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DCE

Caltech/MIT- LIGO Project Route 10, Mile Marker 2 Richland, WA 99352

LIGO PROJECT

PO BOX 1970
MAIL STOP S9-02
RICHLAND, WA 99352



FAX

Date: 6-14-98
 Number of pages including cover sheet: _____

To: Rae Weiss
LARRY TOM
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AT LAZZARINI

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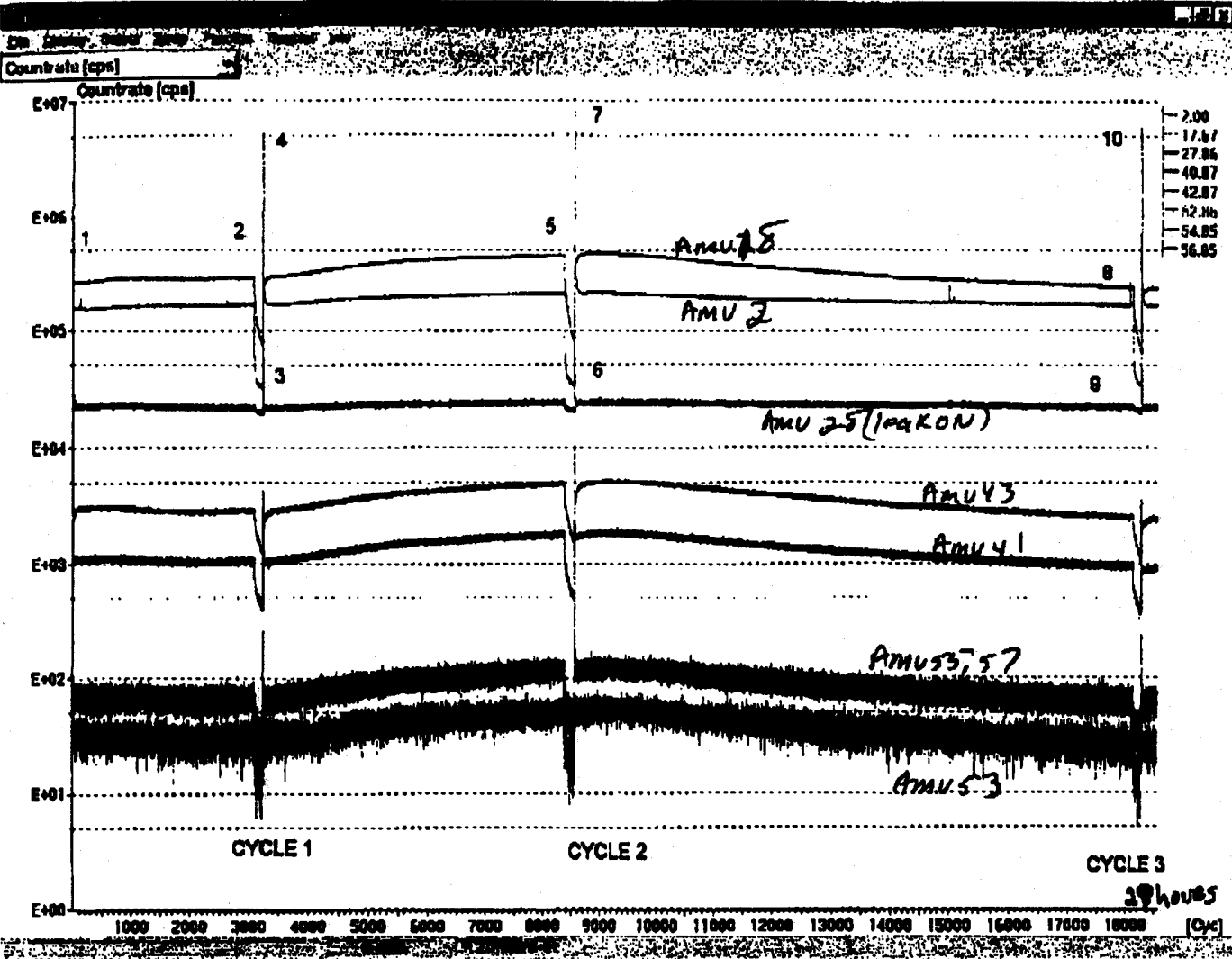
From: MATT SMIR
 Caltech/MIT - LIGO Project
 PO Box 1970 MS-S9-02
 Richland, WA 99352

Phone: 509-372-2325
 Fax phone: 509-372-2178

REMARKS: Urgent For your review Reply ASAP Please comment

*RESULTS OF RAISING TEMPERATURE OF SEI TUBE.
 SEE SUMMARY SHEETS FOR OUTGOSSING VALUES.*

Matt



File Edit View Help
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Additional Information

Nbr	Name	Value
0	gage pressure	
1	voltage =2500	full pumping speed
2	June 12-98	A=.323

Deletes All Names
Deletes All Values

Notes

- raise temp to 32, beginning
- raise temp to 42, AFTER cycle 1
- shut off heat, AFTER cycle 2

Title: raise temp of tube

OK
Cancel

FILE : HJUNE12ASUMMARY

Key points	Beginning	Cycle #1			Cycle #2			Cycle #3		
Temperature	1 20.5 C	2 32.5C	3 32.5C	4 32.5C	5 42C	6 42C	7 42C	8 22C	9 22C	10 22C
Cycle number	0	3092	3236	3236	8367	8548	8550	18142	18285	18288
elapsed time(seconds)	0	17347.6	18154.2	18165.4	47184.7	48228	48232.1	103235	104036	104053

AMU	Beginning	Cycle #1, CPS				Cycle #2, CPS			Cycle #3, CPS		
2	1.53E+05	1.67E+05	3.28E+04	5.28E+06	2.11E+05	3.44E+04	7.88E+06	1.68E+05	3.43E+04	5.95E+06	
18	2.64E+05	2.90E+05	7.68E+04	1.10E+05	4.44E+05	8.05E+04	1.27E+05	2.34E+05	8.59E+04	7.58E+04	
41	2.88E+03	1.10E+03	4.02E+02	4.12E+03	1.66E+03	5.19E+02	1.08E+04	9.47E+02	3.47E+02	3.34E+03	
43	3.30E+01	2.65E+03	1.21E+02	2.12E+03	4.85E+03	1.52E+03	3.34E+03	2.47E+03	1.08E+03	1.84E+03	
53	7.50E+01	2.60E+01	1.40E+01	7.60E+01	5.90E+01	1.30E+01	2.08E+02	3.50E+01	1.10E+01	7.60E+01	
55	6.50E+01	7.00E+01	2.40E+01	2.43E+02	1.05E+02	2.80E+01	8.61E+02	5.10E+01	3.80E+01	2.35E+02	
57	6.50E+01	5.70E+01	9.80E+01	1.20E+02	1.23E+02	5.10E+01	2.29E+02	5.20E+01	3.80E+01	8.10E+01	

Alpha= 6.65E-14 TORR/CPS
 Volume=129 LITERS
 Surface Area(tube)= 23579 cm2
 Pump Speed = 16 liters/sec

$J = P \cdot V/A \cdot t = \text{Alpha} \cdot \text{CPS} \cdot V/A \cdot t$
 let $C1 = \text{alpha} \cdot V/A$
 $C1 = 3.58E-16 (\text{torr/cps}) \cdot \text{L/cm}^2$

AMU	CYCLE 1		CYCLE 2		CYCLE 3	
	CPS	Jx	CPS	Jx	CPS	Jx
2	5.28E+06	2.32E-12	7.88E+06	2.76E-12	5.95E+06	2.61E-12
18	1.10E+05	4.8288E-14	1.27E+05	4.39E-14	7.68E+04	3.46E-14
41	4.12E+03	1.81E-15	1.08E+04	3.74E-15	3.34E+03	1.47E-15
43	2.12E+03	9.31E-16	3.34E+03	1.16E-15	1.84E+03	8.08E-16
53	7.60E+01	3.34E-17	2.08E+02	7.20E-17	7.60E+01	3.34E-17
55	2.43E+02	1.07E-16	6.61E+02	2.29E-16	2.35E+02	1.03E-16
57	1.20E+02	5.27E-17	2.29E+02	7.92E-17	8.10E+01	3.56E-17

J(41,43,53,55,57) Torr L/cm2 sec = **2.98E-15**

5.27E-15

2.45E-15

Steady Stee

$$J_x = P^*S/A = \text{ALPHA} \cdot \text{CPS} \cdot S/A = C2 \cdot \text{CPS}$$

$$C2 = \text{alpha} \cdot S/A = 6.85 \times 10^{-14} \text{ torr/cps} \cdot 16 \text{ lbs} / 23579 \text{ cm}^2$$

$$C2 = 4.456 \times 10^{-17} \text{ TORR/CPS L/S CM}^2$$

AMU	CPS	Beginning	cycle #1 (3092)		Cycle #2 (8637)		Cycle #3 (18142)	
		Jx	CPS	Jx	CPS	Jx	CPS	Jx
2	1.53E+05	6.82E-12	1.67E+05	7.44E-12	2.11E+05	9.40E-12	1.68E+05	7.49E-12
18	2.64E+05	1.18E-11	2.90E+05	1.29E-11	4.44E+05	1.98E-11	2.34E+05	1.04E-11
41	2.88E+03	1.28E-13	1.10E+03	4.90E-14	1.88E+03	7.40E-14	9.47E+02	4.22E-14
43	3.30E+01	1.47E-15	2.95E+03	1.27E-13	4.85E+03	2.16E-13	2.47E+03	1.10E-13
53	7.50E+01	3.34E-15	2.80E+01	1.16E-15	5.90E+01	2.63E-15	3.50E+01	1.56E-15
55	8.50E+01	2.90E-15	7.00E+01	3.12E-15	1.05E+02	4.68E-15	5.10E+01	2.27E-15
57	8.50E+01	2.90E-15	5.70E+01	2.54E-15	1.23E+02	5.48E-15	5.20E+01	2.32E-15
J(41,43,53,55,57) Torr L/cm2 sec=		1.90E-13	1.83E-13		3.09E-13		1.68E-13	

Unit	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9	CH10	CH11
ENABLE	ENABLE	ENABLE	ENABLE	ENABLE	ENABLE	ENABLE	ENABLE	ENABLE	OFF	OFF	OFF
ION-COUNT	ION-COUNT	ION-COUNT	ION-COUNT	ION-COUNT	ION-COUNT	ION-COUNT	ION-COUNT	ION-COUNT	---	---	---
2.00	17.67	27.88	40.97	42.87	52.88	54.85	58.95	---	---	---	---
0.1s	0.1s	0.1s	1s	1s	1s	1s	1s	---	---	---	---
ON	ON	ON	ON	ON	ON	ON	ON	---	---	---	---
---	---	---	---	---	---	---	---	---	---	---	---
Pause	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	---	---	---