026 Comment 5.9 mg/cm² nat step: 29184 5th ②

Date 10/16

Start 18 : 12

Stop 19 : 13

GR angle 0 deg

Beam current 2.8 nA

C.I. range 6 nA

Target

☐ ^{16}O mg/cm² (☐ice or ☐glass)

☐ ^{24}Mg mg/cm²

☐ ^{28}Si mg/cm²

☑ ^{32}S 5.9 mg/cm² (☐99.9% ☑nat) ②

☐ ^{40}Ca mg/cm²

☐ mg/cm²

VDC ☐ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☐ SC rot. V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= -202 ℃ TC2= -130 ℃

rate1

0	Beam Intensity	3.080 nA
1	GR event request	9.003 kcps
2	GR event live	6.668 kcps
3	LAS eventRequest	0.210 kcps
4	LAS event live	0.161 kcps
5	GR clock reqest	9.806 kcps
6	GR clock live	7.376 kcps
7	GR Single	6.667 kcps
8	GR Single Sample	6.667 kcps
9	LAS Single	0.160 kcps
10	LAS SingleSample	0.160 kcps
11	GR & LAS COIN	0.001 kcps
12	ALL accept Event	6.829 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	6.829 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 74.065 percent
Trig.(LAS) live : 76.852 percent
Clock live : 75.218 percent

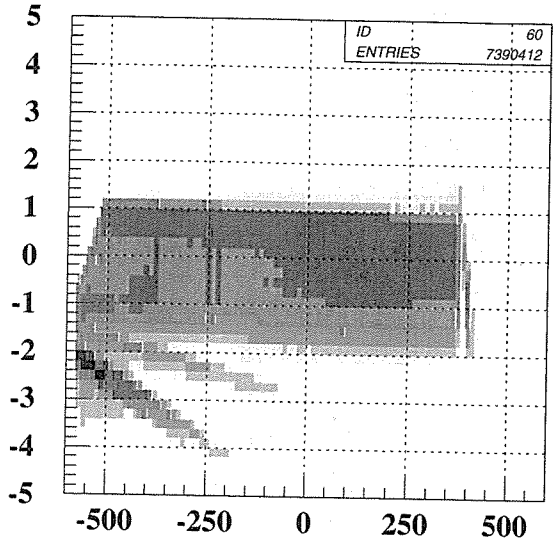
rate3

0	BLP CLK req :	10.122 kcps
1	BLP CLK live :	9.772 kcps
2	BLP Trig req :	1.130 kcps
3	BLP Trig live :	1.130 kcps
4	Akimune UP :	0.024 kcps
5	Akimune Down :	0.106 kcps
6	Akimune Left :	0.023 kcps
7	Akimune Right :	0.043 kcps
8	Beam Monitor1 :	9.279 kcps
9	Beam Monitor2 :	6.928 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	20.636 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

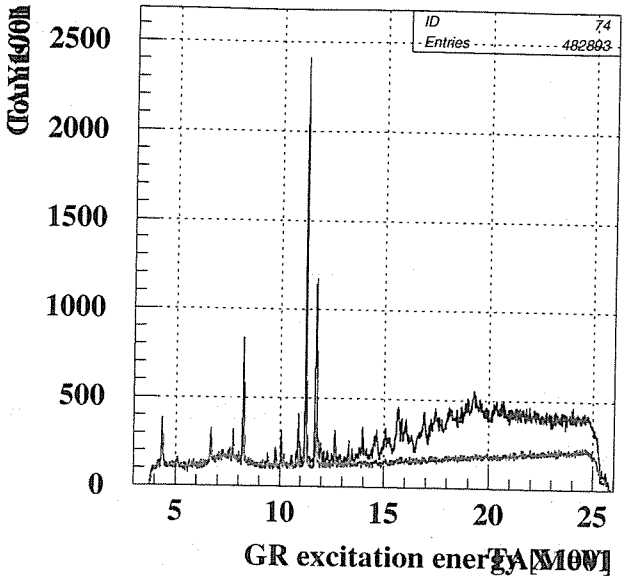
scaler down
RUN NUM. 1026 B.I. Range 6 nA
RUN START 2007-Oct-16 18:12:19
NOW 2007-Oct-16 18:21:36
scaler 0 ch Scal

2007/10/16 19.13

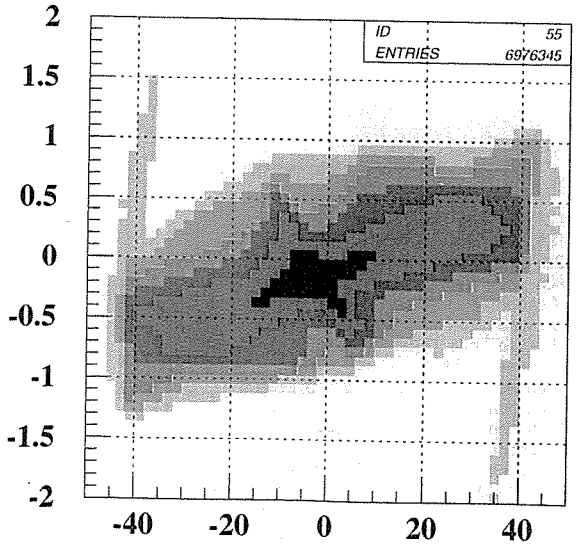
#1026



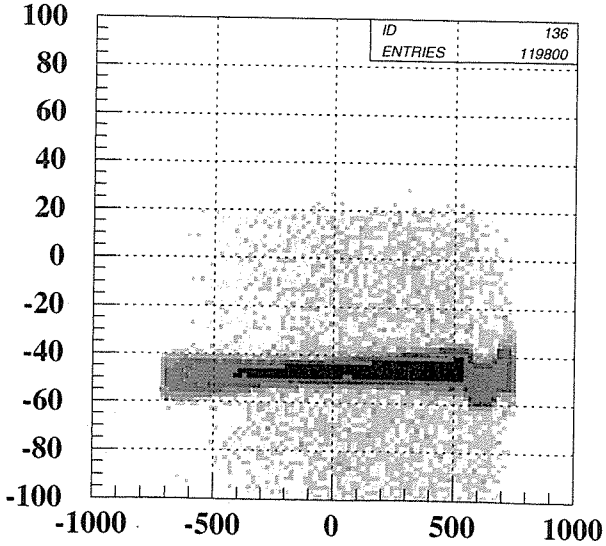
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

S ② 6th

Run# 1027 Comment 5.9 mg/cm² nat step = 29184

Date 10/16
Start 19 : 13
Stop 20 : 13
GR angle 0 deg
Beam current 3.2 nA
C.I. range 6 nA

Target
☐ ^{16}O mg/cm² (☐ice or ☐glass)
☐ ^{24}Mg mg/cm²
☐ ^{28}Si mg/cm²
☑ ^{32}S 5.9 mg/cm² (☐99.9% ☑nat) ②
☐ ^{40}Ca mg/cm²
☐ mg/cm²

VDC ☐ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☐ SC rot. V
GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V
GR event req. kcps accep. kcps ratio %
LAS event req. kcps accep. kcps ratio %
Print out? ☐histograms ☐rate table
Ice target temp. TC1= -201 ℃ TC2= -130 ℃

rate1

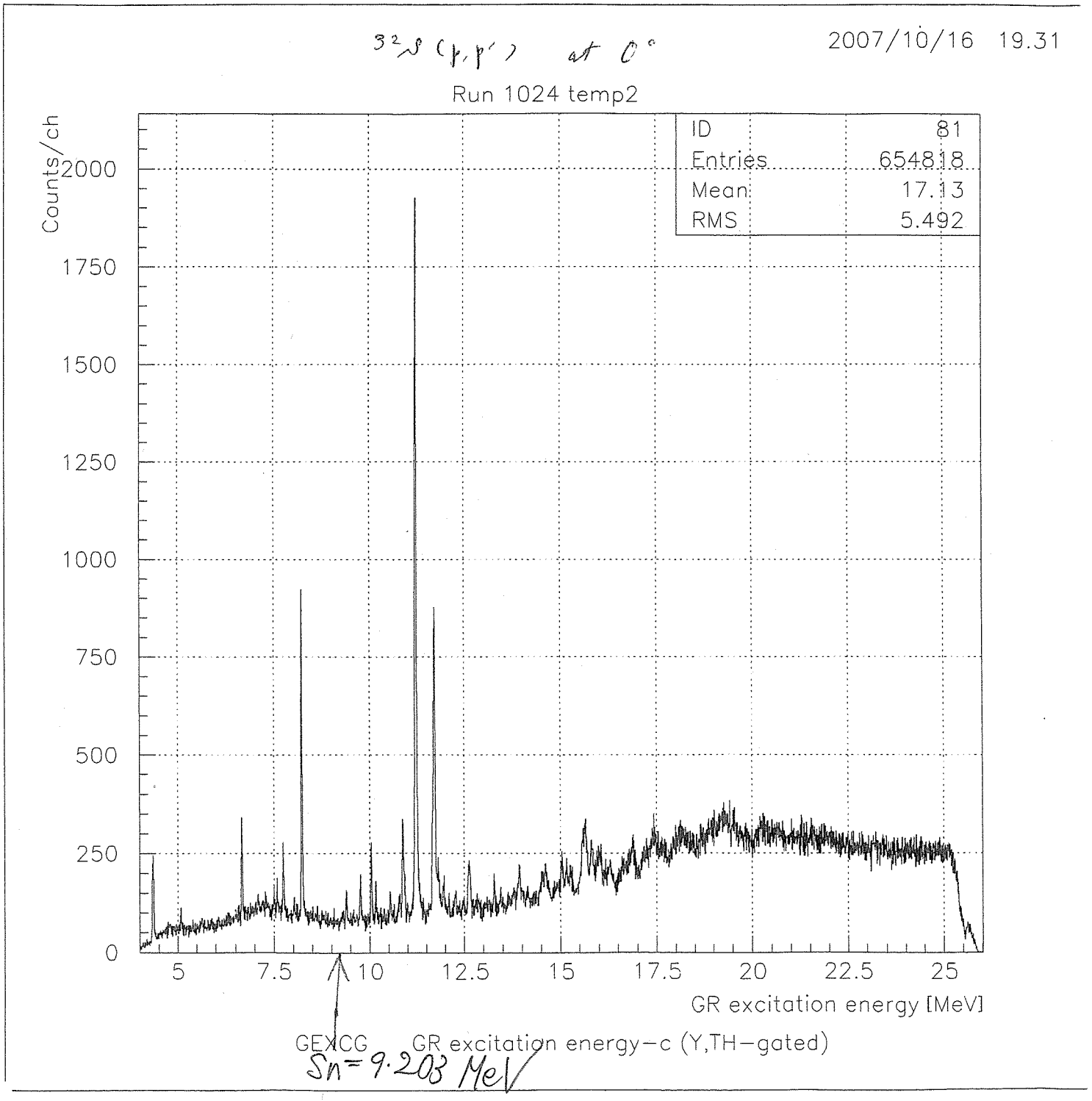
0	Beam Intensity	3.064 nA
1	GR event request	8.823 kcps
2	GR event live	6.584 kcps
3	LAS eventRequest	0.217 kcps
4	LAS event live	0.165 kcps
5	GR clock reqest	9.902 kcps
6	GR clock live	7.589 kcps
7	GR Single	6.584 kcps
8	GR Single Sample	6.584 kcps
9	LAS Single	0.165 kcps
10	LAS SingleSample	0.165 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	6.748 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	6.747 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 74.617 percent
Trig.(LAS) live : 76.018 percent
Clock live : 76.641 percent

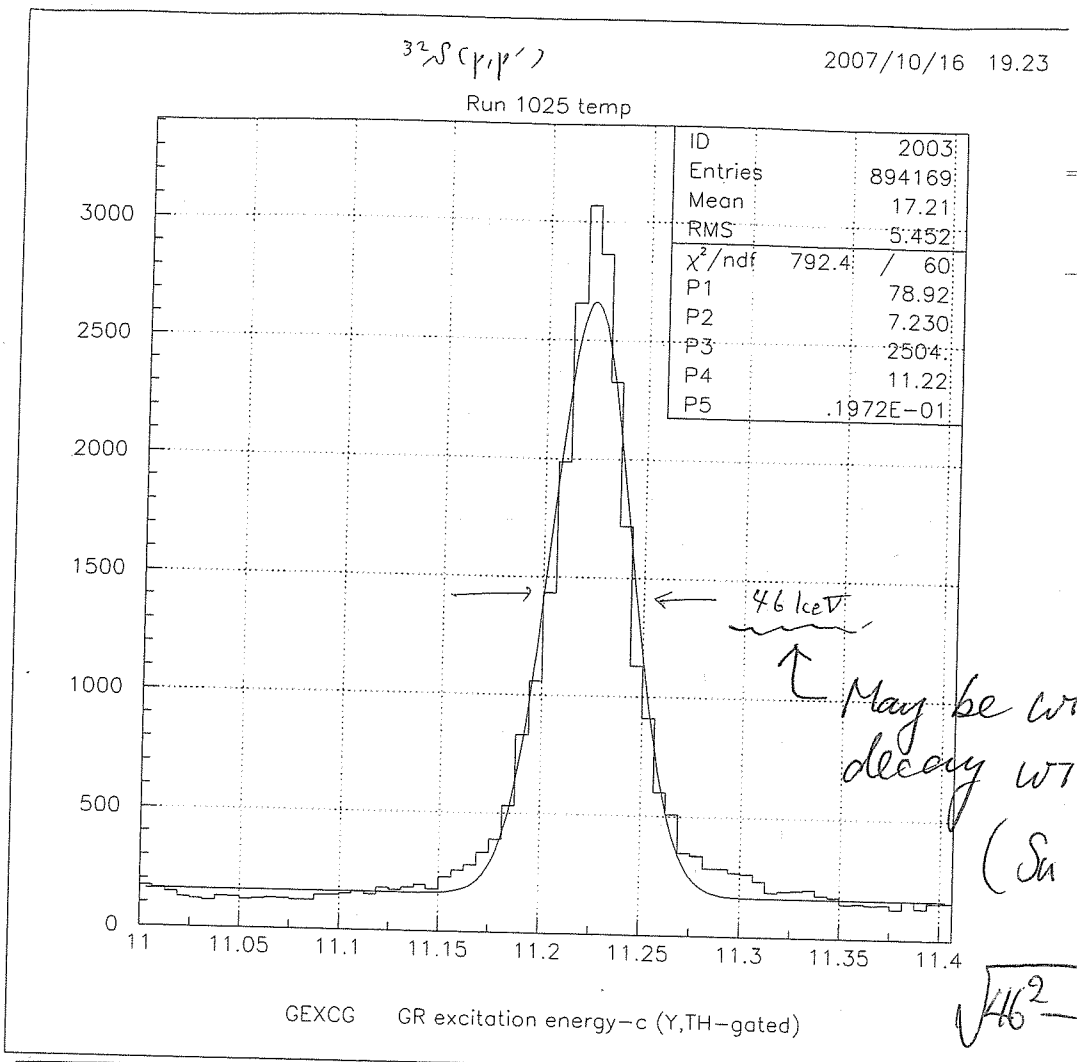
rate3

0	BLP CLK req :	9.903 kcps
1	BLP CLK live :	9.560 kcps
2	BLP Trig req :	1.106 kcps
3	BLP Trig live :	1.106 kcps
4	Akimune UP :	0.025 kcps
5	Akimune Down :	0.076 kcps
6	Akimune Left :	0.017 kcps
7	Akimune Right :	0.079 kcps
8	Beam Monitor1 :	8.823 kcps
9	Beam Monitor2 :	6.584 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	19.824 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler down
RUN NUM 1027 B.I. Range 6 nA
RUN START 2007-Oct-16 19:14:08
NOW 2007-Oct-16 19:16:01
scaler 0 ch Sca1



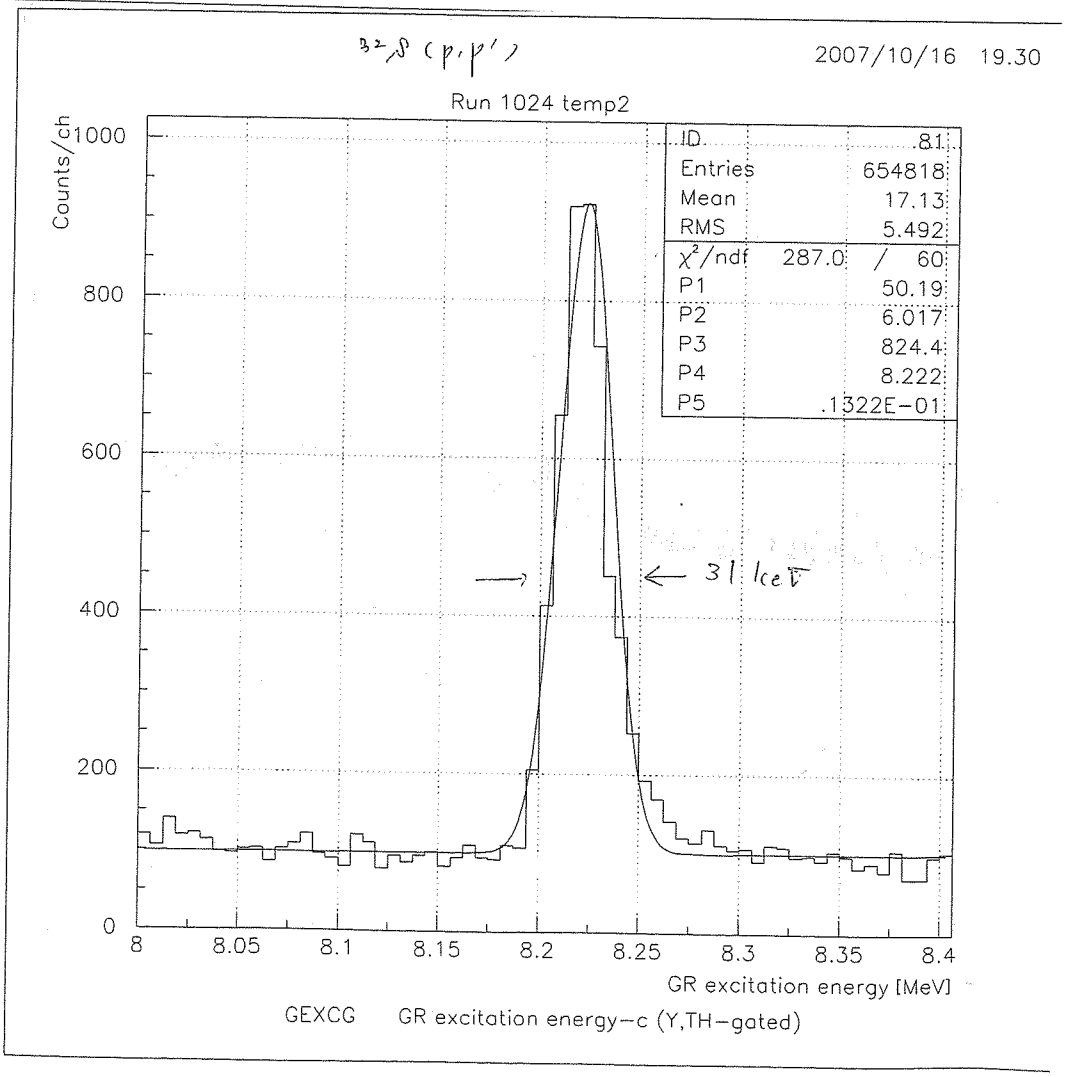
^{32}S (p,p') セミオフライン解析



May be with natural decay width!
(S_n = 9.203 MeV)

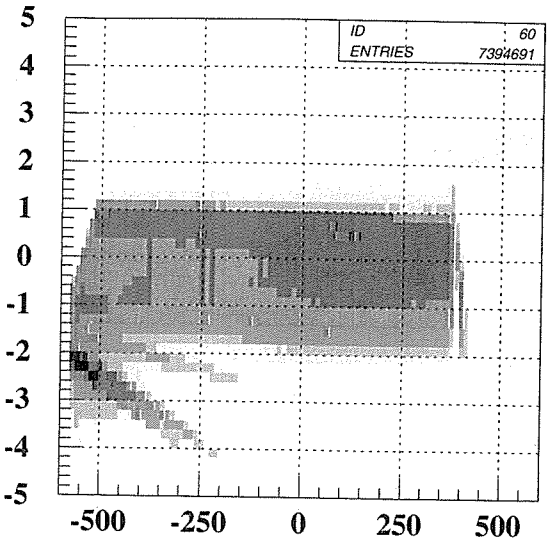
$\sqrt{46^2 - 31^2} = 34$

$\Gamma \sim 34$ keV

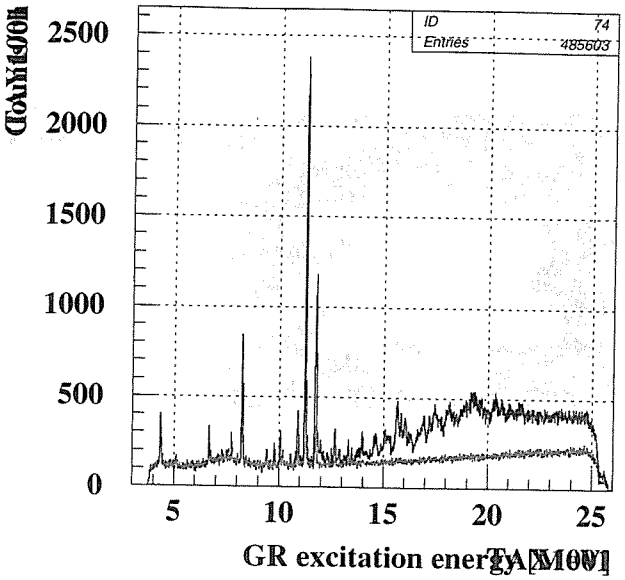


2007/10/16 20.14

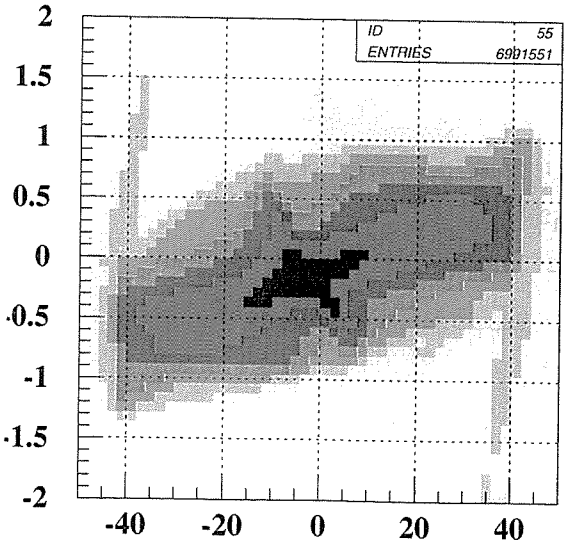
#1027.



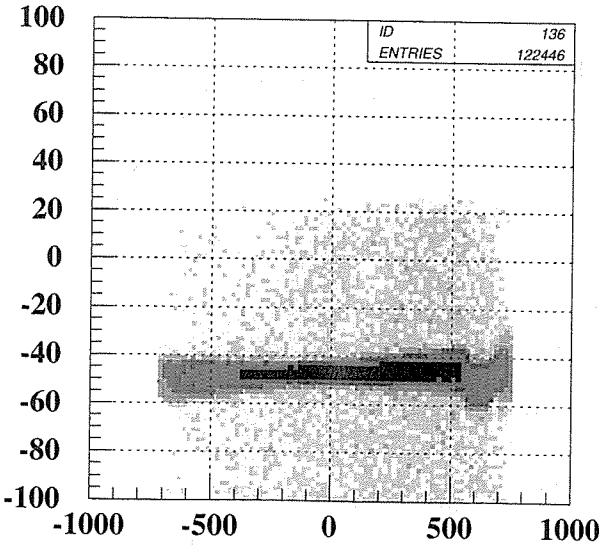
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)

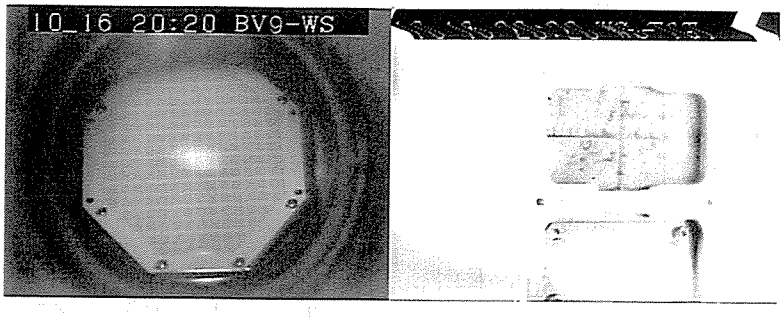


GYPH GR Phi vs Y



LYV LAS Y vs X

20:20 ビーム軸をSnSで確認した
少しずれていたので、調整してもらった。



7th

Run# 1028 Comment 5.9 mg/cm² S ② nat Step = 29189

Date 10 / 16

Start 20 : 29

Stop 21 : 29

GR angle 0 deg

Beam current 2.6 nA

C.I. range 6 nA

Target

☐ ^{16}O mg/cm² (☐ice or ☐glass)

☐ ^{24}Mg mg/cm²

☐ ^{28}Si mg/cm²

☑ ^{32}S 5.9 mg/cm² (☐99.9% ☑nat) ②

☐ ^{40}Ca mg/cm²

☐ mg/cm²

VDC ☐ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☐ SC rot. V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= -201 ℃ TC2= -132 ℃

rate1

0	Beam Intensity	2.674 nA
1	GR event request	8.703 kcps
2	GR event live	6.669 kcps
3	LAS eventRequest	0.184 kcps
4	LAS event live	0.137 kcps
5	GR clock reqest	9.811 kcps
6	GR clock live	7.646 kcps
7	GR Single	6.668 kcps
8	GR Single Sample	6.668 kcps
9	LAS Single	0.136 kcps
10	LAS SingleSample	0.136 kcps
11	GR & LAS COIN	0.001 kcps
12	ALL accept Event	6.804 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	6.804 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 76.624 percent
Trig.(LAS) live : 74.603 percent
Clock live : 77.937 percent

rate3

0	BLP CLK req :	9.811 kcps
1	BLP CLK live :	9.471 kcps
2	BLP Trig req :	1.095 kcps
3	BLP Trig live :	1.095 kcps
4	Akimune UP :	0.021 kcps
5	Akimune Down :	0.076 kcps
6	Akimune Left :	0.014 kcps
7	Akimune Right :	0.034 kcps
8	Beam Monitor1 :	8.703 kcps
9	Beam Monitor2 :	6.669 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	18.529 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

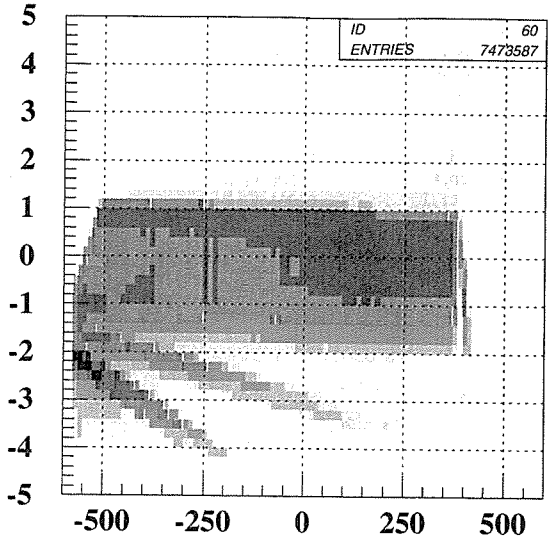
scaler up
RUN NUM 1028 B.I. Range 6 nA
RUN START 2007-Oct-16 20:29:16
NOW 2007-Oct-16 20:32:20
scaler 1 ch Scal

20:46 GR VDC のリークカレントをチェック.

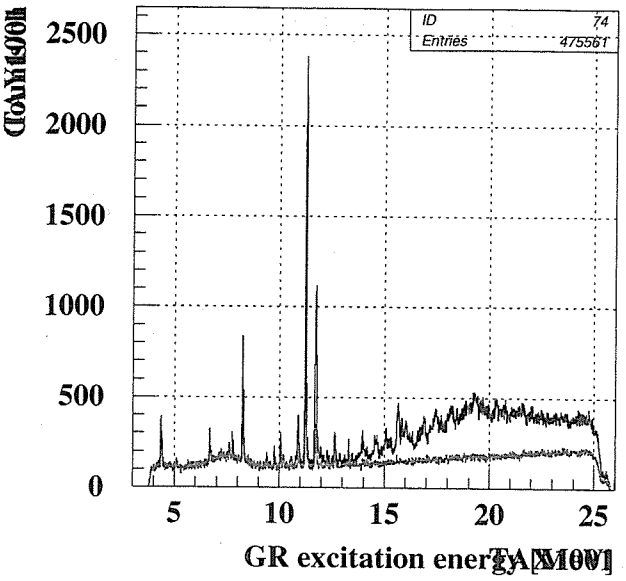
Cath = 2.67μA.

#1028

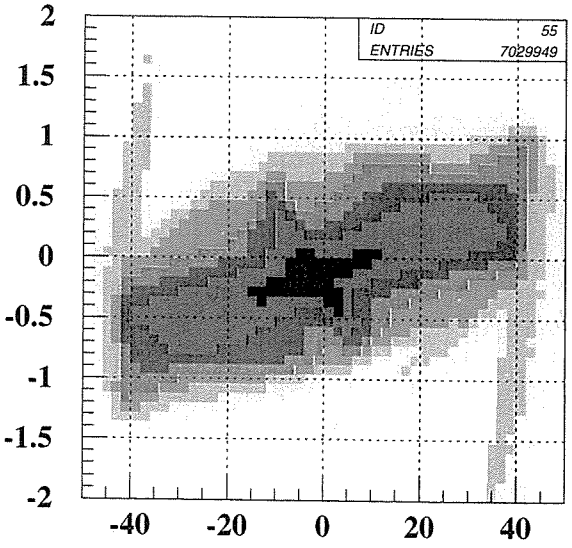
2007/10/16 21.29



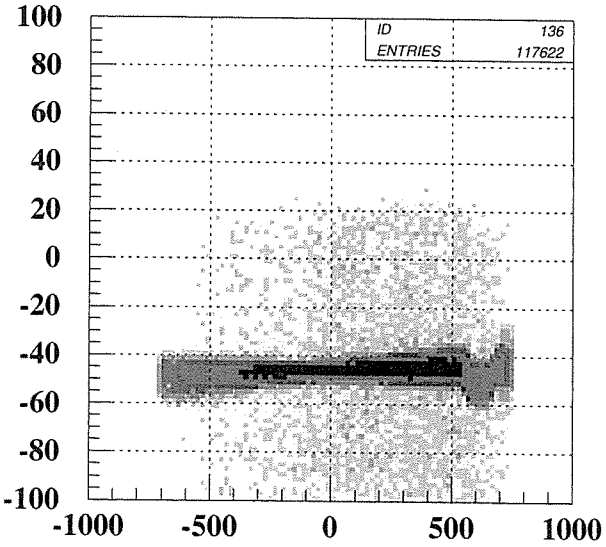
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

target 温度上がった. 8th

Run# 1029 Comment 5.9 mg/cm² S ② nat, Step=29184

Date 10/16

Start 21 : 31

Stop 22 : 30

GR angle 0 deg

Beam current 2.6 nA

C.I. range 6 nA

Target

☐ ^{16}O mg/cm² (☐ice or ☐glass)

☐ ^{24}Mg mg/cm²

☐ ^{28}Si mg/cm²

☑ ^{32}S 5.9 mg/cm² (☐99.9% ☑nat) ②

☐ ^{40}Ca mg/cm²

☐ mg/cm²

VDC ☐ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☐ SC rot. V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= -165 ℃ TC2= -119 ℃

rate1

0	Beam Intensity	2.545 nA
1	GR event request	8.029 kcps
2	GR event live	6.454 kcps
3	LAS eventRequest	0.160 kcps
4	LAS event live	0.126 kcps
5	GR clock reqest	10.226 kcps
6	GR clock live	8.268 kcps
7	GR Single	6.454 kcps
8	GR Single Sample	6.454 kcps
9	LAS Single	0.126 kcps
10	LAS SingleSample	0.126 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	6.580 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	6.580 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 80.383 percent
Trig.(LAS) live : 78.481 percent
Clock live : 80.855 percent

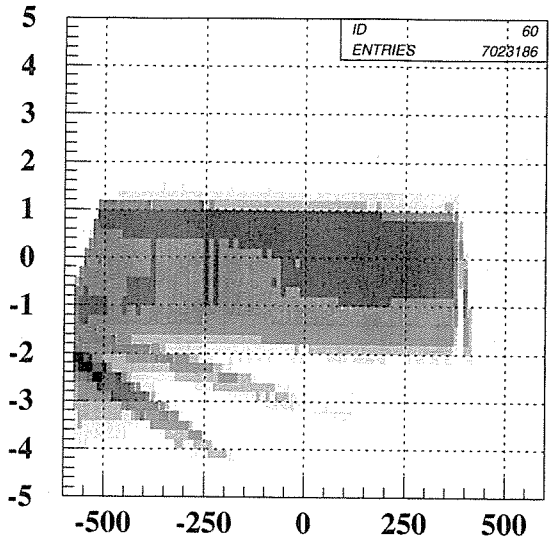
rate3

0	BLP CLK req :	10.226 kcps
1	BLP CLK live :	9.872 kcps
2	BLP Trig req :	1.142 kcps
3	BLP Trig live :	1.142 kcps
4	Akimune UP :	0.016 kcps
5	Akimune Down :	0.082 kcps
6	Akimune Left :	0.011 kcps
7	Akimune Right :	0.043 kcps
8	Beam Monitor1 :	8.029 kcps
9	Beam Monitor2 :	6.454 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	17.164 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

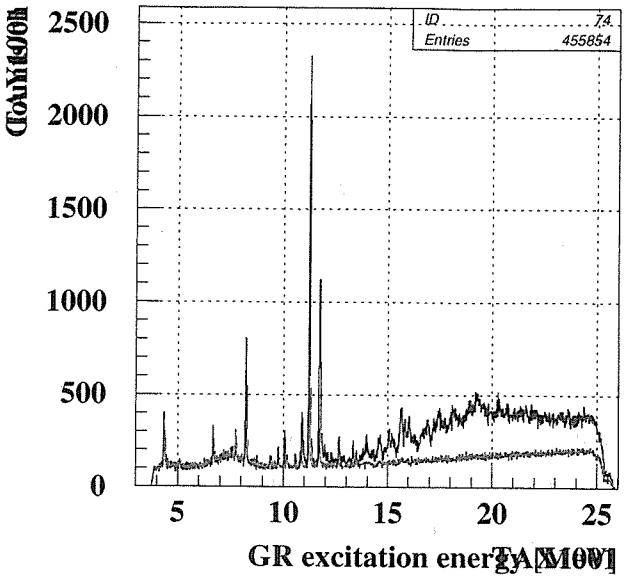
scaler down
RUN NUM 1029 B.I. Range 6 nA
RUN START 2007-Oct-16 21:31:29
NOW 2007-Oct-16 21:32:09
scaler 0 ch Sca1

1029

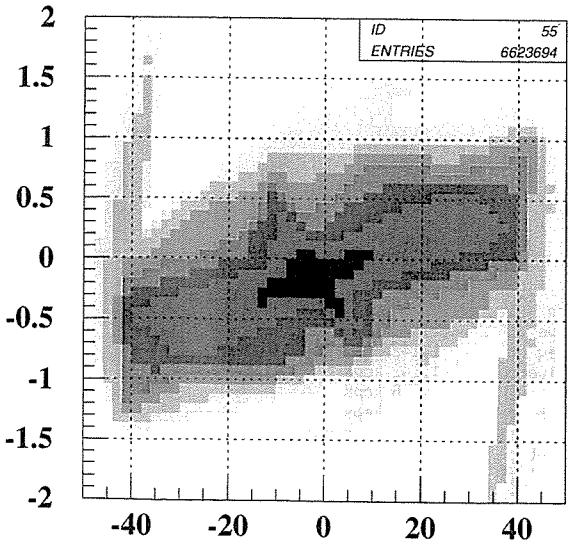
2007/10/16 22.30



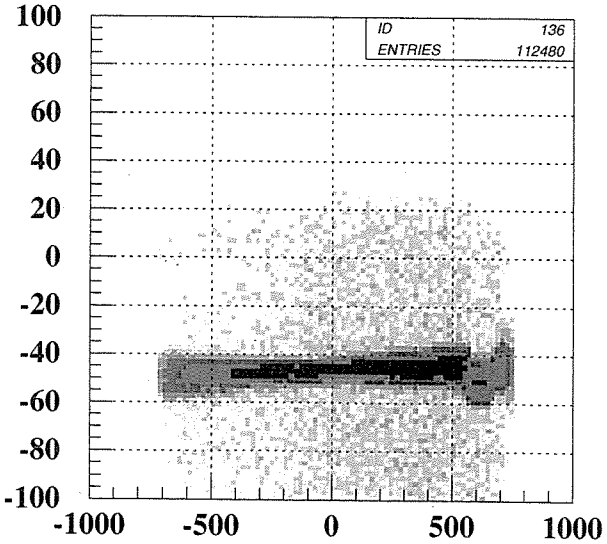
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

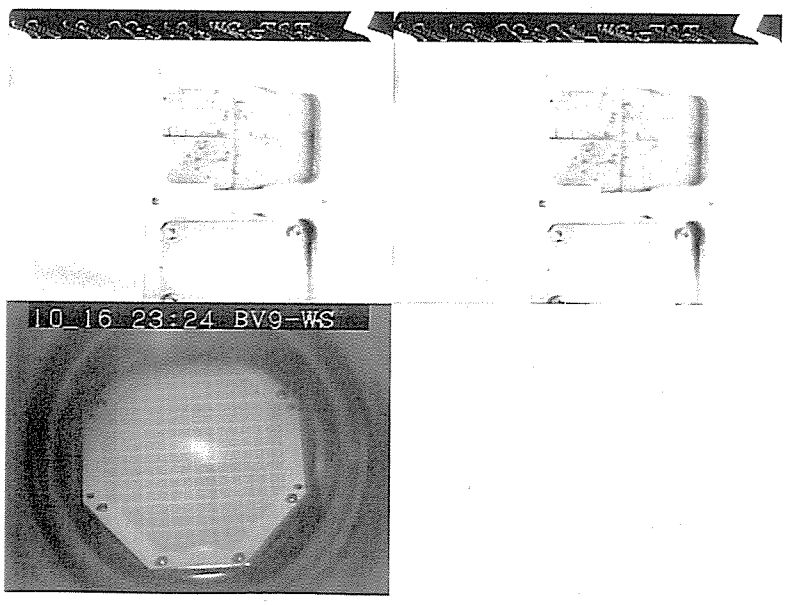
~~10:30~~ 22ころ 西へ.

ice target の温度上昇は、LN2が沸騰したため、
↓
1/1kgくらいでなくなるか

23:00 出る。 ビームスポット確認

リングKFを元に戻した。
~~AUT~~
少し右に寄ってるようなので、AUTのbee電極調整

調整前　　後



たまたまfluxの前後が同じような映像になってしまった。

9th

Run# 1030 Comment 5.9 mg/cm² S ② nat Step = 29184

Date 10 / 16

Start 23 : 29

Stop :

GR angle 0 deg

Beam current 2.8 nA

C.I. range 6 nA

Target

☐ ^{16}O mg/cm² (☐ice or ☐glass)

☐ ^{24}Mg mg/cm²

☐ ^{28}Si mg/cm²

☑ ^{32}S 5.9 mg/cm² (☐99.9% ☑nat) ②

☐ ^{40}Ca mg/cm²

☐ mg/cm²

VDC ☐ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☐ SC rot. V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= -202 ℃ TC2= -130 ℃

rate1

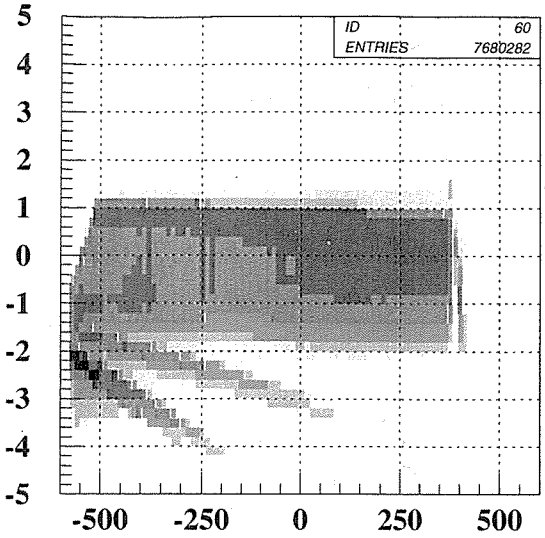
0	Beam Intensity	2.800 nA
1	GR event request	8.782 kcps
2	GR event live	6.740 kcps
3	LAS eventRequest	0.199 kcps
4	LAS event live	0.152 kcps
5	GR clock reqest	9.926 kcps
6	GR clock live	7.623 kcps
7	GR Single	6.739 kcps
8	GR Single Sample	6.739 kcps
9	LAS Single	0.151 kcps
10	LAS SingleSample	0.151 kcps
11	GR & LAS COIN	0.001 kcps
12	ALL accept Event	6.891 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	6.890 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 76.748 percent
Trig.(LAS) live : 76.355 percent
Clock live : 76.797 percent

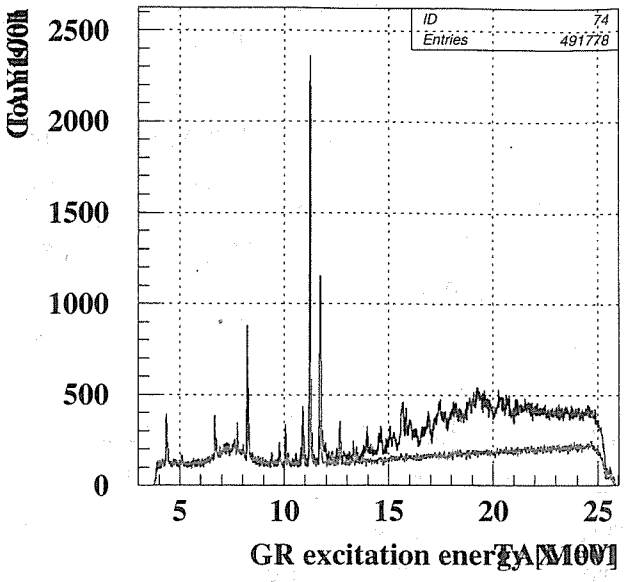
rate3

0	BLP CLK req :	9.926 kcps
1	BLP CLK live :	9.582 kcps
2	BLP Trig req :	1.108 kcps
3	BLP Trig live :	1.108 kcps
4	Akimune UP :	0.017 kcps
5	Akimune Down :	0.098 kcps
6	Akimune Left :	0.013 kcps
7	Akimune Right :	0.046 kcps
8	Beam Monitor1 :	8.782 kcps
9	Beam Monitor2 :	6.740 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	18.767 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps
	:	0.000 kcps

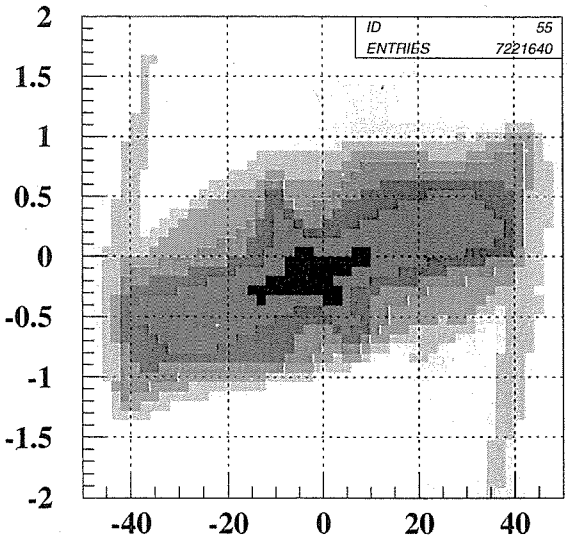
scaler down
RUN NUM 1030 B.I. Range 6 nA
RUN START 2007-Oct-16 23:29:27
NOW 2007-Oct-16 23:30:03
scaler 0 ch Sca1



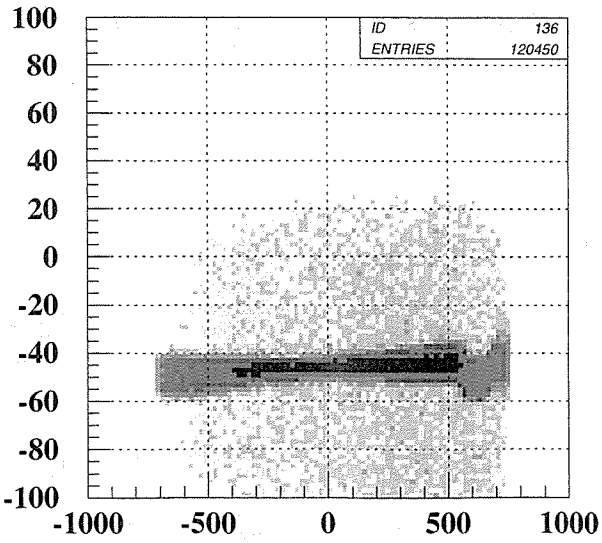
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

10th

Run# #1031 Comment 5.9 mg/cm² ^{32}S ⊘ nat. stop = 29184.

Date 10 / 17

Start 0 : 33

Stop 1 : 41

GR angle 0 deg

Beam current 2.6 nA

C.I. range 6 nA

Target

☐ ^{16}O mg/cm² (☐ice or ☐glass)

☐ ^{24}Mg mg/cm²

☐ ^{28}Si mg/cm²

☑ ^{32}S 5.9 mg/cm² (☐99.9% ☑nat) ②

☐ ^{40}Ca mg/cm²

☐ mg/cm²

VDC ☐ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☐ SC rot. V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= -199 ℃ TC2= -121 ℃

rate1

0	Beam Intensity	2.818 nA
1	GR event request	8.181 kcps
2	GR event live	6.419 kcps
3	LAS eventRequest	0.216 kcps
4	LAS event live	0.165 kcps
5	GR clock reqest	9.906 kcps
6	GR clock live	7.853 kcps
7	GR Single	6.419 kcps
8	GR Single Sample	6.419 kcps
9	LAS Single	0.165 kcps
10	LAS SingleSample	0.165 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	6.584 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	6.584 kcps
15	LAS-reject	0.000 kcps

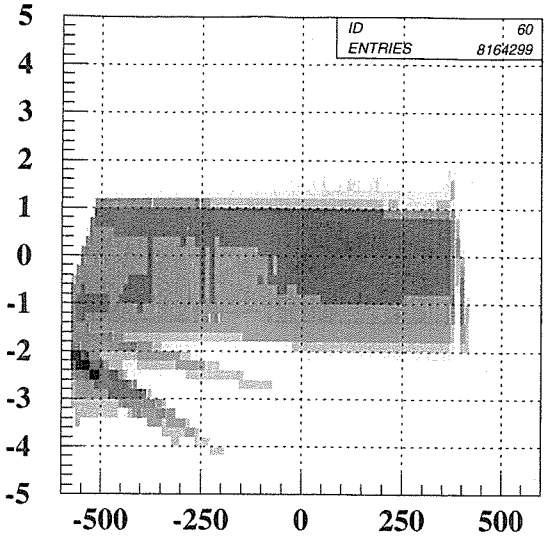
Trig.(GR) live : 78.464 percent
Trig.(LAS) live : 76.364 percent
Clock live : 79.283 percent

rate3

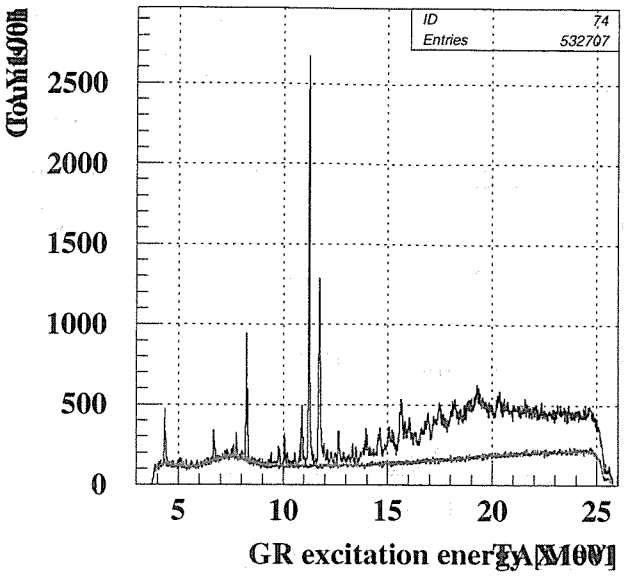
0	BLP CLK req :	9.883 kcps
1	BLP CLK live :	9.540 kcps
2	BLP Trig req :	1.103 kcps
3	BLP Trig live :	1.103 kcps
4	Akimune UP :	0.022 kcps
5	Akimune Down :	0.084 kcps
6	Akimune Left :	0.012 kcps
7	Akimune Right :	0.036 kcps
8	Beam Monitor1 :	8.037 kcps
9	Beam Monitor2 :	6.400 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	18.179 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler up
RUN NUM 1031 B.I. Range 6 nA
RUN START 2007-Oct-17 00:33:32
NOW 2007-Oct-17 00:35:07
scaler 1 ch Scal

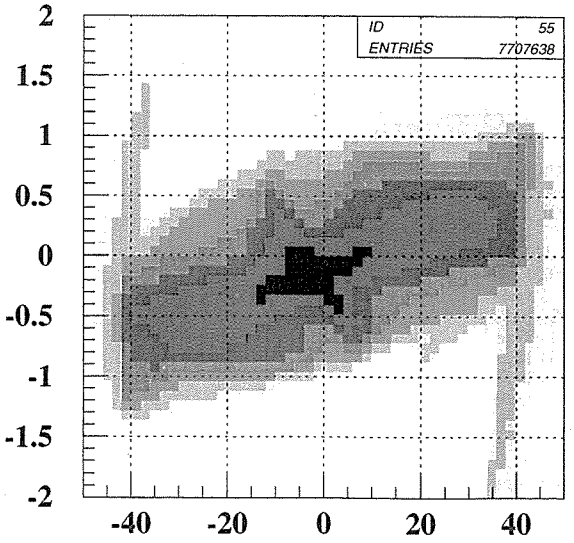
2007/10/17 01.41



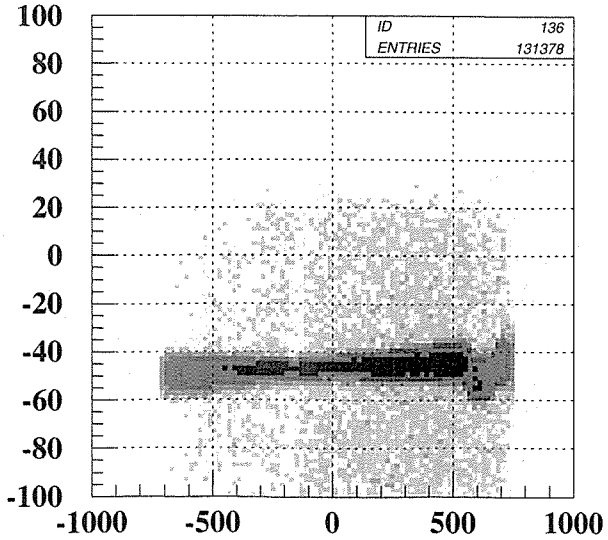
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

11th.

Run# #1032 Comment 5.9 mg/cm² ^{32}S ② nat step=29184.

Date 10 / 17

Start 1 : 42

Stop :

GR angle 0 deg

Beam current 26 nA

C.I. range 6 nA

Target

☐ ^{16}O mg/cm² (☐ice or ☐glass)

☐ ^{24}Mg mg/cm²

☐ ^{28}Si mg/cm²

☑ ^{32}S 5.9 mg/cm² (☐99.9% ☑nat) ②

☐ ^{40}Ca mg/cm²

☐ mg/cm²

VDC ☐ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☐ SC rot. V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1=-199 ℃ TC2=-132 ℃

rate1

0	Beam Intensity	2.822 nA
1	GR event request	8.448 kcps
2	GR event live	6.554 kcps
3	LAS eventRequest	0.183 kcps
4	LAS event live	0.142 kcps
5	GR clock reqest	9.820 kcps
6	GR clock live	7.617 kcps
7	GR Single	6.552 kcps
8	GR Single Sample	6.552 kcps
9	LAS Single	0.140 kcps
10	LAS SingleSample	0.140 kcps
11	GR & LAS COIN	0.002 kcps
12	ALL accept Event	6.694 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	6.694 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 77.577 percent
Trig.(LAS) live : 77.660 percent
Clock live : 77.563 percent

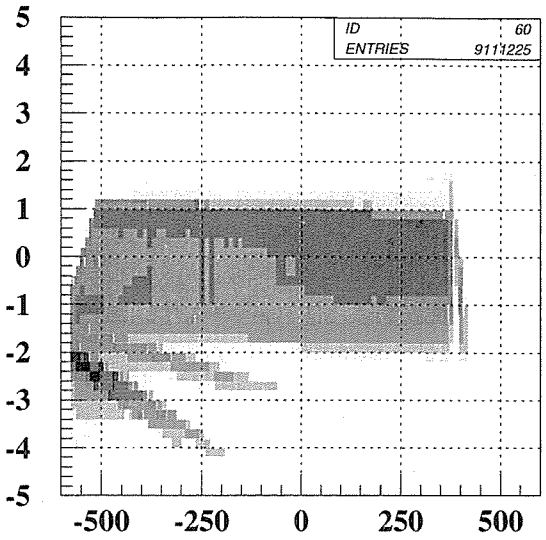
rate3

0	BLP CLK req :	9.820 kcps
1	BLP CLK live :	9.480 kcps
2	BLP Trig req :	1.097 kcps
3	BLP Trig live :	1.097 kcps
4	Akimune UP :	0.016 kcps
5	Akimune Down :	0.097 kcps
6	Akimune Left :	0.015 kcps
7	Akimune Right :	0.053 kcps
8	Beam Monitor1 :	8.448 kcps
9	Beam Monitor2 :	6.554 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	18.653 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

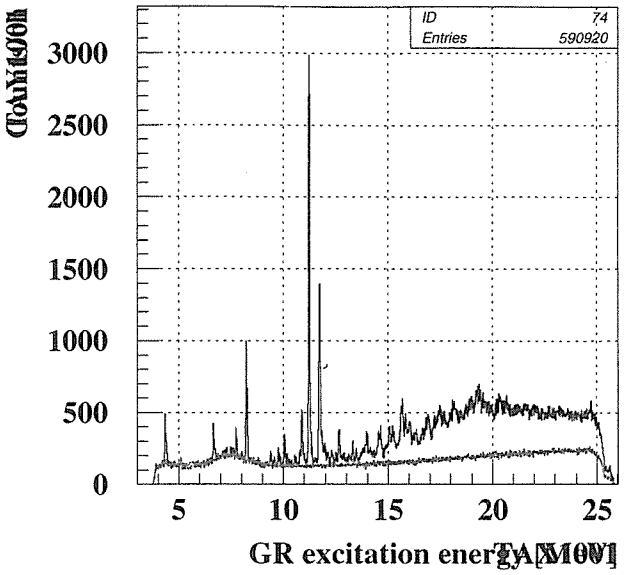
scaler up
RUN NUM 1032 B.I. Range 6 nA
RUN START 2007-Oct-17 01:42:41
NOW 2007-Oct-17 01:43:32
scaler 1 ch Sca1

2007/10/17 02.56

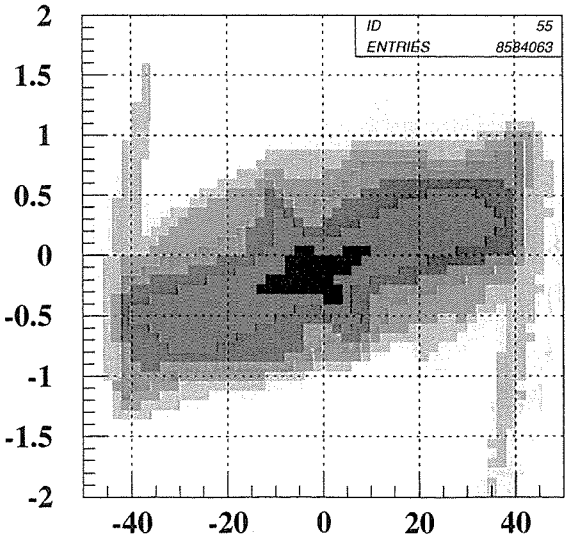
#1032



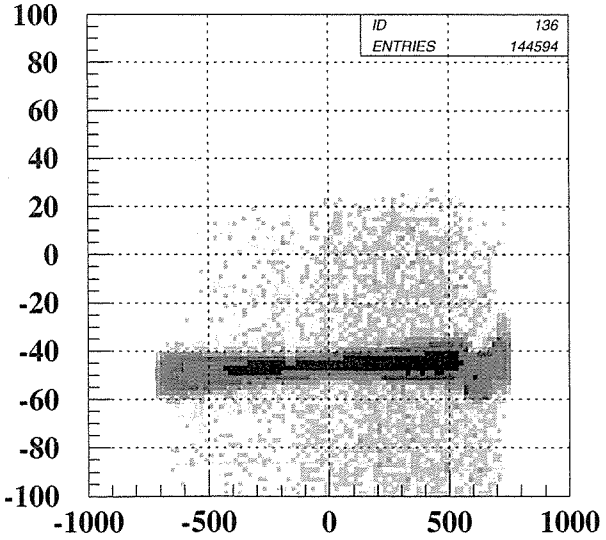
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

3:00 乗入室.

0° FCの check をしてるかったので 乗れる,

3:05 出る.

~~6uA range~~

#1033 0° FC ⇔ BLP
target ⇒ nat 3

これは. 0° FCと SLFCの sum に合っていた
(実験家はの推論)

scaleは. BLP1 のみを使用.

(BLPとは あちら側!?)

BLP1	left	4299	− 38	= 4261
	right	4900	− 27	= 4873
	up	4510	− 48	= 4462
	down	4848	− 27	= 4821

sum = 18458.

BI sum = 57663

BI sum / BLP sum = 57663 / 18458 = 3.124

nat ↑ #2

step = 29184

#1034 0° FC ⟹ BLP target in

↑ 覚え

(#1033 とのちがいに注意)

left	4582 − 26 = 4556
r	5280 − 32 = 5248
u	4998 − 27 = 4971
d	5117 − 40 = 5077

sum = 19652

BI sum = 61161

BI sum / sum = 61161 / 19652 = $\boxed{3.112}$

#1035 SLFC ⟺ BLP target in

SCFC at 1.659 V.

left.	4173 − 18 = 4155
r	4943 − 30 = 4913
u	4226 − 27 = 4199
d.	4859 − 29 = 4830.

sum = 18097.

BI sum = 59888.

BI / sum = 59888 / 18097 = $\boxed{3.309}$

#1036.　SCFC ⇔ BLP.

blank target

left	3998 − 24 =	3974
r	4768 − 32 =	4736
u	4344 − 35 =	4309
d	4656 − 23 =	4633

sum = 17652.

BT / sum = 59083 / 17652 = $\boxed{3.347}$

#1036 との比.

#1033 / #1036 = 3.124 / 3.347 = 0.9334

#1034 / #1036 = 3.112 / 3.347 = 0.9298

#1035 / #1036 = 3.309 / 3.347 = 0.9886

+6.3%　+6.0%

うーん 大きくちがう

大小関係はルーズナブル.

このかい離?

偽誤を見ると, 最大でも+2.6%の差だったのだが…

0. 軸出し.
1. WSに入る前の Beam Current check,
2. Blankで SCFC, で B.C. check
3. Q1を移動して B.C check
4. ~~Q1~~ Q1 position 調整

5:00 西入室.

GR 0° → 2.5°

Q1 FC操作.

2.5° での SCFCの positionは. 1.6Tくらいか?

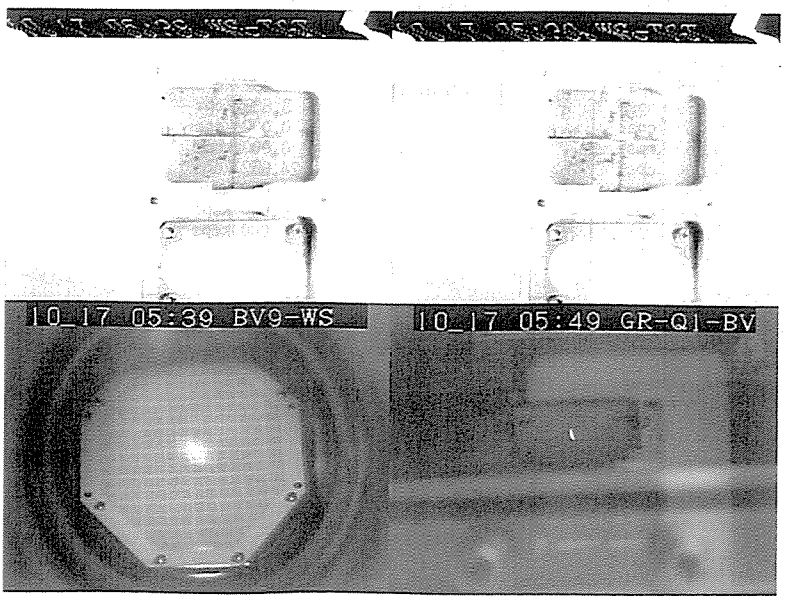
0.0825T/deg → 0.02π.

計=1.64T なら. ~~~~ OK.

2.5° 測定の. Q1FCは 2.651T

トランスミッションOK.

調整前　　後



← Q1FCの 2.651T

途中からトリガーrateが少しだけ大きくなっている
？　　だからにあた，

Run# # 1037 / Comment 5.9 mg/cm² ^{32}S ② nat step = 29184 1st

Date 10 / 17
Start 6 : 03
Stop 6 : 40
GR angle 2.5 deg
Beam current 2.5 nA
C.I. range 6 nA

Target
☐ ^{16}O mg/cm² (☐ice or ☐glass)
☐ ^{24}Mg mg/cm²
☐ ^{28}Si mg/cm²
☑ ^{32}S 5.9 mg/cm² (☐99.9% ☑nat) ②
☐ ^{40}Ca mg/cm²
☐ mg/cm²

VDC ☐ OK ☐ Tripped F.C. ☐0deg ☑Q1 ☐ SC rot. 2.651 V
GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V
GR event req. kcps accep. kcps ratio %
LAS event req. kcps accep. kcps ratio %
Print out? ☐histograms ☐rate table
Ice target temp. TC1= -200 ℃ TC2= -115 ℃

数100 kcps
以上にまでなる

rate1

0	Beam Intensity	2.482 nA
1	GR event request	4.232 kcps
2	GR event live	3.688 kcps
3	LAS eventRequest	0.292 kcps
4	LAS event live	0.259 kcps
5	GR clock reqest	9.903 kcps
6	GR clock live	8.709 kcps
7	GR Single	3.688 kcps
8	GR Single Sample	3.688 kcps
9	LAS Single	0.259 kcps
10	LAS SingleSample	0.259 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	3.947 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	3.947 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 87.147 percent
Trig.(LAS) live : 88.591 percent
Clock live : 87.945 percent

rate5

0	BLP CLK req :	9.902 kcps
1	BLP CLK live :	9.560 kcps
2	BLP Trig req :	1.106 kcps
3	BLP Trig live :	1.106 kcps
4	Akimune UP :	0.121 kcps
5	Akimune Down :	0.672 kcps
6	Akimune Left :	0.049 kcps
7	Akimune Right :	0.117 kcps
8	Beam Monitor1 :	4.232 kcps
9	Beam Monitor2 :	3.688 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	24.852 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler up
RUN NUM 1037 B.I. Range 6 nA
RUN START 2007-Oct-17 06:02:55
NOW 2007-Oct-17 06:04:56
scaler 1 ch Sca1

WS Magnet Controller '07/10/17 06:13

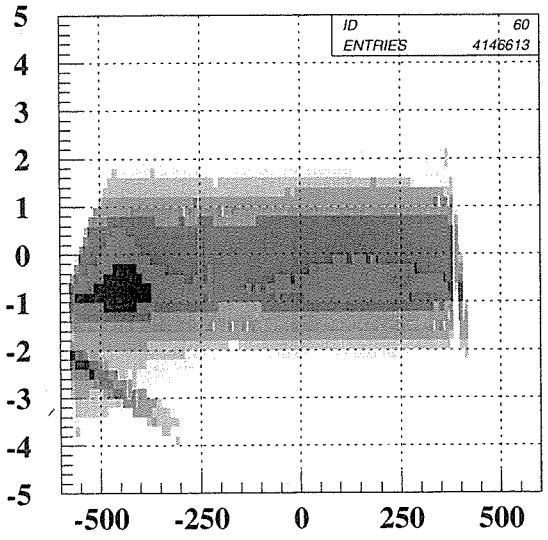
176

/WS\/PIS\

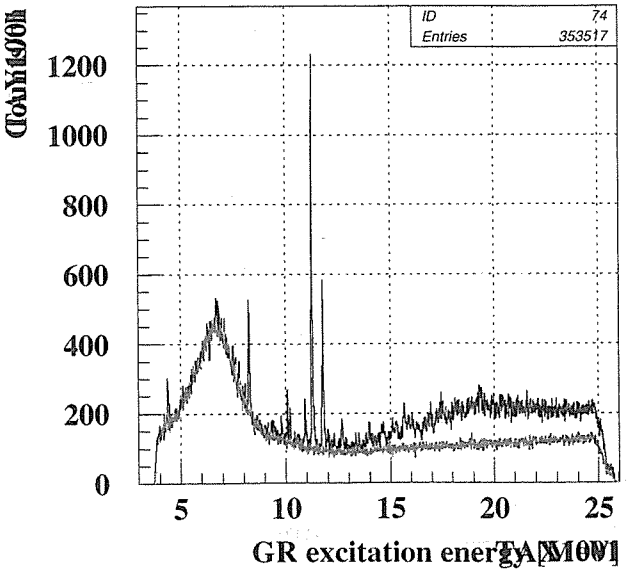
Magnet	Field(Preset|Actual)		Current(Preset|Actual)	Status	PS	NMR	FB
GR Q1		mT	90.20 A				
GR SX		mT	18.20 A				
GR Q2		mT	8.50 A				
GR MQ		mT	0.02 A				
GR MS		mT	0.02 A				
GR D1	869.775	mT	230.64 A				
GR D2	869.814	mT	433.88 A				
GR DSR	110.612	mT	12.4 / 12.41 A				
LAS Q		mT	217.40 A				
LAS D	-747.972	mT	280.10 A				
GR DQ1		mT	50.00 A				
GR DQ2		mT	65.10 A				

2007/10/17 06.47

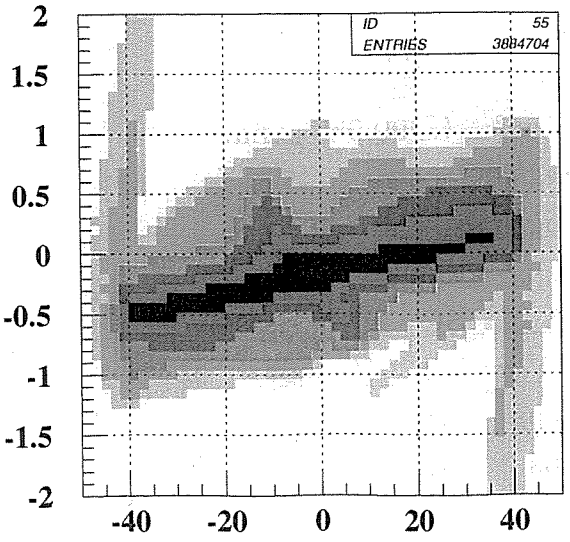
#1031



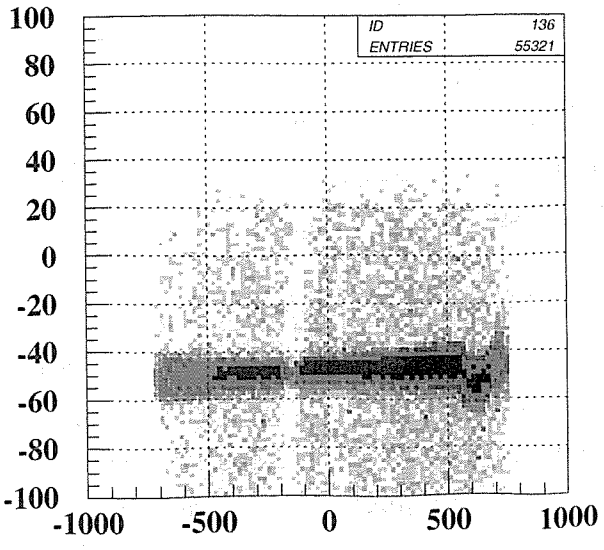
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



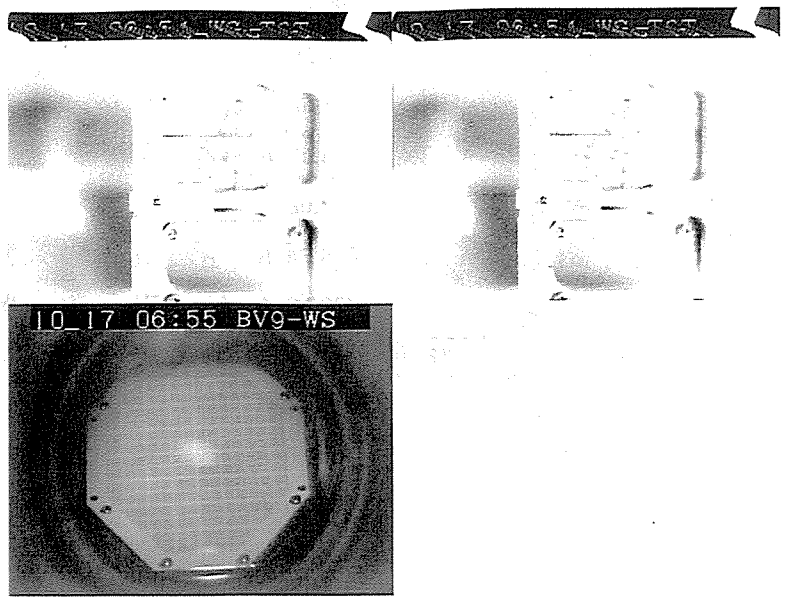
GYPH GR Phi vs Y



LXY LAS Y vs X

5mm以上飛にズレている.

↓



LAS V1がまた発振してたので.

12V → 13V → 12V

threshuld, あげさげ.

→ 数本残る.

Run# 1078. Comment 5.9 mg/cm² natS ③ step = 29184 2nd

Date 10 / 17.
Start 17 : 46.
Stop 8 : 30.
GR angle 2.5 deg
Beam current 2.7 nA
C.I. range 6 nA

Target
☐ ^{16}O mg/cm² (☐ice or ☐glass)
☐ ^{24}Mg mg/cm²
☐ ^{28}Si mg/cm²
☑ ^{32}S 5.9 mg/cm² (☐99.9% ☑nat)
☐ ^{40}Ca mg/cm²
☐ mg/cm²

VDC ☑ OK ☐ Tripped F.C. ☐0deg ☑Q1 ☐ SC rot. 2.651 V
GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V
GR event req. kcps accep. kcps ratio %
LAS event req. kcps accep. kcps ratio %
Print out? ☐histograms ☐rate table
Ice target temp. TC1= -198 ℃ TC2= -125 ℃

0	Beam Intensity	2.629 nA
1	GR event request	4.583 kcps
2	GR event live	3.947 kcps
3	LAS eventRequest	0.297 kcps
4	LAS event live	0.262 kcps
5	GR clock reqest	9.841 kcps
6	GR clock live	8.511 kcps
7	GR Single	3.943 kcps
8	GR Single Sample	3.943 kcps
9	LAS Single	0.258 kcps
10	LAS SingleSample	0.258 kcps
11	GR & LAS COIN	0.004 kcps
12	ALL accept Event	4.205 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	4.205 kcps
15	LAS-reject	0.000 kcps

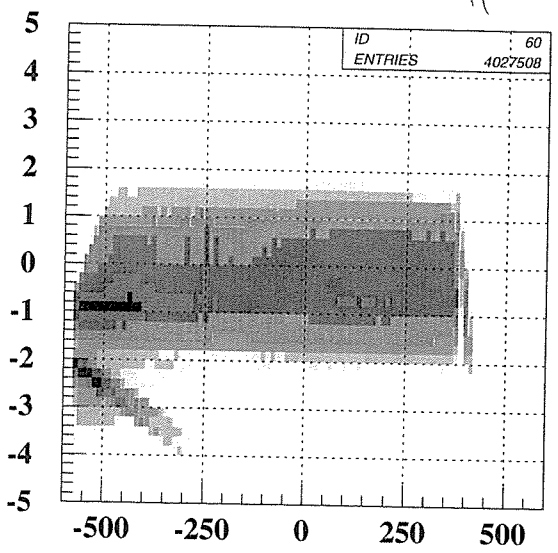
Trig.(GR) live : 86.124 percent
Trig.(LAS) live : 88.197 percent
Clock live : 86.492 percent

0	BLP CLK req :	9.841 kcps
1	BLP CLK live :	9.500 kcps
2	BLP Trig req :	1.099 kcps
3	BLP Trig live :	1.099 kcps
4	Akimune UP :	0.129 kcps
5	Akimune Down :	0.713 kcps
6	Akimune Left :	0.068 kcps
7	Akimune Right :	0.148 kcps
8	Beam Monitor1 :	4.583 kcps
9	Beam Monitor2 :	3.947 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	26.242 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

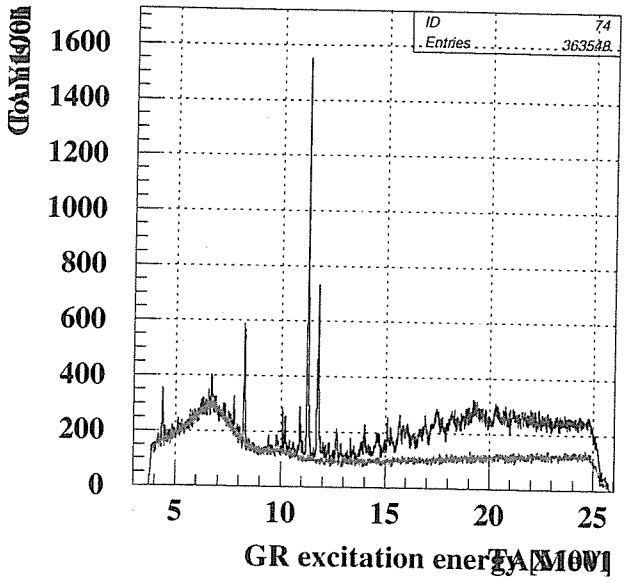
scaler down
RUN NUM 1038 B.I. Range 6 nA
RUN START 2007-Oct-17 07:46:22
NOW 2007-Oct-17 07:46:55
scaler 0 ch Sca1

2007/10/17 08.30

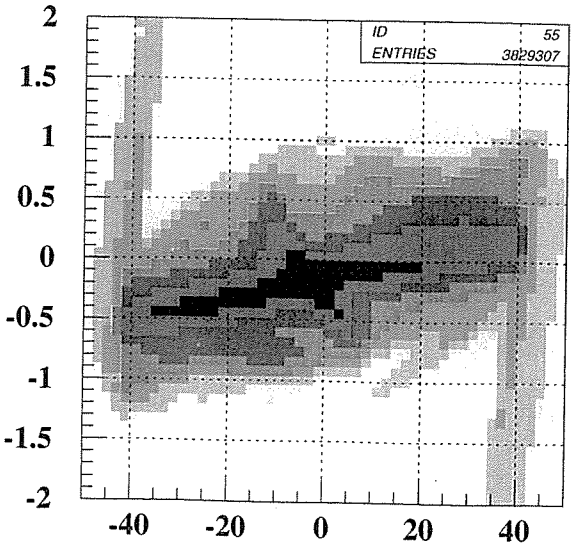
1038



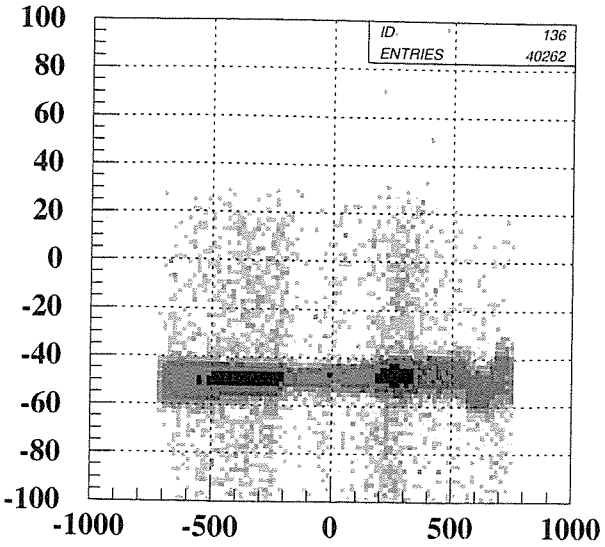
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

Q1 = 2.651V.

1039. Q1FC ⟺ B2P
target (not S②) in (5.9mS/cm²)

left	3964 − 27 = 3937
r	4375 − 20 = 4355
u	4023 − 23 = 4000
d	4551 − 22 = 4529

sum = 16821.

BI / sum = 56231 / 16821 = 3.343

1040. SCFC ⟺ B2P.
target in (not S② = 5.9mS/cm²)

not SCFC = 1.64V.

left	4068 − 28 = 4040.
r	4505 − 27 = 4478.
u	4176 − 32 = 4144
d	4621 − 28 = 4593.

sum = 17255

BI / sum = 58467 / 17255 = 3.388

#1041. SLFC ⇔ BLP.

↑

Blank target. rot SCFC = 1.647

left	3884 − 32	= 3852
r	4346 − 32	= 4314
u	4029 − 21	= ~~4028~~ 4008.
d	4392 − 32	= 4360.

sum = 16534.

BI / sum = 55485 / 16534 = $\boxed{3.356}$

#1041 との比.

#1039 / #1041 = 3.343 / 3.356 = 0.9961

#1040 / #1041 = 3.388 / 3.356 = 1.060.

5%.

9:00, 西へ入室.

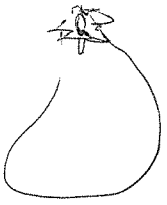
・GR 2.5° → 4.5°.

・LAS UI の発振が厳になるので、
threshould 上げ上げで suda さんに

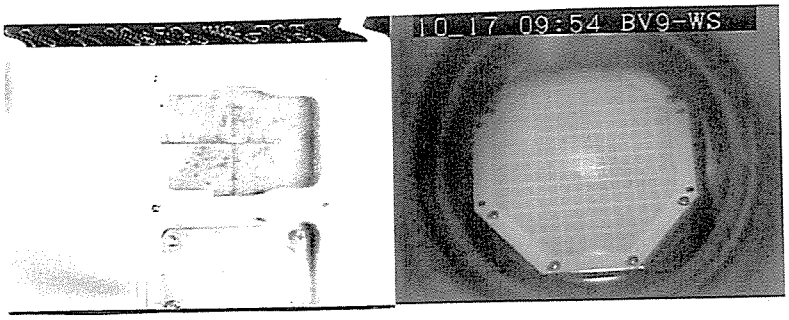
threshould.
12V → 12.5V へ変えた.

9:40. 軸出しをしてもらう.

また、右へ 10mm 以上 ずれている. 直りそうない.
上流から見直してもらう.



BLP1 のところで少し大きくずれていたそう.
他は、それほどずれていない



Q1 FC は、4,000V か? (~~center が見~~ 十字が見えない)

Run# 1042 Comment nat 5° 4.5° 1st 第29回目stop

Date 10 / 17

Start 10 : 12

Stop 10 : 25

GR angle 4°.5 deg

Beam current 2.5 nA

B.I. range 6 nA

Target

☐ ^{16}O mg/cm^2 (☐ice or ☐glass)

☐ ^{24}Mg mg/cm^2

☐ ^{28}Si mg/cm^2

☑ ^{32}S 5.9 mg/cm^2 (☐99.9% ☑nat)

☐ ^{40}Ca mg/cm^2

☐ mg/cm^2

TDC ☐ OK ☐ Tripped F.C. ☐0deg ☑Q1 ☐ SC rot. 4,000 V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. 1 kcps accep. kcps ratio 95 %

LAS event req. 0.3 kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

ice target temp. TC1= -199 ℃ TC2= -126 ℃

rate1

0	Beam Intensity	3.058 nA
1	GR event request	1.134 kcps
2	GR event live	1.084 kcps
3	LAS eventRequest	0.353 kcps
4	LAS event live	0.335 kcps
5	GR clock reqest	9.903 kcps
6	GR clock live	9.470 kcps
7	GR Single	1.084 kcps
8	GR Single Sample	1.084 kcps
9	LAS Single	0.335 kcps
10	LAS SingleSample	0.335 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	1.419 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	1.419 kcps
15	LAS-reject	0.000 kcps

rig.(GR) live : 95.592 percent
rig.(LAS) live : 95.000 percent
lock live : 95.626 percent

rate3

0	BLP CLK req :	9.903 kcps
1	BLP CLK live :	9.560 kcps
2	BLP Trig req :	1.106 kcps
3	BLP Trig live :	1.106 kcps
4	Akimune UP :	0.266 kcps
5	Akimune Down :	0.916 kcps
6	Akimune Left :	0.281 kcps
7	Akimune Right :	2.106 kcps
8	Beam Monitor1 :	1.134 kcps
9	Beam Monitor2 :	1.084 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	23.717 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler down
RUN NUM 1042 B.I. Range 6 nA
RUN START 2007-Oct-17 10:11:37
NOW 2007-Oct-17 10:16:48
scaler 0 ch Scal

照射後に rateが20kcpsをこえたのでストップ

See next page

また急に増えたので、様子見る。

やはり再入10mm ずれる

氣にせずに 再スタート

rate1 C

0	Beam Intensity	2.895 nA
1	GR event request	20.066 kcps
2	GR event live	4.004 kcps
3	LAS eventRequest	0.322 kcps
4	LAS event live	0.266 kcps
5	GR clock reqest	9.907 kcps
6	GR clock live	8.203 kcps
7	GR Single	4.002 kcps
8	GR Single Sample	4.002 kcps
9	LAS Single	0.264 kcps
10	LAS SingleSample	0.264 kcps
11	GR & LAS COIN	0.002 kcps
12	ALL accept Event	4.268 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	4.268 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 19.953 percent
Trig.(LAS) live : 82.622 percent
Clock live : 82.794 percent

rate3 O x

0	BLP CLK req :	9.891 kcps
1	BLP CLK live :	9.549 kcps
2	BLP Trig req :	1.104 kcps
3	BLP Trig live :	1.104 kcps
4	Akimune UP :	1.124 kcps
5	Akimune Down :	2.072 kcps
6	Akimune Left :	6.150 kcps
7	Akimune Right :	4.291 kcps
8	Beam Monitor1 :	8.831 kcps
9	Beam Monitor2 :	2.830 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	31.089 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

RUN NUM 1042 B.I. Range 6 nA
START 2007-Oct-17 10:11:37
RUN STOP 2007-Oct-17 10:24:53
NOW 2007-Oct-17 10:25:01
scaler 0 ch Sca1

abort.

Run# 1043 Comment 325 (p,p') natural_2 4.5 deg pos.-29184 #2

Target

Date 10/17 ☐^{16}O mg/cm^2 (☐ice or ☐glass)

Start 10 : 32 ☐^{24}Mg mg/cm^2

Stop : 36 abort ☐^{28}Si mg/cm^2

GR angle 4.5 deg ☑^{32}S 5.9 mg/cm^2 (☐99.9% ☑nat) #2

Beam current 2.5 nA ☐^{40}Ca mg/cm^2

C.I. range nA ☐ mg/cm^2

VDC ☑ OK ☐ Tripped F.C. ☐0deg ☑Q1 ☐ SC rot. 4.001 V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. 0.94 kcps accep. 0.93 kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= -160 ℃ TC2= -115 ℃

rate1 C

0	Beam Intensity	2.488 nA
1	GR event request	0.999 kcps
2	GR event live	0.953 kcps
3	LAS eventRequest	0.268 kcps
4	LAS event live	0.257 kcps
5	GR clock reqest	9.904 kcps
6	GR clock live	9.535 kcps
7	GR Single	0.952 kcps
8	GR Single Sample	0.952 kcps
9	LAS Single	0.256 kcps
10	LAS SingleSample	0.256 kcps
11	GR & LAS COIN	0.001 kcps
12	ALL accept Event	1.209 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	1.209 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 95.388 percent
Trig.(LAS) live : 95.971 percent
Clock live : 96.279 percent

rate3 O x

0	BLP CLK req :	9.727 kcps
1	BLP CLK live :	9.390 kcps
2	BLP Trig req :	1.086 kcps
3	BLP Trig live :	1.086 kcps
4	Akimune UP :	0.142 kcps
5	Akimune Down :	0.660 kcps
6	Akimune Left :	0.128 kcps
7	Akimune Right :	0.967 kcps
8	Beam Monitor1 :	0.873 kcps
9	Beam Monitor2 :	0.842 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	18.594 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler up
RUN NUM 1043 B.I. Range 6 nA
RUN START 2007-Oct-17 10:32:05
NOW 2007-Oct-17 10:33:44
scaler 1 ch Sca1

↳ liq. N2 is almost emp
↳ Abort and fill it.

↑

基本通り

~~Hi~~ 10こST. Wが戻る.

再びスポット確認. また10mm以上動いている.
うーむ.

RTmg の RF の影響か??

11:40 Liq. N2 交換に行って帰るとまたスポットは右へ.
うーむ

↑

RFの発振を抑えようとしたことに関連しているように見える.

↑

一応原因をつきとめて対処してもらった.

12:00 LAS, GR共にVOL HTがトリップしていた

2nd.

Run# ~~1044~~ 1043 ~~1043~~ Comment next S③ 4.5° step = 29184

Date 10 / 17

Start ~~11:50~~ 12:00

Stop 13 : 01

GR angle 4.5 deg

Beam current ~~2.0~~ 3.0 nA

C.I. range 6 nA

Target

☐ ^{16}O mg/cm^2 (☐ice or ☐glass)

☐ ^{24}Mg mg/cm^2

☐ ^{28}Si mg/cm^2

☒ ^{32}S 5.9 mg/cm^2 (☐99.9% ☐nat)

☐ ^{40}Ca mg/cm^2

☐ mg/cm^2

VDC ☑ OK ☐ Tripped F.C. ☐0deg ☑Q1 ☐ SC rot. 4.001 V

GR cath. 5.6 V, pot. A ,B 0.3 V, LAS cath1 5.3 V, cath.2 5.3 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= -199 ℃ TC2= -122 ℃

rate

0	Beam Intensity	2.732 nA
1	GR event request	1.162 kcps
2	GR event live	1.101 kcps
3	LAS eventRequest	0.333 kcps
4	LAS event live	0.316 kcps
5	GR clock reqest	9.853 kcps
6	GR clock live	9.420 kcps
7	GR Single	1.101 kcps
8	GR Single Sample	1.101 kcps
9	LAS Single	0.316 kcps
10	LAS SingleSample	0.316 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	1.417 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	1.417 kcps
15	LAS-reject	0.000 kcps

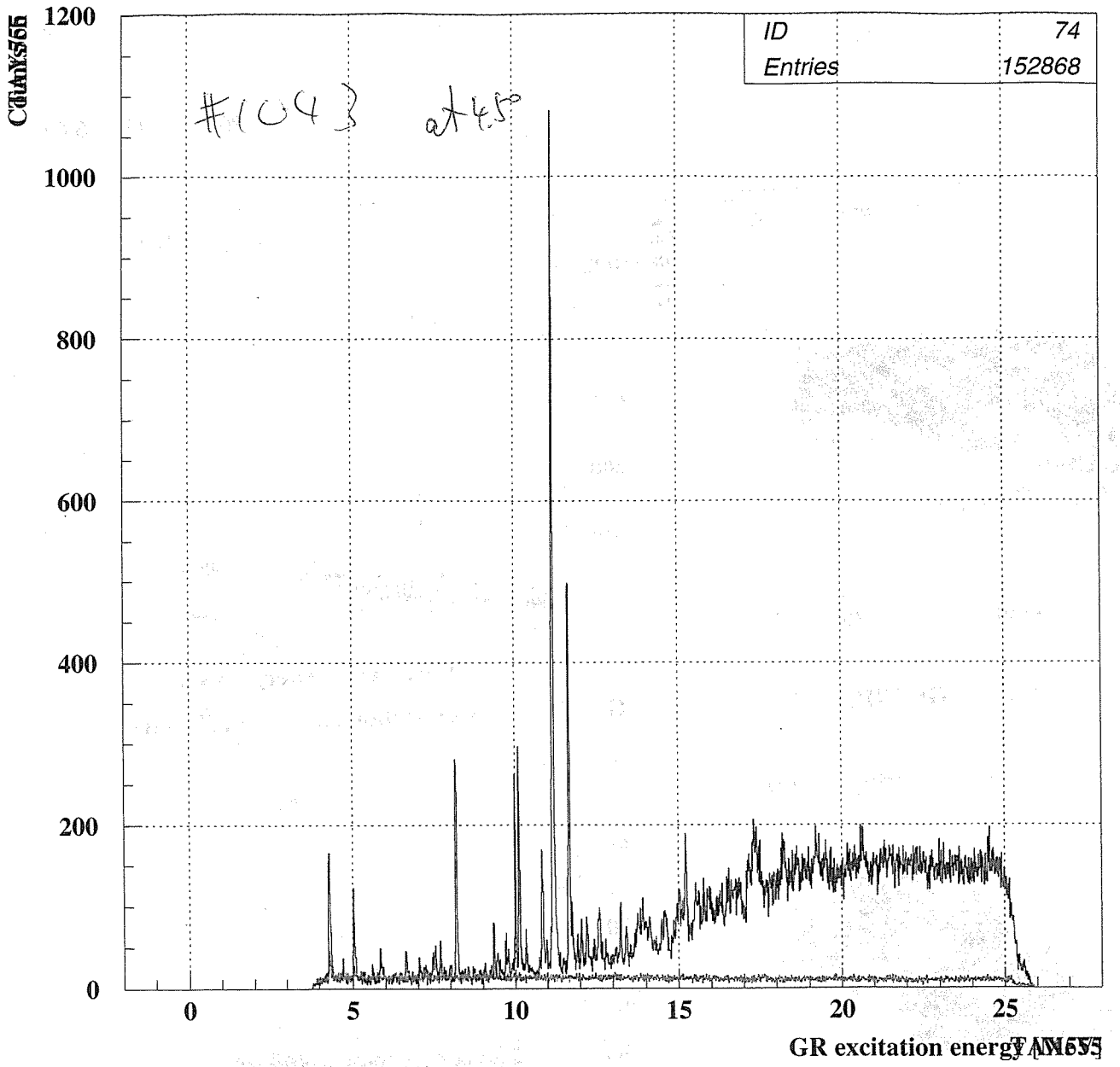
Trig.(GR) live : 94.715 percent
Trig.(LAS) live : 94.737 percent
Clock live : 95.606 percent

0	BLP CLK req :	9.853 kcps
1	BLP CLK live :	9.511 kcps
2	BLP Trig req :	1.101 kcps
3	BLP Trig live :	1.101 kcps
4	Akimune UP :	0.139 kcps
5	Akimune Down :	0.718 kcps
6	Akimune Left :	0.090 kcps
7	Akimune Right :	0.477 kcps
8	Beam Monitor1 :	1.162 kcps
9	Beam Monitor2 :	1.101 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	21.029 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler up
RUN NUM 1043 B.I. Range 6 nA
RUN START 2007-Oct-17 12:00:08
NOW 2007-Oct-17 12:05:23
scaler 1 ch Scal

run 終了後 GR pot A が トリップしていたこと

2007/10/17 1

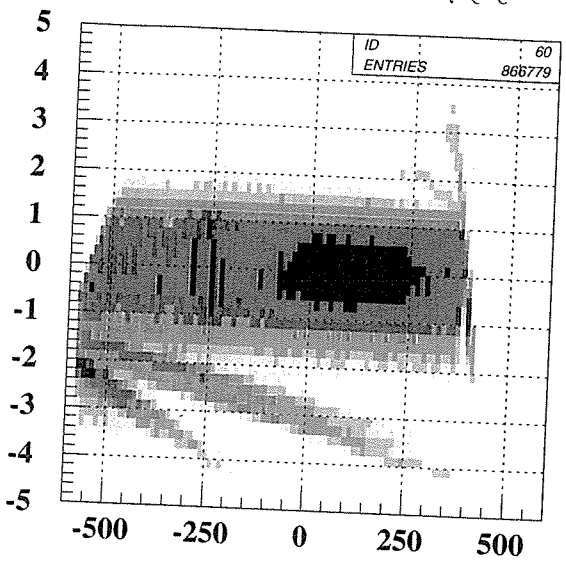


GEXG GR excitation energy (Y,TH-gated)

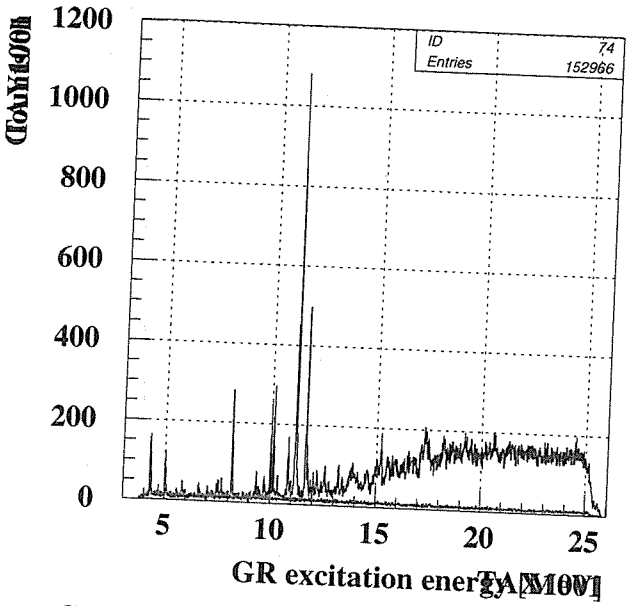
10439 Histgram

#1043

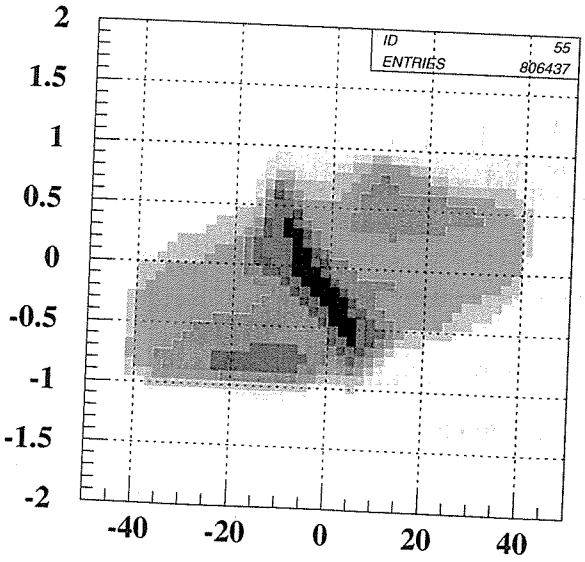
2007/10/17 13.01



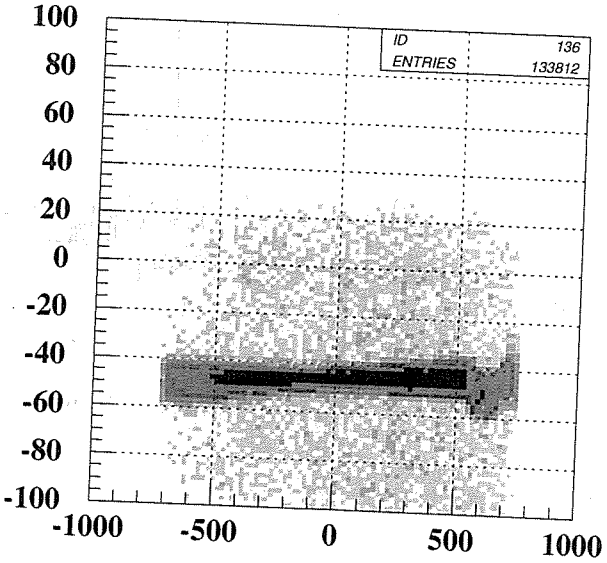
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

nat S @ 5.9g/cm²

#1044 QIFC at 4.0° QIFC ⟺ BLP target in

QIFC = 4.001V

left	3808 − 19	= 3789
r	4329 − 25	= 4324
u	4012 − 30	= 3982
d	4279 − 20	= 4259.

sum = 16354

BI / sum = 53678 / 16354 = $\boxed{3.282}$

1045 SCFC ⟺ BLP target in. 5.9g/cm².

SCFC at 1.657V.

left	4109 − 34	= 4075
r	4443 − 28	= 4418
u	4086 − 30	= 4056
d	4617 − 33	= 4584

sum = 17130.

BI / sum = 57276 / 17130 = $\boxed{3.344}$

#1046 SCFC ⟺ BLP blank target

left	3883 − 19	= 3864
r	4446 − 28	= 4418
u	4052 − 23	= ~~4029~~ 4029
d.	4394 − 16	= 4378

sum = 16689.

BI / sum = 55079 / 16689 = $\boxed{3.300}$

#1044 / #1046 = 3.282 / 3.300 = 0.9945

#1045 / #1046 = 3.344 / 3.300 = 1.013 → #−1.8%

13:30 WS 入室.

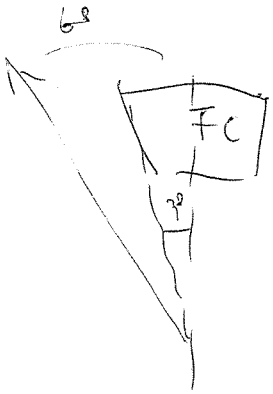
9R 4.5° → 6°.

±30mr × ±30mr スリット挿入.

LGN N_2 自動供給 60min → 75min に変更.

6° 測定 1.659 deg が center

0.0825 J/deg で



とすると 0.0825 × 3 = 0.2475. LAS 使いの (#

1.659
0.024
1.683

#5 LFC pos = $\boxed{1.6830}$ が 6° 測定用

→ 6° では
1.724 − 1.732 付近が良い
(1.659 に設定した後で)

WS Magnet Controller '07/10/17 14:20

/WS\/PIS\

Magnet	Field(Preset|Actual)		Current(Preset|Actual)	Status	PS	NMR	FB
GR Q1		mT	90.20 A				
GR SX		mT	18.20 A				
GR Q2		mT	8.50 A				
GR MQ		mT	0.02 A				
GR MS		mT	0.02 A				
GR D1	869.777	mT	230.64 A				
GR D2	869.816	mT	434.13 A				
GR DSR	110.611	mT	12.4 / 12.41 A				
LAS Q		mT	217.40 A				
LAS D	-747.971	mT	280.10 A				
GR DQ1		mT	50.00 A				
GR DQ2		mT	65.10 A				

Update | update Cycle 10 sec. | Hcopy | Queue acc2424 | eXit

0	Beam Intensity	2.453 nA
1	GR event request	0.221 kcps
2	GR event live	0.214 kcps
3	LAS eventRequest	0.475 kcps
4	LAS event live	0.466 kcps
5	GR clock reqest	9.745 kcps
6	GR clock live	9.532 kcps
7	GR Single	0.214 kcps
8	GR Single Sample	0.214 kcps
9	LAS Single	0.466 kcps
10	LAS SingleSample	0.466 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	0.680 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	0.680 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 96.943 percent
Trig.(LAS) live : 97.972 percent
Clock live : 97.813 percent

0	BLP CLK req :	9.745 kcps
1	BLP CLK live :	9.408 kcps
2	BLP Trig req :	1.089 kcps
3	BLP Trig live :	1.089 kcps
4	Akimune UP :	0.564 kcps
5	Akimune Down :	4.645 kcps
6	Akimune Left :	0.424 kcps
7	Akimune Right :	0.794 kcps
8	Beam Monitor1 :	0.221 kcps
9	Beam Monitor2 :	0.214 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	27.729 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler up
RUN NUM 1047 B.I. Range 6 nA
RUN START 2007-Oct-17 14:22:29
NOW 2007-Oct-17 14:23:33
scaler 1 ch Sca1

15:00, GR 6° → 10°へ.

CIを 6nA → 20nA range

SV3を閉めて Beam量を 2nA → 7nAにしたい

↑

0度に戻す時は、SV3をしめること.

Run# 1047 Comment 5.9mg/cm² nat S ② 29184 step at 10° 15T.

Date 10/17

Start 15 : 21

Stop 16 : 08

GR angle 10 deg

Beam current 6.7 nA

C.I. range 20 nA

Target

☐ ^{16}O mg/cm² (☐ice or ☐glass)

☐ ^{24}Mg mg/cm²

☐ ^{28}Si mg/cm²

☑ ^{32}S 5.9 mg/cm² (☐99.9% ☑nat) ②

☐ ^{40}Ca mg/cm²

☐ mg/cm²

VDC ☑ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☑ SC rot. 1.659 V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= -199 ℃ TC2= -122 ℃

1047 start 14分後に Hata Auto → Out に切りかえた.

rate1

0	Beam Intensity	6.908 nA
1	GR event request	2.086 kcps
2	GR event live	1.839 kcps
3	LAS eventRequest	2.101 kcps
4	LAS event live	1.828 kcps
5	GR clock reqest	9.914 kcps
6	GR clock live	8.753 kcps
7	GR Single	1.838 kcps
8	GR Single Sample	1.838 kcps
9	LAS Single	1.827 kcps
10	LAS SingleSample	1.827 kcps
11	GR & LAS COIN	0.001 kcps
12	ALL accept Event	3.666 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	3.665 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 88.147 percent
Trig.(LAS) live : 87.015 percent
Clock live : 88.291 percent

rate3

0	BLP CLK req :	9.914 kcps
1	BLP CLK live :	9.571 kcps
2	BLP Trig req :	1.107 kcps
3	BLP Trig live :	1.107 kcps
4	Akimune UP :	2.230 kcps
5	Akimune Down :	13.726 kcps
6	Akimune Left :	1.886 kcps
7	Akimune Right :	12.859 kcps
8	Beam Monitor1 :	2.086 kcps
9	Beam Monitor2 :	1.839 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	81.185 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

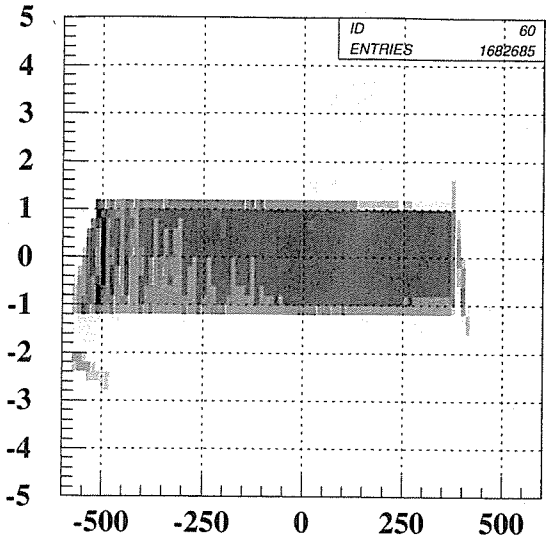
scaler down
RUN NUM 1047 B.I. Range 20 nA
RUN START 2007-Oct-17 15:21:58
NOW 2007-Oct-17 15:28:58
scaler 0 ch Sca1

:50

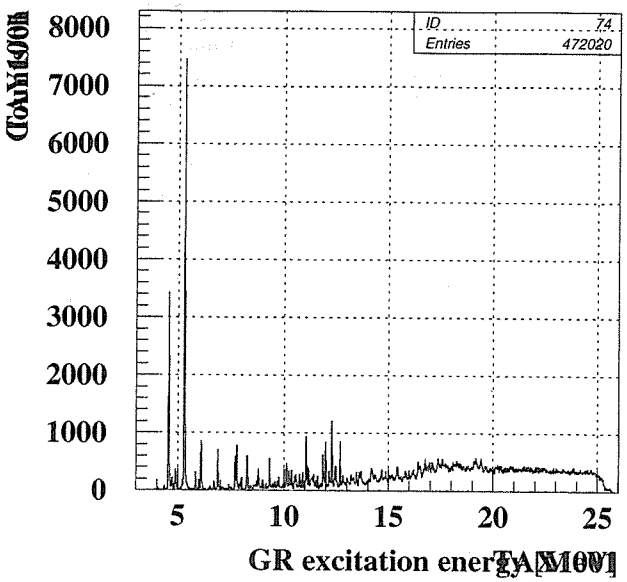
ハーフ ケレント (テスター読み) 1mA=10V

GR	Cath.	117.7 mV	11.77 μA	(1mA=10V)
LAS1	Cath	193.9 mV	19.39 μA	
LAS2	Cath	0.262 V	26.2 μA	(100μA=1V)
GR(A)	pot.	0.025 mV	0.0025 μA	(1mA=10V)
GR(B)	pot.	0.03 mV	0.003 μA	
LAS(A)	pot	2.81 mV	0.281 μA	
LAS(B)	pot	1.89 mV	0.189 μA	

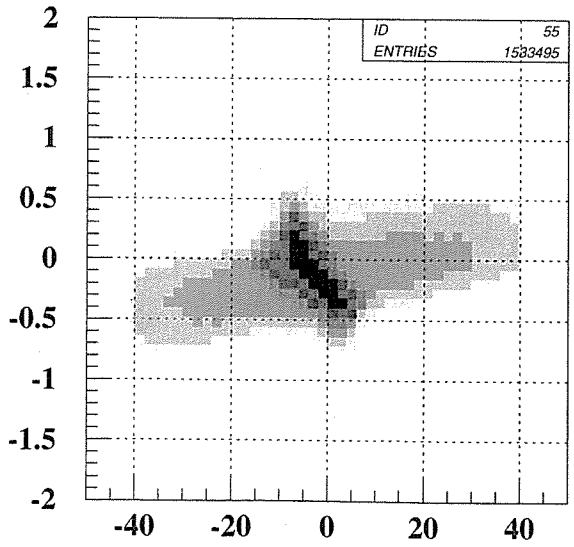
#1047



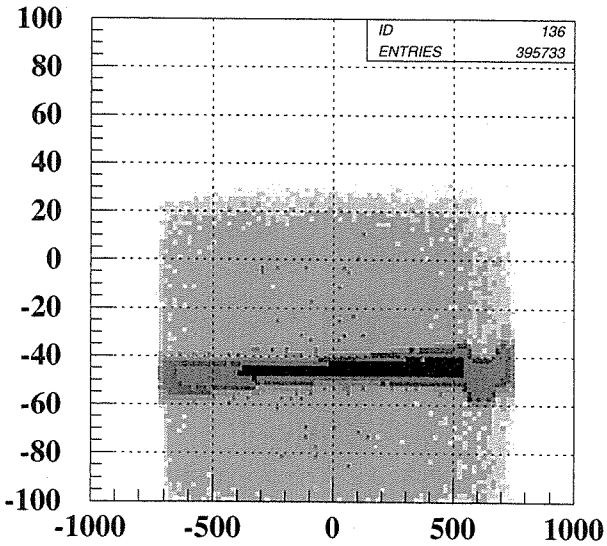
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

2nd

Run# 1048 Comment 5.9 mg/cm² nat S ② 29184 stop at 10°

Target

Date 10 / 17

Start 16 : 09

Stop 16 : 55

GR angle 10 deg

Beam current 6.7 nA

C.I. range 20 nA

☐ ^{16}O mg/cm² (☐ice or ☐glass)

☐ ^{24}Mg mg/cm²

☐ ^{28}Si mg/cm²

☑ ^{32}S 5.9 mg/cm² (☐99.9% ☑nat) ②

☐ ^{40}Ca mg/cm²

☐ mg/cm²

VDC ☐ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☐ SC rot. V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= -185 ℃ TC2= -122 ℃

rate1

0	Beam Intensity	6.841 nA
1	GR event request	2.081 kcps
2	GR event live	1.839 kcps
3	LAS eventRequest	2.141 kcps
4	LAS event live	1.909 kcps
5	GR clock reqest	9.903 kcps
6	GR clock live	8.707 kcps
7	GR Single	1.836 kcps
8	GR Single Sample	1.836 kcps
9	LAS Single	1.905 kcps
10	LAS SingleSample	1.905 kcps
11	GR & LAS COIN	0.003 kcps
12	ALL accept Event	3.744 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	3.744 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 88.366 percent
Trig.(LAS) live : 89.153 percent
Clock live : 87.917 percent

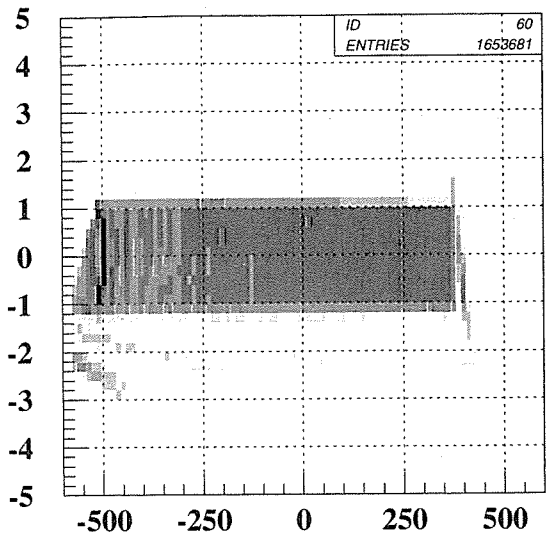
rate2

0	BLP CLK req :	9.902 kcps
1	BLP CLK live :	9.560 kcps
2	BLP Trig req :	1.105 kcps
3	BLP Trig live :	1.105 kcps
4	Akimune UP :	1.664 kcps
5	Akimune Down :	13.017 kcps
6	Akimune Left :	1.158 kcps
7	Akimune Right :	3.123 kcps
8	Beam Monitor1 :	2.081 kcps
9	Beam Monitor2 :	1.839 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	81.710 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

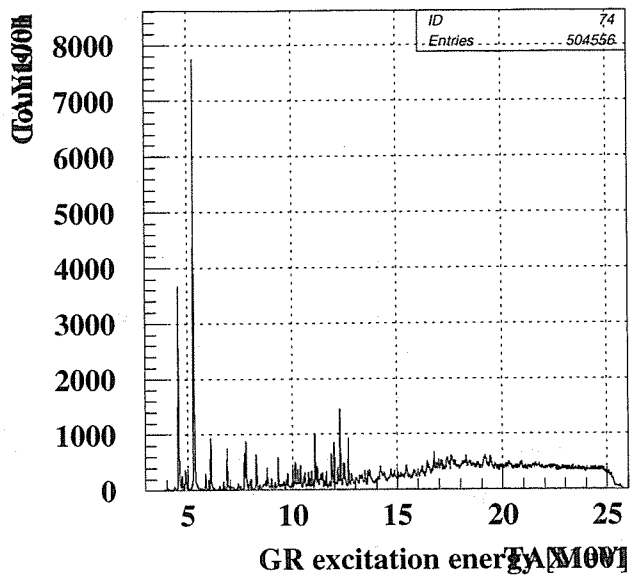
scaler up
RUN NUM 1048 B.I. Range 20 nA
RUN START 2007-Oct-17 16:09:58
NOW 2007-Oct-17 16:11:05
scaler 1 ch Sca1

#9 1049 < 1048

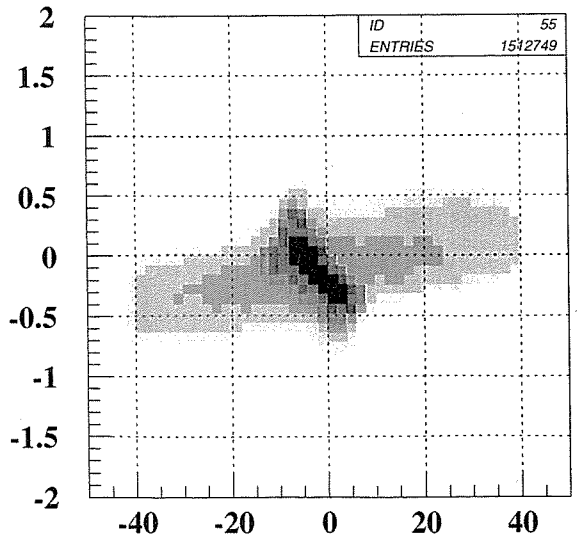
2007/10/17 16.55



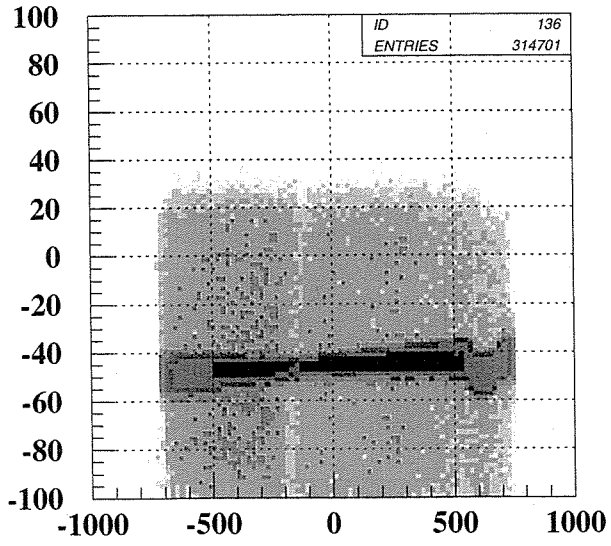
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

17:00 WS入室.

・BLPのテストパルサ抜く.

・Liq.N_2 デュワー交換.

・GR 10° → 12°.

WSdeのミーティング終わる
電源抜きさし.

17:20 スポット確認.

ターゲット右にずれていた.

Run# 1049 Comment 5.9 mg/cm² nat S @~~10°~~ 12° 1st

Date 10 / 17
Start 17 : 29
Stop 18 : 14
GR angle 12 deg
Beam current 65 nA
C.I. range 20 nA

Target
☐ ^{16}O mg/cm² (☐ice or ☐glass)
☐ ^{24}Mg mg/cm²
☐ ^{28}Si mg/cm²
☒ ^{32}S 5.9 mg/cm² (☐99.9% ☒nat) ②
☐ ^{40}Ca mg/cm²
☐ mg/cm²

WN
Hota
Auto

VDC ☐ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☑SC rot. 1657 V
GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V
GR event req. kcps accep. kcps ratio %
LAS event req. kcps accep. kcps ratio %
Print out? ☐histograms ☐rate table
Ice target temp. TC1= -119 ~~3~~℃ TC2= -129 ℃

rate1

0	Beam Intensity	6.453 nA
1	GR event request	1.817 kcps
2	GR event live	1.618 kcps
3	LAS eventRequest	1.993 kcps
4	LAS event live	1.757 kcps
5	GR clock reqest	10.060 kcps
6	GR clock live	8.982 kcps
7	GR Single	1.616 kcps
8	GR Single Sample	1.616 kcps
9	LAS Single	1.755 kcps
10	LAS SingleSample	1.755 kcps
11	GR & LAS COIN	0.002 kcps
12	ALL accept Event	3.373 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	3.373 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 89.041 percent
Trig.(LAS) live : 88.156 percent
Clock live : 89.280 percent

rate3

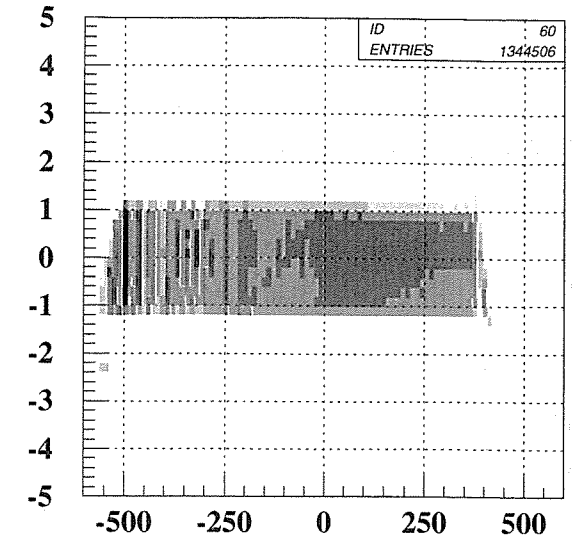
0	BLP CLK req :	10.061 kcps
1	BLP CLK live :	10.060 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	2.516 kcps
5	Akimune Down :	13.400 kcps
6	Akimune Left :	2.319 kcps
7	Akimune Right :	20.520 kcps
8	Beam Monitor1 :	1.817 kcps
9	Beam Monitor2 :	1.618 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	75.051 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler down
RUN NUM 1049 B.I. Range 20 nA
RUN START 2007-Oct-17 17:29:19
NOW 2007-Oct-17 17:30:23
scaler 0 ch Sca1

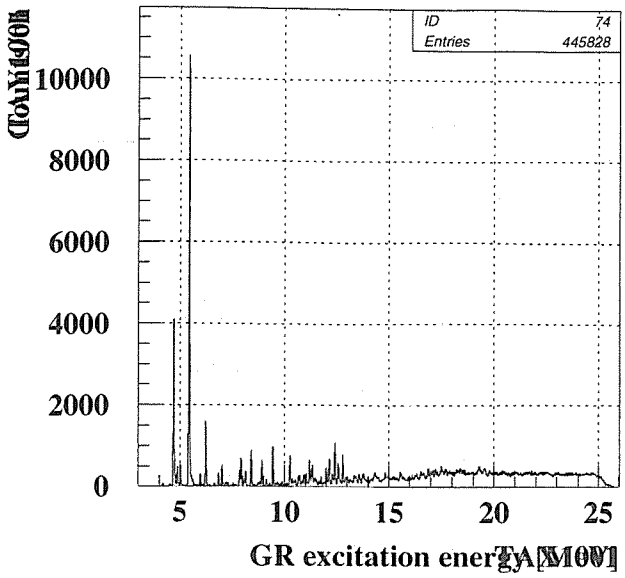
LAS の UI の発振がひどくなっている

1049

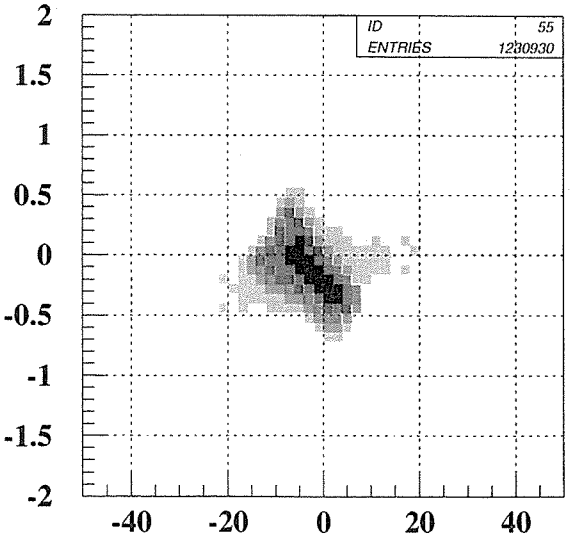
2007/10/17 18.15



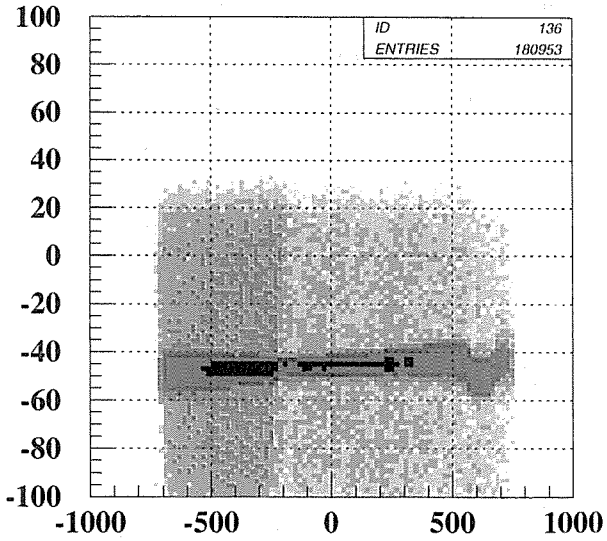
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

Run# 1050 Comment $^{32}S(p,p')$ at 12° #2

Date 10 / 17

Start 18 : 17

Stop 19 : 01

GR angle 12 deg

Beam current 7 nA

C.I. range 20 nA

Target

☐ ^{16}O mg/cm^2 (☐ice or ☐glass)

☐ ^{24}Mg mg/cm^2

☐ ^{28}Si mg/cm^2

☑ ^{32}S 5.9 mg/cm^2 (☐99.9% ☑nat)

☐ ^{40}Ca mg/cm^2

☐ mg/cm^2

Hata-Out

VDC ☑ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☑ SC rot. V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. 2.0 kcps accep. 1.8 kcps ratio 86 %

LAS event req. 2.2 kcps accep. 1.8 kcps ratio 88 %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= -199 ℃ TC2= -135 ℃

rate1

0	Beam Intensity	7.075 nA
1	GR event request	2.161 kcps
2	GR event live	1.909 kcps
3	LAS eventRequest	2.327 kcps
4	LAS event live	2.056 kcps
5	GR clock reqest	10.012 kcps
6	GR clock live	8.739 kcps
7	GR Single	1.907 kcps
8	GR Single Sample	1.907 kcps
9	LAS Single	2.053 kcps
10	LAS SingleSample	2.053 kcps
11	GR & LAS COIN	0.002 kcps
12	ALL accept Event	3.962 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	3.962 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 88.354 percent
Trig.(LAS) live : 88.373 percent
Clock live : 87.292 percent

rate3

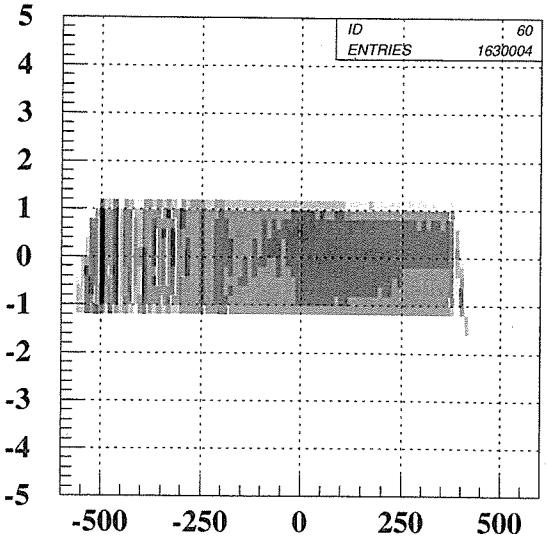
0	BLP CLK req :	10.012 kcps
1	BLP CLK live :	10.012 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	1.739 kcps
5	Akimune Down :	13.113 kcps
6	Akimune Left :	1.092 kcps
7	Akimune Right :	2.466 kcps
8	Beam Monitor1 :	2.161 kcps
9	Beam Monitor2 :	1.909 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	84.455 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler up
RUN NUM 1050 B.I. Range 20 nA
RUN START 2007-Oct-17 18:15:52
NOW 2007-Oct-17 18:17:09
scaler 1 ch Sca1

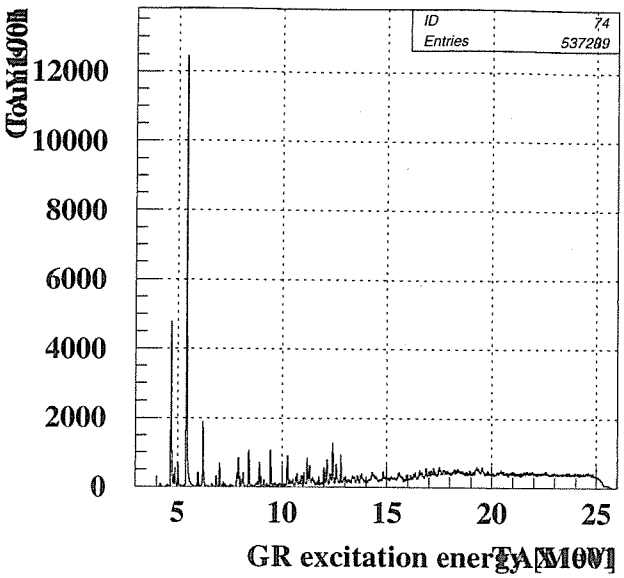
LAS U1
発振 ヤやまれたみたい
(何もしてない)

2007/10/17 19.00

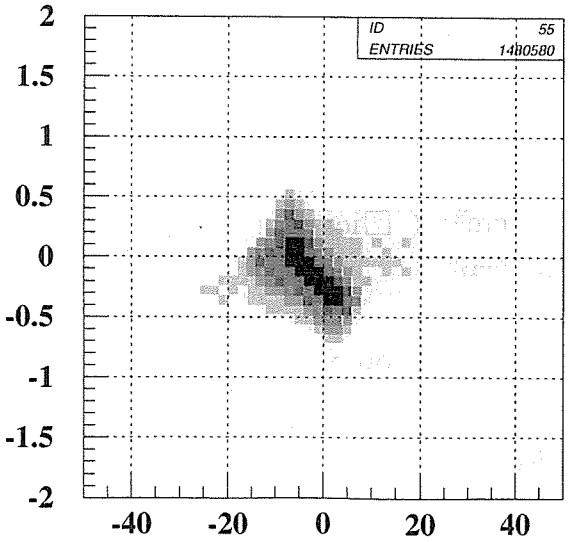
1050.



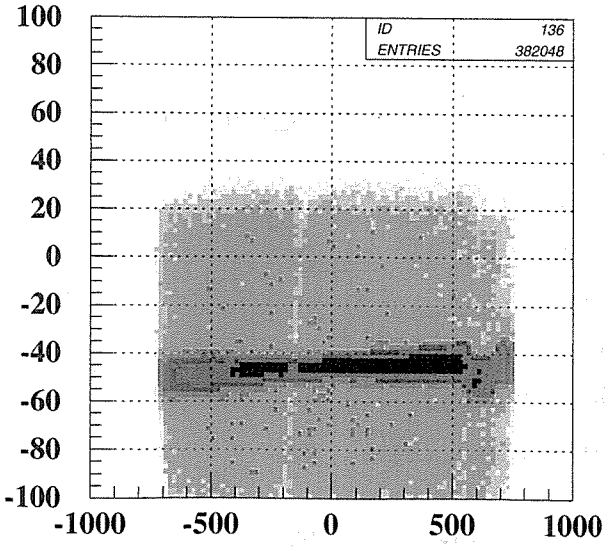
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



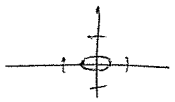
GYPH GR Phi vs Y



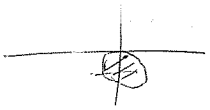
LXY LAS Y vs X

GR 12° → 14°

Beam Spot



on Target
ok



BV 9
5mm F

↳ 多の測定では ok とする.
0°に行く前に check すべし

step = 29184

Run# 1051 ~~18~~ Comment nat S 5.9 mg/cm² @ 14° 1st

Date 10/17
Start 19 : 23
Stop 20 : 08.
GR angle 14° deg
Beam current nA
C.I. range 20 nA

Target
☐ ^{16}O mg/cm² (☐ice or ☐glass)
☐ ^{24}Mg mg/cm²
☐ ^{28}Si mg/cm²
☒ ^{32}S 5.9 mg/cm² (☐99.9% ☒nat)
☐ ^{40}Ca mg/cm²
☐ mg/cm²

VDC ☐ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☐ SC rot. V
GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V
GR event req. kcps accep. kcps ratio %
LAS event req. kcps accep. kcps ratio %
Print out? ☐histograms ☐rate table
Ice target temp. TC1= -198 ℃ TC2= -132 ℃

0	Beam Intensity	6.489 nA
1	GR event request	1.662 kcps
2	GR event live	1.481 kcps
3	LAS eventRequest	2.017 kcps
4	LAS event live	1.800 kcps
5	GR clock reqest	9.962 kcps
6	GR clock live	8.907 kcps
7	GR Single	1.481 kcps
8	GR Single Sample	1.481 kcps
9	LAS Single	1.799 kcps
10	LAS SingleSample	1.799 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	3.280 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	3.280 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 89.139 percent
Trig.(LAS) live : 89.242 percent
Clock live : 89.418 percent

0	BLP CLK req :	9.961 kcps
1	BLP CLK live :	9.962 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	2.495 kcps
5	Akimune Down :	13.678 kcps
6	Akimune Left :	2.474 kcps
7	Akimune Right :	19.880 kcps
8	Beam Monitor1 :	1.662 kcps
9	Beam Monitor2 :	1.481 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	75.613 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler down
RUN NUM 1051 B.I. Range 20 nA
RUN START 2007-Oct-17 19:23:05
NOW 2007-Oct-17 19:24:31
scaler 0 ch Scal

Step=29184

Run# 1052 Comment nat S 5.9 mg/cm² @ 14° #2

Date 10 / 17
Start 20 : 09
Stop :
GR angle 14 deg
Beam current 6.7 nA
C.I. range 20 nA

Target
☐ ^{16}O mg/cm² (☐ice or ☐glass)
☐ ^{24}Mg mg/cm²
☐ ^{28}Si mg/cm²
☑ ^{32}S 5.9 mg/cm² (☐99.9% ☑nat)
☐ ^{40}Ca mg/cm²
☐ mg/cm²

VDC ☐ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☐ SC rot. V
GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V
GR event req. kcps accep. kcps ratio %
LAS event req. kcps accep. kcps ratio %
Print out? ☐histograms ☐rate table
Ice target temp. TC1= −199 ℃ TC2= −135 ℃

rate1

0	Beam Intensity	6.802 nA
1	GR event request	1.877 kcps
2	GR event live	1.601 kcps
3	LAS eventRequest	2.257 kcps
4	LAS event live	1.970 kcps
5	GR clock reqest	9.902 kcps
6	GR clock live	8.555 kcps
7	GR Single	1.598 kcps
8	GR Single Sample	1.598 kcps
9	LAS Single	1.967 kcps
10	LAS SingleSample	1.967 kcps
11	GR & LAS COIN	0.003 kcps
12	ALL accept Event	3.568 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	3.568 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 85.274 percent
Trig.(LAS) live : 87.277 percent
Clock live : 86.390 percent

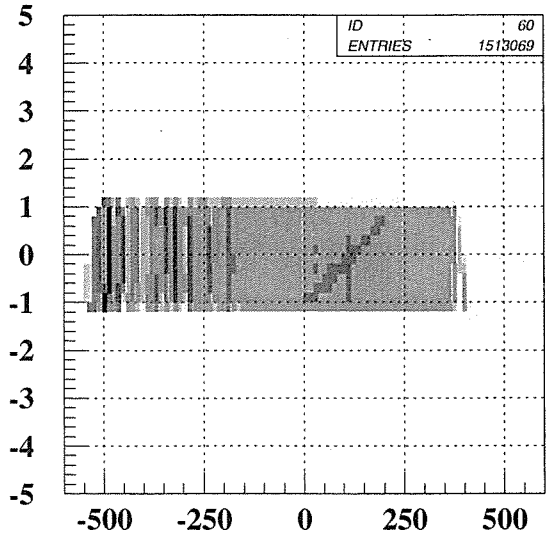
rate3

0	BLP CLK req :	9.902 kcps
1	BLP CLK live :	9.903 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	1.742 kcps
5	Akimune Down :	12.958 kcps
6	Akimune Left :	1.206 kcps
7	Akimune Right :	3.974 kcps
8	Beam Monitor1 :	1.877 kcps
9	Beam Monitor2 :	1.601 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	80.469 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

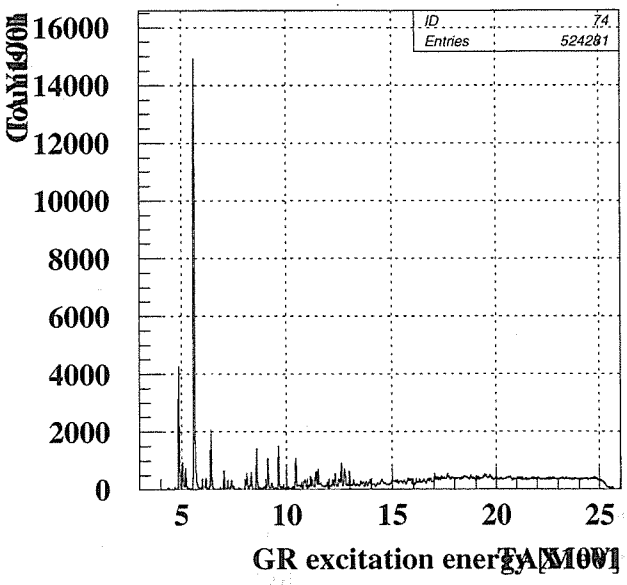
scaler up
RUN NUM 1052 B.I. Range 20 nA
RUN START 2007-Oct-17 20:09:10
NOW 2007-Oct-17 20:11:46
scaler 1 ch Sca1

2007/10/17 20.55

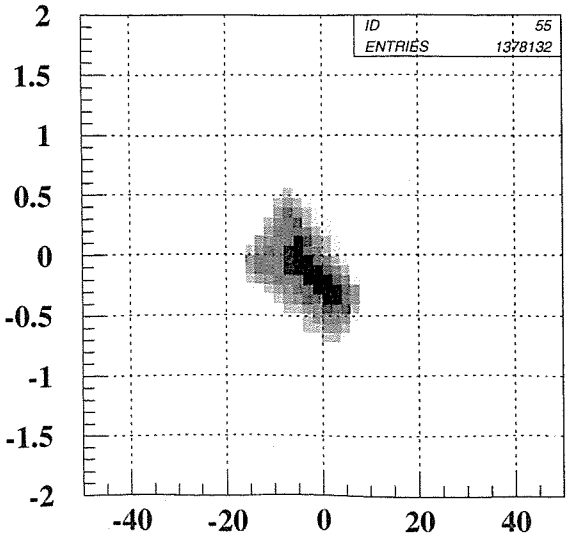
#1052



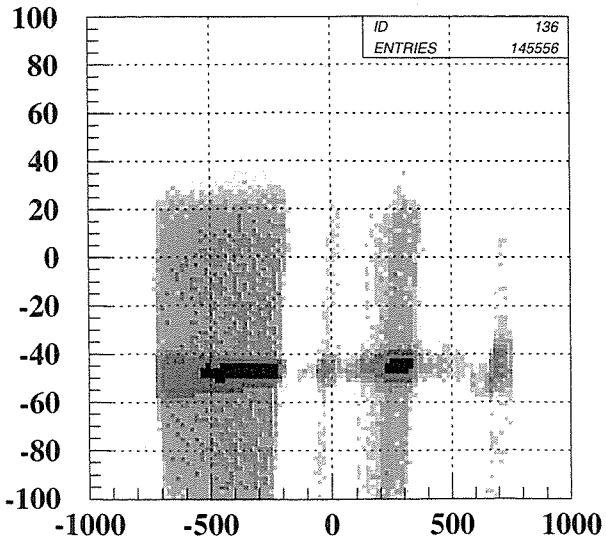
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



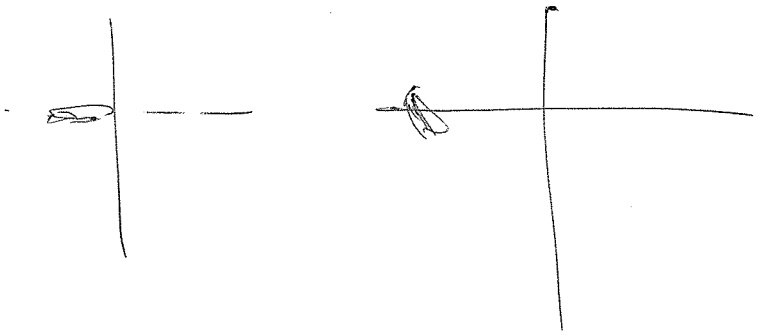
LXY LAS Y vs X

索　引

数	摘　要	頁数	摘　要	頁数	摘　要
	BLP を用いる.				
	fre 02 > nfa 7 0 1 0 0				

2007 10/17.

21:10. GR 14° → 8°.

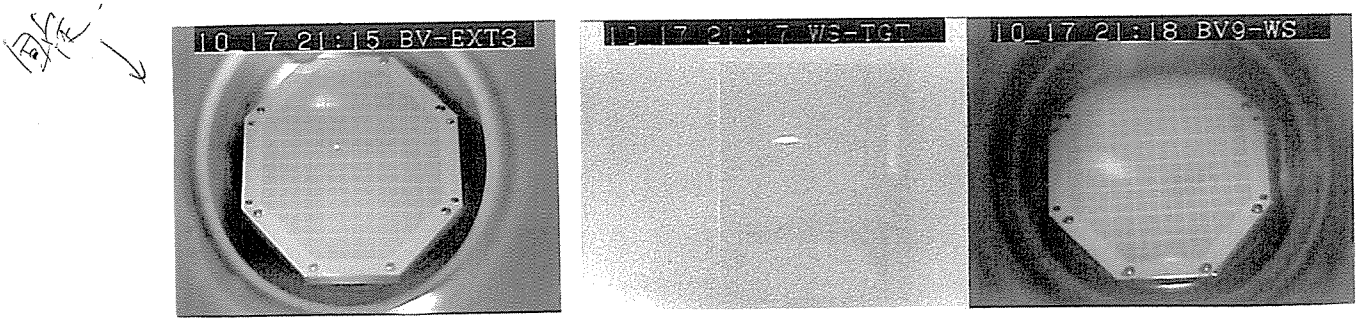


target BV-9

左にずれている。

上流から軸出しいただく

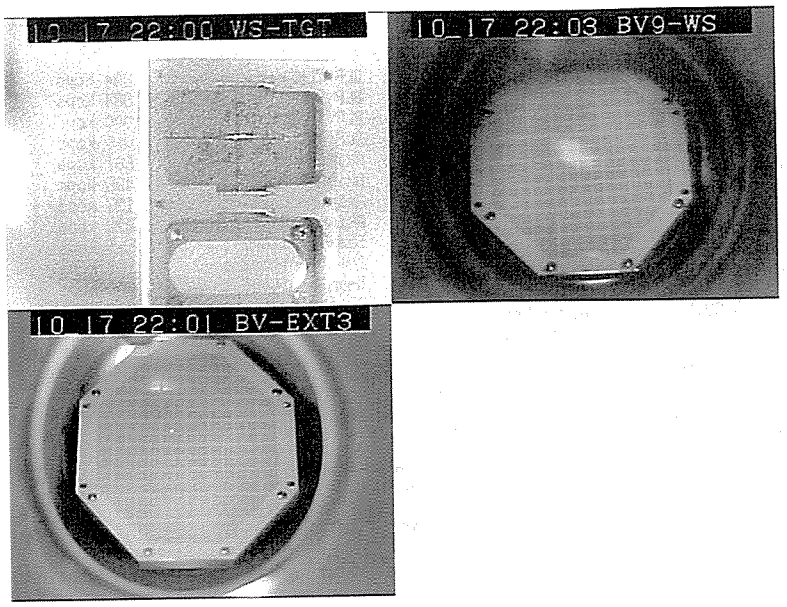
以下は調整前



CAS UI の載振を抑えるため threshold を上げた。

21:50〜 軸出しをお願いする

調整後



ここは動かない

rot 再SCFC = 1.686 V.

SCFCの影が見えるので zoomで stop

step=29184

Run# 1053 Comment next S 5.9 mg/cm² @ 8°

		Target		
Date	10 / 17	☐ ^{16}O	mg/cm²	(☐ice or ☐glass)
Start	22 : 13	☐ ^{24}Mg	mg/cm²	
Stop	22 : 33	☐ ^{28}Si	mg/cm²	
GR angle	8 deg	☑ ^{32}S	5.9 mg/cm²	(☐99.9% ☑nat)
Beam current	6.8 nA	☐ ^{40}Ca	mg/cm²	
C.I. range	20 nA	☐	mg/cm²	

VDC ☐ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☑ SC rot. 1.686 V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= -199 ℃ TC2= -134 ℃

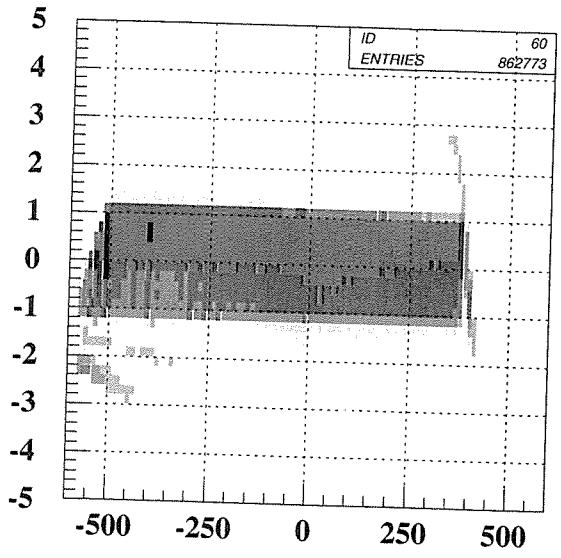
0	Beam Intensity	6.734 nA
1	GR event request	2.515 kcps
2	GR event live	2.169 kcps
3	LAS eventRequest	1.993 kcps
4	LAS event live	1.711 kcps
5	GR clock reqest	9.885 kcps
6	GR clock live	8.667 kcps
7	GR Single	2.166 kcps
8	GR Single Sample	2.166 kcps
9	LAS Single	1.708 kcps
10	LAS SingleSample	1.708 kcps
11	GR & LAS COIN	0.003 kcps
12	ALL accept Event	3.877 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	3.877 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 86.226 percent
Trig.(LAS) live : 85.855 percent
Clock live : 87.673 percent

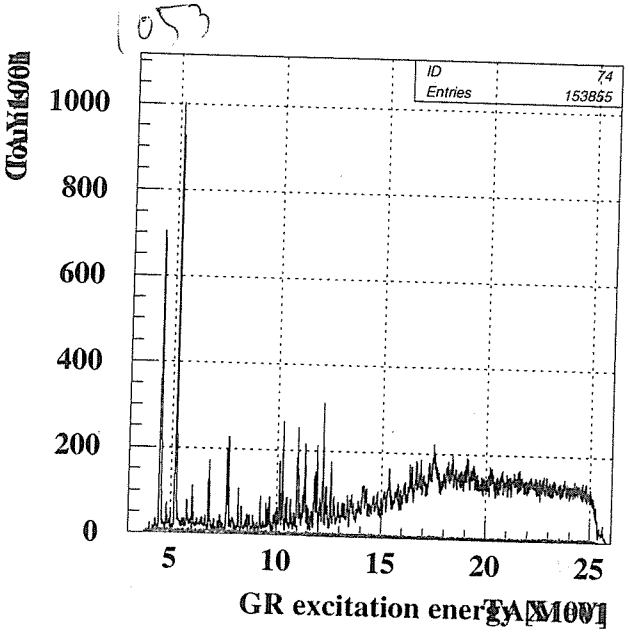
0	BLP CLK req :	9.884 kcps
1	BLP CLK live :	9.884 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	1.667 kcps
5	Akimune Down :	12.496 kcps
6	Akimune Left :	1.123 kcps
7	Akimune Right :	1.822 kcps
8	Beam Monitor1 :	2.515 kcps
9	Beam Monitor2 :	2.169 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	80.793 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler down
RUN NUM 1053 B.I. Range 20 nA
RUN START 2007-Oct-17 22:13:29
NOW 2007-Oct-17 22:13:53

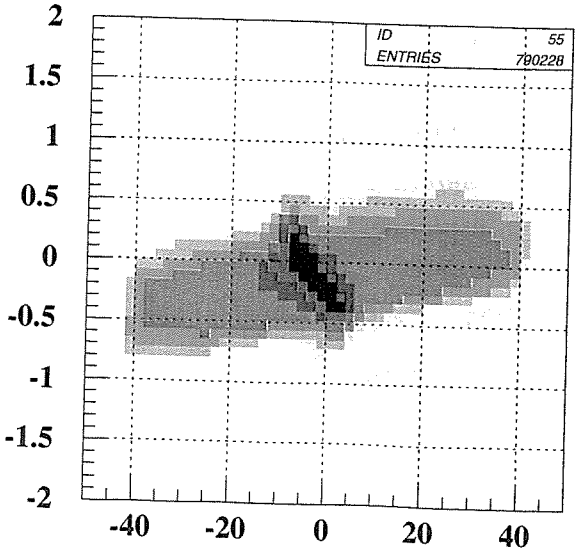
2007/10/17 22.33



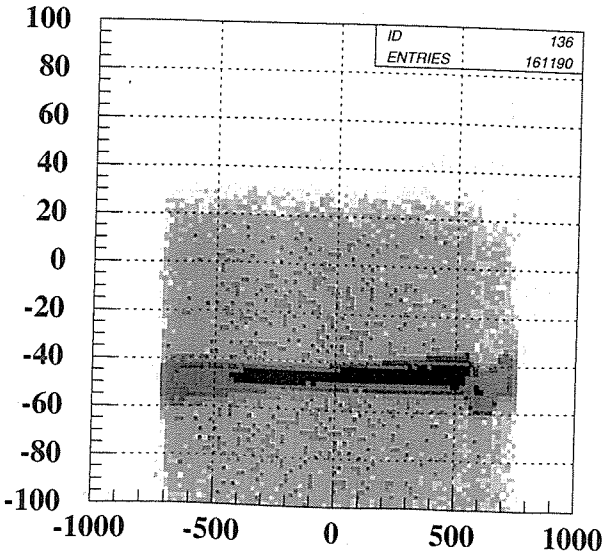
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



SCFC 1.715T

step = 29184

Run# 1054 Comment SCFC at 1.715T . natS 5.9mg/cm² 2th.

Date 10 / 17

Start 22 : 35

Stop 23 : 45

GR angle 8 deg

Beam current 6.9 nA

C.I. range 20 nA

Target

☐ ^{16}O mg/cm² (☐ice or ☐glass)

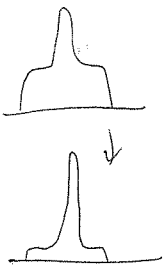
☐ ^{24}Mg mg/cm²

☐ ^{28}Si mg/cm²

☑ ^{32}S 5.9 mg/cm² (☐99.9% ☑nat)

☐ ^{40}Ca mg/cm²

☐ mg/cm²



VDC ☑ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☑SC rot. 1.715 V

gのbgがへった

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= -99 ℃ TC2= -134 ℃

rate1

0	Beam Intensity	6.762 nA
1	GR event request	1.472 kcps
2	GR event live	1.315 kcps
3	LAS eventRequest	1.963 kcps
4	LAS event live	1.756 kcps
5	GR clock reqest	9.986 kcps
6	GR clock live	9.016 kcps
7	GR Single	1.315 kcps
8	GR Single Sample	1.315 kcps
9	LAS Single	1.756 kcps
10	LAS SingleSample	1.756 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	3.071 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	3.071 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 89.322 percent
Trig.(LAS) live : 89.426 percent
Clock live : 90.288 percent

rate2

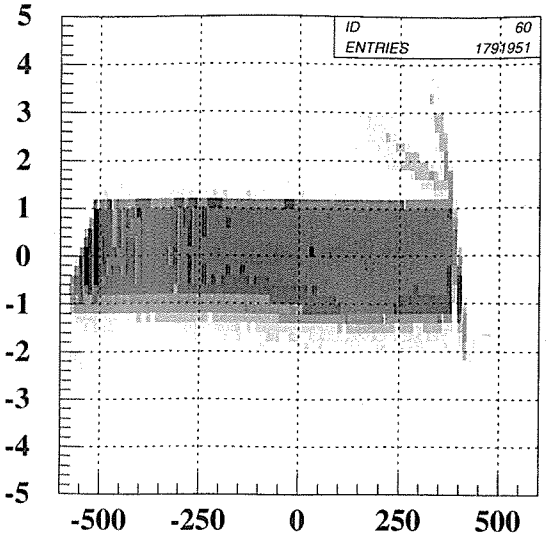
0	BLP CLK req :	9.986 kcps
1	BLP CLK live :	9.986 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	2.206 kcps
5	Akimune Down :	13.304 kcps
6	Akimune Left :	2.061 kcps
7	Akimune Right :	12.091 kcps
8	Beam Monitor1 :	1.472 kcps
9	Beam Monitor2 :	1.315 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	82.801 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler down
RUN NUM 1054 B.I. Range 20 nA
RUN START 2007-Oct-17 22:35:57
NOW 2007-Oct-17 22:38:48
scaler 0 ch Scal

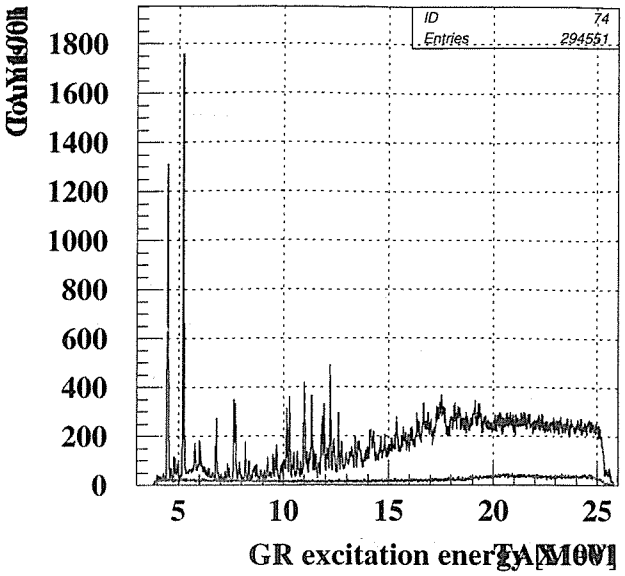
うーん、最後の方はゼーロスポット移動しなくなったかも

(FCにあたってた!?)

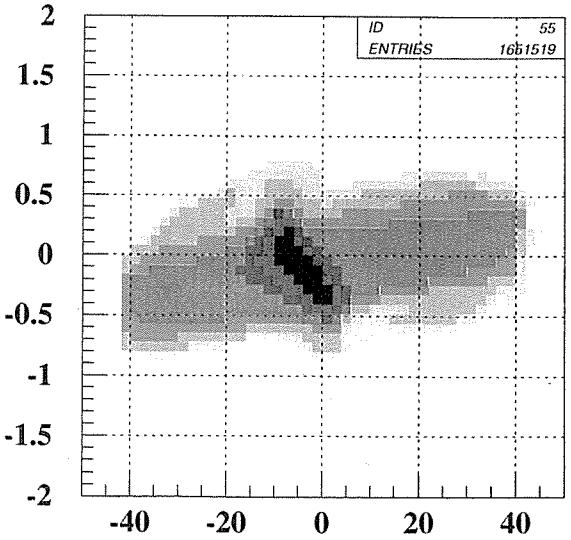
2007/10/17 23.45



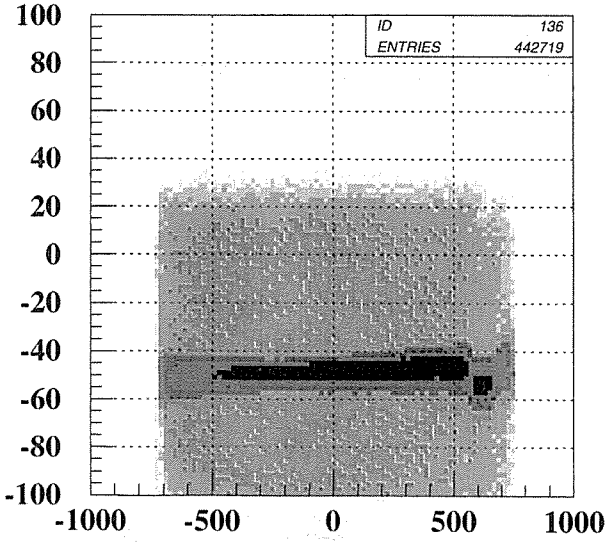
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



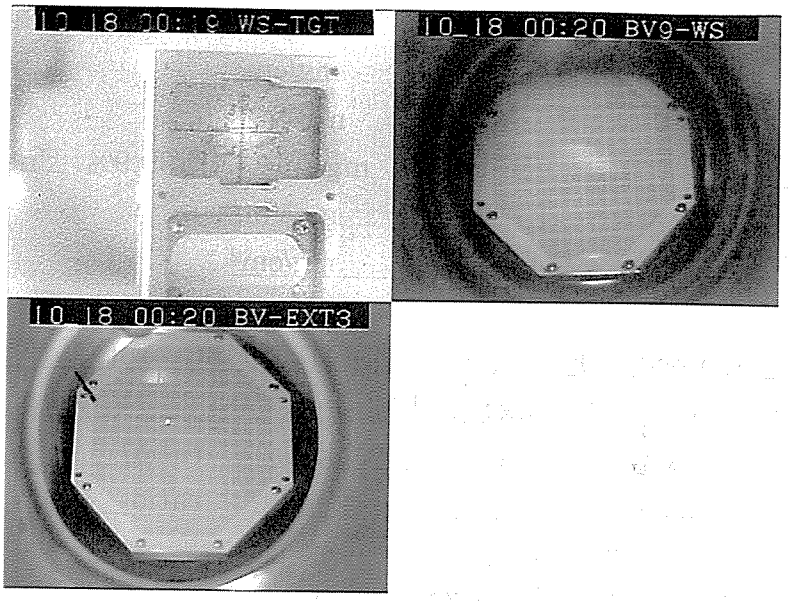
LXY LAS Y vs X

10分4

23:50 GR 8° → 6°.

spot 形状 右にずれている

Q SCFCは、1.659に戻してから、1.724へ。
(#1の P.189参照)



調整後

1230付近、ビーム落ちる
動かず復帰

Run# 1055 Comment 6deg nat S ② (5.9mg/cm²) 29104 step Foil 1.659, S 1.724V

Date 10 / 18

Start 0 : 26

Stop 1 : 31

GR angle 6 deg

Beam current 6.9 nA

C.I. range 20 nA

Target

☐ ^{16}O mg/cm² (☐ice or ☐glass)

☐ ^{24}Mg mg/cm²

☐ ^{28}Si mg/cm²

☑ ^{32}S 5.9 mg/cm² (☐99.9% ☑nat)

☐ ^{40}Ca mg/cm²

☐ mg/cm²

VDC ☑ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☑ SC rot. 1.659 S 1.724 V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= -19.8℃ TC2= -17.4 ℃

rate1

0	Beam Intensity	6.799 nA
1	GR event request	3.269 kcps
2	GR event live	2.818 kcps
3	LAS eventRequest	1.913 kcps
4	LAS event live	1.625 kcps
5	GR clock reqest	10.130 kcps
6	GR clock live	8.744 kcps
7	GR Single	2.816 kcps
8	GR Single Sample	2.816 kcps
9	LAS Single	1.623 kcps
10	LAS SingleSample	1.623 kcps
11	GR & LAS COIN	0.002 kcps
12	ALL accept Event	4.441 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	4.441 kcps
15	LAS-reject	0.000 kcps

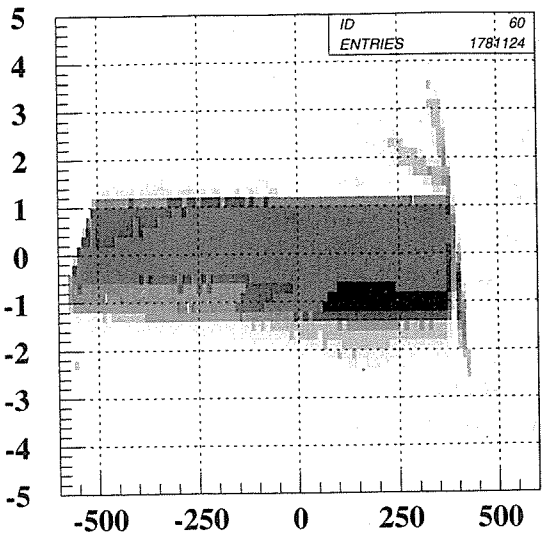
Trig.(GR) live : 86.196 percent
Trig.(LAS) live : 84.958 percent
Clock live : 86.320 percent

rate3

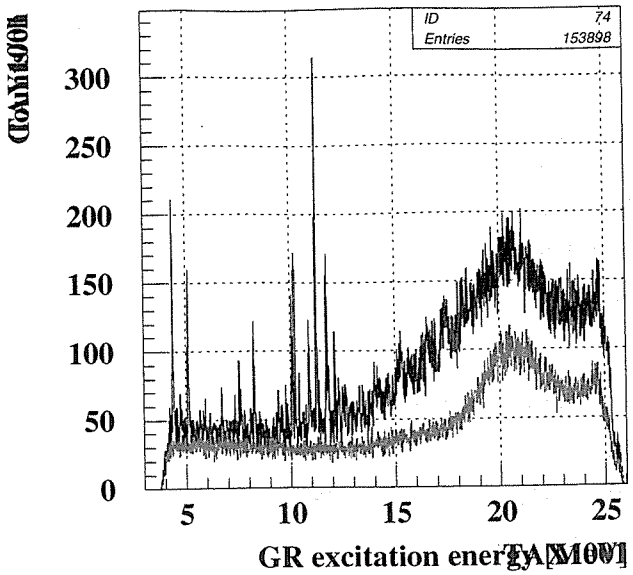
0	BLP CLK req :	10.130 kcps
1	BLP CLK live :	10.129 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	1.639 kcps
5	Akimune Down :	12.623 kcps
6	Akimune Left :	1.026 kcps
7	Akimune Right :	2.854 kcps
8	Beam Monitor1 :	3.269 kcps
9	Beam Monitor2 :	2.818 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	86.209 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler up
RUN NUM 1055 B.I. Range 20 nA
RUN START 2007-Oct-18 00:26:05
NOW 2007-Oct-18 00:28:20
scaler 1 ch Sca1

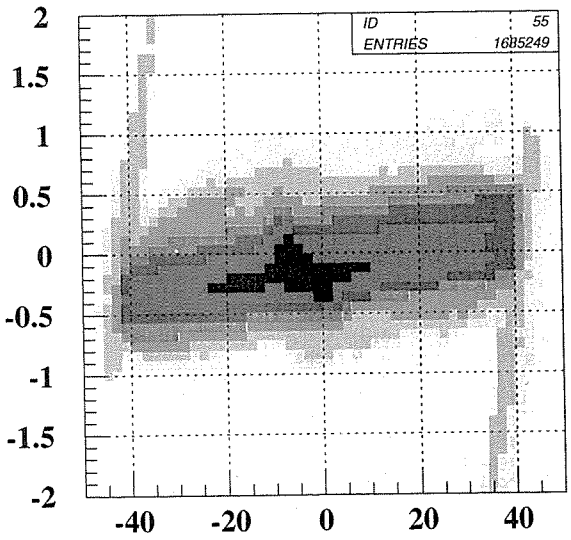
2007/10/18 01.31



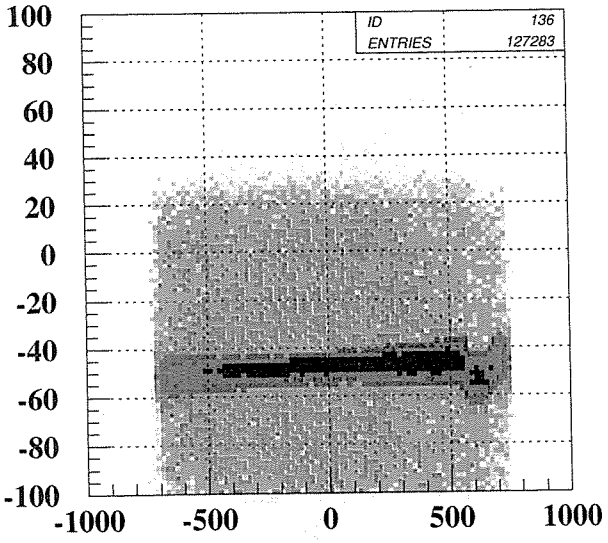
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

1055

cavity #2が動いていた

Run# 1056 Comment 32S(p,p') natural-2 6 deg posi-29186 #2
FCrot = 1.724

Date 10 / 18
Start 2 : 14
Stop 2 : 29
GR angle 6 deg
Beam current 6.4 nA
C.I. range 20 nA

Target
☐ ^{16}O mg/cm^2 (☐ice or ☐glass)
☐ ^{24}Mg mg/cm^2
☐ ^{28}Si mg/cm^2
☑ ^{32}S mg/cm^2 (☐99.9% ☑nat) #2
☐ ^{40}Ca mg/cm^2
☐ mg/cm^2

VDC ☑ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☑ SC rot. 1.724 V
GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V
GR event req. 3.8 kcps accep. 2.4 kcps ratio ~~48~~ 85 %
LAS event req. 1.8 kcps accep. 1.6 kcps ratio 85 %
Print out? ☐histograms ☐rate table
Ice target temp. TC1= -198 ℃ TC2= -135 ℃

rate1

0	Beam Intensity	6.470 nA
1	GR event request	3.784 kcps
2	GR event live	3.187 kcps
3	LAS eventRequest	1.795 kcps
4	LAS event live	1.527 kcps
5	GR clock reqest	9.904 kcps
6	GR clock live	8.439 kcps
7	GR Single	3.184 kcps
8	GR Single Sample	3.184 kcps
9	LAS Single	1.524 kcps
10	LAS SingleSample	1.524 kcps
11	GR & LAS COIN	0.003 kcps
12	ALL accept Event	4.711 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	4.711 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 84.223 percent
Trig.(LAS) live : 85.090 percent
Clock live : 85.212 percent

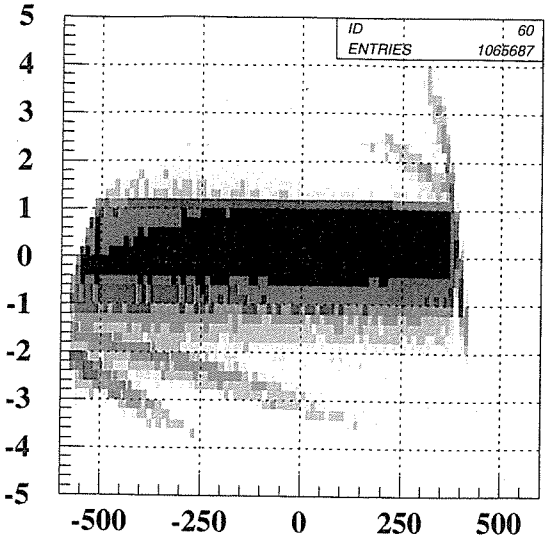
rate3

0	BLP CLK req :	9.904 kcps
1	BLP CLK live :	9.904 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	1.591 kcps
5	Akimune Down :	11.675 kcps
6	Akimune Left :	0.971 kcps
7	Akimune Right :	1.553 kcps
8	Beam Monitor1 :	3.784 kcps
9	Beam Monitor2 :	3.187 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	81.759 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

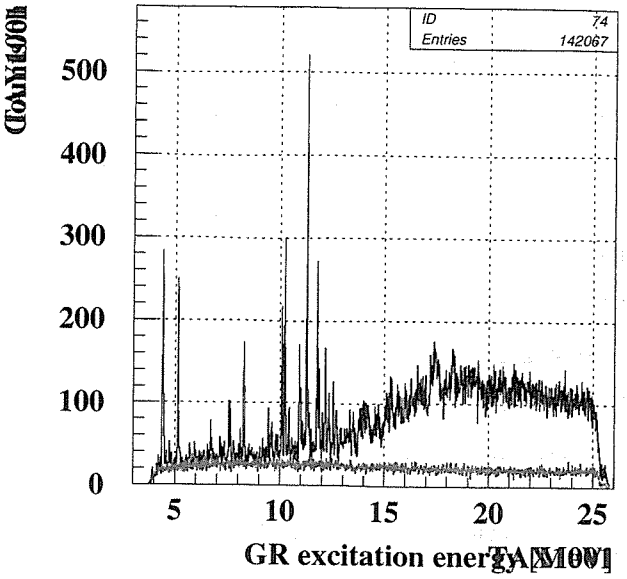
scaler down
RUN NUM 1056 B.I. Range 20 nA
RUN START 2007-Oct-18 02:14:30
NOW 2007-Oct-18 02:16:07
scaler 0 ch Scal

2007/10/18 02.30

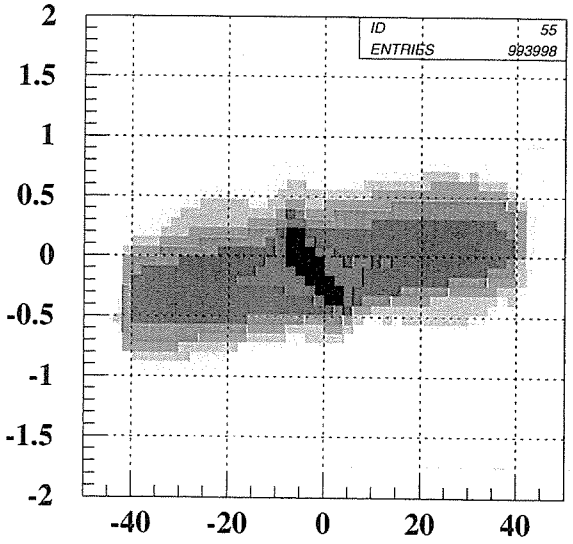
#1056



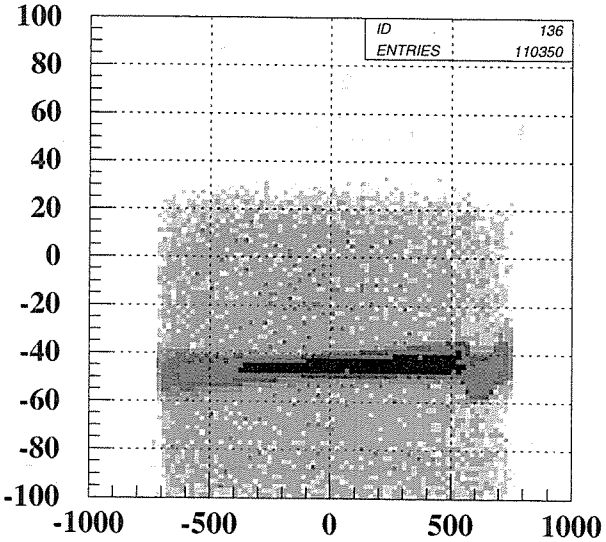
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)

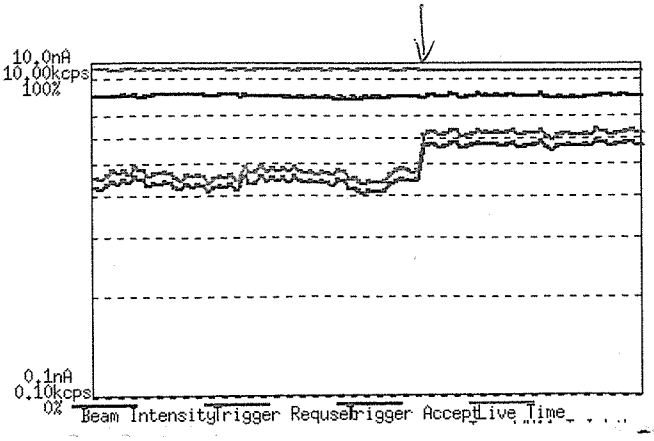


GYPH GR Phi vs Y



LXY LAS Y vs X

イベントレートが急に減少したのでうこそであった。標的の中央が欠けてしまった様子
(上部はOKだったが)



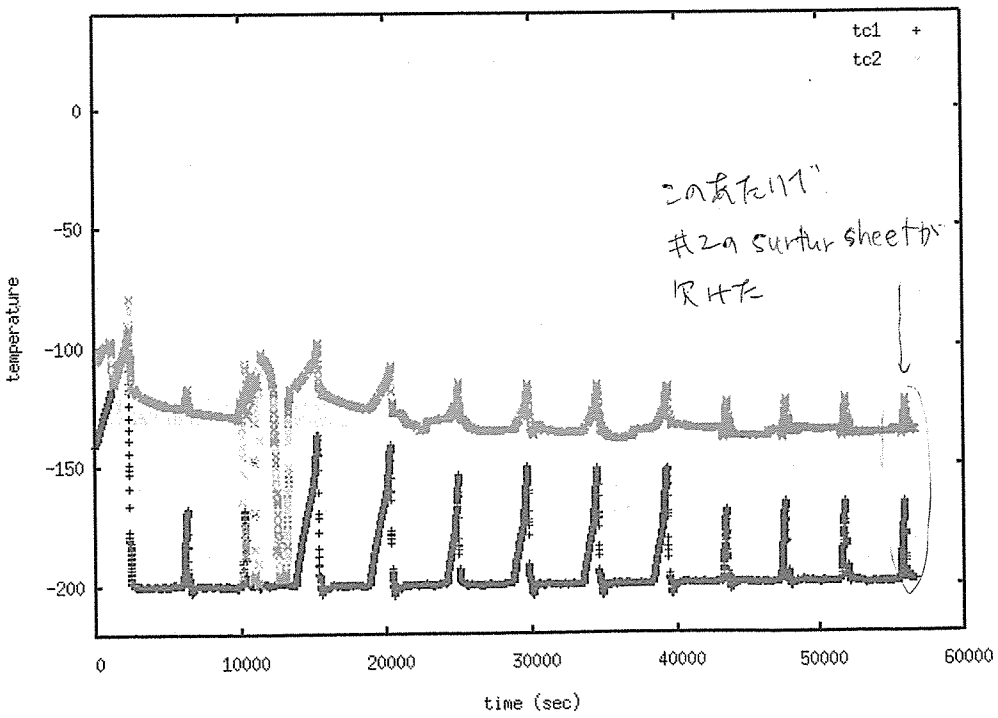
もう一枚(厚い目)の時も とっておく

Run# 1057 Comment next は 5.9mg/cm² の., step = 38044 at 6° 3rd.

Date 10 / 18.
Start 2 : 35
Stop :
GR angle 6 deg
Beam current 6.2 nA
C.I. range 20 nA

Target
☐^{16}O mg/cm² (☐ice or ☐glass)
☐^{24}Mg mg/cm²
☐^{28}Si mg/cm²
☑^{32}S 5.9 mg/cm² (☐99.9% ☑nat) #1
☐^{40}Ca mg/cm²
☐ mg/cm²

VDC ☑OK ☐ Tripped F.C. ☐0deg ☐Q1 ☑SC rot. 1.659 → 1.724 V
GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V
GR event req. kcps accep. kcps ratio %
LAS event req. kcps accep. kcps ratio %
Print out? ☐histograms ☐rate table
Ice target temp. TC1= -148 ℃ TC2= -135 ℃



rate1

0	Beam Intensity	6.370 nA
1	GR event request	5.137 kcps
2	GR event live	4.083 kcps
3	LAS eventRequest	1.892 kcps
4	LAS event live	1.524 kcps
5	GR clock reqest	9.903 kcps
6	GR clock live	8.149 kcps
7	GR Single	4.076 kcps
8	GR Single Sample	4.076 kcps
9	LAS Single	1.517 kcps
10	LAS SingleSample	1.517 kcps
11	GR & LAS COIN	0.007 kcps
12	ALL accept Event	5.600 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	5.600 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 79.489 percent
Trig.(LAS) live : 80.570 percent
Clock live : 82.294 percent

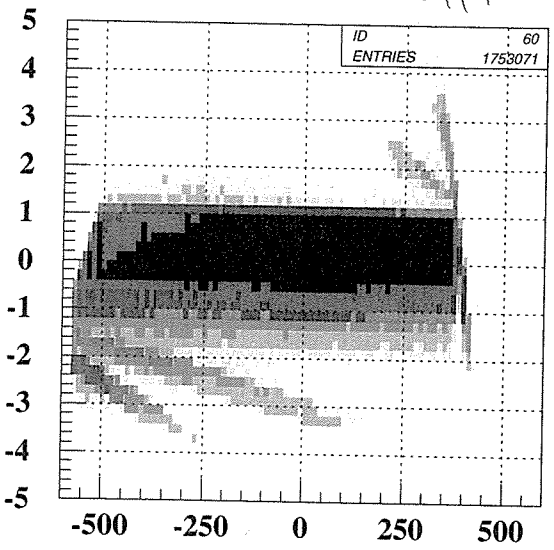
rate3

0	BLP CLK req :	9.903 kcps
1	BLP CLK live :	9.903 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	1.414 kcps
5	Akimune Down :	11.050 kcps
6	Akimune Left :	1.012 kcps
7	Akimune Right :	1.544 kcps
8	Beam Monitor1 :	5.137 kcps
9	Beam Monitor2 :	4.083 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	81.416 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

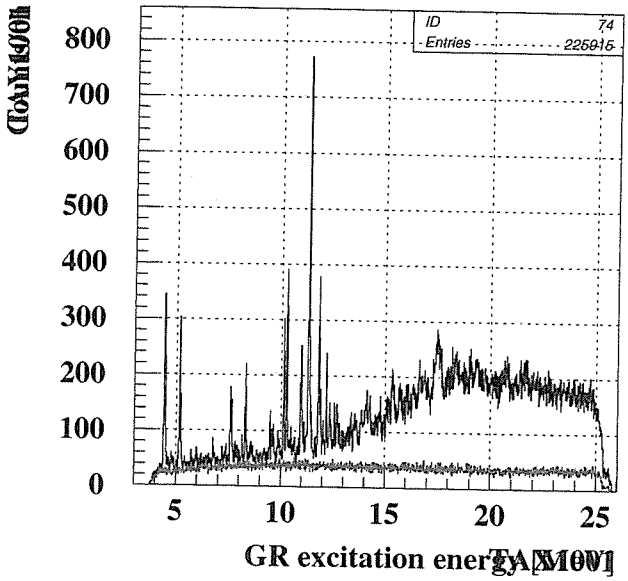
scaler down
RUN NUM 1057 B.I. Range 20 nA
RUN START 2007-Oct-18 02:35:59
NOW 2007-Oct-18 02:36:07
scaler 0 ch Sca1

2007/10/18 03.05

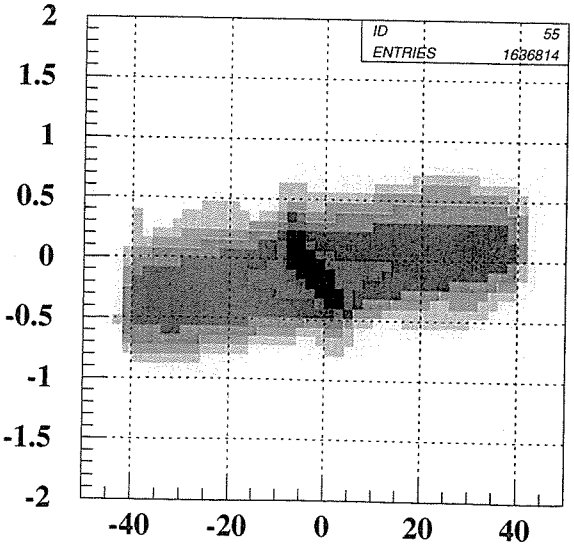
#1057



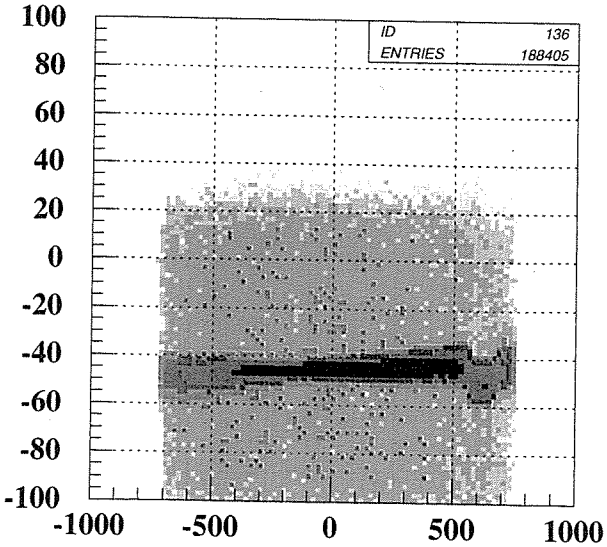
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

10/18.
3こ(0 ice target
いる場合.

5こ(0 { タンク交換 37.80kg.
すべって 45 kg/cm².

ice target マウント.

{ 中段のは. 大丈夫 (step = 3A44)
下段は 死亡.

GR 6° → 0°. ダクトつなぐ.

5こ35. ~~0度~~
軸出し開始.

FCは. 0deg FCと SCFCの sum をとるように
している.

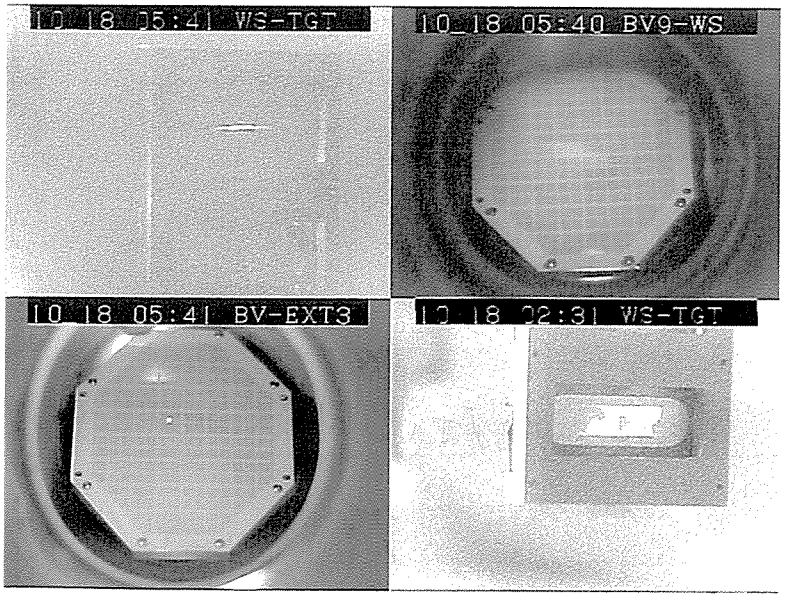
WS Magnet Controller '07/10/18 03:39

WS PIS

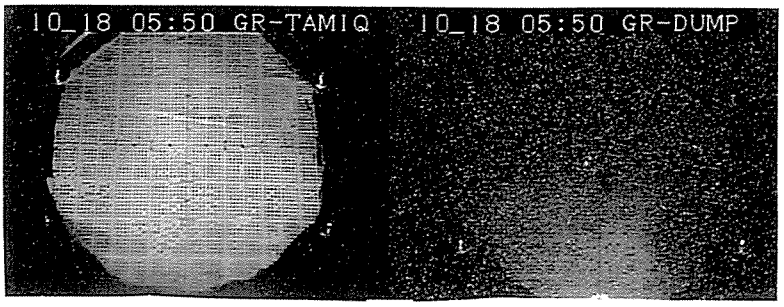
Magnet	Field(Preset|Actual)		Current(Preset|Actual)	Status	PS	NMR	FB
GR Q1		mT	90.20 A				
GR SX		mT	18.20 A				
GR Q2		mT	8.50 A				
GR MQ		mT	0.02 A				
GR MS		mT	0.02 A				
GR D1	869.777	mT	230.64 A				
GR D2	869.820	mT	434.13 A				
GR DSR	110.610	mT	12.41 A				
LAS Q		mT	217.40 A				
LAS D	-747.974	mT	280.10 A				
GR DQ1		mT	50.00 A				
GR DQ2		mT	65.10 A				

Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

ダンプQ立ち上げ時



Q1FLは 4.0のまま



ビームは非常に安定していた

(5ヶ スリットは閉じてもらった)

1nAで ~~200cps~~ 100 - 200cps (blank)

target inでも 1uA → 200cps

もう iceはない…

朝

川畑さんの開発.

アルコールを使い 若干コレールも使って.

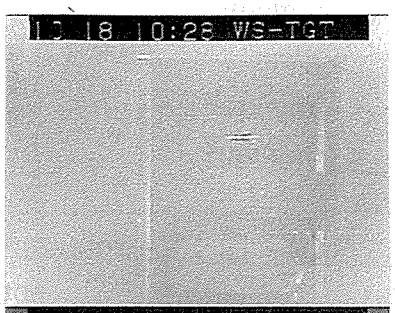
(2枚 でカット

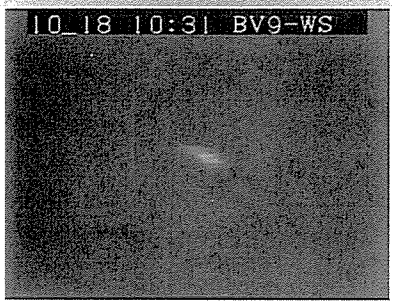
1枚はすぐ剥れる.

厚みは不明

10こ20. 2回目インストール完

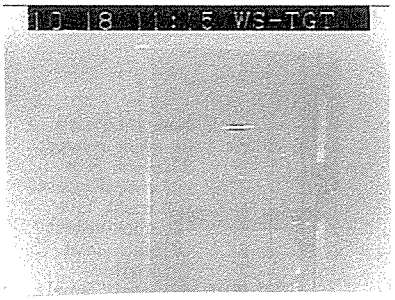
10こ25 軸出し.





調整後

attenuator 1/10 強度.



Run# 1058 Comment step = 38044, 0° 16O ice, 1st

Date 10 / 18

Start 10 : 53

Stop :

GR angle 0 deg

Beam current 1.6 nA

C.I. range 6 nA

Target

☑ ^{16}O mg/cm^2 (☐ice or ☐glass)

☐ ^{24}Mg mg/cm^2

☐ ^{28}Si mg/cm^2

☐ ^{32}S mg/cm^2 (☐99.9% ☐nat)

☐ ^{40}Ca mg/cm^2

☐ mg/cm^2

VDC ☐ OK ☐ Tripped F.C. ☑0deg ☐Q1 ☐ SC rot. 2.0 V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= ℃ TC2= ℃

rate1

0	Beam Intensity	1.633 nA
1	GR event request	3.718 kcps
2	GR event live	3.208 kcps
3	LAS eventRequest	0.111 kcps
4	LAS event live	0.096 kcps
5	GR clock reqest	9.583 kcps
6	GR clock live	8.518 kcps
7	GR Single	3.207 kcps
8	GR Single Sample	3.207 kcps
9	LAS Single	0.095 kcps
10	LAS SingleSample	0.095 kcps
11	GR & LAS COIN	0.001 kcps
12	ALL accept Event	3.303 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	3.303 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 86.301 percent
Trig.(LAS) live : 86.325 percent
Clock live : 88.895 percent

rate3

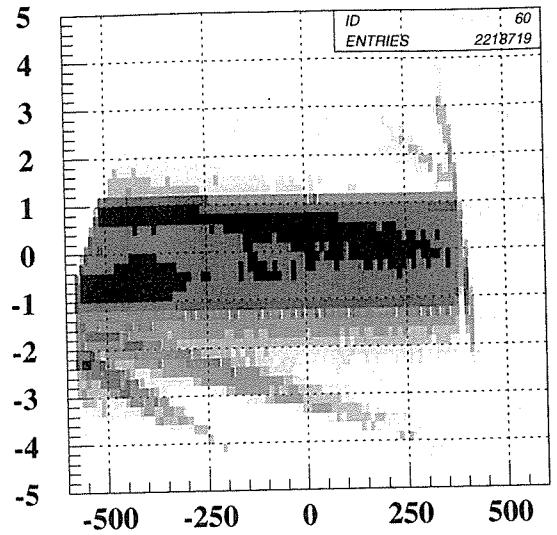
0	BLP CLK req :	9.809 kcps
1	BLP CLK live :	9.808 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	0.015 kcps
5	Akimune Down :	0.075 kcps
6	Akimune Left :	0.016 kcps
7	Akimune Right :	0.046 kcps
8	Beam Monitor1 :	3.884 kcps
9	Beam Monitor2 :	3.369 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	9.494 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

sca

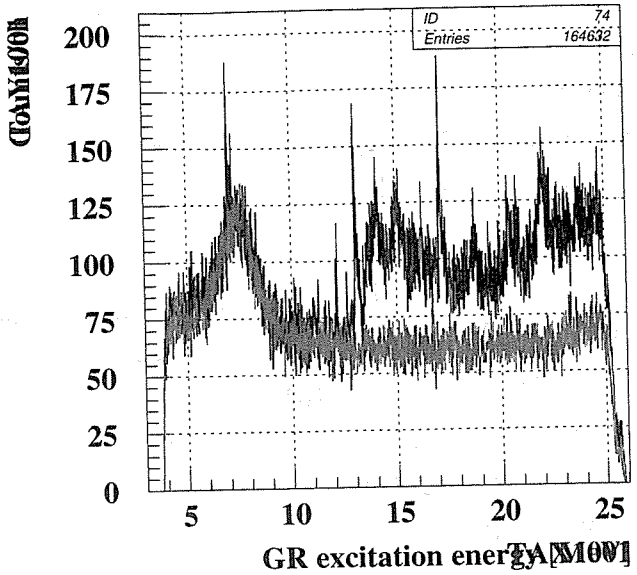
scaler down
RUN NUM 1058 B.I. Range 6 nA
RUN START 2007-Oct-18 10:53:11
NOW 2007-Oct-18 10:55:43
scaler 0 ch Sca1

2007/10/18 11.10

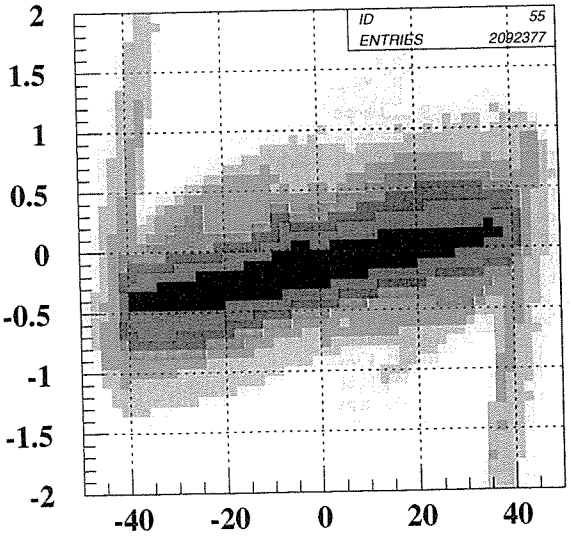
H 1058.



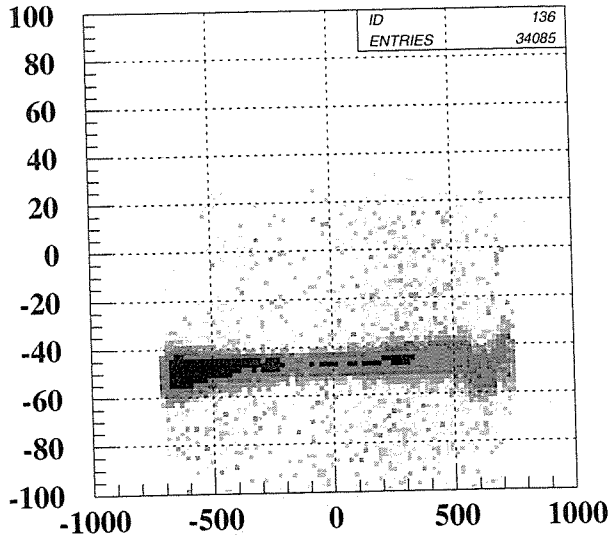
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

コメントは手書きかつ
これが正解
?

Run# 1059 Comment step = 37694, 16O, 0deg 2nd,

Date 10/18
Start 11 : 21
Stop 11 : 30
GR angle 0 deg
Beam current 1.7 nA
C.I. range 6 nA

Target
☑ ^{16}O ? mg/cm^2 (☑ice or ☐glass)
☐ ^{24}Mg mg/cm^2
☐ ^{28}Si mg/cm^2
☐ ^{32}S mg/cm^2 (☐99.9% ☐nat)
☐ ^{40}Ca mg/cm^2
☐ mg/cm^2

VDC ☐ OK ☐ Tripped F.C. ☑0deg ☐Q1 ☐ SC rot. V
GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V
GR event req. kcps accep. kcps ratio %
LAS event req. kcps accep. kcps ratio %
Print out? ☐histograms ☐rate table
Ice target temp. TC1= -199 ℃ TC2= -115 ℃

rate1

0	Beam Intensity	1.931 nA
1	GR event request	4.164 kcps
2	GR event live	3.618 kcps
3	LAS eventRequest	0.158 kcps
4	LAS event live	0.132 kcps
5	GR clock reqest	9.619 kcps
6	GR clock live	8.417 kcps
7	GR Single	3.618 kcps
8	GR Single Sample	3.618 kcps
9	LAS Single	0.132 kcps
10	LAS SingleSample	0.132 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	3.750 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	3.750 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 86.874 percent
Trig.(LAS) live : 83.735 percent
Clock live : 87.506 percent

rate3

0	BLP CLK req :	9.619 kcps
1	BLP CLK live :	9.619 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	0.010 kcps
5	Akimune Down :	0.065 kcps
6	Akimune Left :	0.013 kcps
7	Akimune Right :	0.040 kcps
8	Beam Monitor1 :	4.164 kcps
9	Beam Monitor2 :	3.618 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	10.771 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

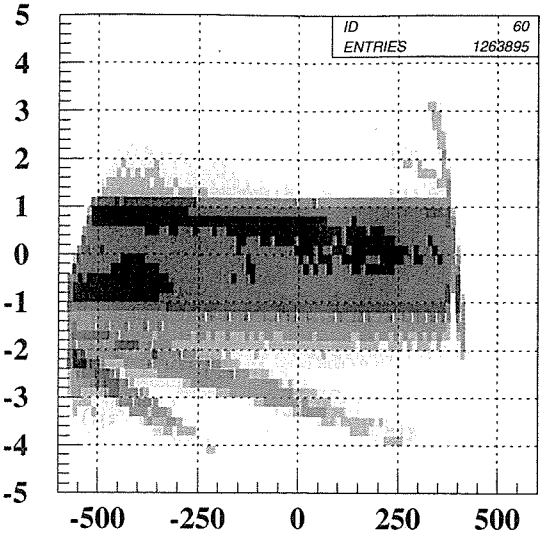
sca

scaler down
RUN NUM 1059 B.I. Range 6 nA
RUN START 2007-Oct-18 11:21:25
NOW 2007-Oct-18 11:26:09
scaler 0 ch Sca1

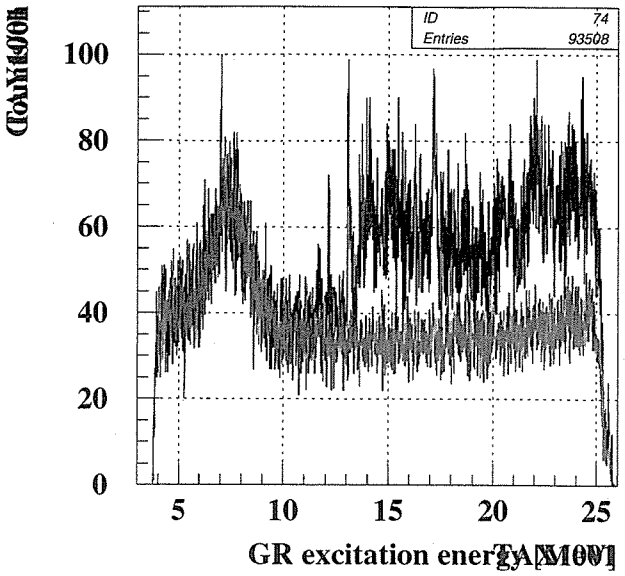
Collimator is in! Possibly source of the BG around 5~10MeV?

2007/10/18 11.30

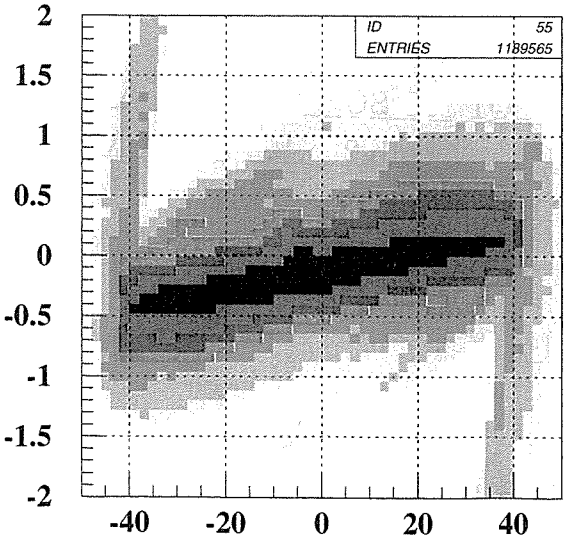
#1059



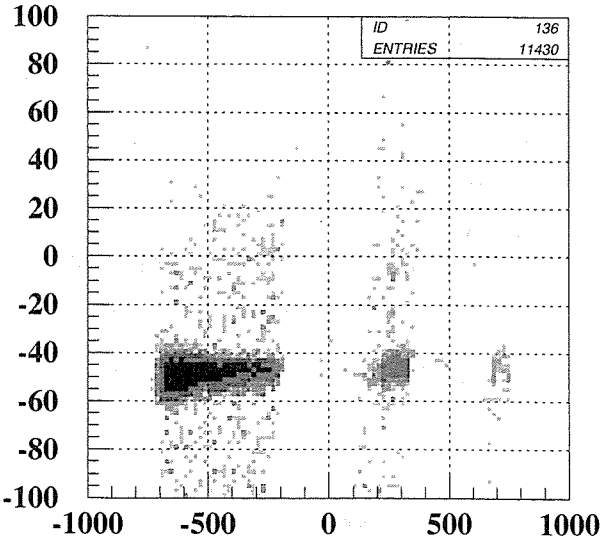
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



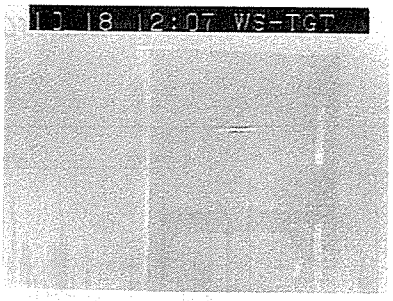
GYPH GR Phi vs Y



LXY LAS Y vs X

ここまで 0度にしてからも±20mrad×±30mrad
スリットを狭くしてみた

12:05. スポット確認.



← 調整つしゝOK

Run# 1060 Comment 16O 0deg step=37694 #3

Date 10 / 18

Start 12 : 12

Stop 13 : 12

GR angle 0 deg

Beam current 2 nA

C.I. range 6 nA

Target

☑ ^{16}O 10 mg/cm^2 (☑ ice or ☐ glass)

☐ ^{24}Mg mg/cm^2

☐ ^{28}Si mg/cm^2

☐ ^{32}S mg/cm^2 (☐ 99.9% ☐ nat)

☐ ^{40}Ca mg/cm^2

☐ mg/cm^2

VDC ☑ OK ☐ Tripped F.C. ☑ 0deg ☐ Q1 ☐ SC rot. V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐ histograms ☐ rate table

Ice target temp. TC1= -198 ℃ TC2= -100 ℃

rate1

0	Beam Intensity	1.965 nA
1	GR event request	2.382 kcps
2	GR event live	2.201 kcps
3	LAS eventRequest	0.188 kcps
4	LAS event live	0.172 kcps
5	GR clock reqest	9.622 kcps
6	GR clock live	8.915 kcps
7	GR Single	2.201 kcps
8	GR Single Sample	2.201 kcps
9	LAS Single	0.172 kcps
10	LAS SingleSample	0.172 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	2.373 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	2.373 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 92.403 percent
Trig.(LAS) live : 91.878 percent
Clock live : 92.656 percent

rate3

0	BLP CLK req :	9.621 kcps
1	BLP CLK live :	9.622 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	0.014 kcps
5	Akimune Down :	0.076 kcps
6	Akimune Left :	0.015 kcps
7	Akimune Right :	0.042 kcps
8	Beam Monitor1 :	2.382 kcps
9	Beam Monitor2 :	2.201 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	8.737 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler down
RUN NUM 1060 B.I. Range 6 nA
RUN START 2007-Oct-18 12:11:53
NOW 2007-Oct-18 12:12:21
scaler 0 ch Scal

Run# 1061 Comment ^{16}O 0 deg #4

Date 10 / 18

Start 13 : 13

Stop : ~1h

GR angle 0 deg

Beam current 2.3 nA

C.I. range 6 nA

Target

☑ ^{16}O 10 mg/cm² (☑ice or ☐glass)

☐ ^{24}Mg mg/cm²

☐ ^{28}Si mg/cm²

☐ ^{32}S mg/cm² (☐99.9% ☐nat)

☐ ^{40}Ca mg/cm²

☐ mg/cm²

VDC ☑ OK ☐ Tripped F.C. ☑0deg ☐Q1 ☐ SC rot. V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= -199 ℃ TC2= -195 ℃

rate1

0	Beam Intensity	2.251 nA
1	GR event request	2.948 kcps
2	GR event live	2.530 kcps
3	LAS eventRequest	0.194 kcps
4	LAS event live	0.183 kcps
5	GR clock reqest	9.621 kcps
6	GR clock live	8.815 kcps
7	GR Single	2.530 kcps
8	GR Single Sample	2.530 kcps
9	LAS Single	0.183 kcps
10	LAS SingleSample	0.183 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	2.713 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	2.713 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 85.820 percent
Trig.(LAS) live : 94.118 percent
Clock live : 91.618 percent

rate3

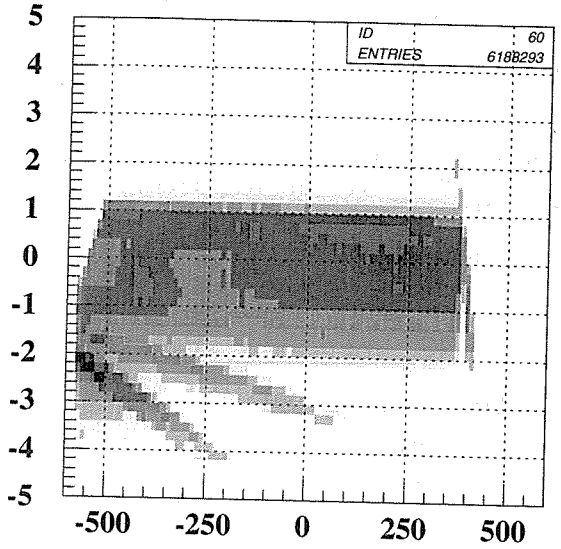
0	BLP CLK req :	9.621 kcps
1	BLP CLK live :	9.621 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	0.024 kcps
5	Akimune Down :	0.079 kcps
6	Akimune Left :	0.027 kcps
7	Akimune Right :	0.197 kcps
8	Beam Monitor1 :	2.948 kcps
9	Beam Monitor2 :	2.530 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	10.437 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

sca

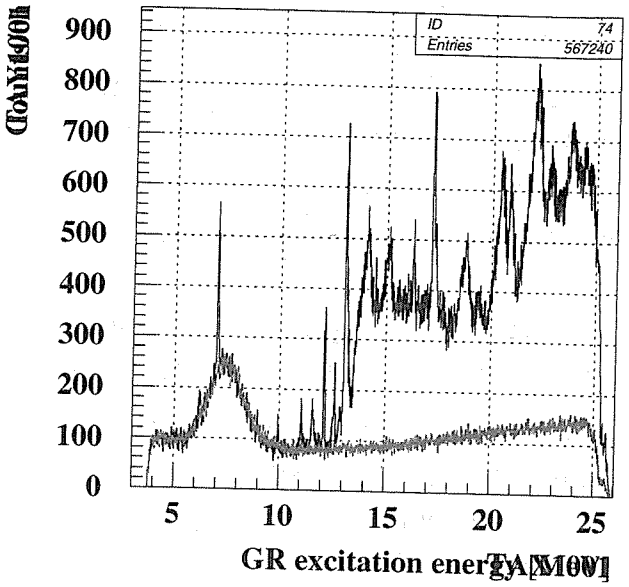
scaler down
RUN NUM 1061 B.I. Range 6 nA
RUN START 2007-Oct-18 13:13:39
NOW 2007-Oct-18 13:14:08
scaler 0 ch Sca1

1061

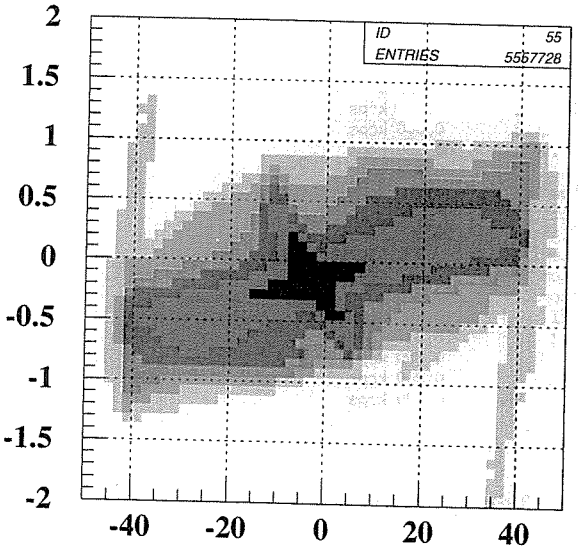
2007/10/18 14.13



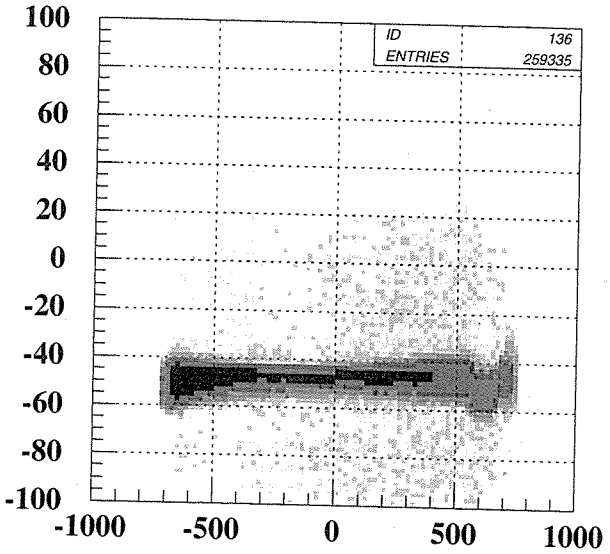
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

Run# 1062 Comment ^{16}O @ 0deg (Ice Target) #5.

Date 10 / 18

Start 14 : 25

Stop 15 : 26

GR angle 0 deg

Beam current 2.6 nA

C.I. range 6 nA

Target

☑ ^{16}O mg/cm² (☑ice or ☐glass)

☐ ^{24}Mg mg/cm²

☐ ^{28}Si mg/cm²

☐ ^{32}S mg/cm² (☐99.9% ☐nat)

☐ ^{40}Ca mg/cm²

☐ mg/cm²

VDC ☐ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☐ SC rot. V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= ℃ TC2= ℃

rate1

0	Beam Intensity	2.743 nA
1	GR event request	3.269 kcps
2	GR event live	2.880 kcps
3	LAS eventRequest	0.258 kcps
4	LAS event live	0.241 kcps
5	GR clock reqest	9.621 kcps
6	GR clock live	8.691 kcps
7	GR Single	2.879 kcps
8	GR Single Sample	2.879 kcps
9	LAS Single	0.240 kcps
10	LAS SingleSample	0.240 kcps
11	GR & LAS COIN	0.001 kcps
12	ALL accept Event	3.120 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	3.120 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 88.086 percent
Trig.(LAS) live : 93.358 percent
Clock live : 90.340 percent

rate3

0	BLP CLK req :	9.621 kcps
1	BLP CLK live :	9.621 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	0.029 kcps
5	Akimune Down :	0.089 kcps
6	Akimune Left :	0.016 kcps
7	Akimune Right :	0.050 kcps
8	Beam Monitor1 :	3.269 kcps
9	Beam Monitor2 :	2.880 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	12.028 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler down
RUN NUM 1062 B.I. Range 6 nA
RUN START 2007-Oct-18 14:25:38
NOW 2007-Oct-18 14:26:57
scaler 0 ch Sca1

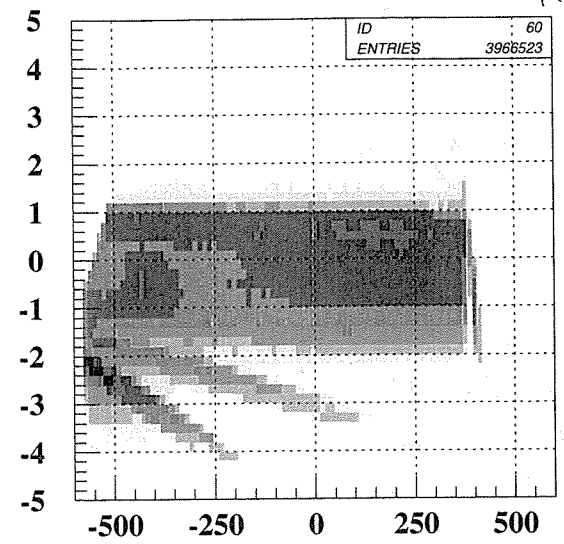
☆ Liq. N_2 残量みつもり

5:00 37.8kg
14:20 27.0kg
→ 1.2 kg/h で減っていくことになる

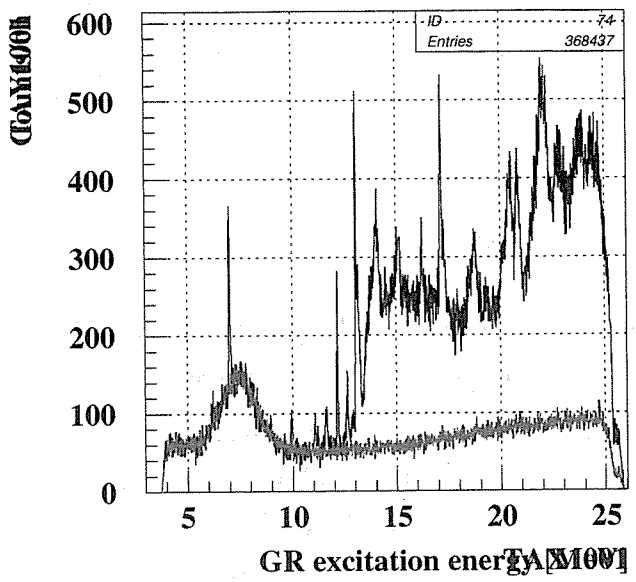
20kg で交換なら 夜8時頃 ?

2007/10/18 15.26

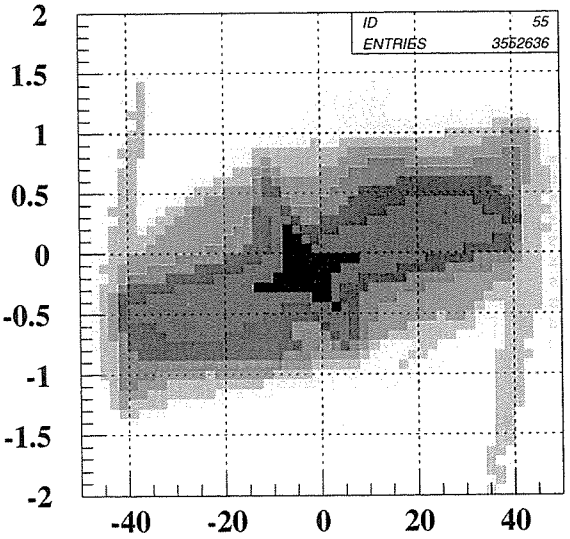
#1062



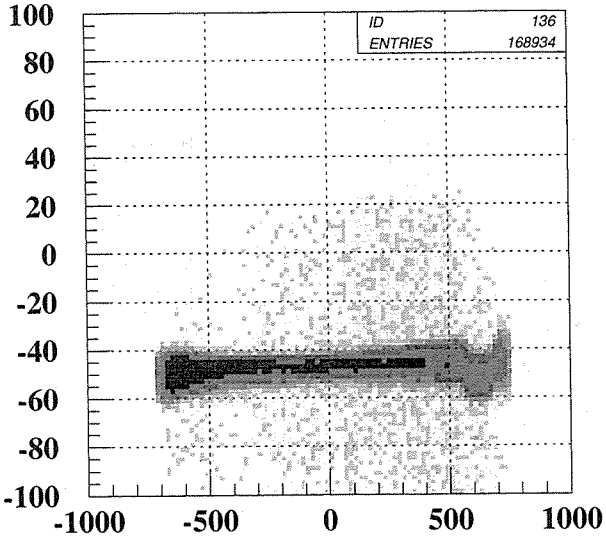
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

Run# 1063 Comment ^{16}O 8deg step = 37694 #6

Date 10 / 18

Start 15 : 27

Stop :

GR angle 0 deg

Beam current 2.17 nA

C.I. range 6 nA

Target

☑ ^{16}O 10 mg/cm^2 (☑ice or ☐glass)

☐ ^{24}Mg mg/cm^2

☐ ^{28}Si mg/cm^2

☐ ^{32}S mg/cm^2 (☐99.9% ☐nat)

☐ ^{40}Ca mg/cm^2

☐ mg/cm^2

VDC ☑ OK ☐ Tripped F.C. ☑0deg ☐Q1 ☐ SC rot. V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= -19.7 ℃ TC2= -12.8 ℃

rate1

0	Beam Intensity	3.103 nA
1	GR event request	3.650 kcps
2	GR event live	3.249 kcps
3	LAS eventRequest	0.333 kcps
4	LAS event live	0.298 kcps
5	GR clock reqest	9.621 kcps
6	GR clock live	8.564 kcps
7	GR Single	3.249 kcps
8	GR Single Sample	3.249 kcps
9	LAS Single	0.298 kcps
10	LAS SingleSample	0.298 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	3.547 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	3.547 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 89.016 percent
Trig.(LAS) live : 89.429 percent
Clock live : 89.013 percent

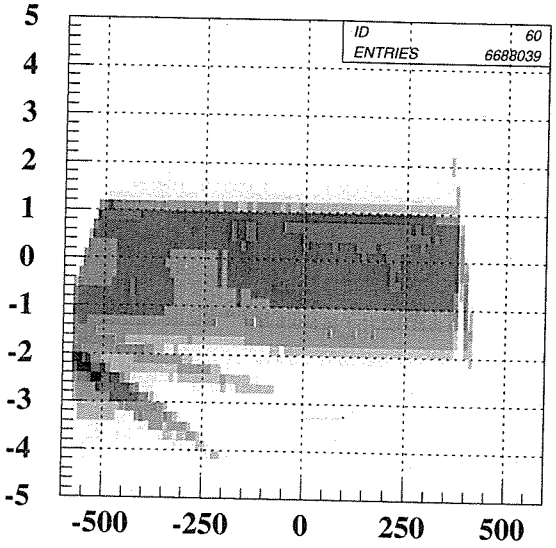
rate3

0	BLP CLK req :	9.621 kcps
1	BLP CLK live :	9.622 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	0.033 kcps
5	Akimune Down :	0.120 kcps
6	Akimune Left :	0.007 kcps
7	Akimune Right :	0.032 kcps
8	Beam Monitor1 :	3.650 kcps
9	Beam Monitor2 :	3.249 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	13.917 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

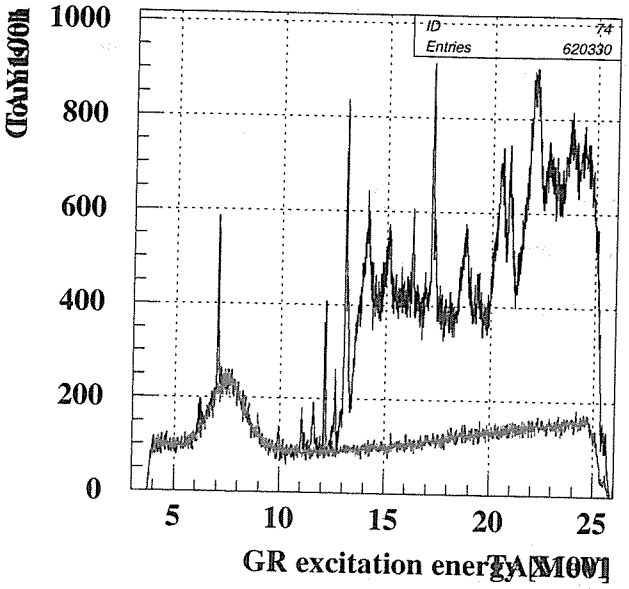
scaler down
RUN NUM 1063 B.I. Range 6 nA
RUN START 2007-Oct-18 15:27:32
NOW 2007-Oct-18 15:27:56
scaler 0 ch Scal

#1063

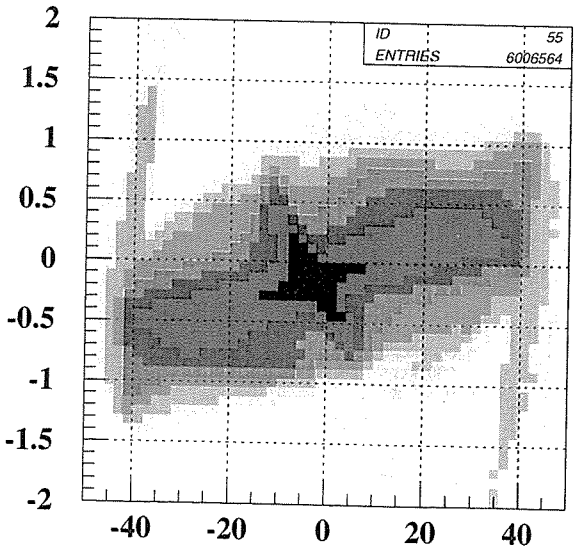
2007/10/18 16.28



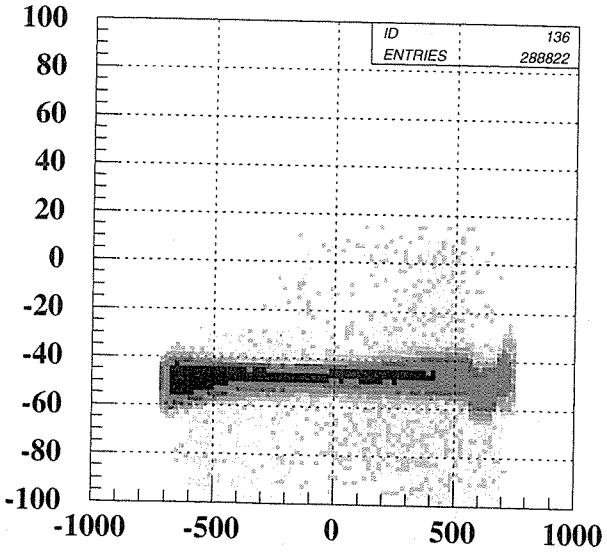
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



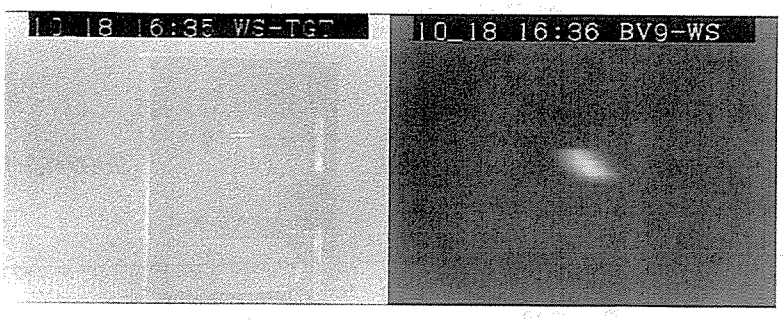
GYPH GR Phi vs Y



LXY LAS Y vs X

16:30. スポット確認

targetが少し右にずれている.



調整後

~~[illegible]~~
ほとんど~~[illegible]~~
調整いらず.

Run# 1064 Comment ^{16}O 0deg step=37694 #7

Date 10/18
Start 16:40
Stop 17:40
GR angle 0 deg
Beam current 2.4 nA
C.I. range 6 nA

Target
☑ ^{16}O 10 mg/cm^2 (☑ice or ☐glass)
☐ ^{24}Mg mg/cm^2
☐ ^{28}Si mg/cm^2
☐ ^{32}S mg/cm^2 (☐99.9% ☐nat)
☐ ^{40}Ca mg/cm^2
☐ mg/cm^2

VDC ☑ OK ☐ Tripped F.C. ☑0deg ☐Q1 ☐ SC rot. V
GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V
GR event req. kcps accep. kcps ratio %
LAS event req. kcps accep. kcps ratio %
Print out? ☐histograms ☐rate table
Ice target temp. TC1= -203 ℃ TC2= -131 ℃

rate1

0	Beam Intensity	2.440 nA
1	GR event request	2.677 kcps
2	GR event live	2.478 kcps
3	LAS eventRequest	0.170 kcps
4	LAS event live	0.155 kcps
5	GR clock reqest	9.622 kcps
6	GR clock live	8.839 kcps
7	GR Single	2.478 kcps
8	GR Single Sample	2.478 kcps
9	LAS Single	0.155 kcps
10	LAS SingleSample	0.155 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	2.633 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	2.633 kcps
15	LAS-reject	0.000 kcps

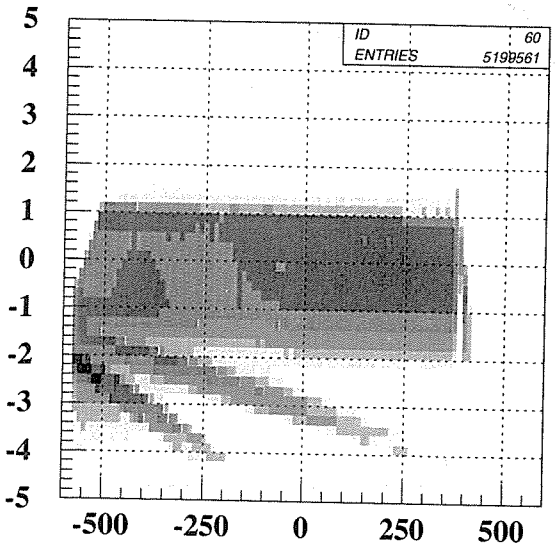
Trig.(GR) live : 92.565 percent
Trig.(LAS) live : 91.573 percent
Clock live : 91.865 percent

rate3

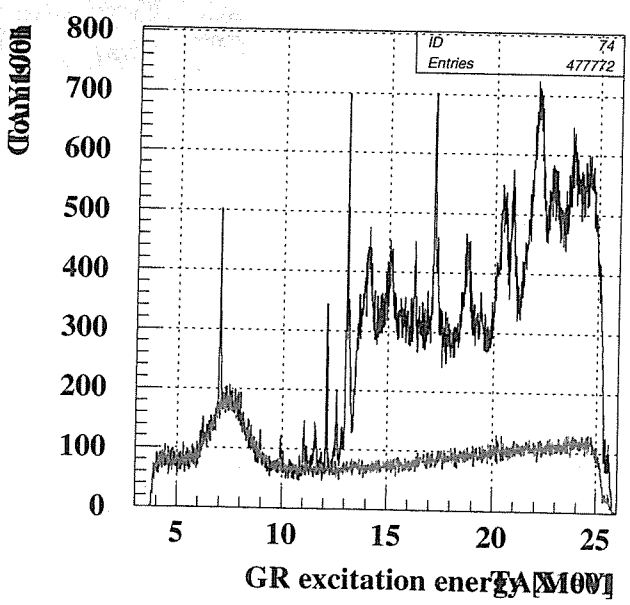
0	BLP CLK req :	9.621 kcps
1	BLP CLK live :	9.621 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	0.016 kcps
5	Akimune Down :	0.073 kcps
6	Akimune Left :	0.014 kcps
7	Akimune Right :	0.033 kcps
8	Beam Monitor1 :	2.677 kcps
9	Beam Monitor2 :	2.478 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	10.636 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler up
RUN NUM 1064 B.I. Range 6 nA
RUN START 2007-Oct-18 16:40:59
NOW 2007-Oct-18 16:42:27

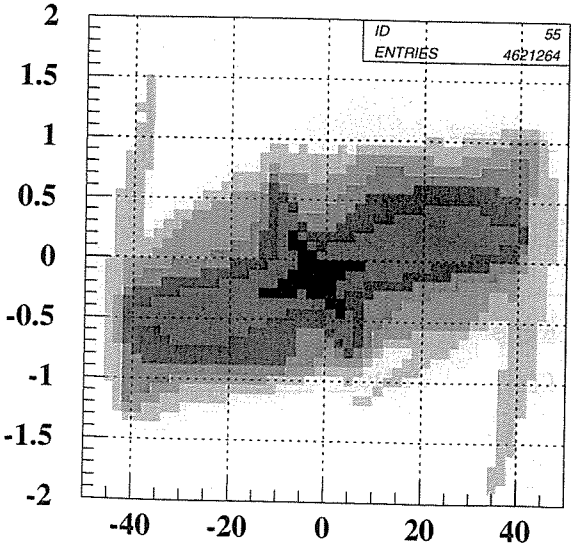
2007/10/18 17.40



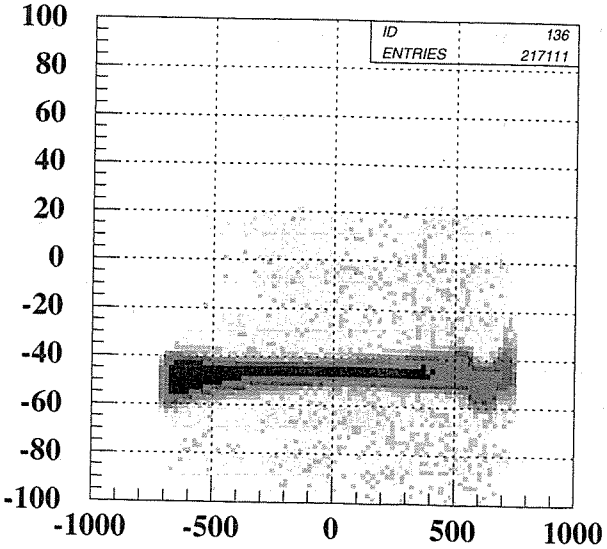
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)

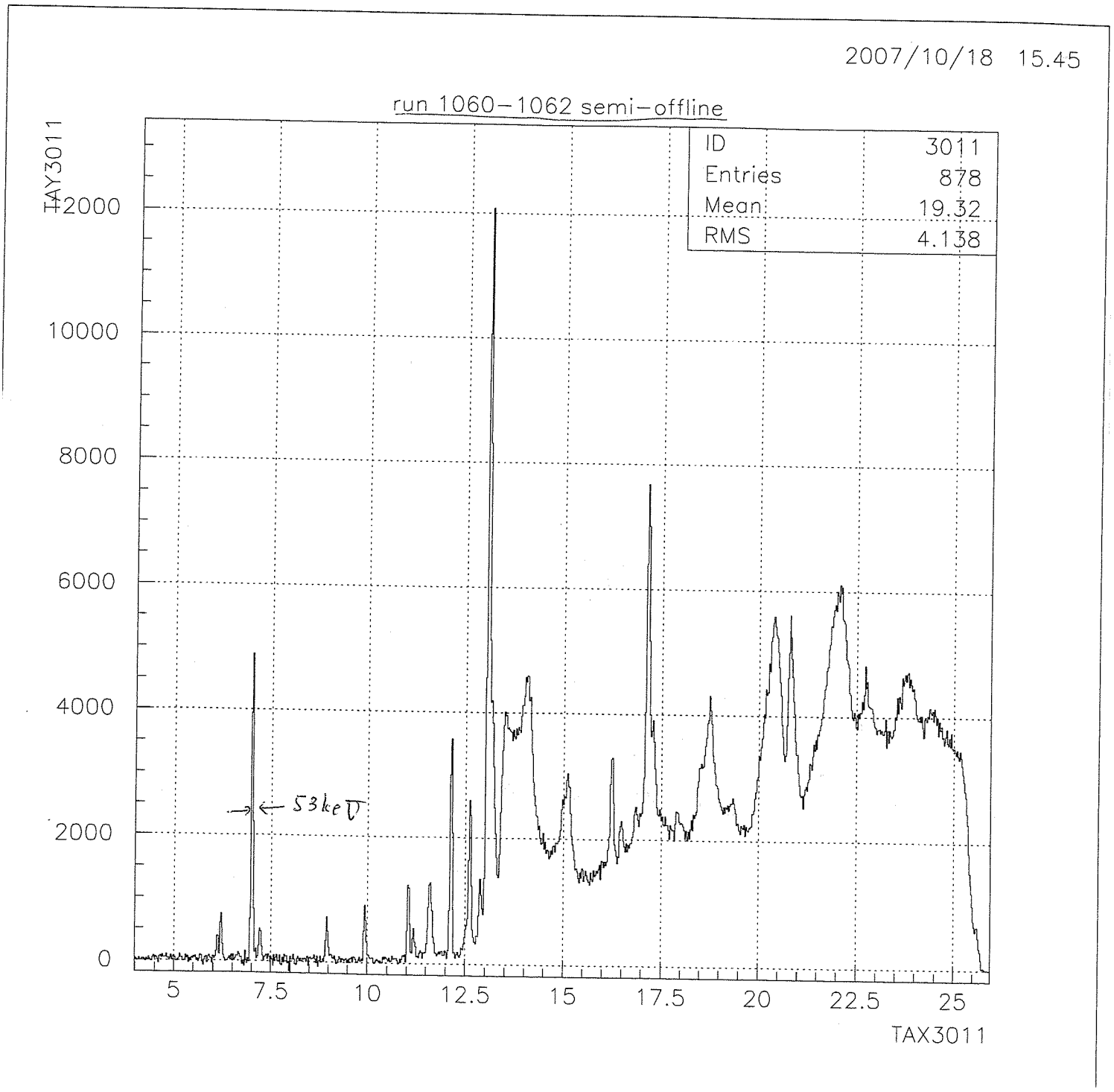


GYPH GR Phi vs Y

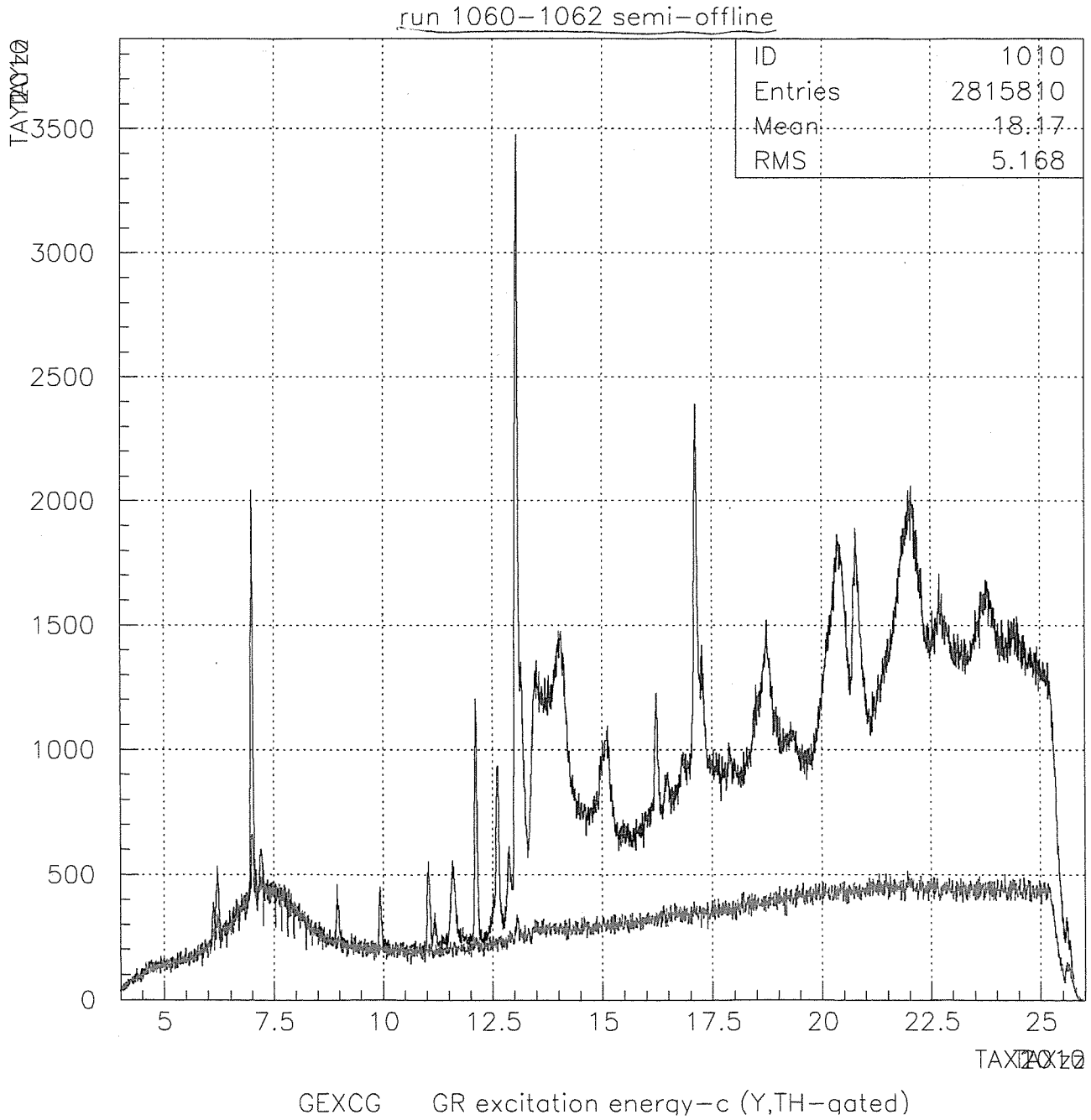


LXY LAS Y vs X

#1060-1062


2007/10/18 15.45
run 1060-1062 semi-offline
ID 3011
Entries 878
Mean 19.32
RMS 4.138
TAY3011
2000
10000
8000
6000
4000
2000
0
5
7.5
10
12.5
15
17.5
20
22.5
25
TAX3011
53keV

2007/10/18 15.44



GEXCG GR excitation energy−c (Y,TH−gated)

Run# 1065 Comment ^{16}C C^{16} #8 (ice)

Date 10 / 18

Start 17 : 41

Stop 19 : 00 ?

GR angle 0° deg

Beam current nA

C.I. range 6° nA

Target (376 mg)

☑ ^{16}O mg/cm² (☑ice or ☐glass)

☐ ^{24}Mg mg/cm²

☐ ^{28}Si mg/cm²

☐ ^{32}S mg/cm² (☐99.9% ☐nat)

☐ ^{40}Ca mg/cm²

☐ mg/cm²

VDC ☐ OK ☐ Tripped F.C. ☑0deg ☐Q1 ☐ SC rot. V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= ℃ TC2= ℃

rate1

0	Beam Intensity	2.034 nA
1	GR event request	2.237 kcps
2	GR event live	2.073 kcps
3	LAS eventRequest	0.141 kcps
4	LAS event live	0.136 kcps
5	GR clock reqest	9.622 kcps
6	GR clock live	8.964 kcps
7	GR Single	2.072 kcps
8	GR Single Sample	2.072 kcps
9	LAS Single	0.135 kcps
10	LAS SingleSample	0.135 kcps
11	GR & LAS COIN	0.001 kcps
12	ALL accept Event	2.208 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	2.208 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 92.678 percent
Trig.(LAS) live : 96.622 percent
Clock live : 93.161 percent

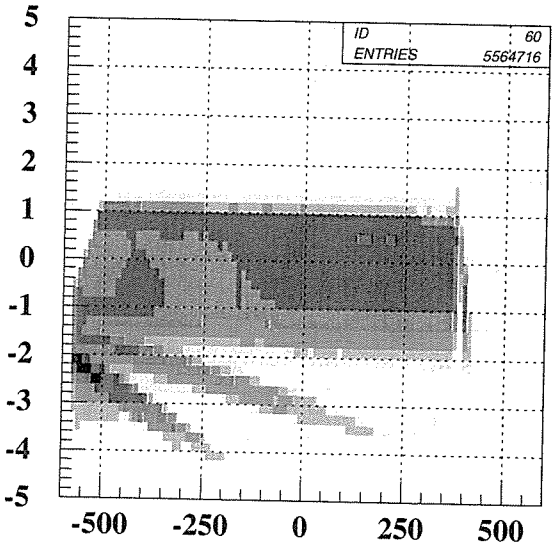
rate3

0	BLP CLK req :	9.622 kcps
1	BLP CLK live :	9.622 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	0.013 kcps
5	Akimune Down :	0.056 kcps
6	Akimune Left :	0.008 kcps
7	Akimune Right :	0.026 kcps
8	Beam Monitor1 :	2.237 kcps
9	Beam Monitor2 :	2.073 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	8.987 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

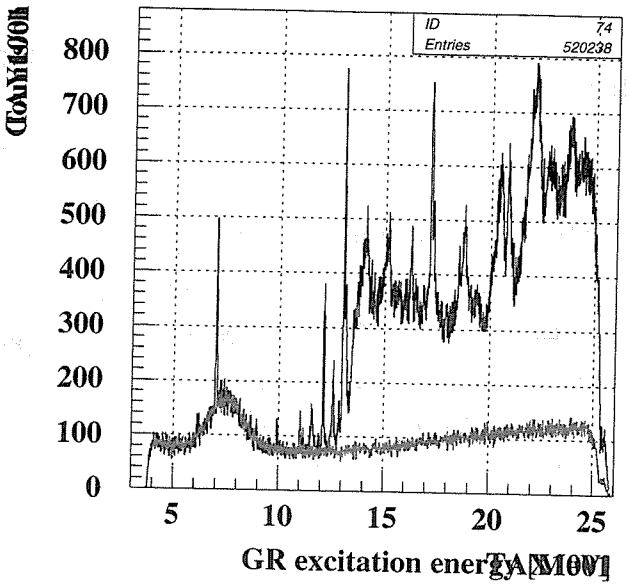
scaler down
RUN NUM 1065 B.I. Range 6 nA
RUN START 2007-Oct-18 17:41:43
NOW 2007-Oct-18 17:42:15

#1065

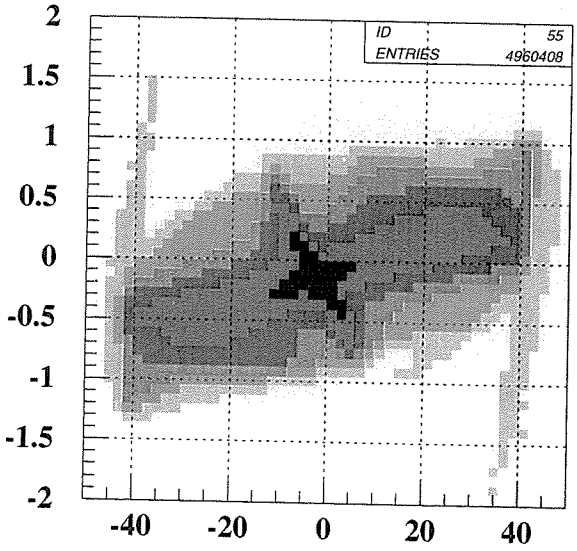
2007/10/18 19.06



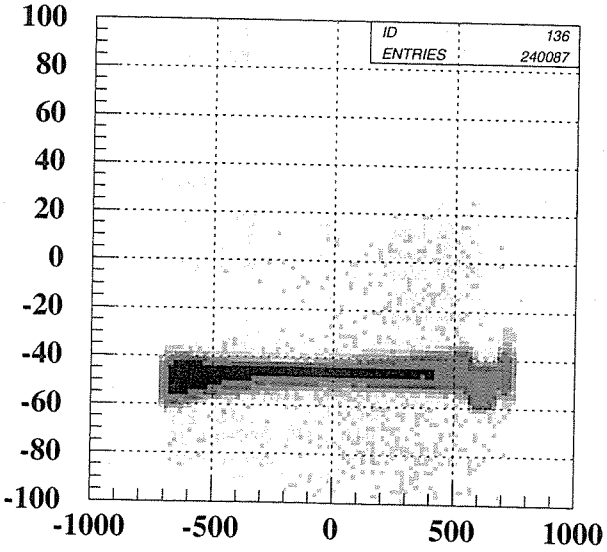
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



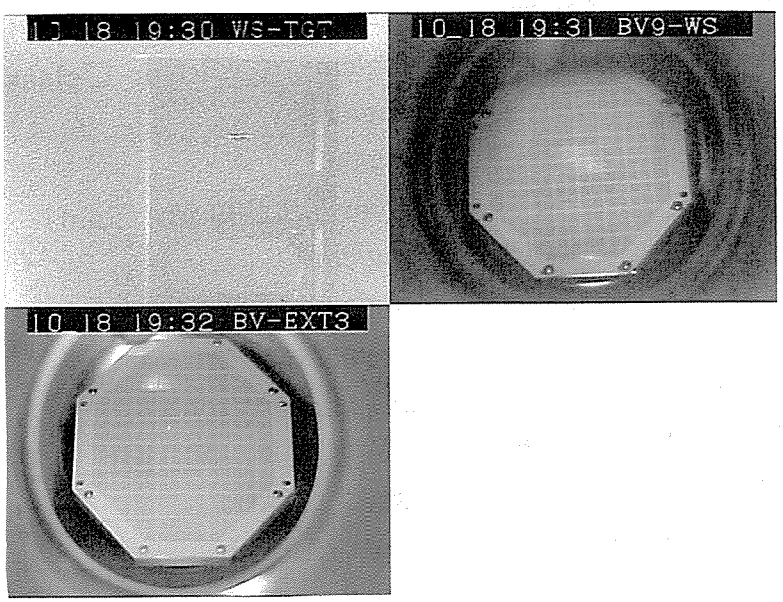
GYPH GR Phi vs Y



LXY LAS Y vs X

19:30 スポット確認。

変化なし。ずれなし



調整いらず。

Run# 1066 Comment 16O 0deg step= 37644 #9.

Date 10/18
Start 19:35
Stop :
GR angle 0 deg
Beam current 38 nA
C.I. range 6 nA

Target
☑ ^{16}O 10 mg/cm^2 (☑ice or ☐glass)
☐ ^{24}Mg mg/cm^2
☐ ^{28}Si mg/cm^2
☐ ^{32}S mg/cm^2 (☐99.9% ☐nat)
☐ ^{40}Ca mg/cm^2
☐ mg/cm^2

VDC ☑ OK ☐ Tripped F.C. ☑0deg ☐Q1 ☐ SC rot. V
GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V
GR event req. kcps accep. kcps ratio %
LAS event req. kcps accep. kcps ratio %
Print out? ☐histograms ☐rate table
Ice target temp. TC1= -199 ℃ TC2= -172 ℃

rate1

0	Beam Intensity	2.920 nA
1	GR event request	3.456 kcps
2	GR event live	3.113 kcps
3	LAS eventRequest	0.266 kcps
4	LAS event live	0.237 kcps
5	GR clock reqest	9.621 kcps
6	GR clock live	8.625 kcps
7	GR Single	3.113 kcps
8	GR Single Sample	3.113 kcps
9	LAS Single	0.237 kcps
10	LAS SingleSample	0.237 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	3.350 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	3.350 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 90.080 percent
Trig.(LAS) live : 89.247 percent
Clock live : 89.647 percent

rate3

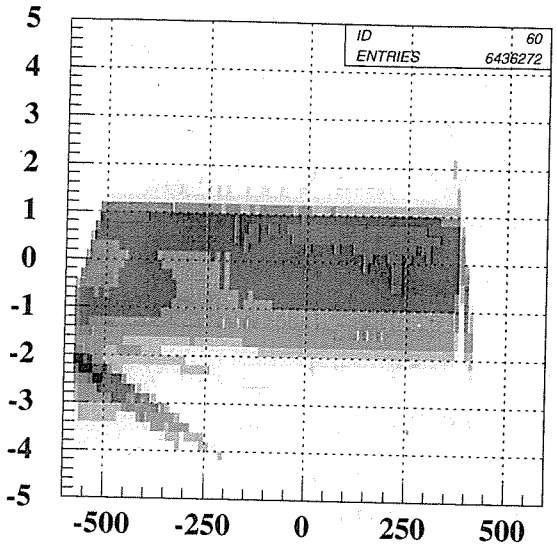
0	BLP CLK req :	9.622 kcps
1	BLP CLK live :	9.622 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	0.016 kcps
5	Akimune Down :	0.092 kcps
6	Akimune Left :	0.011 kcps
7	Akimune Right :	0.020 kcps
8	Beam Monitor1 :	3.522 kcps
9	Beam Monitor2 :	3.108 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	13.081 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

sca

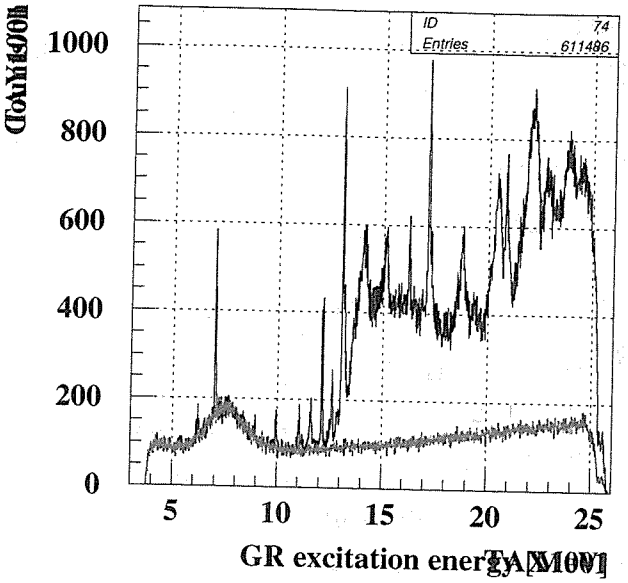
scaler down
RUN NUM 1066 B.I. Range 6 nA
RUN START 2007-Oct-18 19:35:28
NOW 2007-Oct-18 19:38:52

#1069

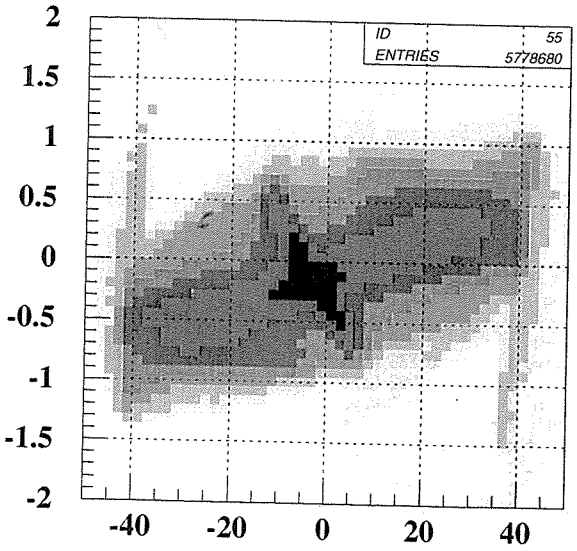
2007/10/18 20.38



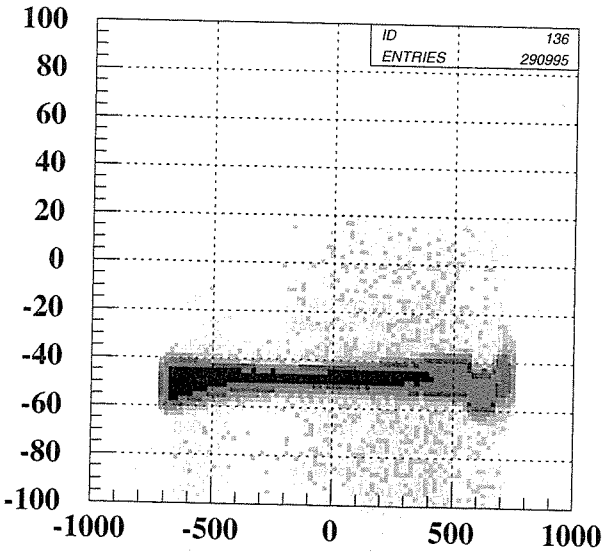
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

Run# 1067 Comment 16O 0deg step = 37694 #10.

Date 10 / 18

Start 20 : 39

Stop 22 : 10

GR angle 0 deg

Beam current 25 nA

C.I. range 6 nA

Target

☐ ^{16}O mg/cm^2 (☐ice or ☐glass)

☐ ^{24}Mg mg/cm^2

☐ ^{28}Si mg/cm^2

☐ ^{32}S mg/cm^2 (☐99.9% ☐nat)

☐ ^{40}Ca mg/cm^2

☐ mg/cm^2

VDC ☐ OK ☐ Tripped F.C. ☑0deg ☐Q1 ☐ SC rot. V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= -190 ℃ TC2= -132 ℃

rate1

0	Beam Intensity	2.731 nA
1	GR event request	54.211 kcps
2	GR event live	0.000 kcps
3	LAS eventRequest	0.224 kcps
4	LAS event live	0.000 kcps
5	GR clock reqest	9.621 kcps
6	GR clock live	0.000 kcps
7	GR Single	0.000 kcps
8	GR Single Sample	0.000 kcps
9	LAS Single	0.000 kcps
10	LAS SingleSample	0.000 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	0.000 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	0.000 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 0.000 percent
Trig.(LAS) live : 0.000 percent
Clock live : 0.000 percent

rate3

0	BLP CLK req :	9.621 kcps
1	BLP CLK live :	9.516 kcps
2	BLP Trig req :	0.339 kcps
3	BLP Trig live :	0.336 kcps
4	Akimune UP :	0.986 kcps
5	Akimune Down :	1.900 kcps
6	Akimune Left :	2.209 kcps
7	Akimune Right :	21.818 kcps
8	Beam Monitor1 :	54.211 kcps
9	Beam Monitor2 :	0.000 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	71.865 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

sca

scaler up
RUN NUM 1067 B.I. Range 6 nA
RUN START 2007-Oct-18 20:39:05
NOW 2007-Oct-18 20:45:04

22:15 本GR 0° → 2.5° へ.

Dump Q の磁場 off、ゲートオフ.

WS Magnet Controller '07/10/18 22:26

/WS\/PIS\

Magnet	Field(Preset|Actual)		Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1		mT		90.20 A				
GR SX		mT		18.20 A				
GR Q2		mT		8.50 A				
GR MQ		mT		0.02 A				
GR MS		mT		0.02 A				
GR D1	869.778	mT		230.64 A				
GR D2	869.821	mT		434.13 A				
GR DSR	110.612	mT		12.41 A				
LAS Q		mT		217.40 A				
LAS D	-747.973	mT		280.10 A				
GR DQ1		mT	0	0.00 A				
GR DQ2		mT	0	1.00 A				

Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

22:50 入射ビーム確認 o.k.

Q1 FC と SCFC のトランスミッションの目視 o.k.

Run# # 1068 Comment 10 , 2.5deg , stop = 37694 , 1st.

Date 10 / 18

Start 22 : 59

Stop 23 : 24

GR angle 2.5 deg

Beam current 2.5 nA

C.I. range 6 nA

Target

☑ ^{16}O 10 mg/cm^2 (☑ice or ☐glass)

☐ ^{24}Mg mg/cm^2

☐ ^{28}Si mg/cm^2

☑ ^{32}S mg/cm^2 (☐99.9% ☐nat)

☐ ^{40}Ca mg/cm^2

☐ mg/cm^2

VDC ☐ OK ☐ Tripped F.C. ☐0deg ☑Q1 ☐ SC rot. 2.651 V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= -128 ℃ TC2= -131 ℃

rate1

0	Beam Intensity	2.420 nA
1	GR event request	2.111 kcps
2	GR event live	0.000 kcps
3	LAS eventRequest	0.307 kcps
4	LAS event live	0.000 kcps
5	GR clock reqest	9.570 kcps
6	GR clock live	0.000 kcps
7	GR Single	0.000 kcps
8	GR Single Sample	0.000 kcps
9	LAS Single	0.000 kcps
10	LAS SingleSample	0.000 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	0.000 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	0.000 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 0.000 percent
Trig.(LAS) live : 0.000 percent
Clock live : 0.000 percent

rate3

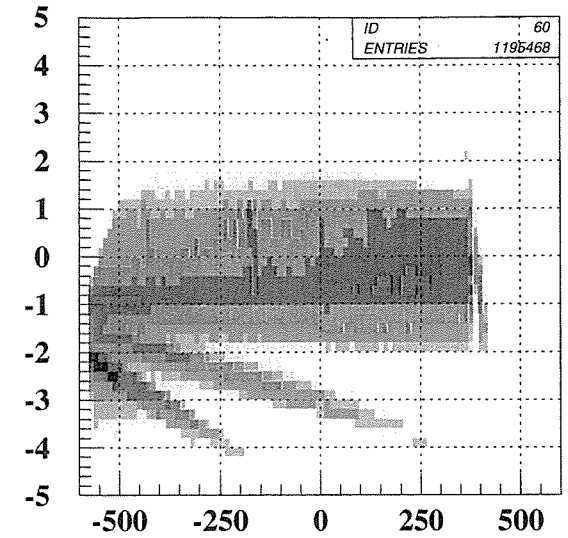
0	BLP CLK req :	9.570 kcps
1	BLP CLK live :	9.498 kcps
2	BLP Trig req :	0.240 kcps
3	BLP Trig live :	0.233 kcps
4	Akimune UP :	1.338 kcps
5	Akimune Down :	2.880 kcps
6	Akimune Left :	2.203 kcps
7	Akimune Right :	29.728 kcps
8	Beam Monitor1 :	2.111 kcps
9	Beam Monitor2 :	0.000 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	22.311 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

sca

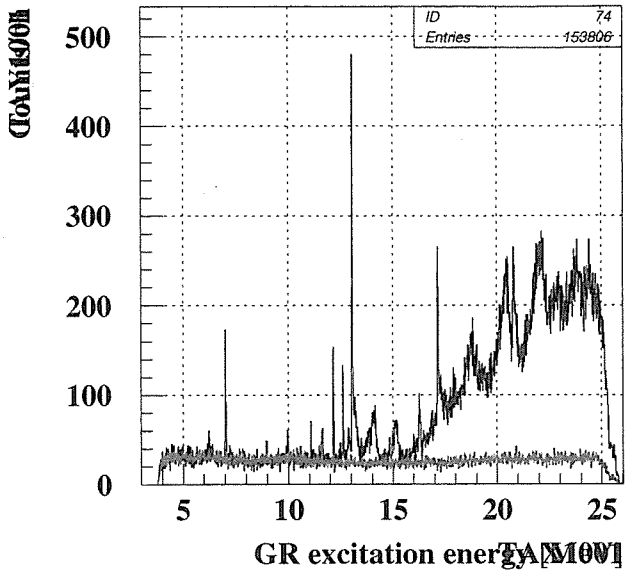
scaler down
RUN NUM 1068 B.I. Range 6 nA
RUN START 2007-Oct-18 22:59:06
NOW 2007-Oct-18 23:01:10

LASのUIが不調なので ストップ

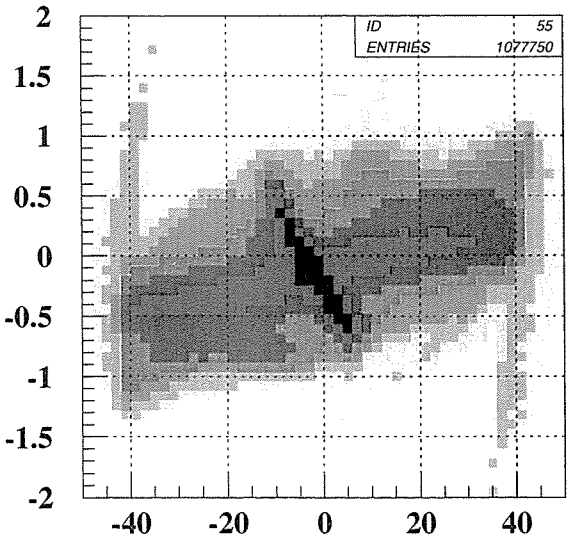
2007/10/18 23.23



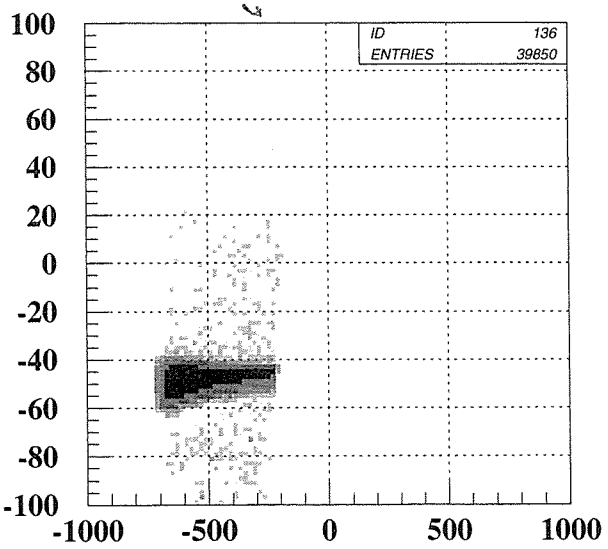
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

~~2~~ 弱 ~~2~~ 30
2分30 西入室.

3ろかのinitializeができない

またそのためのボードもなく、川畑さんが試験していちおう、発振止めをする.

0こ30. 連絡ミスで、ローカルにシャッターをしめて カギをとってしまい、ATFの入射が遅れる.

その間に別ボードにてinitializeをしてもらう.

1こ30. 会 いろいろありました.

LAS、BLP initializeをしようとした (できていない)
runcontrol、DAQ立ち上げ直した

ビームスポットは動いていない模様.

いろいろありまして、LAS initialize しました

3こ30. スポット確認 ひたすら調整

Run# 1069 Comment 16O 2.5deg step = 37694 , 2nd.

Date 10 / 19

Start 3 : 30

Stop 5 : 04

GR angle 2.5 deg

Beam current 2 nA

C.I. range 6 nA

Target

☐ ^{16}O 10 mg/cm^2 (☑ice or ☐glass)

☐ ^{24}Mg mg/cm^2

☐ ^{28}Si mg/cm^2

☐ ^{32}S mg/cm^2 (☐99.9% ☐nat)

☐ ^{40}Ca mg/cm^2

☐ mg/cm^2

VDC ☑ OK ☐ Tripped F.C. ☐0deg ☑Q1 ☐ SC rot. 2.651 V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= -200 ℃ TC2= -132 ℃

5:04 stop

rate1

0	Beam Intensity	2.394 nA
1	GR event request	2.632 kcps
2	GR event live	0.000 kcps
3	LAS eventRequest	0.301 kcps
4	LAS event live	0.000 kcps
5	GR clock reqest	9.904 kcps
6	GR clock live	0.000 kcps
7	GR Single	0.000 kcps
8	GR Single Sample	0.000 kcps
9	LAS Single	0.000 kcps
10	LAS SingleSample	0.000 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	0.000 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	0.000 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 0.000 percent
Trig.(LAS) live : 0.000 percent
Clock live : 0.000 percent

rate3

0	BLP CLK req :	9.905 kcps
1	BLP CLK live :	9.898 kcps
2	BLP Trig req :	0.022 kcps
3	BLP Trig live :	0.022 kcps
4	Akimune UP :	1.113 kcps
5	Akimune Down :	2.297 kcps
6	Akimune Left :	1.806 kcps
7	Akimune Right :	25.549 kcps
8	Beam Monitor1 :	2.632 kcps
9	Beam Monitor2 :	0.000 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	0.000 kcps
13	GR X-hodo :	22.813 kcps
14	:	0.000 kcps
15	:	0.000 kcps
	:	0.000 kcps

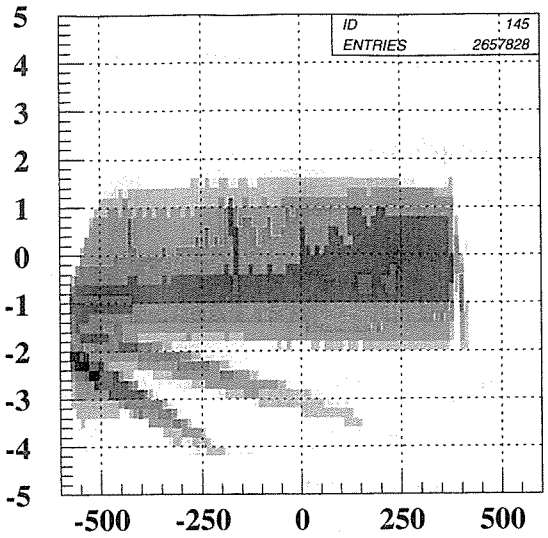
sca

scaler down
RUN NUM 1069 B.I. Range 6 nA
RUN START 2007-Oct-19 03:31:44
NOW 2007-Oct-19 03:39:27
scaler 0 ch Sca1

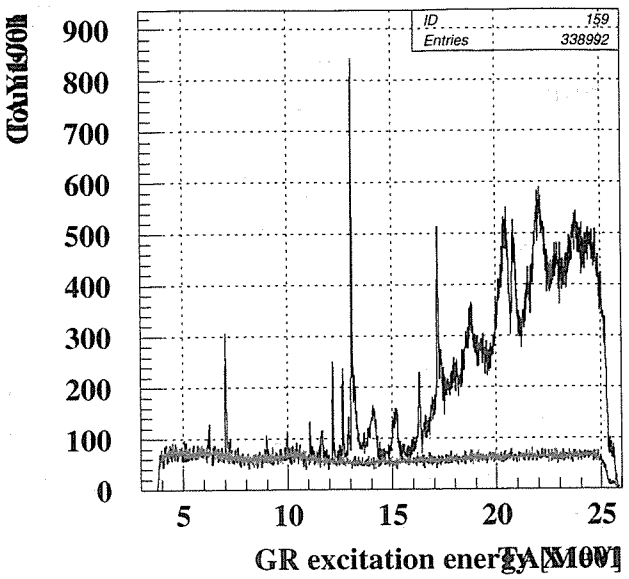
ログは run 1069.lst は既に存在すると言われたので
"run1069.lst -2" という名前で保存しました

by ためしげ

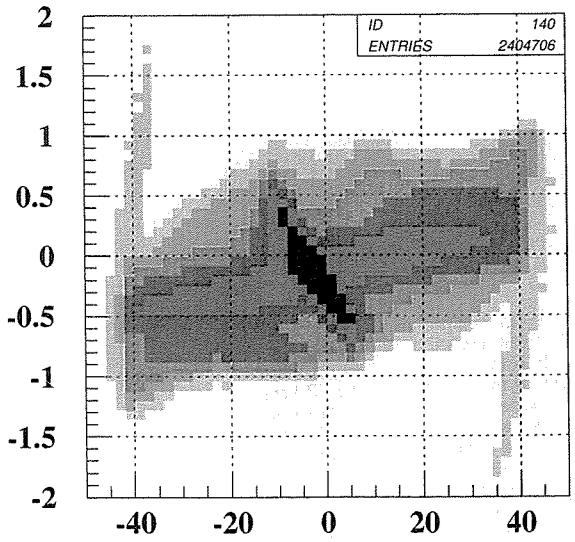
2007/10/19 05.03



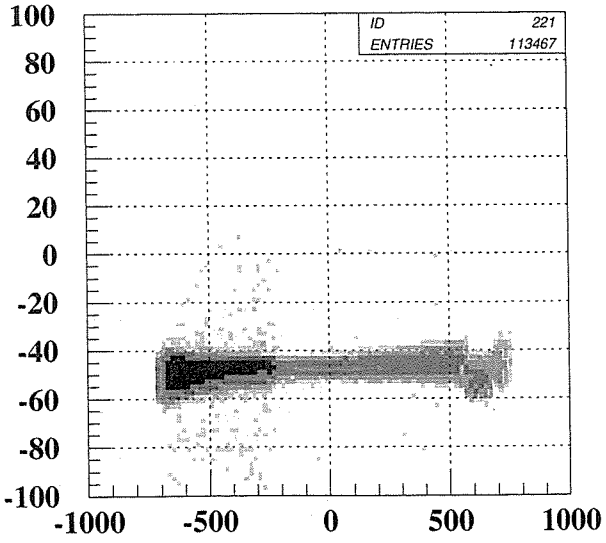
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

Run# 1070 Comment ^{16}O 2.5deg Step=37694 3rd

Date 10 / 19

Start 5 : 04

Stop 6 : 24

GR angle 2.5 deg

Beam current 2.3 nA

C.I. range 6 nA

Target

☑ ^{16}O 10 mg/cm^2 (☑ice or ☐glass)

☐ ^{24}Mg mg/cm^2

☐ ^{28}Si mg/cm^2

☐ ^{32}S mg/cm^2 (☐99.9% ☐nat)

☐ ^{40}Ca mg/cm^2

☐ mg/cm^2

VDC ☑ OK ☐ Tripped F.C. ☐0deg ☑Q1 ☐ SC rot. 2.651 V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= -199.4℃ TC2= -132.2℃

rate1

0	Beam Intensity	2.217 nA
1	GR event request	1.559 kcps
2	GR event live	1.476 kcps
3	LAS eventRequest	0.288 kcps
4	LAS event live	0.267 kcps
5	GR clock reqest	9.902 kcps
6	GR clock live	9.380 kcps
7	GR Single	1.475 kcps
8	GR Single Sample	1.475 kcps
9	LAS Single	0.266 kcps
10	LAS SingleSample	0.266 kcps
11	GR & LAS COIN	0.001 kcps
12	ALL accept Event	1.742 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	1.742 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 94.657 percent
Trig.(LAS) live : 92.517 percent
Clock live : 94.724 percent

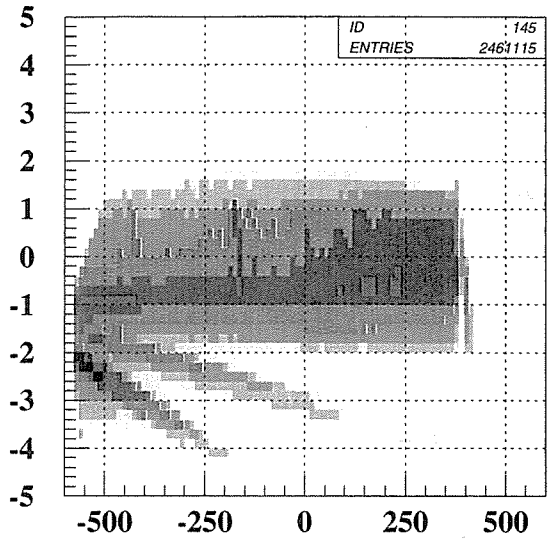
rate3

0	BLP CLK req :	9.902 kcps
1	BLP CLK live :	9.902 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	0.129 kcps
5	Akimune Down :	0.608 kcps
6	Akimune Left :	0.063 kcps
7	Akimune Right :	0.136 kcps
8	Beam Monitor1 :	1.559 kcps
9	Beam Monitor2 :	1.476 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	20.493 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

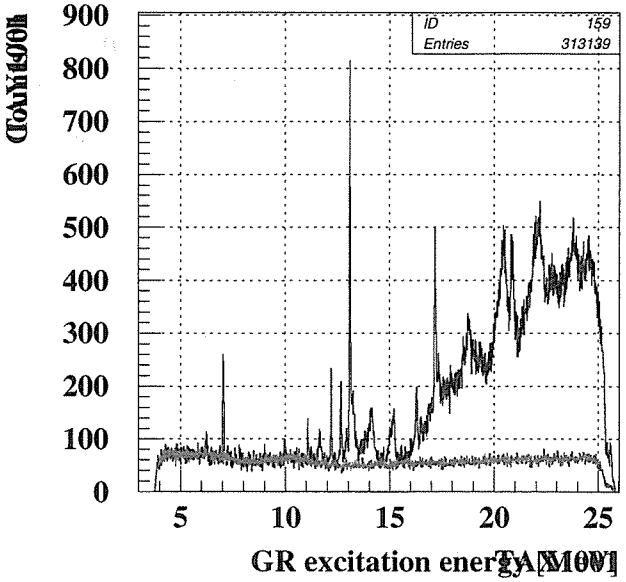
scaler down
RUN NUM 1070 B.I. Range 6 nA
RUN START 2007-Oct-19 05:04:47
NOW 2007-Oct-19 05:06:57
scaler 0 ch Sca1

6:25　　面入入室　　GR 2.5° → 4.5°

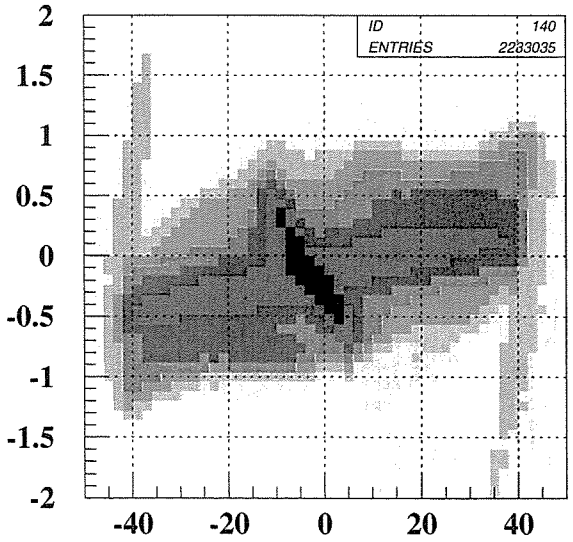
2007/10/19 06.24



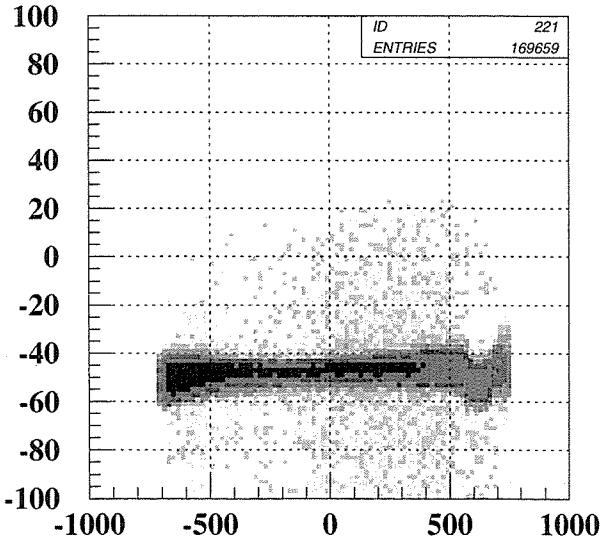
GXTHC　GR THC vs X



GEXG　GR excitation energy (Y,TH-gated)



GYPH　GR Phi vs Y



LXY　LAS Y vs X

うーん、いつの間にか LASのUIが復活している…

STを開けて 2nA → 7nAにしてもらう.
↓

Run# 1071 Comment ^{16}O 4.5deg. step=37694, 1st

Date 10 / 19

Start 6 : 42

Stop :

GR angle 4.5 deg

Beam current 7 nA

C.I. range 20 nA

Target

☑ ^{16}O 10 mg/cm^2 (☑ice or ☐glass)

☐ ^{24}Mg mg/cm^2

☐ ^{28}Si mg/cm^2

☐ ^{32}S mg/cm^2 (☐99.9% ☐nat)

☐ ^{40}Ca mg/cm^2

☐ mg/cm^2

VDC ☑ OK ☐ Tripped F.C. ☐0deg ☑Q1 ☐ SC rot. 4,000 V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= -115 ℃ TC2= -123 ℃

rate1

0	Beam Intensity	7.043 nA
1	GR event request	1.695 kcps
2	GR event live	1.553 kcps
3	LAS eventRequest	1.217 kcps
4	LAS event live	1.117 kcps
5	GR clock reqest	9.937 kcps
6	GR clock live	9.103 kcps
7	GR Single	1.553 kcps
8	GR Single Sample	1.553 kcps
9	LAS Single	1.117 kcps
10	LAS SingleSample	1.117 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	2.671 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	2.671 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 91.642 percent
Trig.(LAS) live : 91.835 percent
Clock live : 91.606 percent

rate3

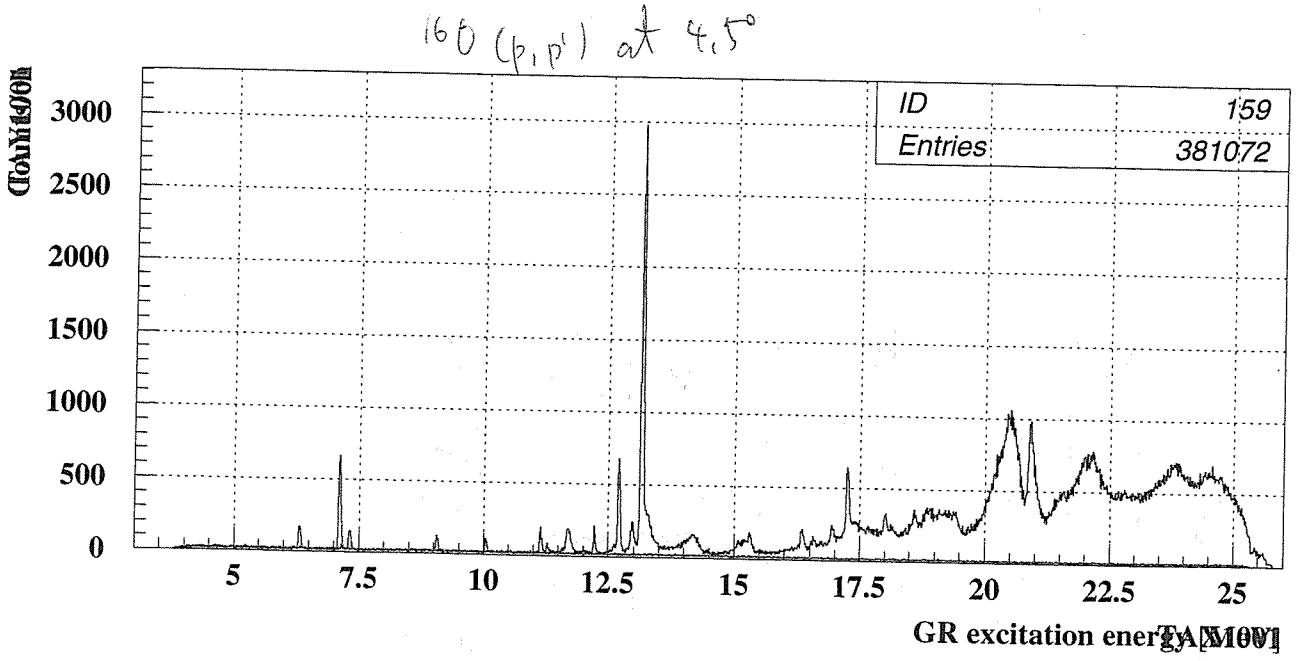
0	BLP CLK req :	9.938 kcps
1	BLP CLK live :	9.937 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	0.360 kcps
5	Akimune Down :	1.850 kcps
6	Akimune Left :	0.152 kcps
7	Akimune Right :	0.554 kcps
8	Beam Monitor1 :	1.695 kcps
9	Beam Monitor2 :	1.553 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	56.320 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler down
RUN NUM 1071 B.I. Range 20 nA
RUN START 2007-Oct-19 06:42:51
NOW 2007-Oct-19 06:43:58
scaler 0 ch Scal

VDC 情報

		HV (kV)	leak (μA)
GR	C	5.6	7.8
	p-x	0.298	0.016
	-u	0.301	0.006
LAS	C	5.3	13
	p-x	0.301	0.25
	-u	0.299	0.13

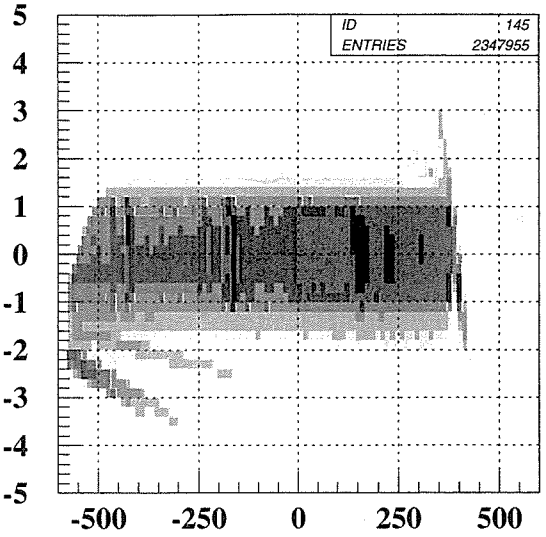
2007/10/19 07.51



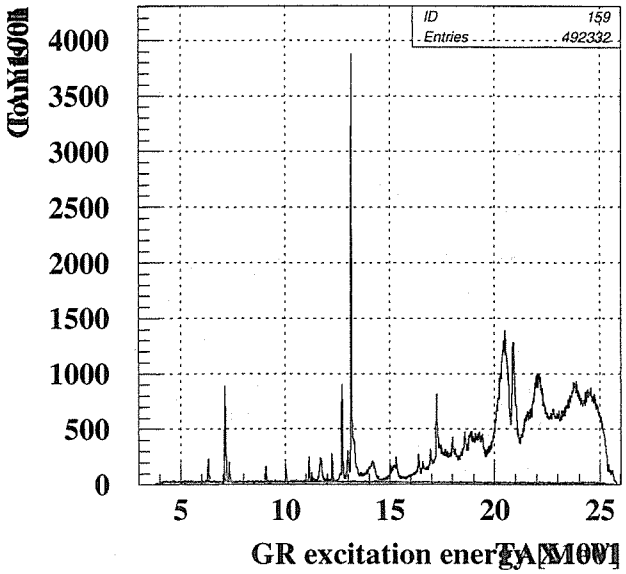
GEXG GR excitation energy (Y,TH-gated)

#071

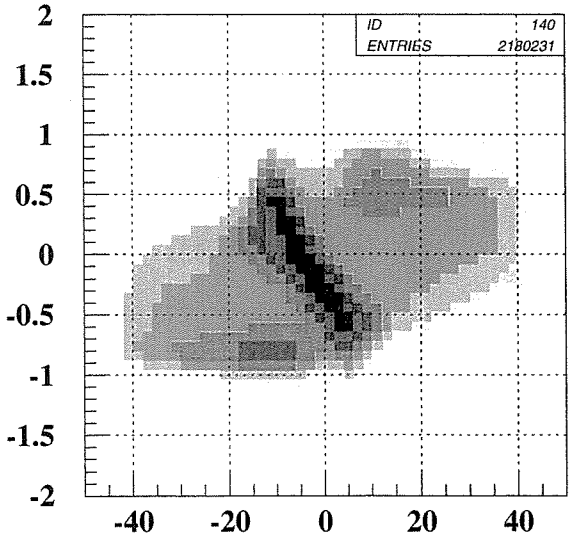
2007/10/19 08.12



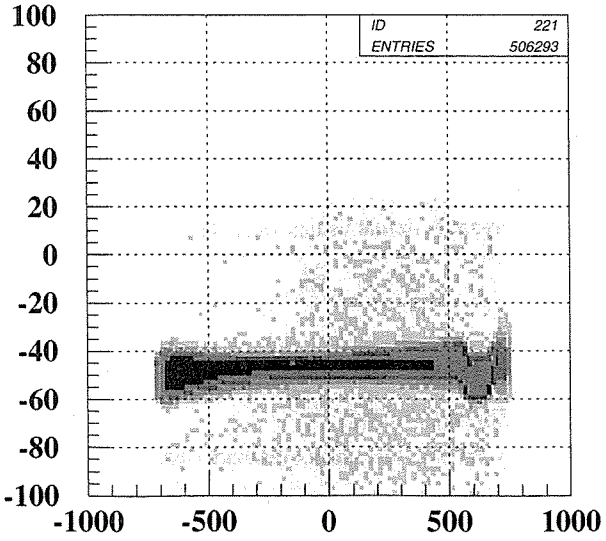
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

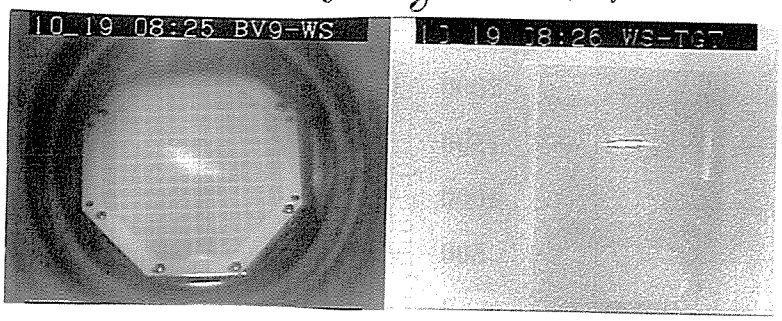
G1 = 4.001ラディ

GR 4.5° → 6.0° スリットは挿入せず

ところで スポット確認

ちゃんと中心にずれていた → 調整

しかし ほとんど dump はいらず、えらく安定



after tune

G

井口さんの FC.

3.993 の

WS Device Controller '07/10/19 08:43

/WS/CHAMBER/GR/LAS/

Device: Preset & Actual Values (Manual Operation Buttons)

Q1 FC	4	3.993 V	IN	◀	■	▶	OUT

WS Device Controller '07/10/19 08:42

/WS/CHAMBER/GR/LAS/

Device: Preset & Actual Values (Manual Operation Buttons)

Target Position	0.645	0.618 V	DOWN	◀	■	▶	UP
Target Rotation		3.408 V	CW	◀	■	▶	CCW
FC Position		4.386 V	DOWN	◀	■	▶	UP
FC Rotation	1.730	1.732 V	CCW	◀	■	▶	CW
FC Tilt		3.490 V	CCW	◀	■	▶	CW
Table Rotation		0.815 V	CCW	◀	■	▶	CW

FCは acceptance を切らず、ゆっくり event reg. が減るようにした。

Run# 1072 Comment 160 6deg step = 32694 1st

Date 10 / 19

Start ~~8:43~~ 8:54

Stop 10: 30.

GR angle 6 deg

Beam current 6.9 nA

C.I. range 20 nA

Target

☑ ^{16}O 10 mg/cm^2 (☑ice or ☐glass)

☐ ^{24}Mg mg/cm^2

☐ ^{28}Si mg/cm^2

☐ ^{32}S mg/cm^2 (☐99.9% ☐nat)

☐ ^{40}Ca mg/cm^2

☐ mg/cm^2

VDC ☑ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☑ SC rot. 1.970 V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= -98 ℃ TC2= -131 ℃

rate1

0	Beam Intensity	6.704 nA
1	GR event request	4.592 kcps
2	GR event live	3.666 kcps
3	LAS eventRequest	1.973 kcps
4	LAS event live	1.660 kcps
5	GR clock reqest	9.902 kcps
6	GR clock live	8.233 kcps
7	GR Single	3.663 kcps
8	GR Single Sample	3.663 kcps
9	LAS Single	1.657 kcps
10	LAS SingleSample	1.657 kcps
11	GR & LAS COIN	0.003 kcps
12	ALL accept Event	5.323 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	5.323 kcps
15	LAS-reject	0.000 kcps

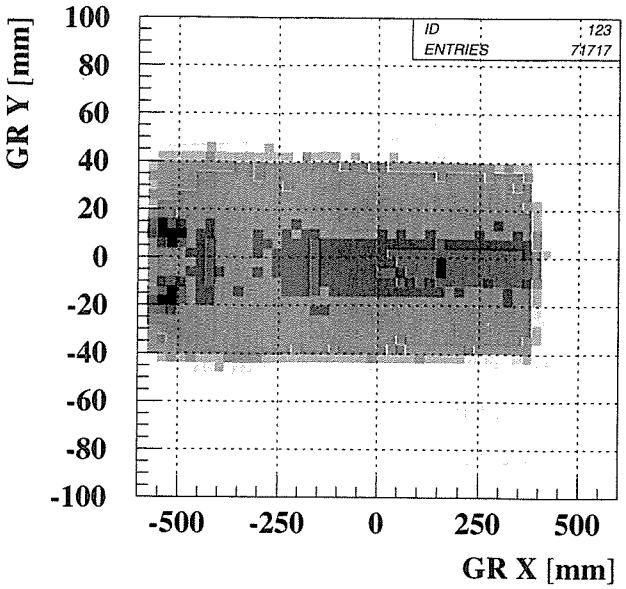
Trig.(GR) live : 79.829 percent
Trig.(LAS) live : 84.153 percent
Clock live : 83.144 percent

rate3

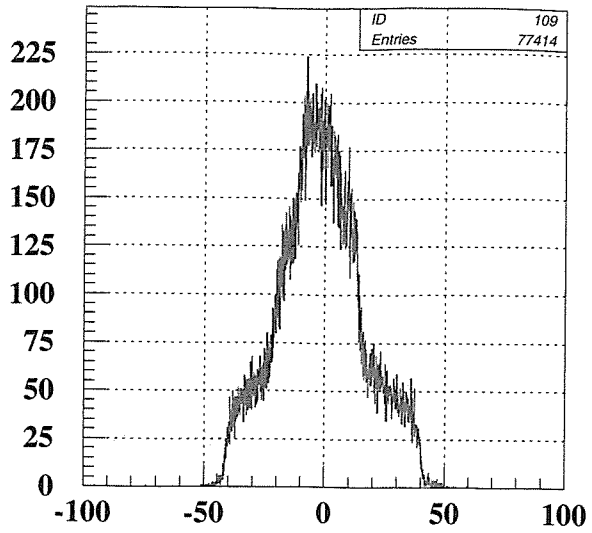
0	BLP CLK req :	9.902 kcps
1	BLP CLK live :	9.902 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	1.518 kcps
5	Akimune Down :	11.602 kcps
6	Akimune Left :	1.108 kcps
7	Akimune Right :	2.311 kcps
8	Beam Monitor1 :	4.592 kcps
9	Beam Monitor2 :	3.666 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	87.603 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler down
RUN NUM 1072 B.I. Range 20 nA
RUN START 2007-Oct-19 ~~08:43:08~~ 8:54
NOW 2007-Oct-19 08:43:45
scaler 0 ch Scal

2007/10/19 08.55



GXY GR Y vs X



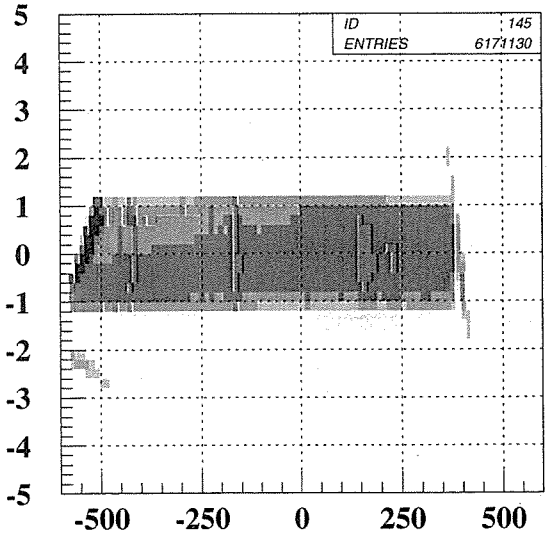
GY GR Y

バックなしの影響

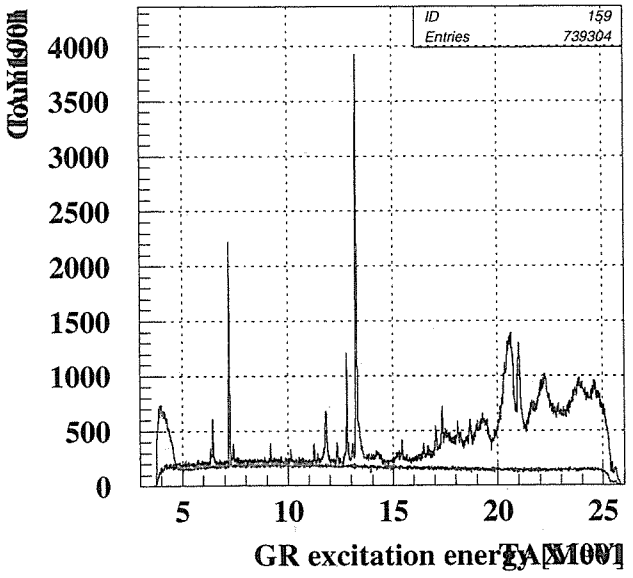
低励起のところにgateかければ yスペクトルもきれいになるだろう

2007/10/19 10.24

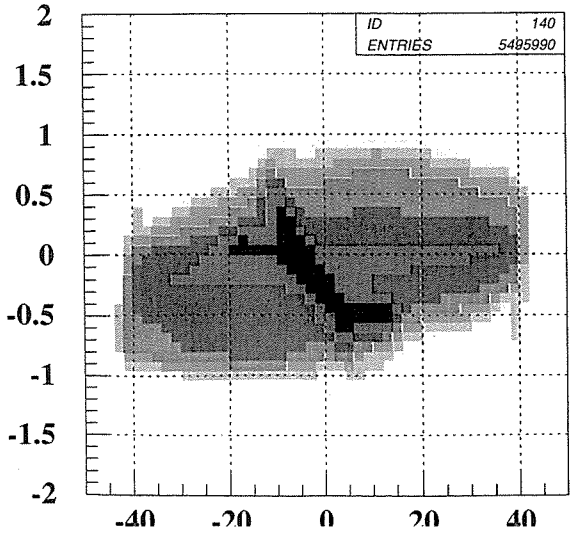
#1072.

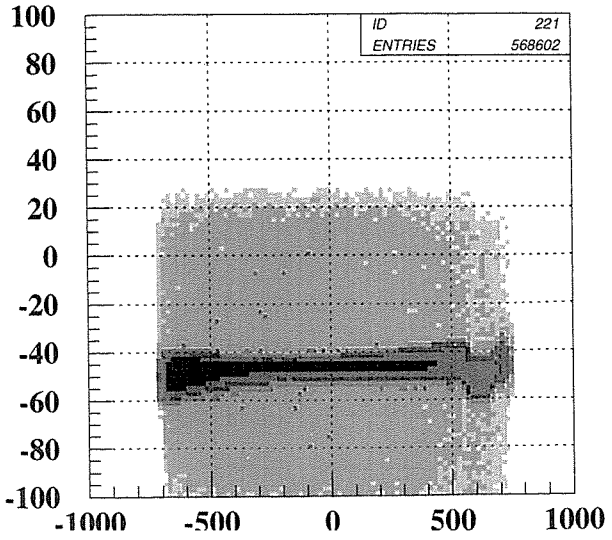


GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)





GR シンチン#動かず → ~~FCS~~ SCFC rot は動かさず (6° のまま)

6 MeV に水素の影響なし

Run# 1073 Comment ^{16}O 8deg step = 37694 1st.

Date 10/19

Start 10:34

Stop :

GR angle 8 deg

Beam current 6.2 nA

C.I. range 20 nA

Target

☑ ^{16}O 10 mg/cm^2 (☑ice or ☐glass)

☐ ^{24}Mg mg/cm^2

☐ ^{28}Si mg/cm^2

☐ ^{32}S mg/cm^2 (☐99.9% ☐nat)

☐ ^{40}Ca mg/cm^2

☐ mg/cm^2

VDC ☑OK ☐ Tripped F.C. ☐0deg ☐Q1 ☑ SC rot. 1.970 V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= -199 ℃ TC2= -132 ℃

rate1

0	Beam Intensity	6.234 nA
1	GR event request	3.733 kcps
2	GR event live	3.209 kcps
3	LAS eventRequest	1.643 kcps
4	LAS event live	1.377 kcps
5	GR clock reqest	9.903 kcps
6	GR clock live	8.475 kcps
7	GR Single	3.207 kcps
8	GR Single Sample	3.207 kcps
9	LAS Single	1.375 kcps
10	LAS SingleSample	1.375 kcps
11	GR & LAS COIN	0.002 kcps
12	ALL accept Event	4.584 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	4.584 kcps
15	LAS-reject	0.000 kcps

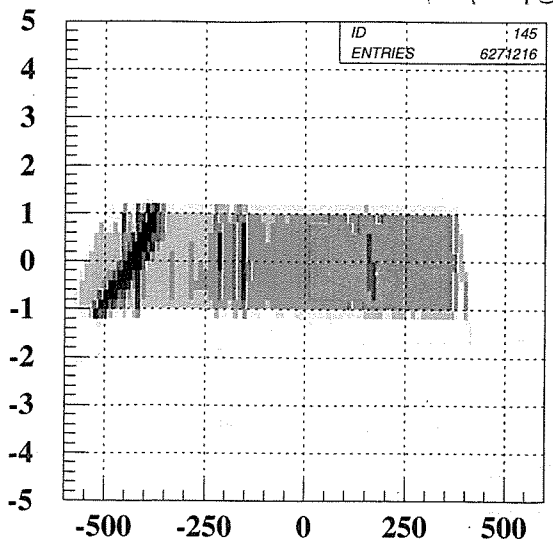
Trig.(GR) live : 85.954 percent
Trig.(LAS) live : 83.831 percent
Clock live : 85.588 percent

rate3

0	BLP CLK req :	9.903 kcps
1	BLP CLK live :	9.903 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	1.351 kcps
5	Akimune Down :	10.973 kcps
6	Akimune Left :	1.096 kcps
7	Akimune Right :	2.254 kcps
8	Beam Monitor1 :	3.733 kcps
9	Beam Monitor2 :	3.209 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	78.245 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps
	:	0.000 kcps

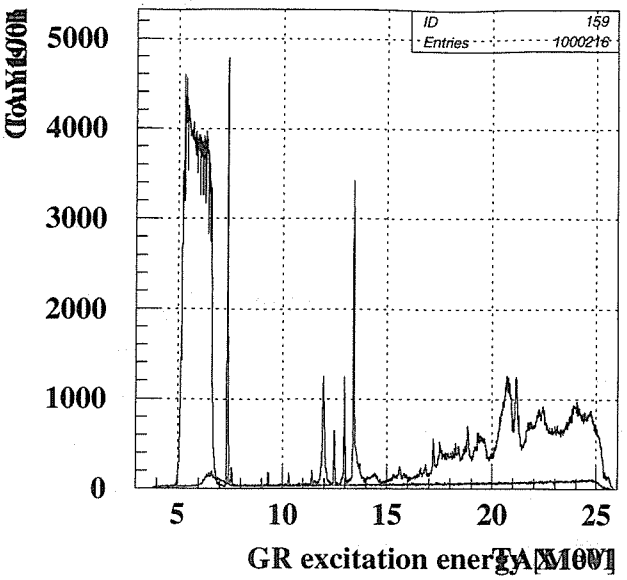
scaler up
RUN NUM 1073 B.I. Range 20 nA
RUN START 2007-Oct-19 10:34:26
NOW 2007-Oct-19 10:38:10
scaler 1 ch Scal

H 1073

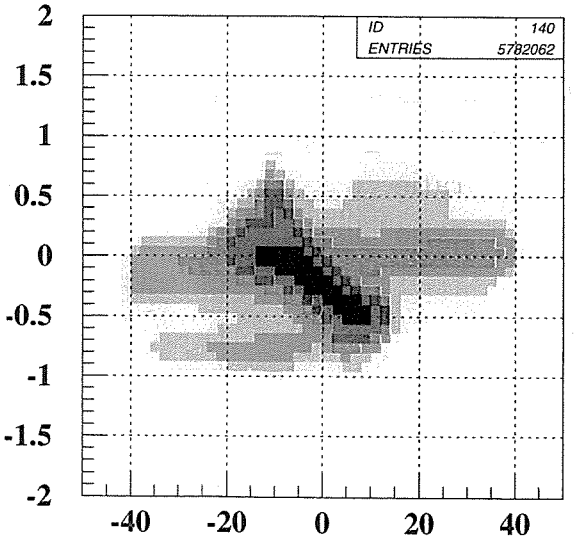


GXTHC GR THC vs X

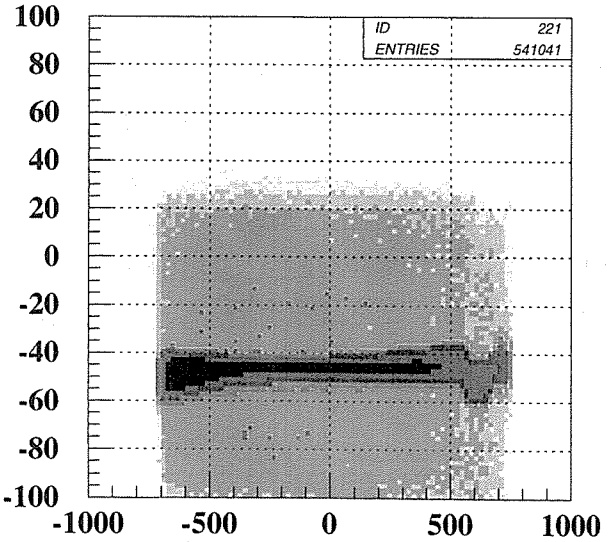
10/19 12:03



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



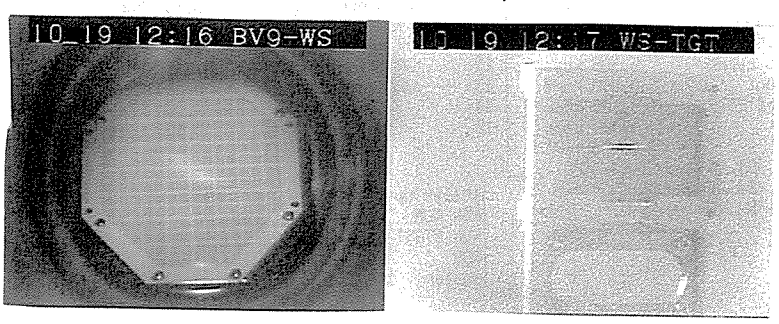
LXY LAS Y vs X

GRシンチが落ちてたので再電源 on

GR δ° → 10°

12:15. スポット確認.

ほとんどなかった. good



9MeV前後に水素

Run# 1074 Comment ^{16}O 10deg dep=39694 1st

Date 10/19

Start 12:19

Stop :

GR angle 16 deg

Beam current 9 nA

C.I. range 20 nA

Target

☑ ^{16}O 10 mg/cm^2 (☑ice or ☐glass)

☐ ^{24}Mg mg/cm^2

☐ ^{28}Si mg/cm^2

☐ ^{32}S mg/cm^2 (☐99.9% ☐nat)

☐ ^{40}Ca mg/cm^2

☐ mg/cm^2

VDC ☑ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☑ SC rot. 1.659 V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table ←忘れてた。

Ice target temp. TC1= -180 ℃ TC2= -126 ℃

#1074 の hbook と print out を忘れてました。

rate1

0	Beam Intensity	7.110 nA
1	GR event request	4.064 kcps
2	GR event live	3.380 kcps
3	LAS eventRequest	2.390 kcps
4	LAS event live	2.013 kcps
5	GR clock reqest	9.904 kcps
6	GR clock live	8.210 kcps
7	GR Single	3.377 kcps
8	GR Single Sample	3.377 kcps
9	LAS Single	2.009 kcps
10	LAS SingleSample	2.009 kcps
11	GR & LAS COIN	0.003 kcps
12	ALL accept Event	5.389 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	5.389 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 83.154 percent
Trig.(LAS) live : 84.230 percent
Clock live : 82.899 percent

rate3

0	BLP CLK req :	9.903 kcps
1	BLP CLK live :	9.903 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	1.682 kcps
5	Akimune Down :	12.980 kcps
6	Akimune Left :	1.191 kcps
7	Akimune Right :	2.528 kcps
8	Beam Monitor1 :	4.064 kcps
9	Beam Monitor2 :	3.380 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	87.173 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

scaler up
RUN NUM 1074 B.I. Range 20 nA
RUN START 2007-Oct-19 12:19:56
NOW 2007-Oct-19 12:20:27
scaler 1 ch Sca1

~14:00ごろ #1073後 LN_2 が 20kg だったので、LASにあった10L タンクの LN_2 を足した
→ 25.4 kg になった。多分これで十分。

#1075

Run# 1075 Comment θGR = 12.0° ^{16}O (ice target) step=37699 1st

Date 10 / 19
Start 14 : 09
Stop :
GR angle 12.0 deg
Beam current 7.9 nA
C.I. range 20 nA

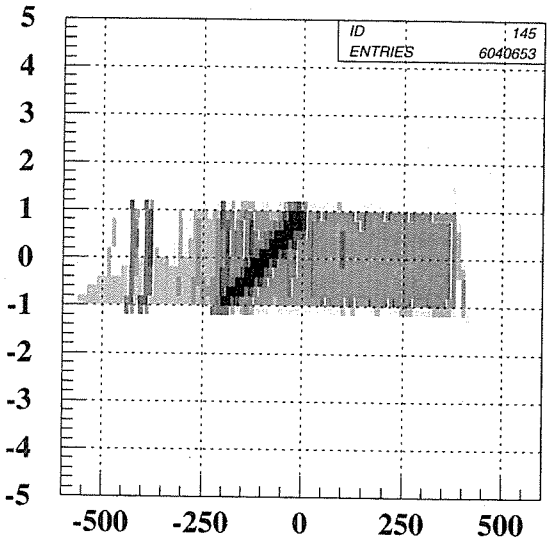
Target
☑ ^{16}O mg/cm² (☑ice or ☐glass)
☐ ^{24}Mg mg/cm²
☐ ^{28}Si mg/cm²
☐ ^{32}S mg/cm² (☐99.9% ☐nat)
☐ ^{40}Ca mg/cm²
☐ mg/cm²

VDC ☑ OK ☐ Tripped F.C. ☐0deg ☐Q1 ☑ SC rot. 1.659 V
GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V
GR event req. kcps accep. kcps ratio %
LAS event req. kcps accep. kcps ratio %
Print out? ☐histograms ☐rate table
Ice target temp. TC1= ℃ TC2= ℃

0	Beam Intensity	7.547 nA
1	GR event request	4.965 kcps
2	GR event live	0.000 kcps
3	LAS eventRequest	2.788 kcps
4	LAS event live	0.000 kcps
5	GR clock reqest	9.903 kcps
6	GR clock live	0.000 kcps
7	GR Single	0.000 kcps
8	GR Single Sample	0.000 kcps
9	LAS Single	0.000 kcps
10	LAS SingleSample	0.000 kcps
11	GR & LAS COIN	0.000 kcps
12	ALL accept Event	0.000 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	0.000 kcps
15	LAS-reject	0.000 kcps

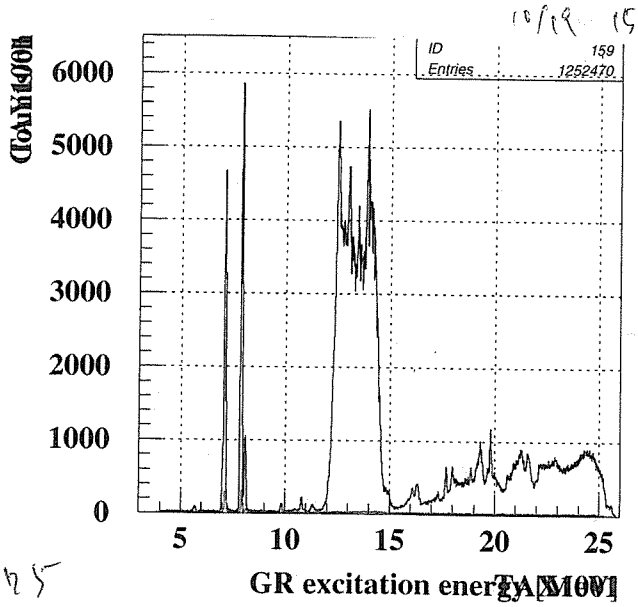
Trig.(GR) live : 0.000 percent
Trig.(LAS) live : 0.000 percent
Clock live : 0.000 percent

0	BLP CLK req :	9.904 kcps
1	BLP CLK live :	9.879 kcps
2	BLP Trig req :	0.078 kcps
3	BLP Trig live :	0.078 kcps
4	Akimune UP :	4.907 kcps
5	Akimune Down :	19.181 kcps
6	Akimune Left :	6.586 kcps
7	Akimune Right :	84.270 kcps
8	Beam Monitor1 :	4.965 kcps
9	Beam Monitor2 :	0.000 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	94.166 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps



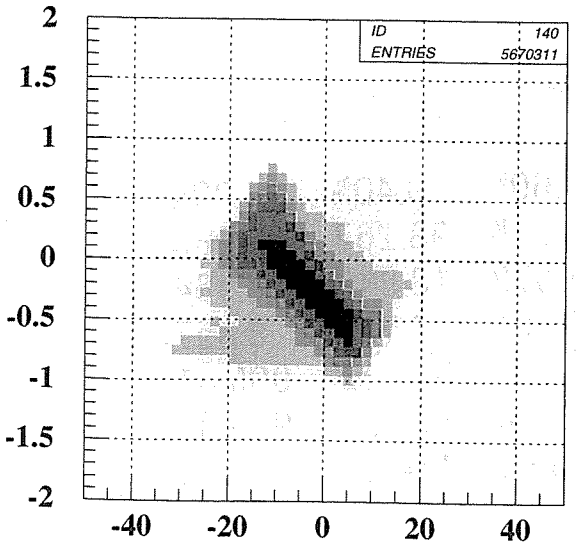
GXTHC GR THC vs X

10/19 15-39

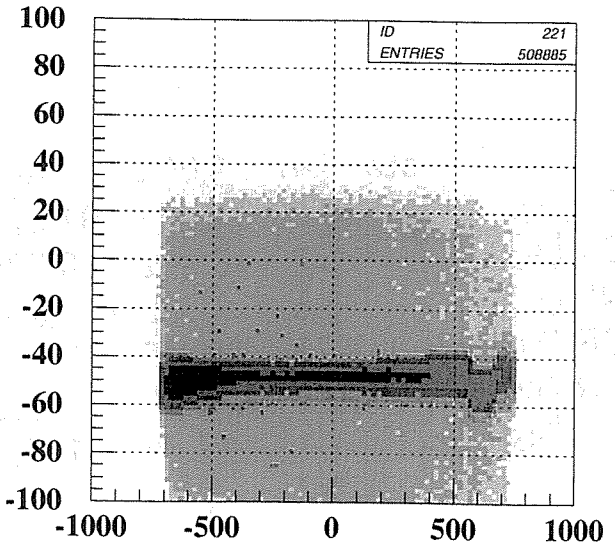


#1025

GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



LXY LAS Y vs X

Sieve - Slit calibrationについて.

磁場は. 1.0%, 1.8%, 2.6%, 3.4%, 4.2% の5種.

それぞれを ±1mm と 0mm の高さに当る.

↓

ST 10V ±0.38A, 1" ±1mm at target.

磁場 (#2の, P.13. P38, #1の P.190.) ← #1の P.109 以降.

↓

Feed back を on にして. mT をセットする.

Actual.

Q1 = 90.20A
SX = 18.20A
Q2 = 8.50A
GR D1 = 869.777mT
D2 = 869.820mT
DSR = 110.610mT

シーブスリットランで入力する磁場

	standar	1.00%	1.80%	2.60%	3.40%	4.20%
Q1[A]	90.2	91.102	91.824	92.545	93.267	93.988
SX [A]	18.2	18.382	18.528	18.673	18.819	18.964
Q2 [A]	8.5	8.585	8.653	8.721	8.789	8.857
GR D1 [mT	869.78	878.47	885.43	892.39	899.35	906.31
GR D2 [mT	869.82	878.52	885.48	892.44	899.39	906.35
GR DSR [m	110.61	111.72	112.6	113.49	114.37	115.26

↓

もっと小さいのを P.66に

Run# 1076 Comment ^{16}O $\theta = 14°$ step = 37694 1st

Date 10 / 19

Start 15 : 46

Stop :

GR angle 14 deg

Beam current 7.3 nA

C.I. range 20 nA

Target

☑ ^{16}O 10 mg/cm² (☑ice or ☐glass)

☐ ^{24}Mg mg/cm²

☐ ^{28}Si mg/cm²

☐ ^{32}S mg/cm² (☐99.9% ☐nat)

☐ ^{40}Ca mg/cm²

☐ mg/cm²

VDC ☑ OK ☐ Tripped F.C. ☑0deg ☐Q1 ☑ SC rot. 1.659 V

GR cath. V, pot. A ,B V, LAS cath1. V, cath.2 V, pot V

GR event req. kcps accep. kcps ratio %

LAS event req. kcps accep. kcps ratio %

Print out? ☐histograms ☐rate table

Ice target temp. TC1= -155 ℃ TC2= -119 ℃

rate1

0	Beam Intensity	7.551 nA
1	GR event request	5.391 kcps
2	GR event live	4.000 kcps
3	LAS eventRequest	2.962 kcps
4	LAS event live	2.252 kcps
5	GR clock reqest	9.907 kcps
6	GR clock live	7.491 kcps
7	GR Single	3.996 kcps
8	GR Single Sample	3.996 kcps
9	LAS Single	2.247 kcps
10	LAS SingleSample	2.247 kcps
11	GR & LAS COIN	0.004 kcps
12	ALL accept Event	6.247 kcps
13	Reject event	0.000 kcps
14	GR3377stop(TEND)	6.247 kcps
15	LAS-reject	0.000 kcps

Trig.(GR) live : 74.191 percent
Trig.(LAS) live : 76.001 percent
Clock live : 75.611 percent

rate3

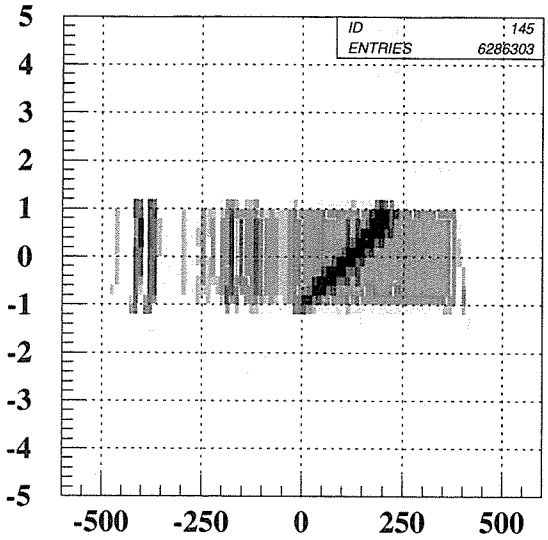
0	BLP CLK req :	9.907 kcps
1	BLP CLK live :	9.907 kcps
2	BLP Trig req :	0.000 kcps
3	BLP Trig live :	0.000 kcps
4	Akimune UP :	1.771 kcps
5	Akimune Down :	13.757 kcps
6	Akimune Left :	1.509 kcps
7	Akimune Right :	2.136 kcps
8	Beam Monitor1 :	5.391 kcps
9	Beam Monitor2 :	4.000 kcps
10	Beam Monitor3 :	0.000 kcps
11	GR scinti.1 :	0.000 kcps
12	GR scinti.2 :	93.773 kcps
13	GR X-hodo :	0.000 kcps
14	:	0.000 kcps
15	:	0.000 kcps

sca

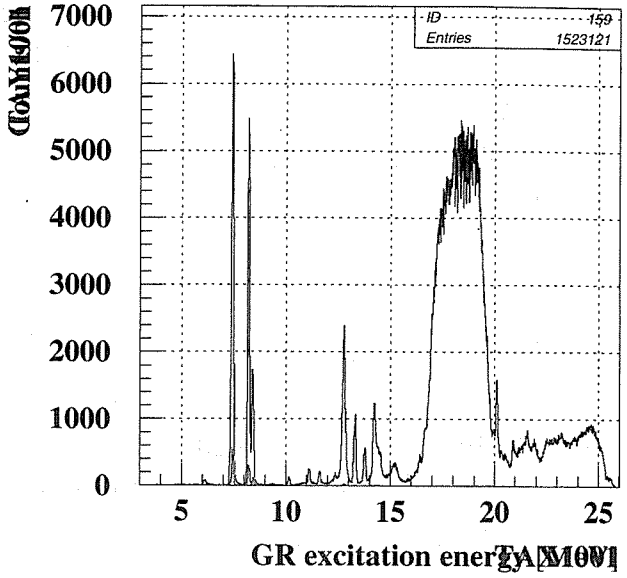
scaler up
RUN NUM 1076 B.I. Range 20 nA
RUN START 2007-Oct-19 15:46:52
NOW 2007-Oct-19 15:59:20

#1077

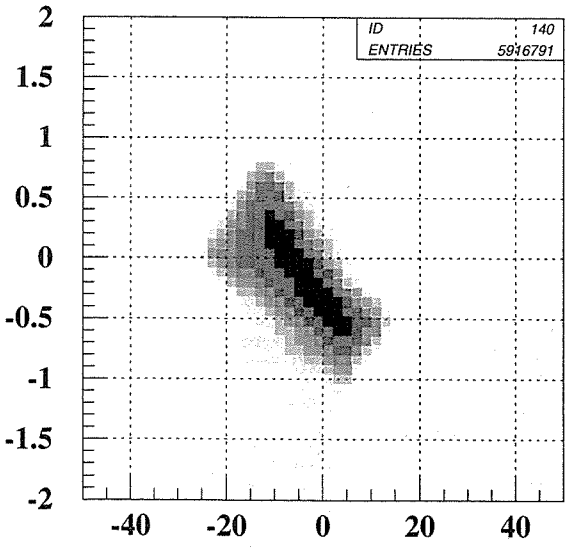
2007/10/19 17.18



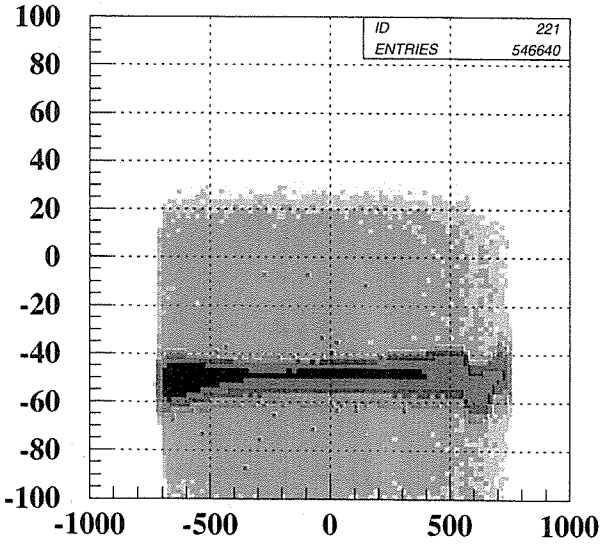
GXTHC GR THC vs X



GEXG GR excitation energy (Y,TH-gated)



GYPH GR Phi vs Y



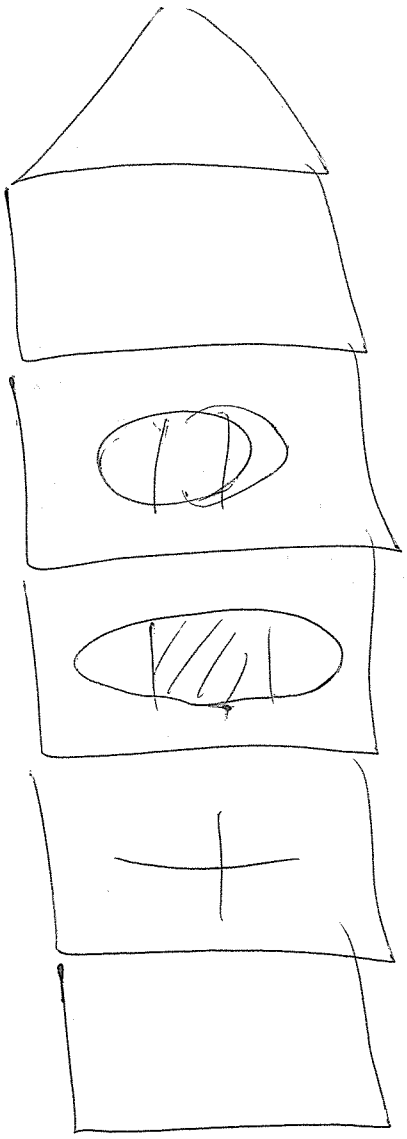
LXY LAS Y vs X

17:00 inelastic 測定終了

dispersive mode → achromatic mode に切替えてもらう
(SAS)

西入室、・ 20 target 撤去. → われる.
・ 2つラダー 〃 → surface 用に残される.
・ 5つラダー準備.
・ シーブシート挿入.

GR 14° → 15°.



20μg 50mg/cm

58Ni 100.1 mg/cm²

Zns

18:40 作業終了、軸出し開始。

+5mm、+1.12A → 0.344 A/mm
−5mm −1.85A → −0.37 A/mm

平均して、±0.35A で ±1mm のシフト。
(5T位のステアラーで上下)

↑
これでスポットを上下に振ります。

sieve-slit 用の magnetic field

	standard	1.00%	1.80%	2.60%	3.40%	4.20%
Q1[A]	90.2	91.102	91.8236	92.5452	93.2668	93.9884
SX [A]	18.2	18.382	18.5276	18.6732	18.8188	18.9644
Q2 [A]	8.5	8.585	8.653	8.721	8.789	8.857
GR D1 [mT]	869.777	878.4748	885.43299	892.3912	899.349418	906.3076
GR D2 [mT]	869.82	878.5182	885.47676	892.43532	899.39388	906.3524
GR DSR [mT	110.61	111.7161	112.60098	113.48586	114.37074	115.2556

ステアラー 0Aで FPで −4mm くらい下に
+0.35Aで FPの ±0mm くらいに見える。

これは、exp中の target の位置が少し高かったことを意味する
?
そういえば、シードスリットのアライン時
1.2mmの少上げでした。

GR 4 kcps

target は. 58 Ni 100.1 mg/cm².

run	磁場	スキャナー.
#1077.	standard.	± 0mm.
#1078	〃	~~+0.35A (+10mm)~~ + 1mm (+0.35A).
#1079	〃	− 1mm (−0.35A)
#1080	+1.0%	± 0mm
#1081	〃	+ 1mm
#1082	〃	− 1mm
#1083	+1.8%	± 0mm
#1084	〃	+ 1mm
#1085	〃	− 1mm
#1086	+2.6%	0 mm
#1087	〃	+1mm
#1088	〃	−1mm
#1089	+3.4%	0mm
#1090	〃	+1mm
#1091	〃	−1mm
#1092	+4.2%	0mm
#1093	〃	+1mm
#1094	〃	−1mm

⊕ は on target で上

2-1-10 終了

WS Magnet Controller

'07/10/19 19:28

/WS\/PIS\

Magnet	Field(Preset|Actual)			Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1			mT		90.20 A				
GR SX			mT		18.20 A				
GR Q2			mT		8.50 A				
GR MQ			mT		0.02 A				
GR MS			mT		0.02 A				
GR D1		870.026	mT		230.64 A				
GR D2		869.958	mT		434.13 A				
GR DSR		101.932	mT		11.44 A				
LAS Q			mT		217.40 A				
LAS D		-747.969	mT		280.10 A				
GR DQ1			mT		1024.00 A				
GR DQ2			mT		1024.00 A				

Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

standard 磁場

WS Magnet Controller

'07/10/19 20:01

/WS\/PIS\

Magnet	Field(Preset|Actual)				Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1				mT	91.102	91.20 A				
GR SX				mT	18.382	18.30 A				
GR Q2				mT	8.585	8.60 A				
GR MQ				mT		0.02 A				
GR MS				mT		0.02 A				
GR D1		878.4748	878.466	mT	233.34934	233.15 A				
GR D2		878.5182	878.530	mT	439.21906	438.66 A				
GR DSR		111.7161	111.711	mT	12.542171	12.57 A				
LAS Q				mT		217.40 A				
LAS D			-747.970	mT		280.10 A				
GR DQ1				mT		1024.00 A				
GR DQ2				mT		1024.00 A				

Update update Cycle 10 sec. Hcopy Queue acc2424 eXit

+10% 磁場

WS Magnet Controller '07/10/19 20:19

/WS\/PIS\

Magnet	Field(Preset)	Field(Actual)		Current(Preset)	Current(Actual)	Status	PS	NMR	FB
GR Q1			mT	91.8236	91.90 A				
GR SX			mT	18.527	18.40 A				
GR Q2			mT	8.653	8.60 A				
GR MQ			mT		0.02 A				
GR MS			mT		0.02 A				
GR D1	885.433	885.439	mT	235.33134	235.10 A				
GR D2	885.477	885.471	mT	442.91871	442.43 A				
GR DSR	112.6	112.595	mT	12.64911E	12.68 A				
LAS Q			mT		217.40 A				
LAS D		-747.971	mT		280.10 A				
GR DQ1			mT		1024.00 A				
GR DQ2			mT		1024.00 A				

Update update Cycle 5 sec. Hcopy Queue acc2424 eXit

磁場 +1.8%

WS Magnet Controller '07/10/19 20:34

/WS\/PIS\

Magnet	Field(Preset)	Field(Actual)		Current(Preset)	Current(Actual)	Status	PS	NMR	FB
GR Q1			mT	92.5452	92.60 A				
GR SX			mT	18.6732	18.60 A				
GR Q2			mT	8.721	8.70 A				
GR MQ			mT		0.02 A				
GR MS			mT		0.02 A				
GR D1	892.3912	892.399	mT	237.27431	237.05 A				
GR D2	892.4353	892.419	mT	446.60055	446.21 A				
GR DSR	113.485	113.468	mT	12.758673	12.79 A				
LAS Q			mT		217.40 A				
LAS D		-747.971	mT		280.10 A				
GR DQ1			mT		1024.00 A				
GR DQ2			mT		1024.00 A				

Update update Cycle 5 sec. Hcopy Queue acc2424 eXit

磁場 +2.6%

WS Magnet Controller

'07/10/19 20:49

/WS\/PIS\

Magnet	Field(Preset|Actual)			Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1			mT	93.2668	93.30 A				
GR SX			mT	18.8188	18.70 A				
GR Q2			mT	8.789	8.80 A				
GR MQ			mT		0.02 A				
GR MS			mT		0.02 A				
GR D1	899.3494	899.378	mT	239.15759	238.86 A				
GR D2	899.3938	899.366	mT	450.17809	449.73 A				
GR DSR	114.3707	114.367	mT	12.862473	12.89 A				
LAS Q			mT		217.40 A				
LAS D		-747.970	mT		280.10 A				
GR DQ1			mT		1024.00 A				
GR DQ2			mT		1024.00 A				

Update | update Cycle 5 sec. | Hcopy | Queue acc2424 | eXit

磁場 +3.4%

WS Magnet Controller

'07/10/19 21:04

/WS\/PIS\

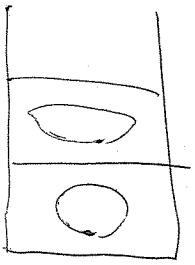
Magnet	Field(Preset|Actual)			Current(Preset|Actual)		Status	PS	NMR	FB
GR Q1			mT	93.9884	94.00 A				
GR SX			mT	18.9644	18.90 A				
GR Q2			mT	8.857	8.90 A				
GR MQ			mT		0.02 A				
GR MS			mT		0.02 A				
GR D1	906.3076	906.336	mT	241.04743	240.81 A				
GR D2	906.3524	906.329	mT	453.72684	453.25 A				
GR DSR	115.2556	115.246	mT	12.967637	13.00 A				
LAS Q			mT		217.40 A				
LAS D		-747.971	mT		280.10 A				
GR DQ1			mT		1024.00 A				
GR DQ2			mT		1024.00 A				

Update | update Cycle 5 sec. | Hcopy | Queue acc2424 | eXit

磁場 +4.2%

21:20.
(SAS) Neomafios → HIPLS ~~PHILS~~ へイオン源交換を依頼

西大室.
ice target に surfer target 載せる



中段 inelastic 用 [illegible] mg/cm² (37694)

下段 elastic 用 [illegible] mg/cm² (29194)

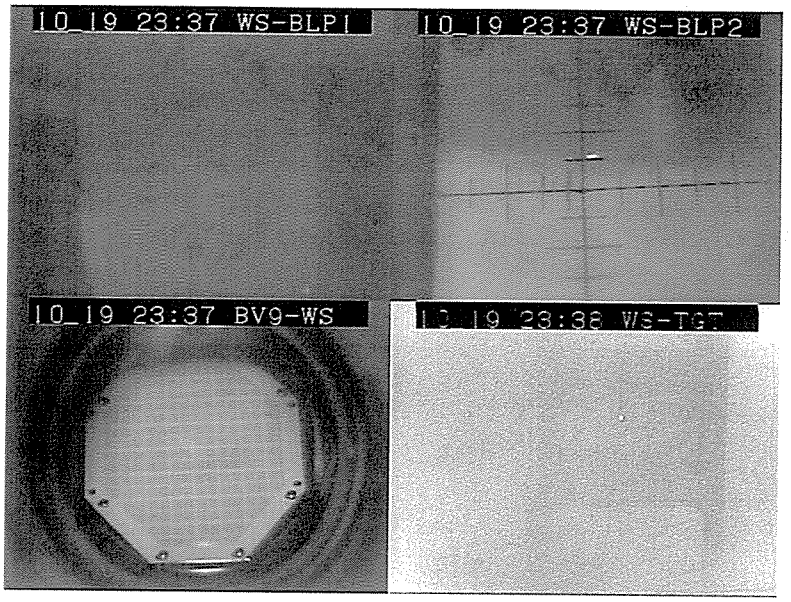
sieve-slit 撤去.
↓
±20mr × ±30mr スリット挿入.

GR は 15° のまま.

22:30 作業終了

23:25. HIPLS で WS まで通す.

23:40 transport 終了



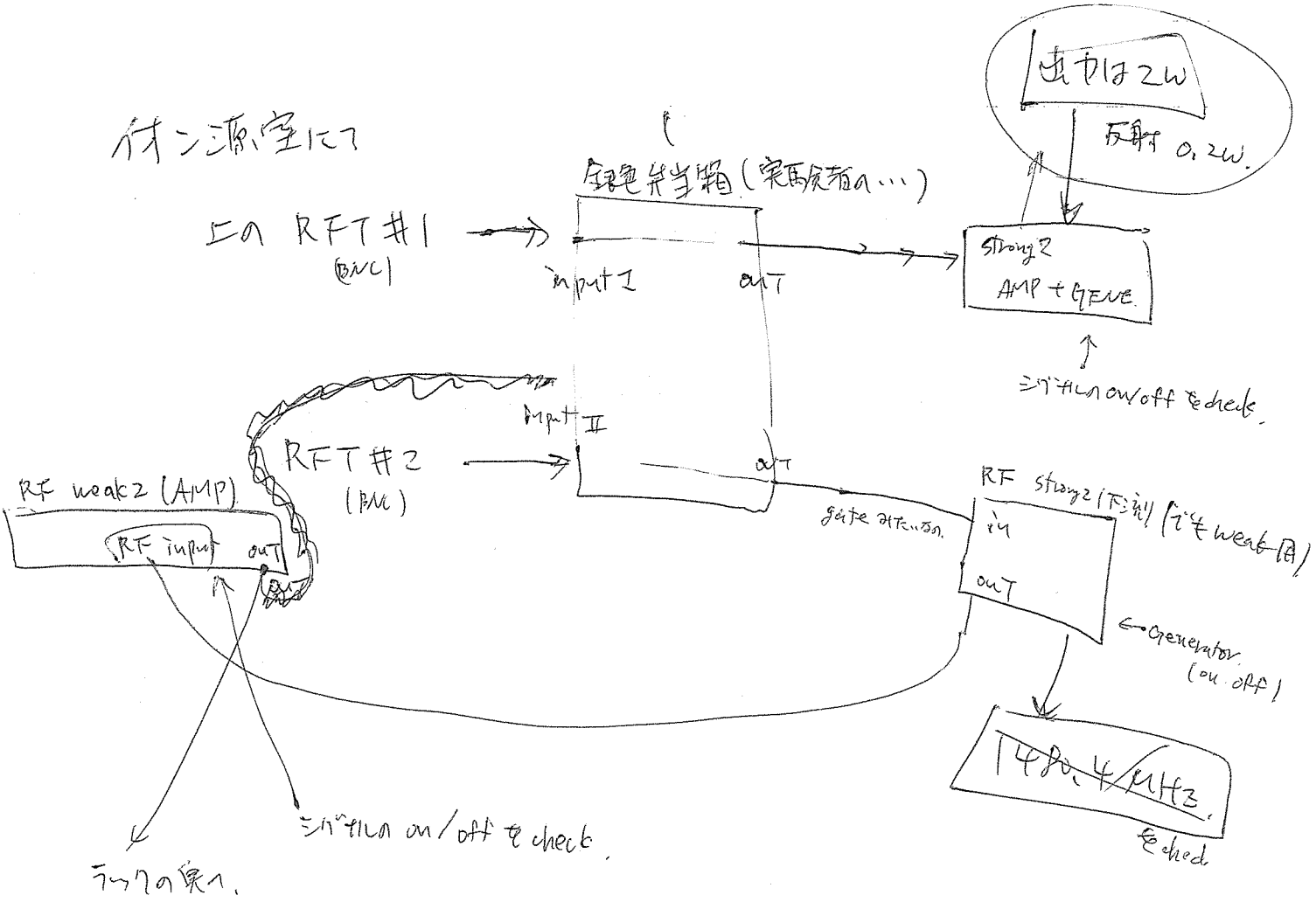
PIS connection

・コンソール
・計数室) の この所 を check する

E299では、計数室の CEAN V262 が Main controler.

そこから、右のラックの、「PIS 1 ~ 3」へ BNCをつなぐ
↳ インオ源へ信号送る。

イオン源室にて



weak field 8.70 MHz. 出力 1.5W. 反射 0.3W.
strong field 14.8.4 MHz 出力 2W. 反射 0.2W.

☆ weak は、generator と amp. を 1台ずつ使用,
strong は、両方を 1台でこなしている (ただし 周波数は、表示しないので デジボルで 読む)

10/20 0:20〜

偏極度サーチ.

まずは、E282を基準に. ( ) 内は actual.

Strong (A)	Weak (A)	pol.
2.35 (2.36)	0.06 (0.17)	

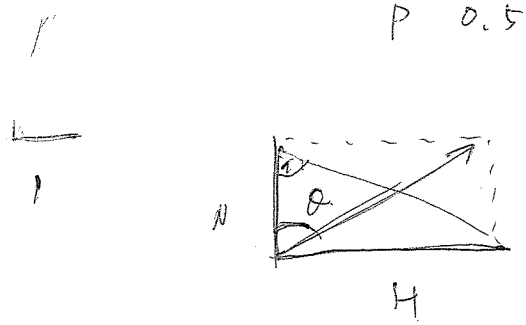
preset → 2.35, actual → 2.36, 0.06 → 0.17 ← 初期値.

BLP1

~~Strong (A)~~
~~2.35~~

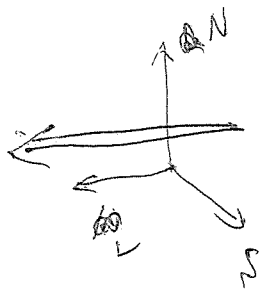
BLP1 Norm 0.388 (0.019)
2 0.431 (0.019)

H 0.309. (17)
P 0.529 (18)



$\tan\theta^{-1} = \frac{H}{N}$

今回は. θ=36°



ベクトル偏極

← N と P がほぼ同じ.
⟹ 鉛直偏極と,
単純偏極が同じ傾き
⇓
pol が傾いていない good

```
Count(True - Chance)
 BLP1   UP   L  2145   R  1686
 BLP1 DOWN   L  1524   R  2494
 BLP1   UP   U  1896   D  2159
 BLP1 DOWN   U  1897   D  2040

 BLP2   UP   L  2506   R  1562
 BLP2 DOWN   L  1684   R  2487
 BLP2   UP   U  1969   D  2011
 BLP2 DOWN   U  1982   D  1960

Beam energy 300.000 MeV
pol pp scaterring Ay  0.400 +- DAy  0.010
VERTICAL
BLP1 UP   0.611  DOWN  -0.291  Norm  0.453
      +- 0.151      +- 0.164     +- 0.030
BLP2 UP   0.713  DOWN  -0.343  Norm  0.531
      +- 0.126      +- 0.136     +- 0.030
HORIZONTAL
BLP1 UP   2.533  DOWN   2.531  Norm -0.036
      +- 2.940      +- 2.776     +- 0.028
BLP2 UP   1.607  DOWN   1.630  Norm -0.020
      +- 4.206      +- 4.102     +- 0.028

 N    0.531 +- 0.030
 L   -0.019 +- 0.028
 S   -0.036 +- 0.028

 H    0.040 +- 0.028  fai      62.200
 P    0.532 +- 0.030  theta   175.646

   '07/10/20 (Sat) 00:41:49
```

ソレイド データ

	set	Actual	UP (B4P2)	DN (B4P2)
① Strong	2.35	2.36	0.514 ±0.017	−0.504 ±0.017
	2.33	2.34	0.478±0.04	−0.458
	2.39	2.40	0.594	−0.571
	2.43	2.44	0.541	−0.535
	2.47 ~~2.48~~	2.48	0.461	−0.334
◎	2.41	2.42	0.531	−0.607
	2.42	2.43	0.495	−0.555
② Weak	~~0.06~~			
	0.07	0.20	0.522	−0.585
	0.09	0.26	0.530	−0.557
	0.14	0.41	0.190±0.05	
	0.12	0.35	0.4±0.05	
	0.04	0.25	0.497	
◎	0.08	0.23 ~~0.49~~	0.594±0.04	

```
BLP2 DOWN   U  4500   D  4477

Beam energy 300.000 MeV
pol pp scaterring Ay  0.400 +- DAy  0.010
VERTICAL
BLP1 UP   0.390  DOWN  -0.682  Norm  0.538
      +- 0.028       +- 0.031      +- 0.023
BLP2 UP   0.580  DOWN  -0.610  Norm  0.595
      +- 0.029       +- 0.029      +- 0.023
HORIZONTAL
BLP1 UP  22.814  DOWN  23.543  Norm  0.004
     +-99.916      +-103.233      +- 0.019
BLP2 UP   1.074  DOWN   1.050  Norm  0.014
      +- 3.520       +- 3.566      +- 0.019

N    0.595 +- 0.023
L    0.014 +- 0.019
S    0.004 +- 0.019

H    0.015 +- 0.019  fai      16.888
P    0.596 +- 0.023  theta   178.580

'07/10/20 (Sat) 02:51:24
```

```
Count(True - Chance)
BLP1   UP   L  5048   R  3686
BLP1 DOWN   L  3282   R  5742
BLP1   UP   U  4283   D  4616
BLP1 DOWN   U  4403   D  4778

BLP2   UP   L  5827   R  3631
BLP2 DOWN   L  3548   R  5839
BLP2   UP   U  4533   D  4408
BLP2 DOWN   U  4500   D  4477

Beam energy 300.000 MeV
pol pp scaterring Ay  0.400 +- DAy  0.010
VERTICAL
BLP1 UP   0.577  DOWN  -0.498  Norm  0.538
      +- 0.087       +- 0.090      +- 0.023
BLP2 UP   0.547  DOWN  -0.644  Norm  0.595
      +- 0.078       +- 0.077      +- 0.023
HORIZONTAL
BLP1 UP  22.814  DOWN  23.543  Norm  0.004
     +-99.916      +-103.233      +- 0.019
BLP2 UP   1.074  DOWN   1.050  Norm  0.014
      +- 3.520       +- 3.566      +- 0.019

N    0.595 +- 0.023
L    0.014 +- 0.019
S    0.004 +- 0.019

H    0.015 +- 0.019  fai      16.888
P    0.596 +- 0.023  theta   178.580

'07/10/20 (Sat) 02:51:28
```

:51

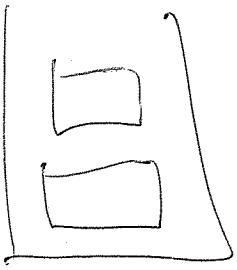
~~23~~ 40ー

#1095. ^{24}Mg elast. 15deg. 50mg/cm^2

~~hata 中に入っていると、vetoがかかる~~ 設定であった...

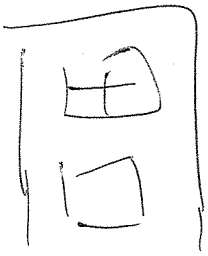
~~GRに~~

面に入る: surfur 仕込み



inelast用 50mg/cm (29684 step)

elast用 50mg/cm (29184 step).

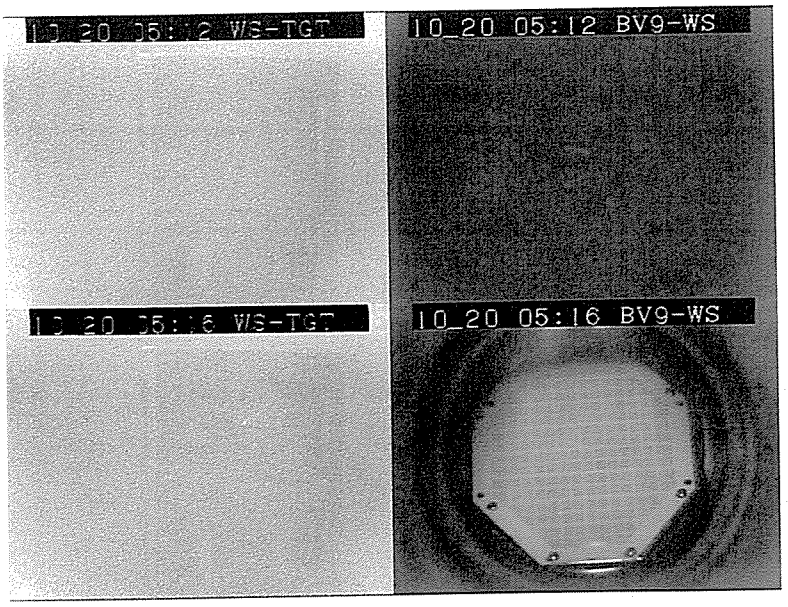


24Mg 50mg/cm²

GR 12°.

# 1096	24Mg.	50mg/cm².	elast at 12°	← BLP 抜いた.
# 1097	〃	〃		← BLP in
# 1098	32S	50mg/cm².	at 12°	
# 1099	32S	50mg/cm²	at 9°	
# 1100	32S	50mg/cm²	at 6°.	— beam 1/10
# 1101	24Mg	50mg/cm²	at 6°	— beam 1/10
# 1102	24Mg	50mg/cm²	at 9°	— beam 1/10

アッテネーター
ここでのみ
つか



elastic 前の
スポット確認

~~#1103 24Mg 50 mg/cm² at 15°~~

#1103. ^{32}S 5.9 mg/cm² at 15°

#1104 ^{32}S 5.9 mg/cm² at 18° ← 急にデータがよくなった.

#1105 ^{32}S 〃 at 18° #2

#1106 ^{24}Mg 50 mg/cm² at 18°

#1107 ^{32}S 59 mg/cm² at 18°

#1108 ^{32}S 59 mg/cm² at 21°

#1109 ^{24}Mg 50 mg/cm² at 21°

#1110 ^{24}Mg 50 mg/cm² at 24°

#1111 ^{32}S 59 mg/cm² at 24°

#1112 ^{32}S 59 mg/cm² at 27°

#1113 ^{24}Mg 50 mg/cm² at 27°

#1114 ^{24}Mg 60mg/cm² at 30°

#1115 ^{32}S 59mg/cm² at 30°

#1116 ^{32}S 59mg/cm² at 33°

#1117 ^{24}Mg 60mg/cm² at 33°

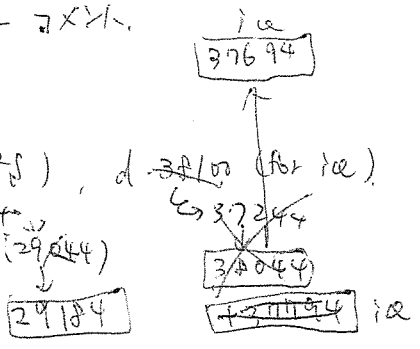
10/20 9:24 終了

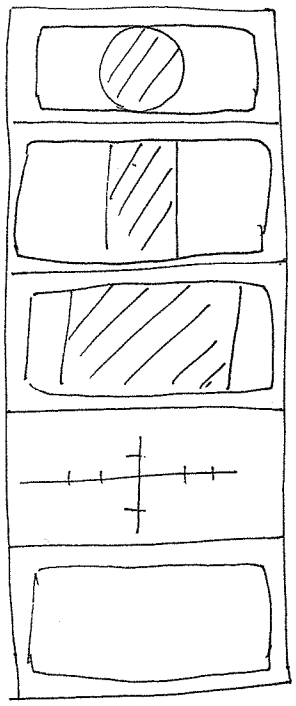
氷標的の動かし方.

(ntsrw へ telnet で入る.
>telnet ntsrw 1003
何かコメント
0>
:)

1. standard target の potentio が 3,325V 以上であることを確認.
2. 0> h- (方向を決める)
3. 0> mc (移動)
CCW limit switch ← コメント.
4. 0> h+ (方向)
5. 0> d ~~30000~~ (for ^{32}S), d ~~38100~~ (for ice)
6. 0> mi (移動) (29044)

むかり





→ 1.86 (修正)

^{28}Si 2.42 mg/cm² 0.645 V

SiO_2 6.2 mg/cm² 1.539 V

Au 1.68 mg/cm² 2.432 V

Zn 3.325 V
(3.299 Magic value)

Blank 4.219 V

FP viewer in = 2.534V

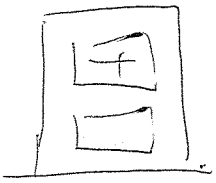
SC. F.C. at 0° = 1.659 V → 2.0 V LAS側 / 1.5 V GR側へ退避.

SC. F.C. 高さ center = 4.397 V

水標的インストール時の
ZnSとBlankの入れ方.

1. 水標的をupper limitへ.

2.



ZnS 3.325 V

Blank 4.219 V

GR at 2.5°, Q1FC → 2.651 V がセンター

4.5° Q1FC → 4.000 V

6° SCFC → ~~1.687 V~~ ?
1.659を経由して
1.724 Vへ

Run Controler ボタンの換え

- BLP 2 heta → BLP 1 & 2 の target in/out
- BLP 1 heta → Q-viewer in/out.

Pump Q → 計数室で(手動)

WS Device Controller '07/10/20 09:26

/WS/CHAMBER/GR/LAS/

Device: Preset & Actual Values (Manual Operation Buttons)

Target Position		4.219	4.218 V	DOWN	◀	■	▶	UP
Target Rotation			3.412 V	CW	◀	■	▶	CCW
FC Position		4.397	4.396 V	DOWN	◀	■	▶	UP
FC Rotation		1.730	1.732 V	CCW	◀	■	▶	CW
FC Tilt			3.489 V	CCW	◀	■	▶	CW
Table Rotation			0.815 V	CCW	◀	■	▶	CW

Update Cycle 5 sec. Hcopy Queue acc2424 eXit

RPH32010 Controller for GR+FPP

/Frame 0\/Frame 1\

Channel: Preset & True Voltage (Z=zero, R=restore)

1:	1650	1650	▲ Z	9:	1550	0	▲ Z	17:	0	0	▲ Z	25:	0	0	▲ Z
	<untitled>		▼ R		Akimune U		▼ R		<untitled>		▼ R		<untitled>		▼ R
2:	1700	1700	▲ Z	10:	1550	10	▲ Z	18:	0	0	▲ Z	26:	0	0	▲ Z
	<untitled>		▼ R		Akimune D		▼ R		<untitled>		▼ R		<untitled>		▼ R
3:	1830	1830	▲ Z	11:	1550	19	▲ Z	19:	0	0	▲ Z	27:	0	0	▲ Z
	<untitled>		▼ R		Akimune L		▼ R		<untitled>		▼ R		<untitled>		▼ R
4:	1870	1870	▲ Z	12:	1550	15	▲ Z	20:	0	0	▲ Z	28:	0	0	▲ Z
	<untitled>		▼ R		Akimune R		▼ R		<untitled>		▼ R		<untitled>		▼ R
5:	0	0	▲ Z	13:	0	0	▲ Z	21:	0	0	▲ Z	29:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
6:	0	0	▲ Z	14:	0	0	▲ Z	22:	0	0	▲ Z	30:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
7:	0	0	▲ Z	15:	0	0	▲ Z	23:	0	0	▲ Z	31:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
8:	0	0	▲ Z	16:	0	0	▲ Z	24:	0	0	▲ Z	32:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R

HV ON Set All Update Set Common 0

HV All ON | HV All OFF | Read File | Write File | Update All | Hcopy | Queue | acc2424 | eXit

RPH32010 Controller for BLP

/Frame 0\

Channel: Preset & True Voltage (Z=zero, R=restore)

1:	1350	1350	▲ Z	9:	1420	1420	▲ Z	17:	0	0	▲ Z	25:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
2:	1080	1080	▲ Z	10:	1090	1090	▲ Z	18:	0	0	▲ Z	26:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
3:	1470	1470	▲ Z	11:	1420	1420	▲ Z	19:	0	0	▲ Z	27:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
4:	1080	1080	▲ Z	12:	1090	1090	▲ Z	20:	0	0	▲ Z	28:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
5:	1250	1250	▲ Z	13:	1330	1330	▲ Z	21:	0	0	▲ Z	29:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
6:	1200	1200	▲ Z	14:	1110	1110	▲ Z	22:	0	0	▲ Z	30:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
7:	1300	1300	▲ Z	15:	1205	1205	▲ Z	23:	0	0	▲ Z	31:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R
8:	1220	1220	▲ Z	16:	1140	1140	▲ Z	24:	0	0	▲ Z	32:	0	0	▲ Z
	<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R		<untitled>		▼ R

HV ON Set All Update Set Common 0

HV All ON | HV All OFF | Read File | Write File | Update All | Hcopy | Queue | acc2424 | eXit

RPH32010 Controller for LAS

/Frame 0\

Channel: Preset & True Voltage (Z=zero, R=restore)

1:	0	0	▲Z	9:	2290	2199	▲Z	17:	0	0	▲Z	25:	0	0	▲Z
	<untitled>		▼R		<untitled>		▼R		<untitled>		▼R		<untitled>		▼R
2:	57	57	▲Z	10:	2290	2331	▲Z	18:	0	0	▲Z	26:	0	0	▲Z
	<untitled>		▼R		<untitled>		▼R		<untitled>		▼R		<untitled>		▼R
3:	1950	1950	▲Z	11:	69	69	▲Z	19:	0	0	▲Z	27:	0	0	▲Z
	<untitled>		▼R		<untitled>		▼R		<untitled>		▼R		<untitled>		▼R
4:	20	2066	▲Z	12:	0	0	▲Z	20:	0	0	▲Z	28:	0	0	▲Z
	<untitled>		▼R		<untitled>		▼R		<untitled>		▼R		<untitled>		▼R
5:	0	0	▲Z	13:	0	0	▲Z	21:	0	0	▲Z	29:	0	0	▲Z
	<untitled>		▼R		<untitled>		▼R		<untitled>		▼R		<untitled>		▼R
6:	0	0	▲Z	14:	0	0	▲Z	22:	0	0	▲Z	30:	0	0	▲Z
	<untitled>		▼R		<untitled>		▼R		<untitled>		▼R		<untitled>		▼R
7:	0	0	▲Z	15:	0	0	▲Z	23:	0	0	▲Z	31:	0	0	▲Z
	<untitled>		▼R		<untitled>		▼R		<untitled>		▼R		<untitled>		▼R
8:	0	0	▲Z	16:	0	0	▲Z	24:	0	0	▲Z	32:	0	0	▲Z
	<untitled>		▼R		<untitled>		▼R		<untitled>		▼R		<untitled>		▼R

HV OFF Set All Update Set Common 0

HV All ON HV All OFF Read File Write File Update All Hcopy Queue acc2424 eXit

WS Magnet Controller

'07/10/20 09:27

/WS\/PIS\

Magnet		Field(Preset)	Actual)		Current(Preset)	Actual)	Status	PS	NMR	FB
GR Q1				mT	96.915	97.00 A				
GR SX				mT	18.751	18.70 A				
GR Q2				mT	8.757	8.70 A				
GR MQ				mT		0.02 A				
GR MS				mT		0.02 A				
GR D1		888.237	888.248	mT	235.8403	235.66 A				
GR D2		888.237	888.233	mT	443.9065	443.44 A				
GR DSR		0	19.957	mT	0.0	0.05 A				
LAS Q				mT		217.40 A				
LAS D			-747.977	mT		280.10 A				
GR DQ1				mT		0.00 A				
GR DQ2				mT		0.00 A				

Update update Cycle 5 sec. Hcopy Queue acc2424 eXit

File Hcopy Queue '07/10/20 09:28

Reaction

$^{32}S(^{1}H,^{1}H)^{32}S$

Incident energy	295	MeV
Excitaion energy	0	MeV
◆ Angle (lab.) ◇ Energy	12	deg.

Figure | Text | GR | LAS

Magnetic Field

Particle			1 H	
Momentum			799.654	MeV/c
Rho			300	cm
Raito			99.9	%
Rho (DSR)		◆ 0	+	-
Q1	0	%	96.945	A
SX			18.756	A
Q2			8.760	A
D1	888.505	mT	236.342	A
D2	888.505	mT	443.364	A
MQ			0.000	A
MS			0.000	A
DSR	0.000	mT	0.000	A

Update | update Cycle 5 sec. | Hcopy | Queue acc2424 | exit

WS Magnet Controller '07/10/20 09:28

/WS/PS/

Magnet	Field(Preset/Actual)		Current(Preset/Actual)		Status	PS	NMR	FB
RF Weak #1		mT ◆		0.00 A				
RF Weak #2		mT ◆	0.08	0.23 A				
RF Strong		mT ◆	2.41	2.42 A				

VDC GR cath -5.6kV

pot -0.3kV

LAS cath -5.3kV

pot -0.3kV

10/21. バックアップ.

セッション 10月実験のデータ量は. 191 GB.

~~ファイル~~ >2gip -n ~~~ file名

で gip 圧縮. -n で タイムスタンプ保持.