

13/01/06

Connections tower ↔ chip board ↔ telescope ↔ detector

tower 0	↔	slot 5	↔	tel 0	↔	back
0		6		0		front
0		8		1		back
0		9		1		front

tower 1	↔	slot 5	↔	tel 2	↔	back
1		6		2		front
1		8		4		back
1		9		4		front
1		11		7		back
1		12		7		front

14/01/06

leakage currents for currently used telescopes according to their
(and voltages) detector

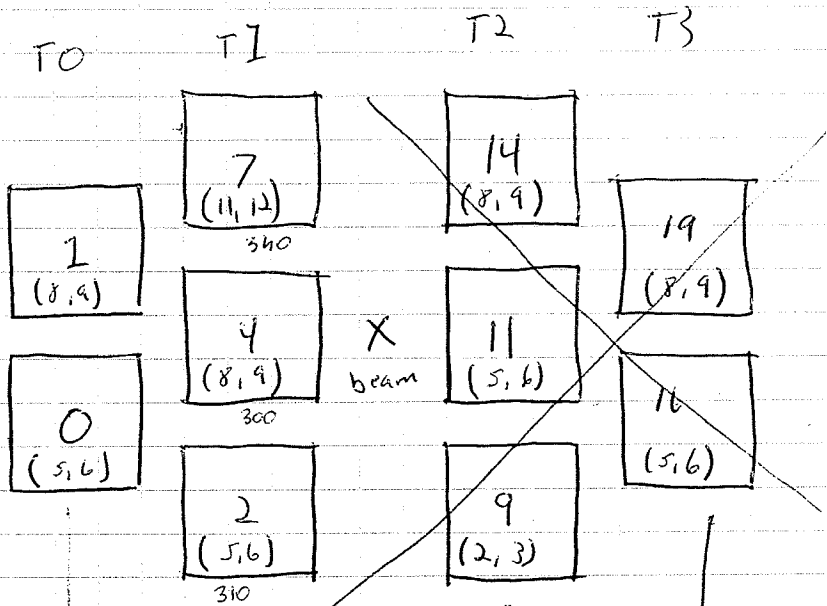
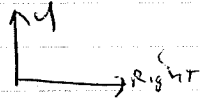
tel 0	:	1.1 μ A	/	290V
1	:	1.7 μ A	/	350V
2	:	1.02 μ A	/	310V
4	:	2.0 μ A	/	300V
7	:	3.19 μ A	/	340V
9	:	1.4 μ A	/	350V
11	:	1.71 μ A	/	350V
14	:	1.47 μ A	/	310V
16	:	1.67 μ A	/	220V
19	:	1.14 μ A	/	310V
5	:	2.39 μ A	/	340V

Tower 2 + 3 configuration

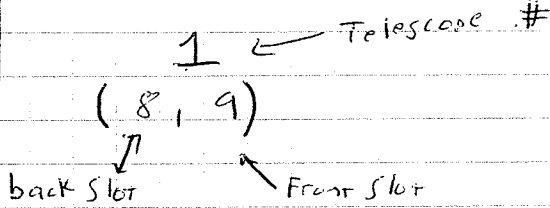
<u>Tower</u>	<u>Telescope</u>	<u>Face</u>	<u>Slot</u>	<u>Waltape Front</u>
2	9	eh	2	
		ef	3	250
	11	eh	5	
		cf	6	250
	14	eh	8	
		9	210	
3	16	eh	5	
		ef	6	120
	19	eh	8	
		ef	9	210

Configuration layout

Facing array

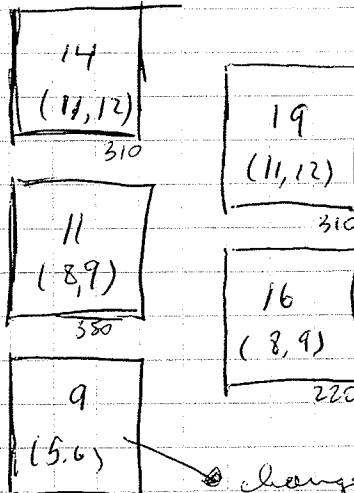
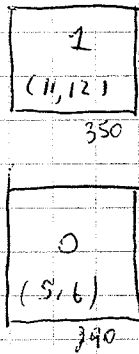


Notation



Moved due to noise (MB noise)

Moved due to bad chip num on 7, 8



changed to 5 on 01/23/06
340

• Voltage Drop for S. Bias Test

$\frac{I}{S}$	$\frac{S}{6}$	V	E
		200.00	18.22 μA
		249.75	22.80 μA
		299.75	27.70 μA
3	15	200.00	17.94 μA
		250.25	22.44 μA
		300.00	26.96 μA

CsI bias test

- Tower 0 (tel. C, 1) ... O.K.
- Tower 1 (tel. 2, 4, 7) ... O.K.
- Tower 2 tel. 9, CsI ~~B~~ ... no signal / the rest ... O.K.
- Tower 3 (tel. 16, 19) ... O.K.

Target ladder positions | 1/24/06 update

subtract 98.0
 $\Rightarrow 0 \equiv \text{viewer}$!

- Viewer : 98.0 - 98

- Be target
 top edge : 142.0 - 98
 bottom edge : 193.0 - 98
 Center : 167.5 - 98

- Mask : 230.4 - 98

- No target : 30.0 - 98

Never go below 0 ! - 98

The shaft will run into the chamber floor !

01/23/06



We found the + CSIB of Tel 9 does not work



we replace it with Tel 5

01/24/06 rru 10

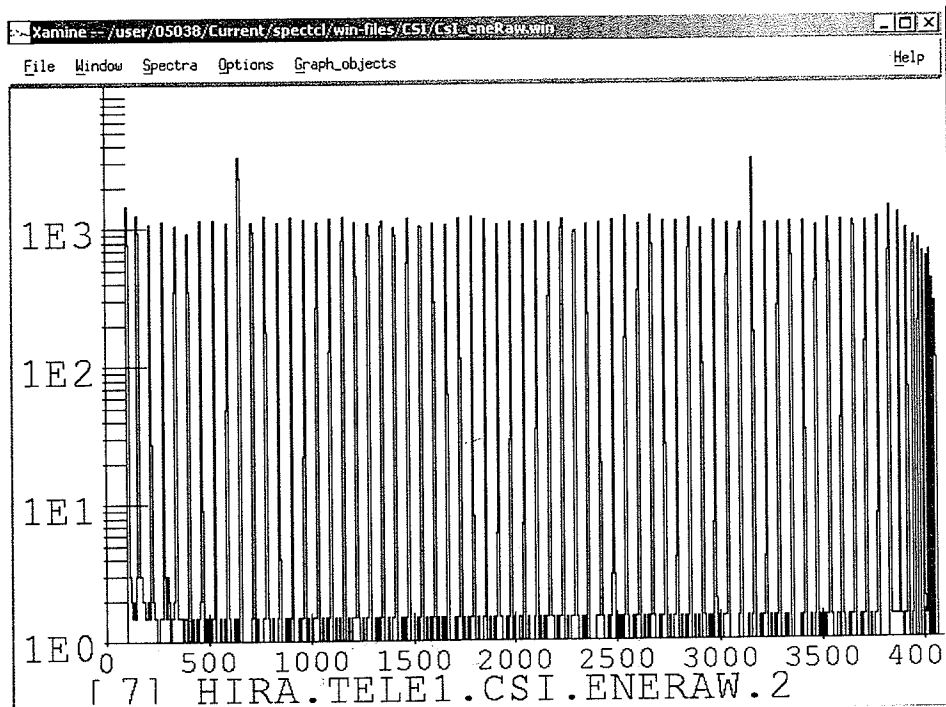
manual!

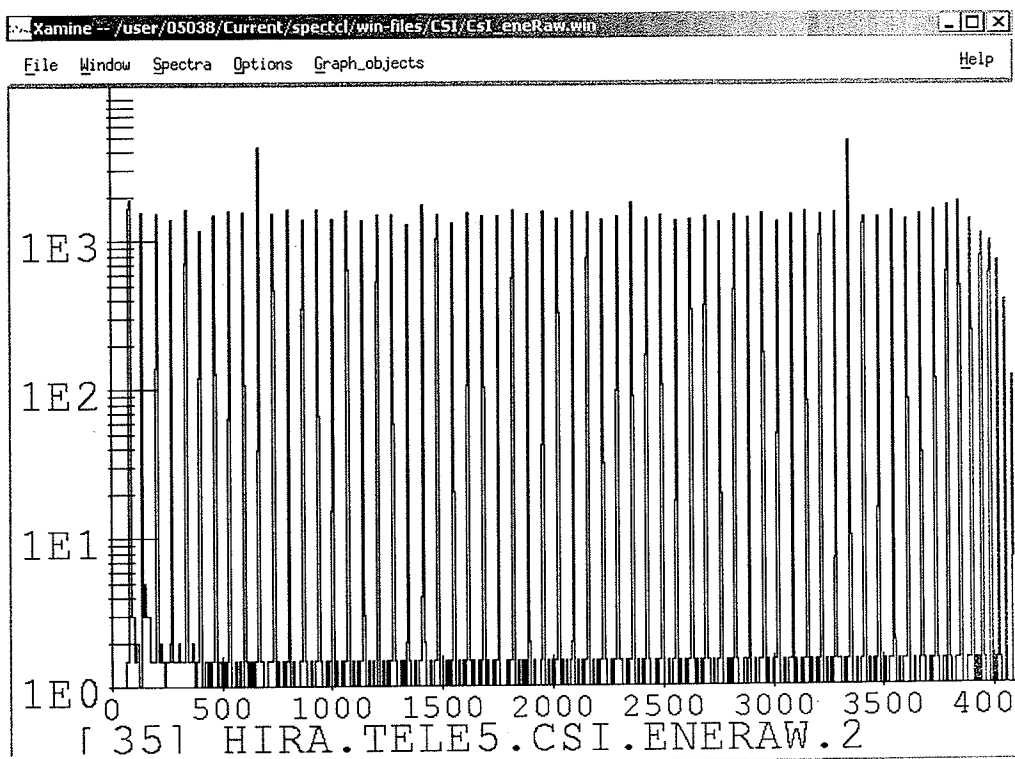
CSI pulser calibration → voltage range from 0.5V - 3.5V

↳ each voltage value kept for ~ 60 seconds

↳ except 0.5V
2.5V > kept for ~ 180 seconds

⚠ strong nonlinearities observed for $ch \geq 4000$!





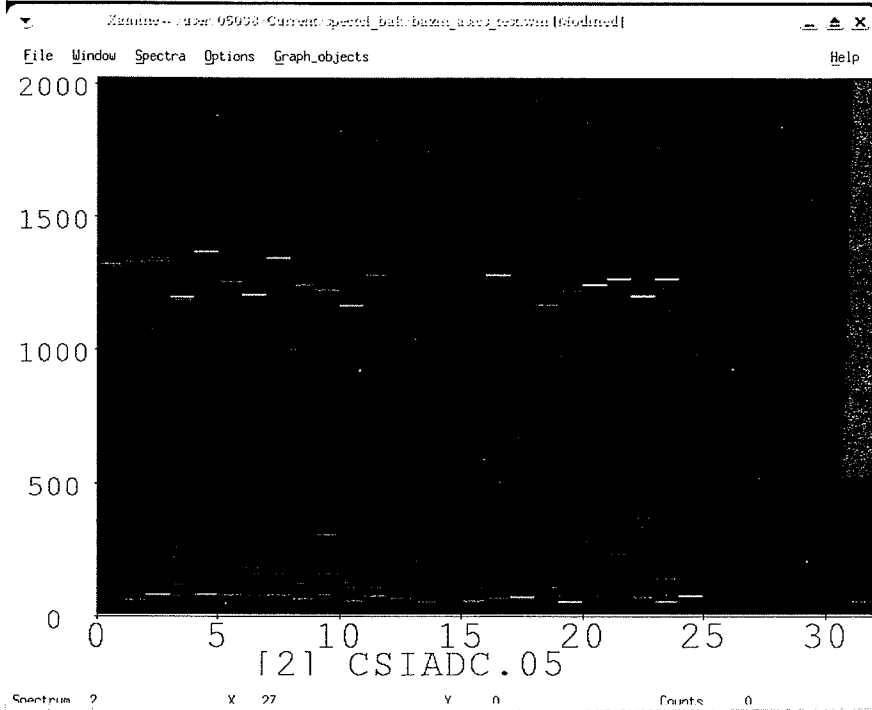
HIRA sources:

Si ϕ - OR	44
Si 1 - OR	45
Si 2 - OR	46
Si 3 - OR	47
CSIP - OR	48
CSI 1 - OR	49
CSI 2 - OR	50
CSI 3 - OR	51
S. Master - OR	52
CSI Master - OR	53
Big Brother	54
S300 - Master	55
S300 - Clear	56
Pocket Pulser	57

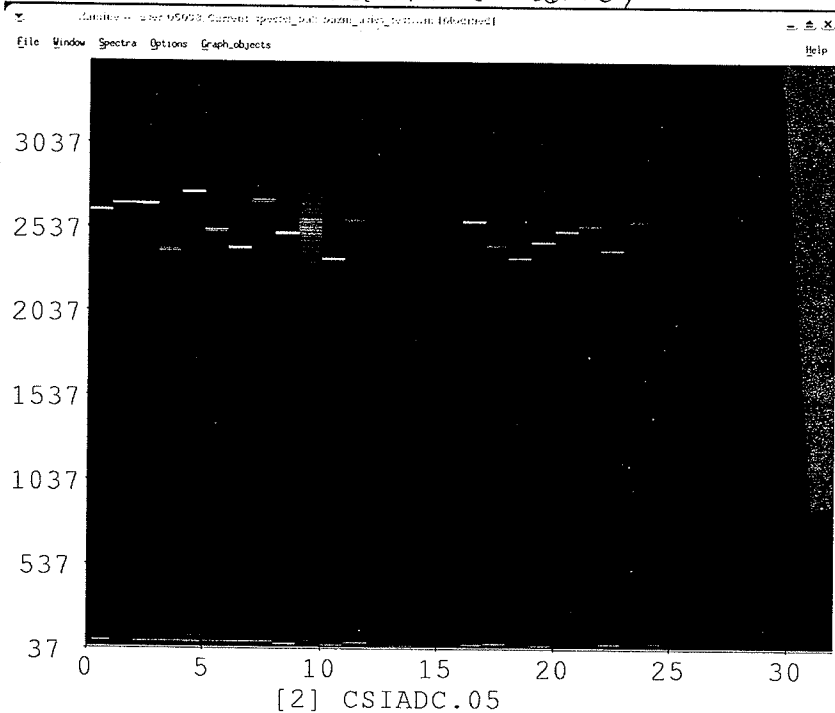
01/26/06

• CSI 1 in telescope 14 very noisy → was not noisy in the last run from yesterday, no changes were done between these two runs

run 12 (01/25/06)



run 14 (01/26/06)



↳ fixed - problem was bad connection to the shaper module

26/01/2006

We inspect the main channel of C&I but find nothing bad. When plugged-in looks fine but other channel at Tower 1 gets noisy. We inspect it, find nothing, but it gets better, yet not good enough. We take the shaper module apart, find nothing but when plugged-in back all work fine again.

01/27/06

- test of Eback shaper suspect signal to check if missing channels n. 15 in Spectel are due to mapping or rather problem of detect/clips.

TOWER	SLOT	CHIP	CHANNEL
0	5	0	0-14 .. ~300-500 mV 15... ~60 mV
0	5	1	15 .. ~60 mV
0	11	0	all channels OK
0	11	1	15... ~40 mV
1	5	0	15.. ~50 mV
1	5	1	15.. ~70 mV
1	8	0	15.. ~40 mV
1	8	1	15.. ~70 mV
1	11	0	all channels OK
1	11	1	7... no signal 15 ~50 mV
2	5	0	15.. ~50 mV
2	5	1	15.. ~70 mV
2	8	0	15.. ~40 mV
2	8	1	- - -

TOWER	SLOT	CHIP	CHANNEL
2	11	0	0. no signal all other ch. OK
2	11	1	15. ~ 40 mV
3	8	0	15. ~ 40 mV
3	8	1	15. ~ 40 mV
3	11	0	15. ~ 50 mV
3	11	1	15. ~ 40 mV

- all channels from back side fine with amplitude between 300-500 mV; channel 15 in west of the axis shows very low signal ~ 50 mV

↳ problem is not in Spectel...

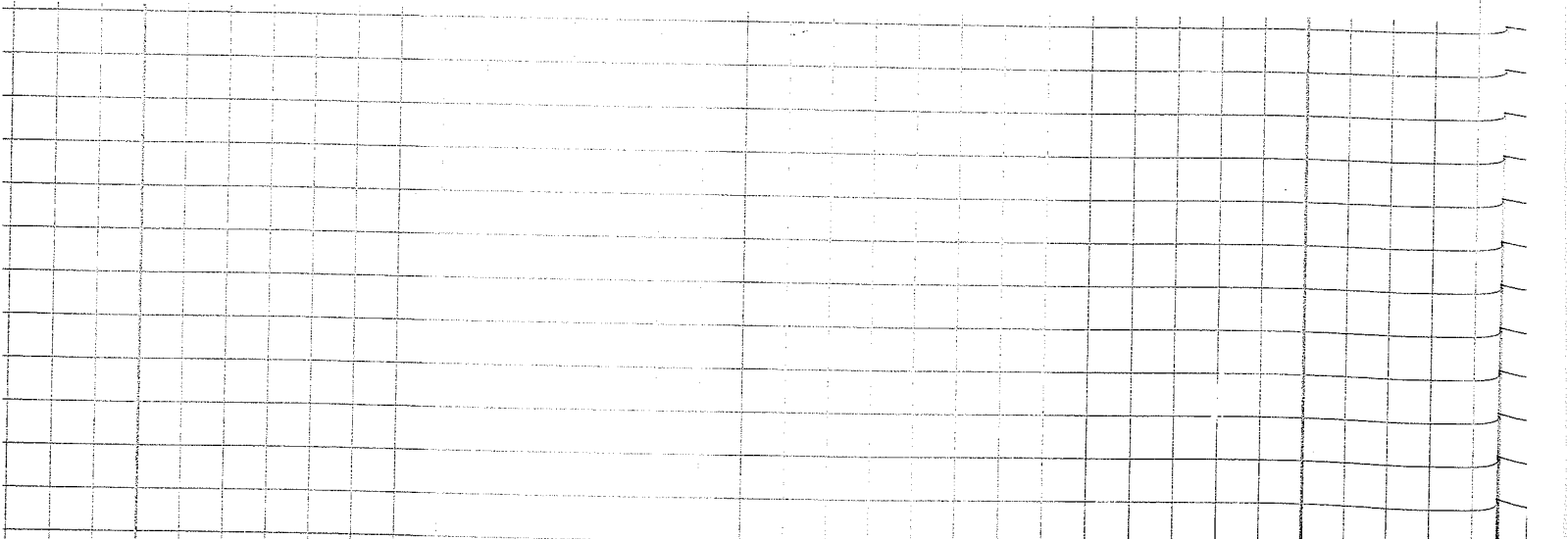
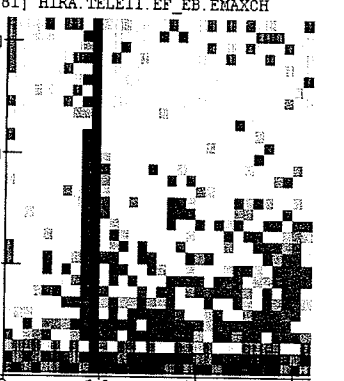
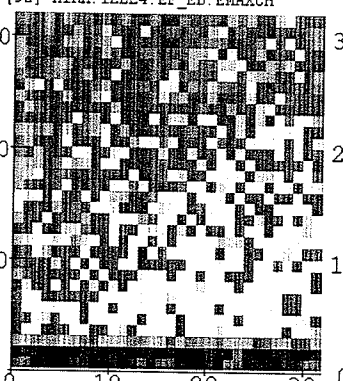
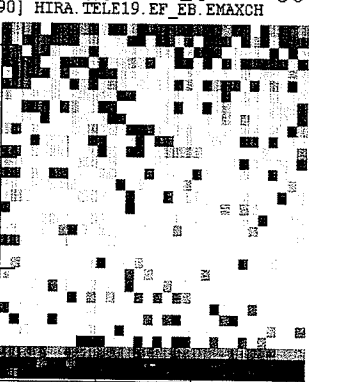
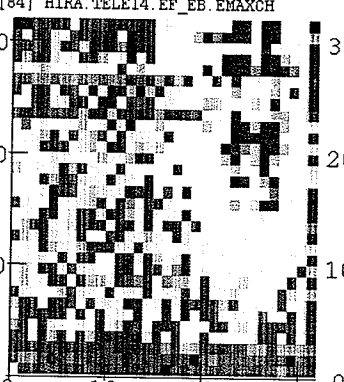
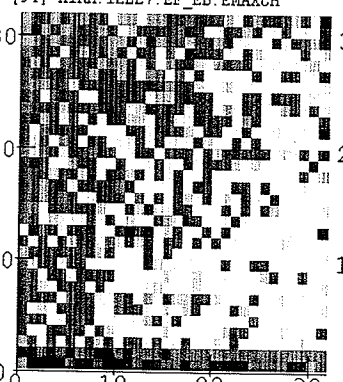
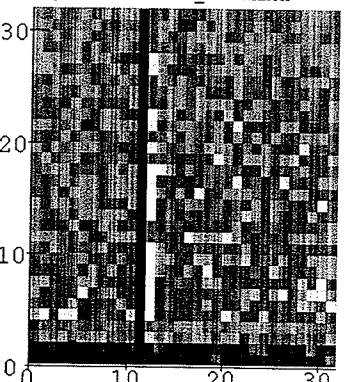
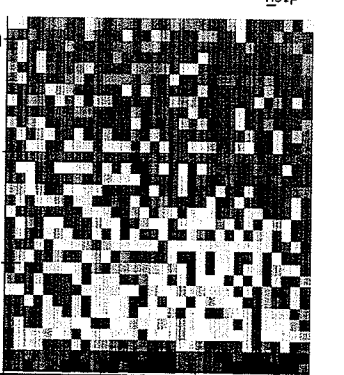
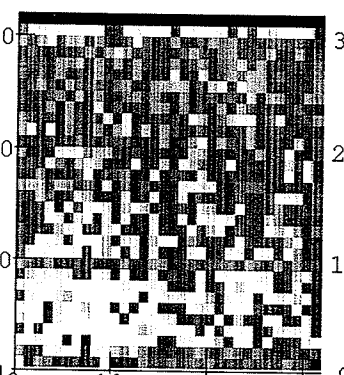
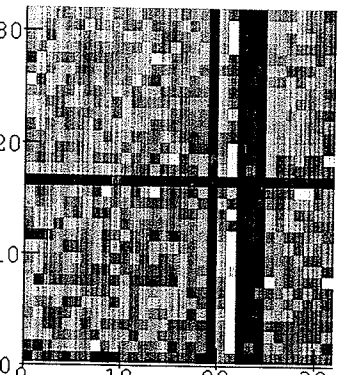
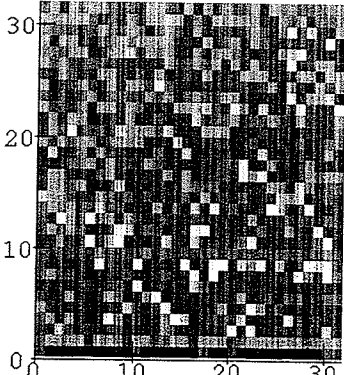
Leakage current on Tower 1 steadily increasing

for E_f from 1.5 pA → 2.28 pA

for E_b from ~3.0 pA → 4.0 pA

↳ over the period of ~4 hours!

↳ current on other towers more or less stable



1/28/06 - 4:30 pm.

The α rate of HIRA when taking 5800 single is pretty high.

We changed the Reset CV on the chipboard from 256 to 432.

This is changing the time that the chip is waiting from 20 μ s to 2 μ s.

The ~~rate~~ α rate is much lower (it should be ~ 16) -

We still need to be able to block the α source when running.

(The α is only ~ 16 cm from the detectors)

Date: 01/29/06

Time: 10:10 am

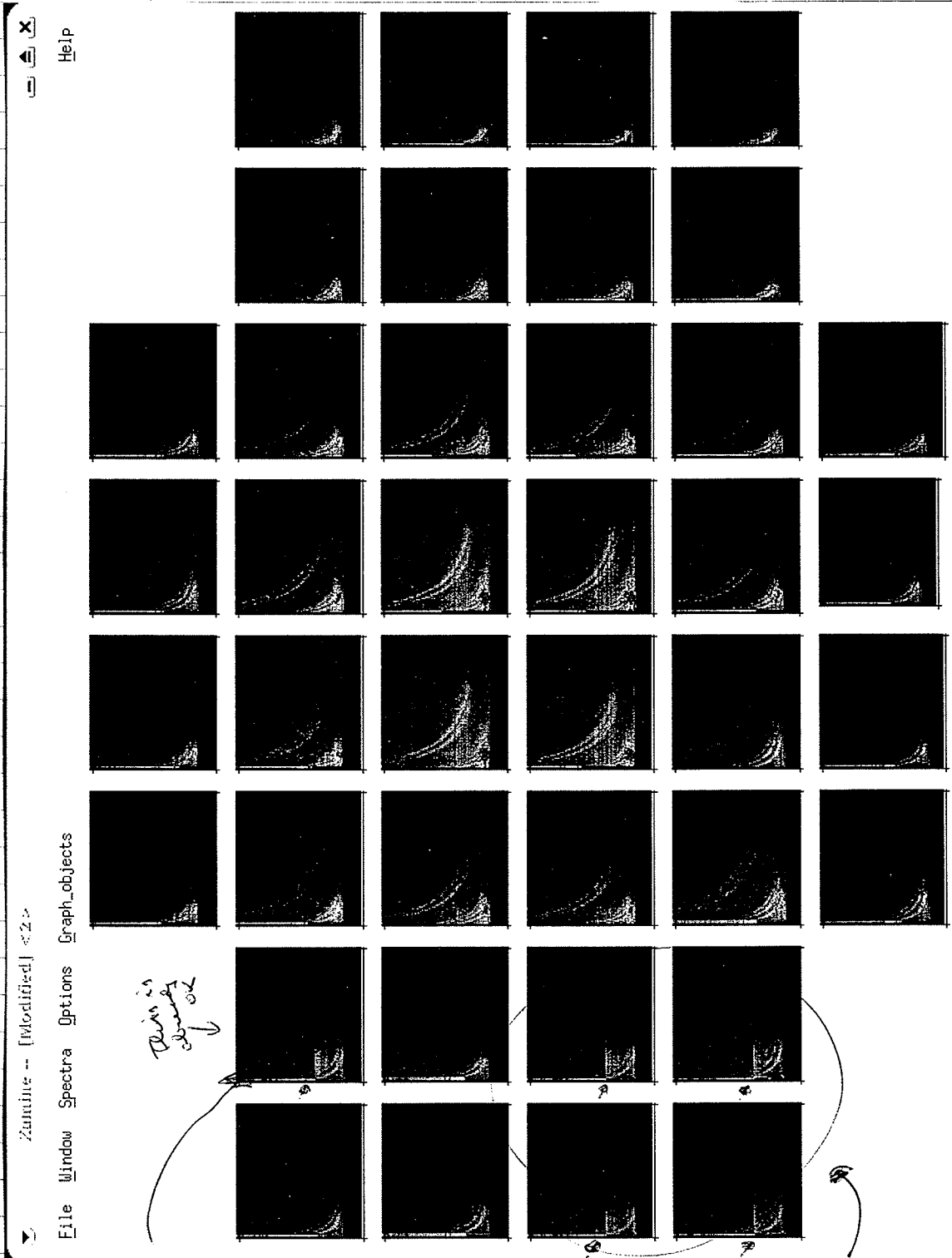
Run: 51

Tower 0	Bias(V)	I (μ A)	Tower 1	Bias(V)	I (μ A)	Tower 2	Bias(V)	I (μ A)	Tower 3	Bias(V)	I (μ A)
Tel 0	189.75	0.44	Tel 2	239.75	2.74	Tel 5	240.00	1.76	Tel 16	209.25	0.84
Tel 1	250.00	1.02	Tel 4	199.75	1.10	Tel 11	249.75	0.84	Tel 19	209.75	0.92
			Tel 7	209.25	0.64	Tel 14	209.75	0.58			
All EB	100	1.50	All EB	100	4.56	All EB	100	3.23	All EB	100	1.76

1-29-06

Removed cards from Towers (unused cards)

Tower	Slot	Serial Number
0	8	PS0041
0	9	PS0038
0	14	PS0021
0	15	SN0018
1	15	SN0025
1	14	PH0009
2	2	PH0005
2	3	PS0031
3	5	SN0020
3	6	SN0028
3	14	PS0024
3	15	SN0019



What's this on T20 and T21 CSIS??

01/30/2006 4:44 am

Peak is
slightly
shifted

Note problem only on T20 or T21 CSIS
displayed as T20 CSIS in Spectral.

File Window Spectra Options Graph_objects
 [Icons: Home, Back, Forward, Print, Help]

Date: 1-30-06

Time: 8:00 am

Run: 84

Tower 0	Bias(V)	I (uA)	Tower 1	Bias(V)	I (uA)	Tower 2	Bias(V)	I (uA)	Tower 3	Bias(V)	I (uA)
Tel 0	250.25	1.00	Tel 2	209.50	0.62	Tel 5	240	1.78	Tel 16	120	0.82
Tel 1	189.75	0.42	Tel 4	199.75	1.08	Tel 11	249.75	0.84	Tel 19	210	0.94
			Tel 7	239.50	2.76	Tel 14	210	0.58			
All EB	100	4.53	All EB	100	1.48	All EB	100		All EB	100	

Date: 1-30-06

Time: 10:10 am

Run: 87

Tower 0	Bias(V)	I (uA)	Tower 1	Bias(V)	I (uA)	Tower 2	Bias(V)	I (uA)	Tower 3	Bias(V)	I (uA)
Tel 0	250.25	1.00	Tel 2	209.50	0.62	Tel 5	240.00	1.78	Tel 16	120.25	0.82
Tel 1	189.75	0.42	Tel 4	199.75	1.08	Tel 11	249.75	0.84	Tel 19	210	0.96
			Tel 7	239.50	2.82	Tel 14	210.00	0.58			
All EB	100	4.59	All EB	100	1.47	All EB	100	1.78	All EB	100	3.25

(Runs 84-87) All EBs for T0-T1 and T2-T3 seem to be swapped

Date: 1/30/06

Time:

Run: 95

Tower 0	Bias(V)	I (uA)	Tower 1	Bias(V)	I (uA)	Tower 2	Bias(V)	I (uA)	Tower 3	Bias(V)	I (uA)
Tel 0	189.75	0.42	Tel 2	239.50	2.94	Tel 5	240.00	1.80	Tel 16	120.25	0.80
Tel 1	250.25	1.00	Tel 4	199.75	1.08	Tel 11	249.75	0.84	Tel 19	210.00	0.98
			Tel 7	209.50	0.62	Tel 14	210.00	0.58			
All EB	100	1.48	All EB	100	4.70	All EB	100	3.27	All EB	100	1.79

Date: 1/30/06

Time: 6:50

Run: 100

Tower 0	Bias(V)	I (uA)	Tower 1	Bias(V)	I (uA)	Tower 2	Bias(V)	I (uA)	Tower 3	Bias(V)	I (uA)
Tel 0	189.75	0.42	Tel 2	239.50		Tel 5	240.00	1.82	Tel 16	120.00	0.80
Tel 1	250.25	1.00	Tel 4	199.75		Tel 11	249.75	0.84	Tel 19	210.00	1.00
			Tel 7	209.50		Tel 14	210.00	0.58			
All EB	100	1.48	All EB	100	4.78	All EB	100	3.29	All EB	100	1.81

Date: 01/31/2006

Time: 1:30 am

Run: 113

Tower 0	Bias(V)	I (uA)	Tower 1	Bias(V)	I (uA)	Tower 2	Bias(V)	I (uA)	Tower 3	Bias(V)	I (uA)
Tel 0	189.75	0.42	Tel 2	239.5	3.10	Tel 5	240.00	1.82	Tel 16	120.25	0.80
Tel 1	250.25	1.00	Tel 4	199.75	1.10	Tel 11	249.75	0.84	Tel 19	210.00	1.04
			Tel 7	209.50	0.62	Tel 14	210.00	0.58			
All EB	100	1.49	All EB	100	4.85	All EB	100	3.31	All EB	100	1.86

Date: 01/31/2006

Time: 4:55 am

Run: 117

Tower 0	Bias(V)	I (uA)	Tower 1	Bias(V)	I (uA)	Tower 2	Bias(V)	I (uA)	Tower 3	Bias(V)	I (uA)
Tel 0	189.75	0.42	Tel 2	239.50	3.15	Tel 5	240.00	1.82	Tel 16	120.25	0.80
Tel 1	250.25	1.02	Tel 4	199.75	1.10	Tel 11	249.75	0.84	Tel 19	210.00	1.06
			Tel 7	209.50	0.62	Tel 14	210.00	0.58			
All EB	100	1.49	All EB	100	4.90	All EB	100	3.31	All EB	100	1.87

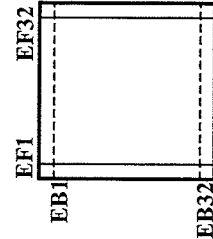
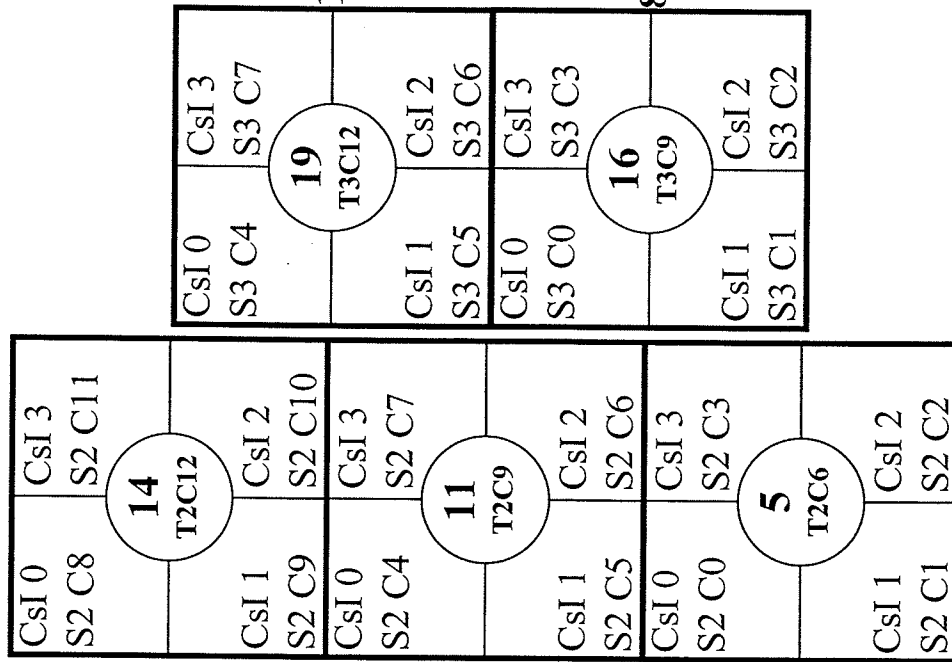
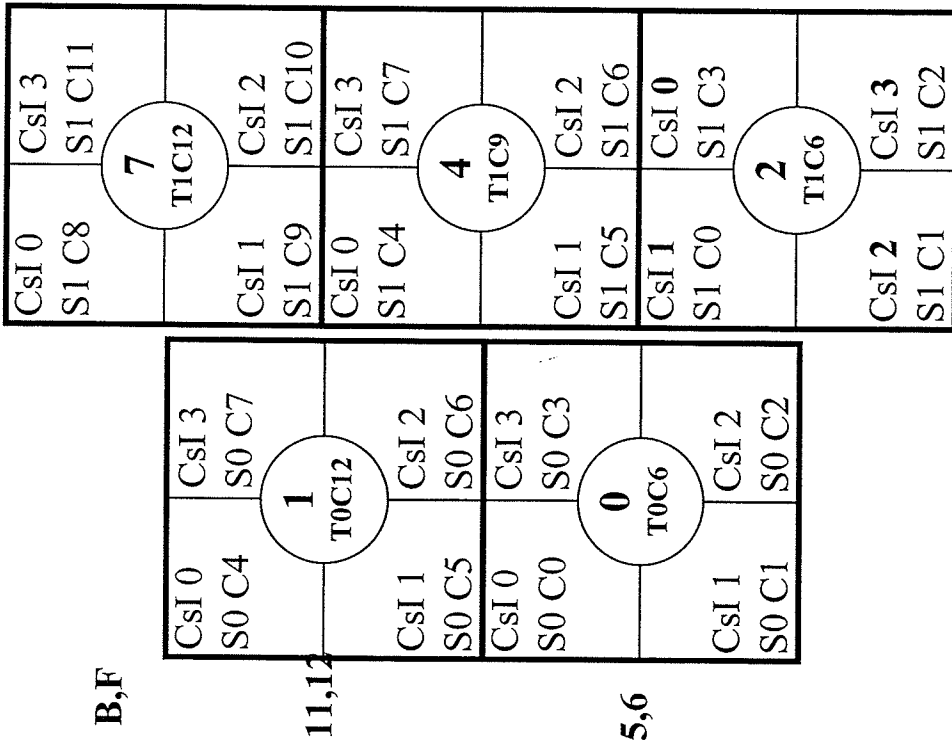
05038

1/30/06

Tele14 EF is the reverse of others (Micron cable)

B,F

B,F



TOWER 0 TOWER 1

TOWER 2 TOWER 3

Date: 01/31/2006

Time: 7:56 am

Run: 120

Tower 0	Bias(V)	I (uA)	Tower 1	Bias(V)	I (uA)	Tower 2	Bias(V)	I (uA)	Tower 3	Bias(V)	I (uA)
Tel 0	189.75	0.42	Tel 2	239.50	3.16	Tel 5	240.00	1.84	Tel 16	20.25	0.82
Tel 1	250.25	1.02	Tel 4	199.75	1.10	Tel 11	249.75	0.84	Tel 19	210.00	1.08
			Tel 7	209.50	0.62	Tel 14	210.00	0.58			
All EB	100	1.49	All EB	100	4.47	All EB	100	3.33	All EB	100	1.29

Date: 01/31/2006

Time: 14:25

Run:

127

Tower 0	Bias(V)	I (uA)	Tower 1	Bias(V)	I (uA)	Tower 2	Bias(V)	I (uA)	Tower 3	Bias(V)	I (uA)
Tel 0	189.75	0.42	Tel 2	209.5	0.62	Tel 5	240	1.86	Tel 16	210	0.82
Tel 1	250.25	1.02	Tel 4	199.75	1.10	Tel 11	249.75	0.84	Tel 19	210	1.62
			Tel 7	239.5	3.22	Tel 14	210.	0.58			
All EB	100	1.49	All EB	100	5.01	All EB	100	3.34	All EB	100	1.93

02/01/2006

Time 11:00 AM

T0 190, .56
T1 250 1.18

T2 210 .76
T3 200, 1.3
T7 240, 1.86

T5 240 1.92
T11 250 1.08
T14 210 .70

T16 120 .98
T19 210 1.1

All EB 1.69

All EB 3.88

All EB 3.70

All EB 2.05

1/31/06 5:30pm

Run 13# end run,

when I begin, it says read out program exited.
cannot restart properly!

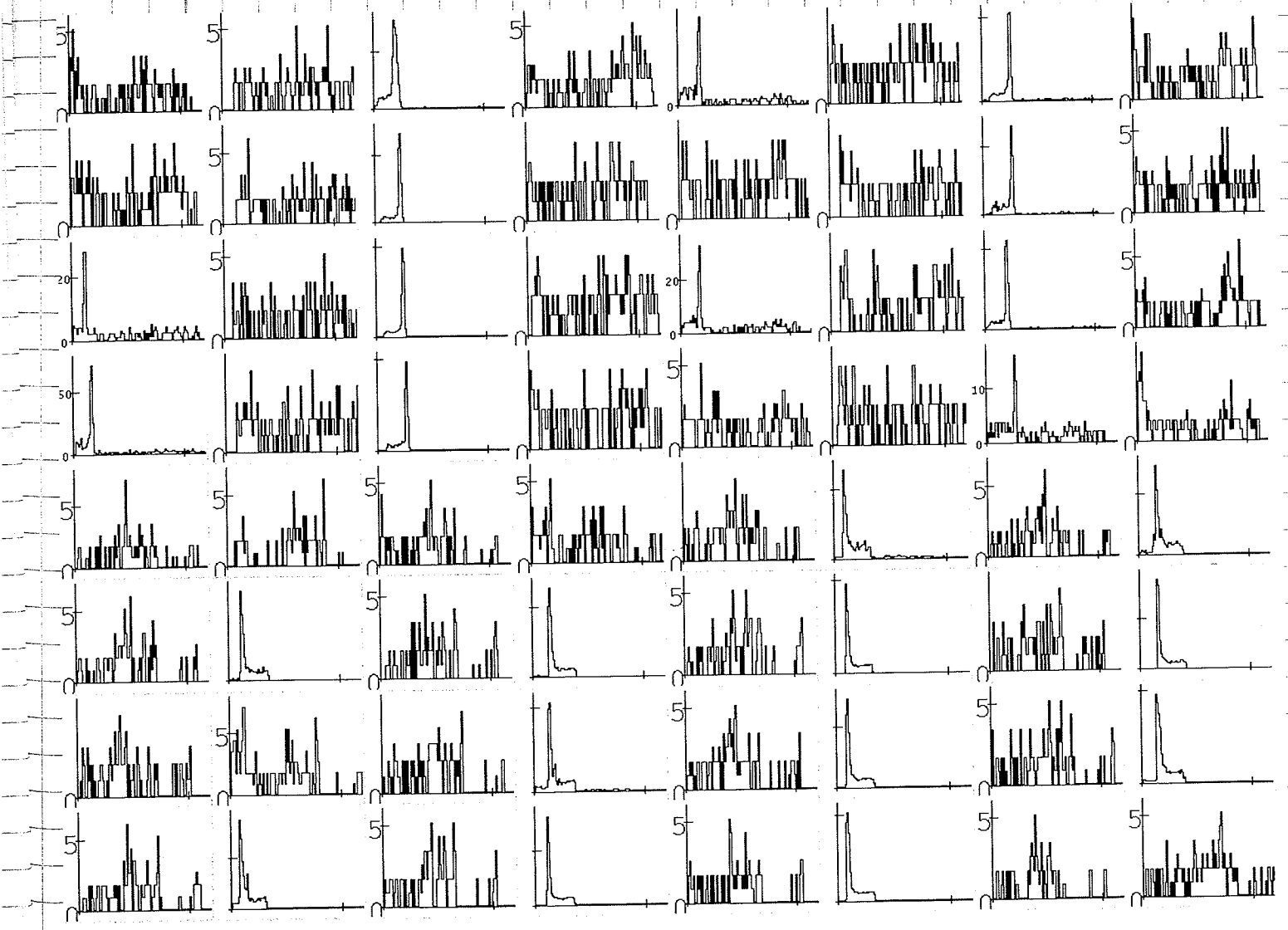
Andy says one of the ~~RAM~~ motherboard set
up files was changed on Jan 29 (Sunday no pmt)

Starting Run 125, Spectra end

Chip Num on Tower 1 is too big, its 68
which is above (3 skipping)

This occurs intermittently

It looks like a chip (s) in tower 1 is broken and
it seems to be related to det 4



11/31/06 \$ 9:30 pm.

Go to sparse read out mode

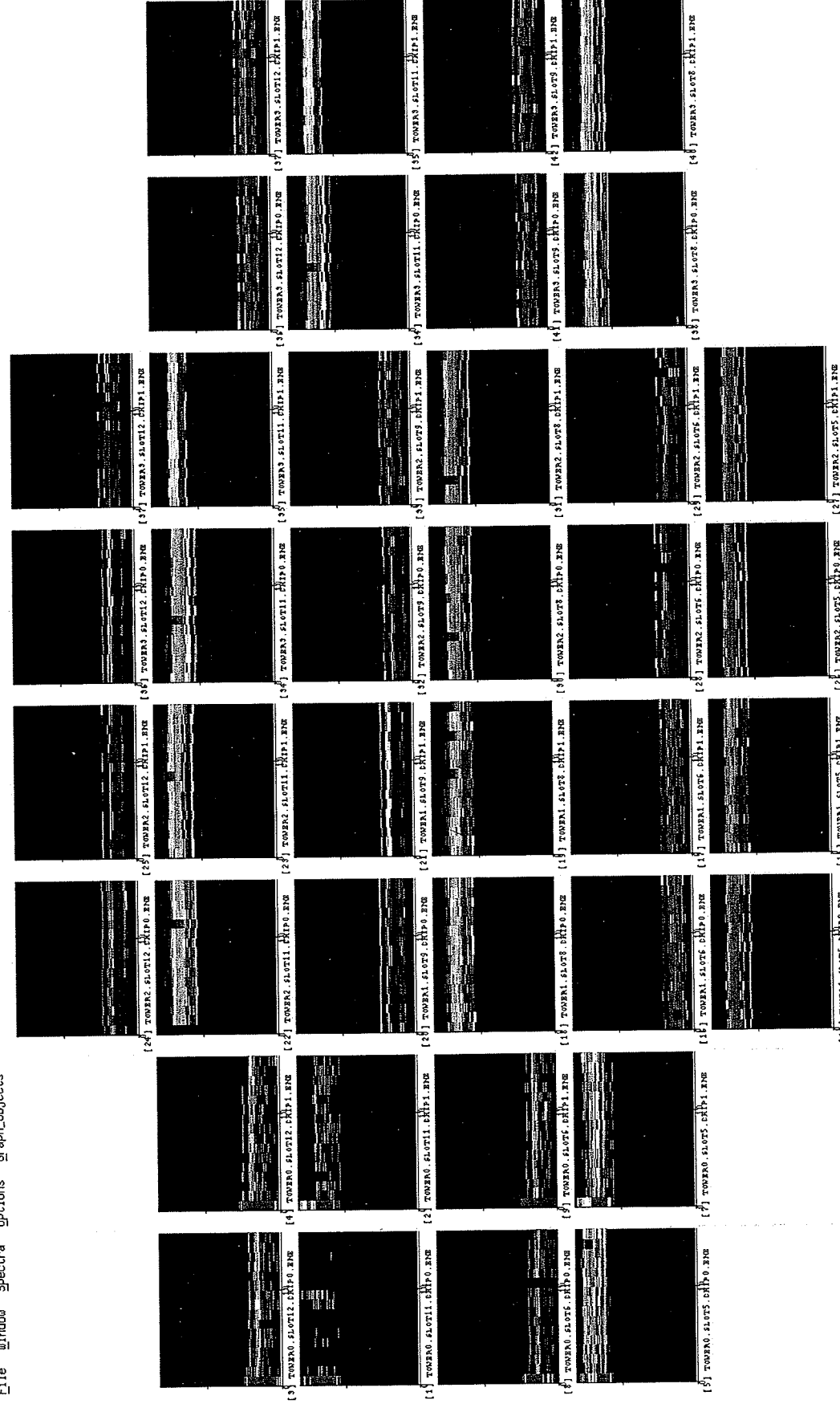
Continue α -calibration

Run 136

tower 0 (Tel 0 & 1) have some problems.
very few counts come in and
they all pile up in channel 0, for
both E_b & E_f ?

Run 137

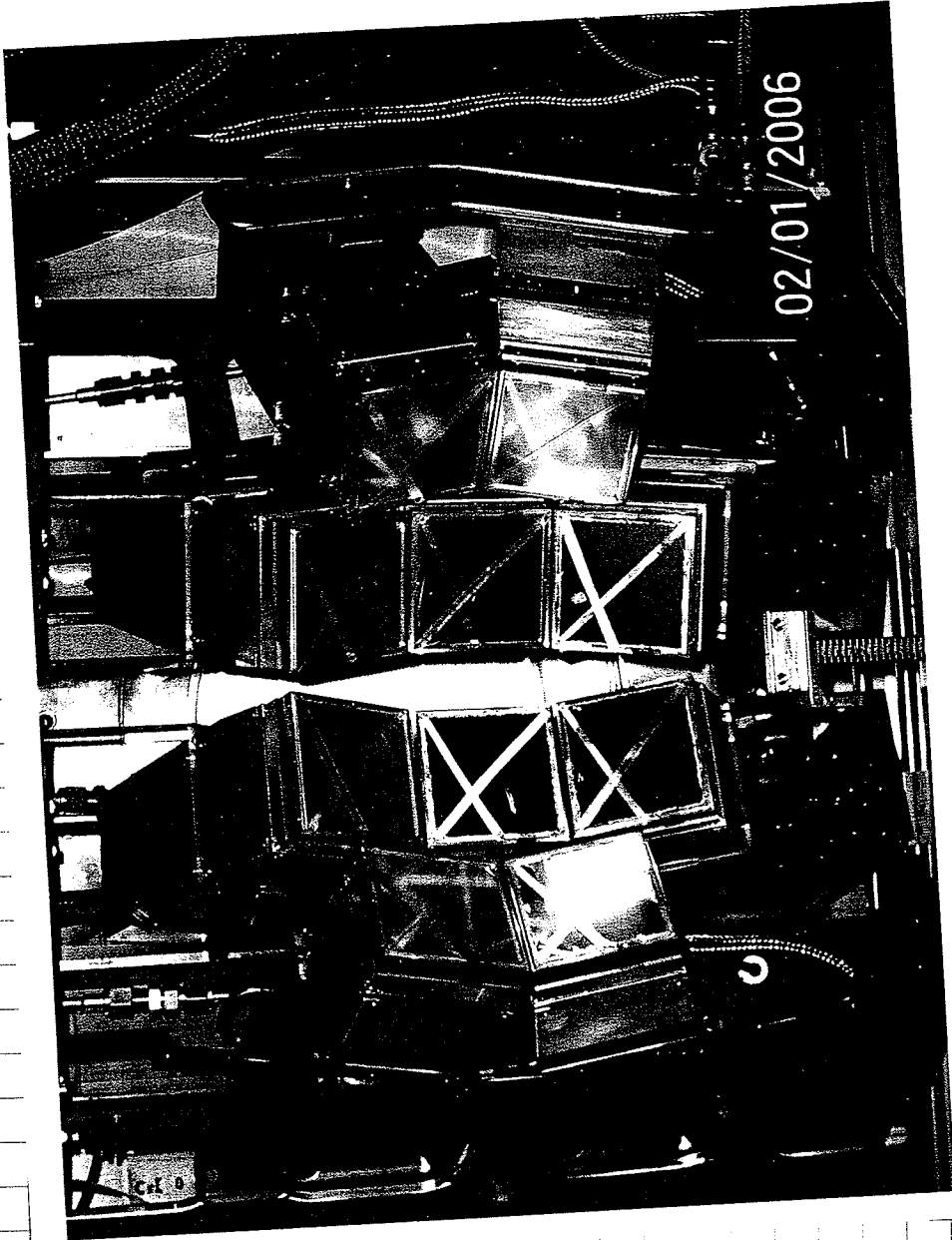
Andy came in and restarted the chip program.
However, we still have problems with tower 0.



X 3 Y 9920 Counts 0

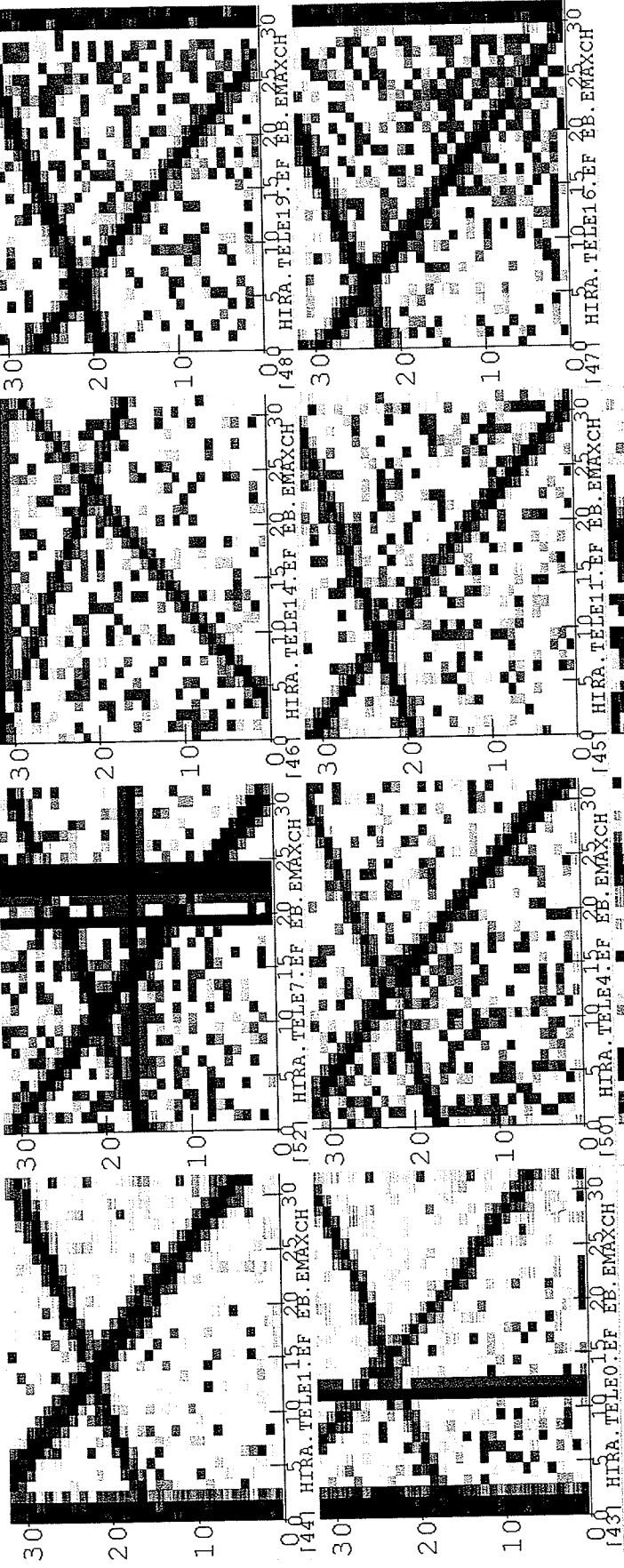
Spectrum 29

- Geometry
- Display
- Display +
- Zoom
- Update All
- Update Selected
- Info + -
- Log
- Map
- Integrate
- Expand
- UnExpand
- Marker
- Summing Region
- Band
- Contour



Xamine -- /user/05030/Current/spectra/win_files/HIRA/.win

File Window Spectra Options Graph_objects



X 0 Y 27 Counts 0

Spectrum 47

Geometry Zoom Update All Update Selected Info + - Log Map UnExpand Expand Marker Summing Region Integrate Contour Cut Band

its