

19 March 1977

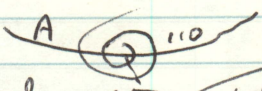
A. R. Waugh

Dept of Metallurgy, Univ of Cambridge

19/3/77 W/30ppm Cr ex PRK 210° F He 60°

Pos of g-b in E's of c ? 2 g-bs

DIV 4.5 KV

g b 20  boundary of grain

DIV all around, think

Nuclei

Small DC crops of spirals

2x larger crops

DIV along boundaries

Small nS crops of boundary (A)

Nuclei

Sends of small crops at A tending to retain along on line of b'dary - some on 110

DIV 5KV Pulse 1KV

60 W³⁺ @ $\frac{137}{132} = 7 + 24 + \frac{64}{900} = 950 \text{ ns}$

45 W⁴⁺ @ $\frac{820 \text{ ns}}{700} = 64 + 18 = 122$

26 Cr²⁺ @ $\frac{620}{590} = 76$

W³⁺ 20 pulses 130

DIV

W⁴⁺ - flush

3 spirals on end

Some mid

Pos of small void @ b above DIV forming

Flush

Blank

2/3/77 Ru ex Melmed $\cdot 60 \times 10^{-10}$ He

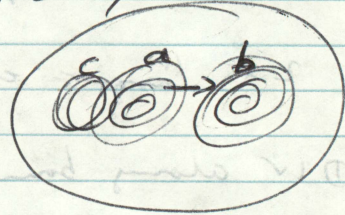
6KV BW x 5 1

Small (20) crystal

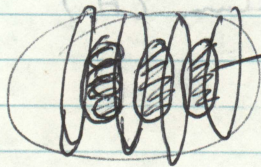
Nuffin 2

a Small crystal could $?(11\bar{2}0)$

b Small crystal of next phase
- ? all rings bright & dim



a 2



top layer evaporates first

DIV x 2 (a)

Nuffin 3

Series evaporating $C =$ top, bright

- same as a, but

top x layers \rightarrow ✓ bright below $b\bar{u}$

last few C atoms



2 2 jump sideways, or stable dim atoms?

3 x 3KV or so

6KV 3W

Nuffin 4

3 LW x 4

7.5KV + 1KV pulse in He

105, 67 - ions (12, 3 or 3, 4+)

103 30 sec

67 "

DW

slight pop

Series of mis

Picture crowding

Another pop

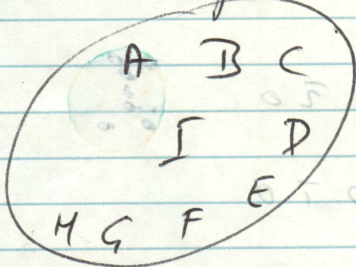
Picture now much better

56

12 3 4

Nafilm

2 3 4 5



series of 10 10 axial

Nafilm

more 10 10 small DC crystal 6

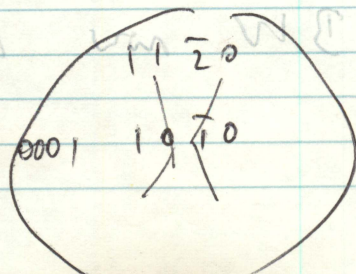
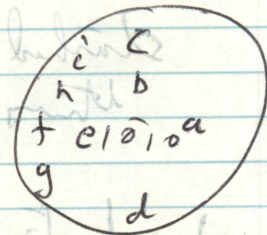
film surrounded

Nafilm

10 10 small dc crystal 7

Nafilm

10 10



Series on spiral to right of 1070

Naftu a
More of spiral 10.5KV

not
1120 | slow expansion of 1120 (top)
end with dim plane on top.

? I thought wasn't supposed to have all rings?
check id.

Naftu 10
→ 1120 at bottom, another 1070 at top.

1120 slow expansion

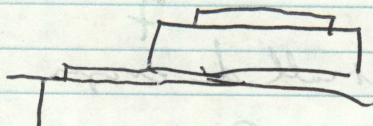
Naftu 11
retained atoms on 1120
v ~ 1070

1071 - dim plane on top.

Series.

can't catch last few back atoms.

must be
started
there



back to 1070 BW now 10.5KV

Myth 12

DW of ns/endform

Blank ← popped white ns emptying

31v
70 30cm
57
He 17 20

68 100cm
56
31v - dead

1120 DW x 2 to void top site

67 80cm
55
He+ 16 40

DIV
31v 10T0
31v 10T1 several
66
54
DIV

Nufik 13

Series 64 among errors 10T1
10T1 / 10T0

10T0

10T0 with just dim ring on top

68 60cm ~ 10 plums
52 13.5 + 1.83

DW x 2

31v 1120 top site (void)

flushed

↳ mostly 2+, some 3+

64 Ru²⁺ (96-104) 48-52

Ru²⁺ 32-34.6

72 RuHe²⁺ (98-102) 50-54

RuHe²⁺ 33.5-35.9

27-30 Mar ISSC3 Surf Sci Conference @ York.

31 Mar Looking @ Ti

- best polish tried was

~ 50/50 Methanol / 1 butanol + ~2% perchloric

- cold, 40-50 °C (on sly polishing unit, v_{ext})

- Few pads of v_{spotty} looking tip

- several tips tried, from old reel of un-annealed wire

- v_{workable}.

- ? try annealed wire, purer wire?

or ? try other polish - Brando's HF bend.

ac + NaOCl goes for Pt rapidly - etches.

1 April

10% (stock soln)

Pt polish roughly in NaOCl - few volts at c

Shangren & polished finally in conc $\text{H}_2\text{SO}_4 / \text{CrO}_3$ a la Rhodum
- few volts ac at bottom of gas evolution range seems to
sharpen tip OK. Lacomit used with NaOCl to get rough
endform, may not be necessary.

410⁻¹⁰ Ne 60
- looks OK.

series of pins at 10KV or 20KV

Blank

2 April Same tip 2×10^{-10} He 60

DIV - lots of hopping spots - ? Ne from yesterday

13KV - so

Blank

Ne 10.7KV DIV all around

Pulse 2.5KV

DIV

Waffle

DIV after ns in He

Something squaking over,

112 106

$\left. \begin{array}{l} \text{v10} \\ \text{3 or 4 attempts to get } Pt^{2+} \\ \text{- kept squaking over.} \\ \text{5 pulses} \end{array} \right\}$

$\sim 98 \text{ amu } 106 = 700 \text{ ns}$

blank DIV Pt

$St\ 65 \Rightarrow 565 \approx 70$
 $Ne\ 20 \Rightarrow 210 \approx 27$

DIV.

411 $2+$ Pt

411

? $3+$

DIV

- CP not getting properly

Pt^{2+}

411

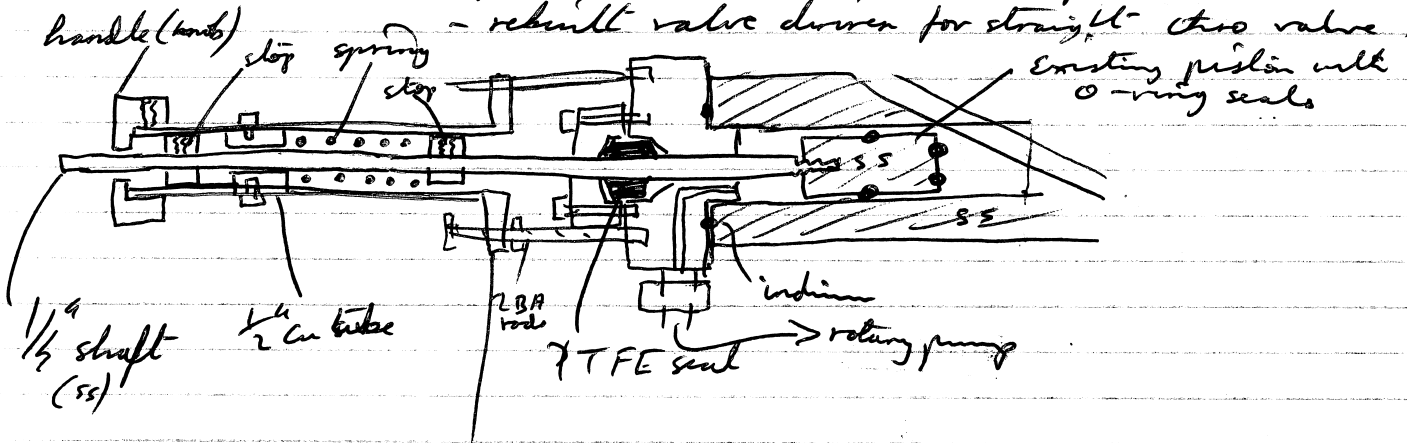
several pulses, last 12 pulses.

Pt^{2+} @ 67 - none seen

DIV

Easter

Rebuilt Ed's a/c - cleaned subpumps
- put in converter from CAM 2 w/ cap & screen better quality
- rebuilt valve driven for straight thro valve :-



Specs machined & polished Hastelloy B (Ni/Mo/Fe) specimen for Tim Bussstein - hopefully to look at permeating films thereon.

Polished roughly with Lacomit 10% perchloric/acetic @ 25 v a-c, finished in 2% perchloric/butoxyethanol 25 DC

chromia forms sludge around specimen.

25 April 1975 W 10^{-10} (a little ? Ne around) He 60

g-b's + triple-point.

? Dis taken on Eds of C.

DIV all around

W²⁺ 15 planes in He 107

funny gaps on around central 110 ring - sort of streak on image & irregular edges of ring.
- seeds @ DIV, small crystals.

Neptun?

More of funny crystals

W⁴⁺ ~ 20 planes @ @ 73

DW

~ 111 Triple Point DW

6-5KV

W²⁺ 107 30 sec ~ 20 planes

DIV

W⁴⁺ 73 50 sec

DIV

He⁺ 20 40 sec

DW

More to other side of 110

DIV

Tip allegedly @ 7.5KV DIV + 1.72KV probe
- dummies of behavior - looks much higher KV

U²⁺

U³⁺

U³⁺

} all 10 planes

DW x 2

U⁴⁺ 71 15 planes

W⁴⁺

DW

Neptun 3

DW

DIV around tip
 DW 110 again



$$61 = W^{3+} @ 100 = 820 \text{ ns}$$

$$16 = O^+ \text{ would be @ } 425 = 52-53$$

→ O^+ 50 sees - nothing seen.

→ W^{2+} 90.5 @ 1010 ns = 125
 Nothing much
 DIV

He+ 17 30 sees

DIV x 2

DIV 111

W^{3+} 50 sees

O^{2+}

DIV

8KV

110 @ DIV x 2 

O^{3+}

15 plumes

100

O^{4+}

63

DIV

gas out

W^{3+}

vac

15 plumes ~ per 3 sees.

W^{4+}

W^{3+}

W^{4+}

gas in
 out

DIV x 2

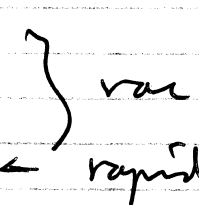
W^{3+}

O^{4+}

W^{3+}

W^{4+}

DIV x 2



~ 50 sees.

$$\phi \quad W^k > k5 @ 64520 \text{ ns}, O^{5+} = 36 @ 400 = 56$$

? W^{5+} - rapid - little seen

Mufly

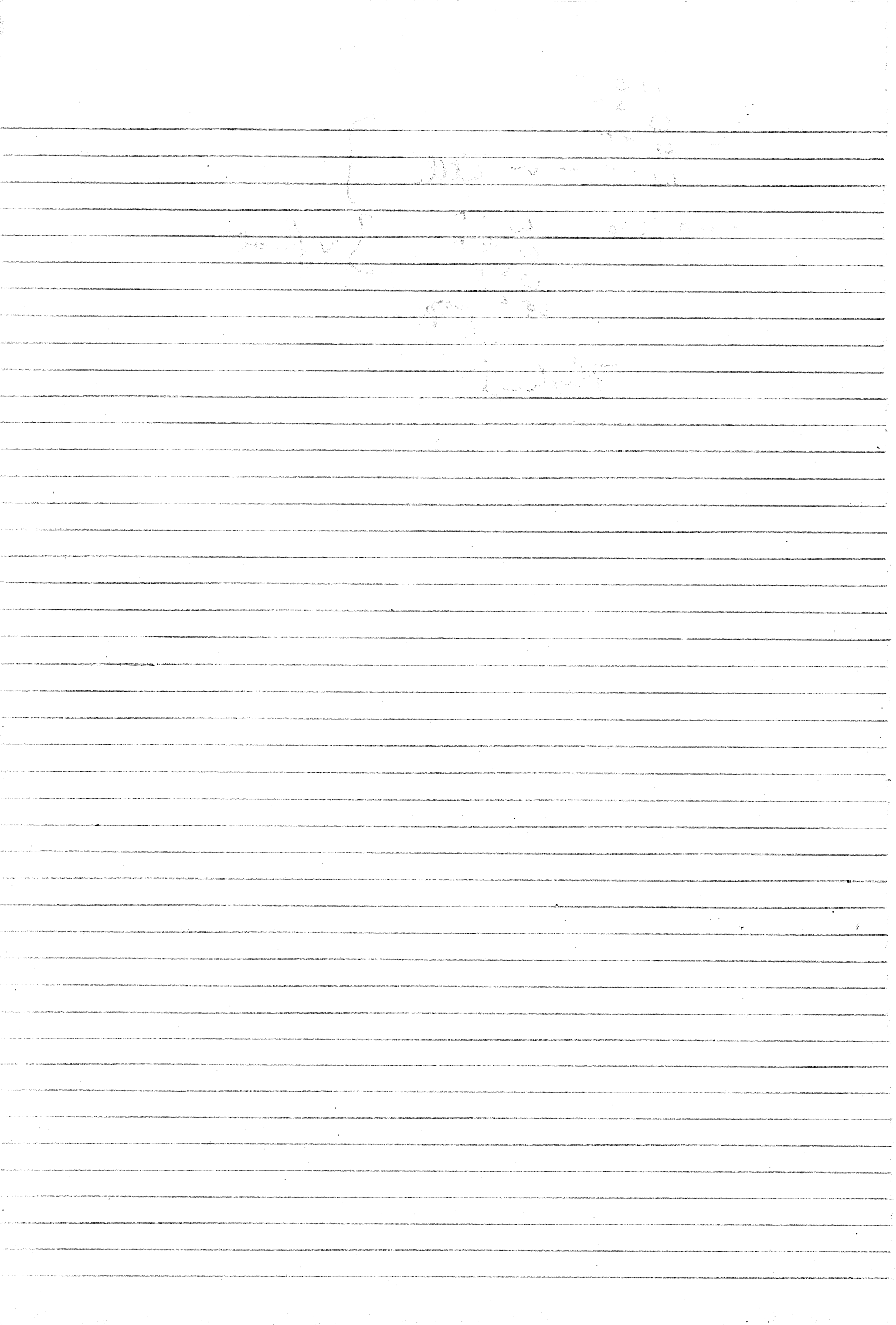
110
3+
2 W
W 4+
W 5+ - v little

110/200

W 2+
W 4+
W 5+
W 5+ pop

}
} v fast

Flushed .



5/5/77 110⁻¹⁰ 60K Hafnium Ne 1.4 gals

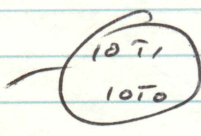
31V

10T0 central
Slow cryps sequence of alt writ/dim rings

31V

10T1 @ top
11T0 @ right, left
10T1 @ bottom
10T1 @ top, slow cryps

~7KV



Nyflim 2

10T1 cold

10T0 few pairs of dim plane, splite up

11T0 slow cryps

Nyflim 3

~~10T0~~ 11T0 last few atoms
pop - oxide coming off

31V 11T0

10T0

10T1, bottom

10T1, top

11T0

10T0

9.5KV 10T1

blank

10T1 last atom

10T0 x 2

1.7KV nS pulsed endform

10T0

- dim ring more prominent

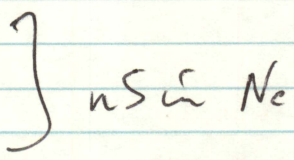
Nyflim 4

10T0

11T0

11T1

10T1



Flashed on its own

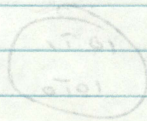
blank

Nutlip Hf

P in r of golly oxide ~ 15KV

Starting to come good ~ 20KV

End of 1st
Flushed



2

3

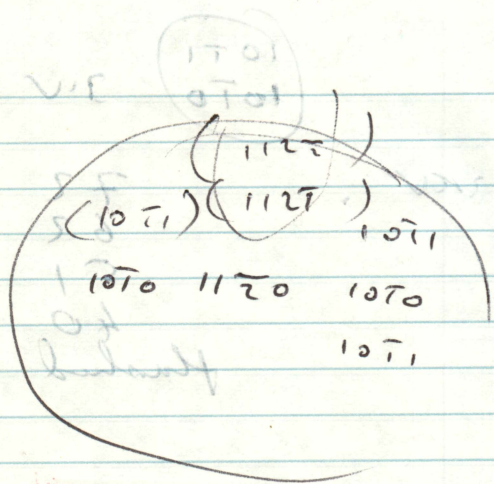
4

22W Hf

Flushed section

6/5/77 Hf 1.510⁰ Ne v.f

DIV (oxidized)
metal
1120 central,
9KV,



9.8+ 102 100sec
pulse 1.3KV 56
BW duff
DIV

~~660~~
460

Hf 177-180 2+ = 90
3+ = 60
4+ = 45

@ 9.2 total W³⁺ @ 102

∴ @ H-T

Observed constant in Hf³⁺ @ 102, 60amu
Ne⁺ @ 56, 20amu

Expect Hf²⁺ @ 124 = 124

DIV
check up electrons - looks ok

but now main peak @ 77 23+ 100 sec = 60nS
11.7+1.7 northern @ 67 24+ 100 sec = 570

BW + 1.4
so 2+ @ 770 = 91

42 = 340
52 = 420 70 sec 3 Ne
100 sec ???

BW 1120 x 2
1070 x 2
1071 x 1

Mftr 2

10 T1
other 1070 at bottom
1121
1122

10T1
10T0

7.1V

11KV

7H

FF/2/10

perhaps 2KV

72

100 sec ← most

62

51

40

flushed

Nutty

2.0⁻¹⁰ Hf 60 Ne

Series of pairs of lower, then upper
10 T0's, which look as if they have a
disturbance (C) I think

Nutty

3

10 T0 coral
small than large corals

1P20 (coral)

2KV

10 T0

+1

106

100 sec

3+

122

≈ 60

? 2+ ?

104-102 rapid

flushed

+1.5

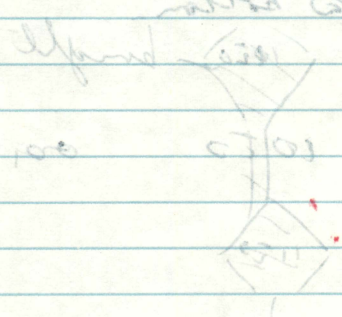
5

Main Enquiry of Hf 20 probably Zr (~90 am)

so Zr³⁺ is likely to be peak @ 51, - wire used was (Molneds) thin wire, not his - purity thick wire.
- Goodfellow's quote ~1% Zr for 10-purity wire.

Final Plan

Zr ³⁺	30	Hf 4+	
Zr ²⁺	45	Hf 0+	← most
	60	Hf 2+	
	(90)		



[Faint, mostly illegible handwritten notes and diagrams follow, including a table with columns for 'P & K', '20', '30', '40', '50', '60', '70', '80', '90', '100' and a large red scribble at the bottom.]

9/5/77 110¹⁰ Ne Be 60

De polished in 2nd problem/history, + lacquer
finishing @ 15V DC pushed by hand.

Few pins @ ~ 4kV, v faint,

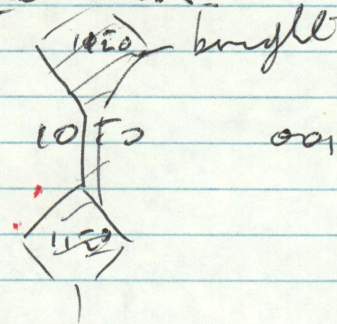
end of last job

Nafta 1

More fault pins - looks warm.

Check cryostat - air bubble @ bottom
- expump

- looks like 001



Try to tighten slug - still looks warm.
few more pins, f2.

Try argon.

Few pins

Evaporates above Ar-Biv

using pulser, ar Biv ~ 4kV, pulser 1.3kV.
Des picture @ octal 31 100sec.
"250ns

Be 9 & 4.5.

exp 2+ @ 31, so 1+ @ 350ns = 43

correct, so

43 100sec

Gas pressure 310⁵

2+ 30

2+ 30

1+ 40

but v faint 7um pin

? Ar+ @ 100 = 640 = 43³⁰ so Ar+ 50 @ ??

Biv x 3 or 4

More to 11E0 @ top

3 x DIV

2+

1+

Ar+ apparently now @ 107 = 710 =

should be @ 740 = 112 except 2+ now @ 26

so all ok,

3W > 2 phases = 5kV in Ar

End of pta 2

22

Supper - pump out Ar - take out tip & check final, on sky.

Pico @ 21V in Ne ~ 6KV, with a little Ar
pulse to 1KV - few pulses after in S. vacuum in Ne.

gas down.

Be²⁺ 27 ~ 10 planes, in 80 sec
Be¹⁺ 35 ~ 290 ns

DW still some at ~ 100
Ne²⁰ @ 435: 53 - no pos cos v little

DIV of 31121 - bright region

2+ 24
1+ 35

checked for H⁺, - v little.

DW

DIV 10 to again

to

2+
1+

→

2000 sec

DW

DIV after DC vacuum

gas up

DW all around after DC vacuum

pulse reduced from 1.3 to 1KV - near BW now, left center.
Now 8KV + 1KV - pulse

Myth 3

DW

10 to 2+
1+

21-45 - good how time DW

8KV + 1KV at end

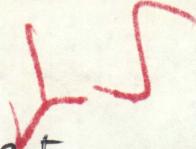
leave overnight

Source plan, next day 210⁻¹⁰, 60, Ne

8.5KV DW 101 - central 1070

Top and middle planes,
left side
bottom middle plane

FF1218102



pulse +1 DC 2+ 22 22 180 sec
 DC 2+ 27-30 "

More to 11 20

pulse 1-2 2+
 1+
 2+ ~ 15 planes in 80 sec
 1+ "

DIV x 2
 DIV 1070 x 2

1.85

2+ 130 sec
 1+ 100 sec (slight pop)
 1+ 170 "

DIV x 2

Nafion 4

ns end for

DC -

ns again, rapid vapor → rounder surface

1070 - gas out

2+ Σ 11.5KV = 460 in vac } 2KV pulse
 1+ v little 9KV 267 in We

→
 can't quite get
 a departure

BW all around after ns pulse
 11 20

→ i = 15 planes

2KV
 pulse

Nafion

480
 395
 290 in NC

BIV after ns vapor 10KV

hand

3hand
 DIV all round

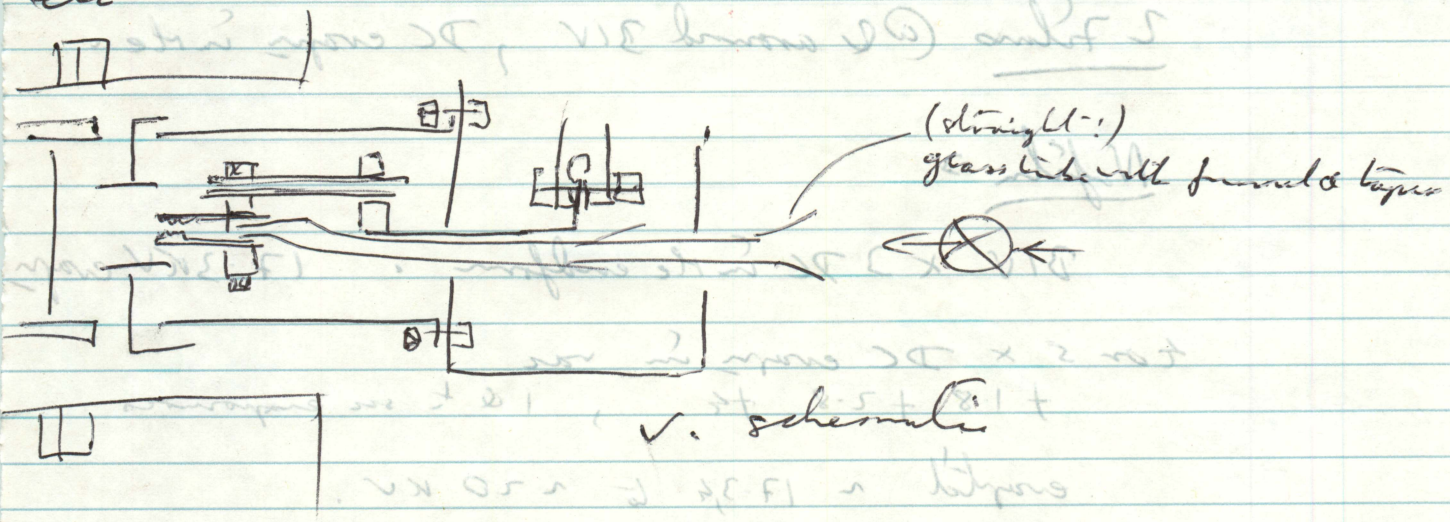
2+ 10T area - 120 sec
 1+ - timer diff 100 "

501815/77

F1

1-18th Rebuilding eds a/c - new top mount 'cos old
one worn out

& V-G mic - building bits for auto-tension, rad shield
etc



16/5/77 Mo Ed/qs ~ 15KV ~ 60K He
DIV x 4

DC comp = des images +18, +2.8, +4

DIV 16KV

On ↑ end of film of Tim Durstins Hestley B.

F

DIV x 5
↓

17/5/77 No eds a/c same top as yesterday He
Helium cooling.

2 films @ around 31V, DC craps in He.

Nufile 3

31V x 3 DC in He endform. 17.3KV craps

for 5 x DC craps in vac
+ 1.8 + 2.8 + 4, 1 & 4 in exposures

exposed ~ 17.34 to ~ 20 KV.

Flushed

Blank

W 110^{-9} , He He cooling

3KV → 8 or 9KV. 31V in He, DC in He endform

Nufile 4

7KV → 8 or 9KV. 31V in He, ~

DC craps in vac x 6 or 7

Flushed.

Blank.

200 1r 7KV He DC endform $2 \cdot 10^{-9}$ He cooling

31V, → 8KV in He

Nufile 5

31V x 2.

AS pulser connected ↓

Nov 2/14

two long craps → A=60%

NS pulsed and form 2KV + 8.5KV sh

→ some sort of switching and form

DW x 15.

NS craps in vac x 1/2 dose

Blank

DC ~ ~ ~ x 7 or 4

pop on last one → 111 centred pattern (!)

Nov 5

He DC, He

NS, He → 300 frame counter

Blank

DC He

Pop 20KV

Nov 7

3x Div of popped and form → more regular

DC craps

NS craps ← zone during

Blank (35)

(DC)

Nov 8

more of (DC) and → (was NS craps number given and blank)

30KV craps

NS pulsed craps images 30KV + 7KV,

Grady home time

from 9/5/77

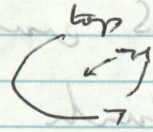
18/5/77 Be (same tip) Helium coding, Ne.

1

11.5KV DIV x 3 or 4 (end of film)

Magnifier 2

DIV all around



Blank

push on, 1.4KV

funny rapid pulsing, little improvement of pulse

3.4KV

Neon fringes of my column.

DIV all around

Magnifier

1070 Ne

Blank

(DIV) of He image, Ne almost out. (Ne S end from)

1070

1120

1071

12.2KV ✓

5.4KV

flow rate up was DIV

Flashed.

Blank.

8 8

Magnifier

Re He He cooling

10 T0 DW $\times \frac{1}{2}$ done 7.5KV

10 T1

Nyfilm . 4

10 T1 small crystal ? dislown or something
other 10 T1

10 T0 **F** 8.5KV

Dlurch

probe 1KV

NS end 10 T0

11 T0

11 T1

11 T0 last few alone

10 T0

Re²⁺ 77 total 9.5 + 1.5

100 sus

5 Nyfilm

DIV

62 Re²⁺ 75 = 610ns 100 sus \approx 5-10 phone pairs?

(46 Re⁴⁺ 525ns = 64)
(92 Re²⁺ 750ns = 113)

Re⁴⁺ 63 100 sus \checkmark little seen

Re²⁺ 112 " more

He⁺ 127 " lots

DIV

Ammy errors Re²⁺ 10 T0

Nyfilm **6**

10 T0

11 T0

11 T1

10 T1

11 T0

- varomulo

DW

$11\bar{2}0$
 $3+$ $7+$
 $2+$ 110
 $4+$ 80
 $He+$
 BIV

Re^{3+} $11\bar{2}0$

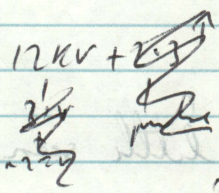
BIV
 N_{eff} 7
 $10T$
 67 $3+$ ~ 10 planes in 90 sec
 1 $4+$
 103 $2+$
 $He+$
 BIV

$10T1/10T2$ BIV

vm $\left[\begin{array}{l} 3+ \\ 4+ \end{array} \right]$ \sim little $2+$
 ~ 10 planes

$10T0$ 63 $3+$
 vm 85 $4+$ 2
 76 $32+$

$11\bar{2}0$ 63 $3+$
 52 $4+$ $white$ $2+$



$BIV = 10T2$ $10KV$

BIV all around
 $10T0$
 $10T1$
 $10T2$

End of Kth

vm $\left[\begin{array}{l} 10 \\ 0.7 \\ 1.5 \\ 1.0 \\ 0.5 \end{array} \right]$

19/5/77 E's a/p Ta He cooling

Transfer-line purged out 'cos full of air after (? during) last session (ie Re above maybe not so cold)

DIV ~~to~~ He 60K 1

Blank
cool down DIV all around

Newfile 2

DIV
DC arapt → flash
Newtip

DIV

Newfile 3

DIV

DC arapt.

Blank

nS pulse added

DIV

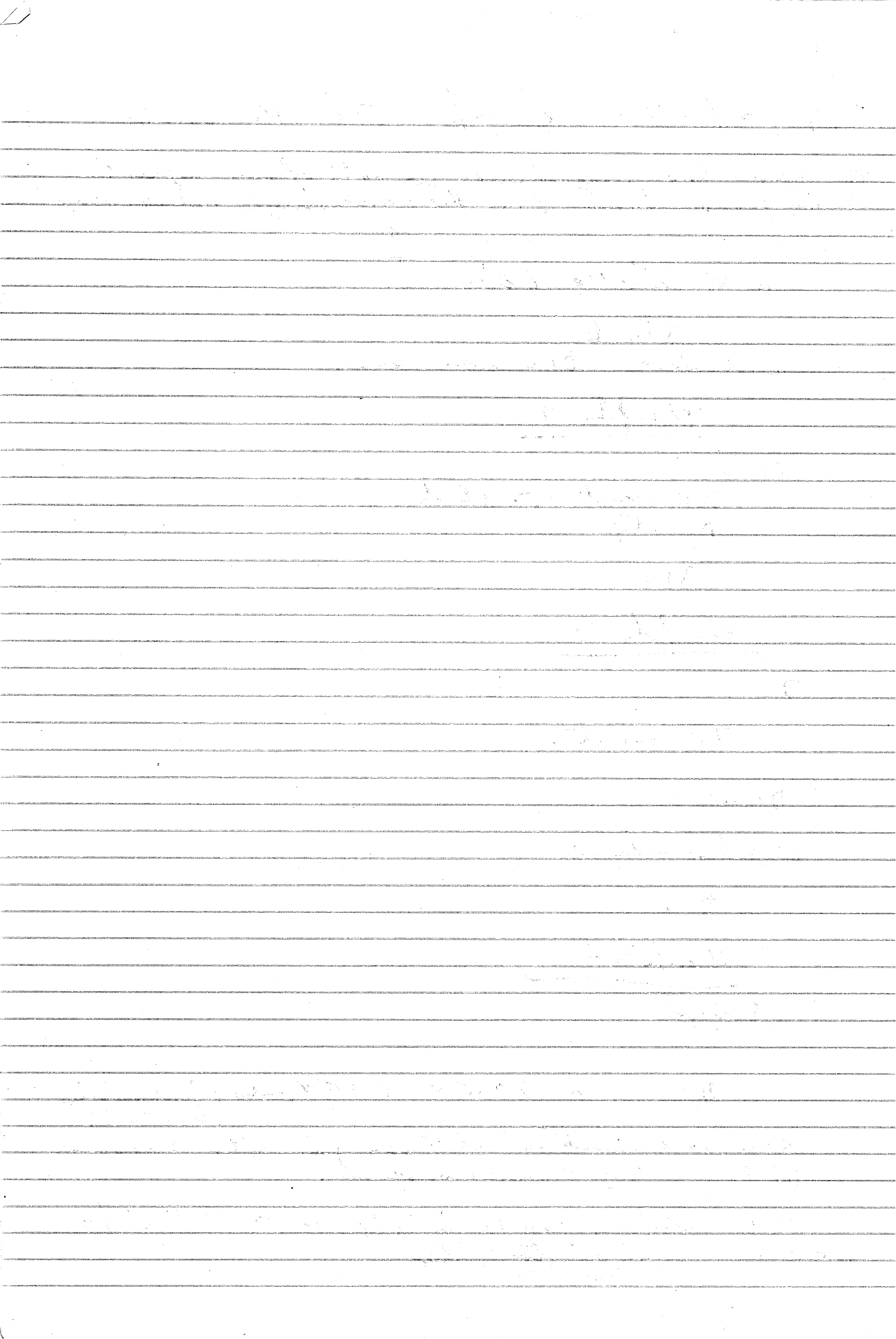
Newfile 4

nS arapt

DIV ~ 30KV + 3KV pulse (full pulse in short cable)

Some contamination altering pic after 5/10 sec
@ DW ? H ? could from stub.

PFM looking @ 3rd Ta in a/p re $Ta^{2+} / Ta^{2+} / H$
des pic. (new detector / chevron)
now fitted



1/6/77 E's ofc Yesterday peds of Rh, with 2 oxide
 round edges after polishing - broke it transferring ⁶⁵¹ AP

~~W/c 3×10^{-10} (but dirty spec - oxide coating)~~

g-b P.D.

2nd top g-b, peds.

1st top in GAP 3×10^{-10} Hc 50 (dirty spec (oxide))

W^{3+} 107 710
 ? 50 400

DIV

W^{3+} 107 50 ms 710
 orbit

60 103 = ~~670~~
 2 Cr 61 = 440
 74 = 600 580
 18 H₂O 45 270
 4 21 170

3+

4+

4+

3+

4+

Dark

107

71

10KV + 2KV

Flashed

N-top W/c DW dual
 DIV f1

DIV

3+

} show

4+

3+

4+

75

67

} mixed

2 @ 45

? 43-15

DW x3

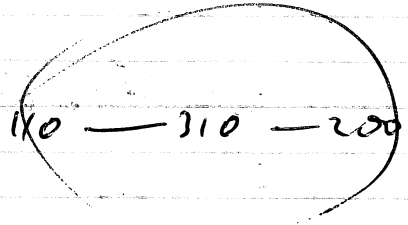
More DIV

11. + 2.3

O^{2+} — prep 40 mm 767

boundary gas
DIV

DIV



Mplh

O^{2+}

O^{4+}

He⁺

O^{2+}

O^{4+}

gas out — black
3+

4+

4+ mixed

110 3+ 10 phm
4+ 20 phm

14 3+
4+

O^{2+} 110 same, constant

211 3+ 20 phm
4+ — 19.5 KV

Gas in 91V of ns/vac endform

211

200

110

16.5 KV

ns in He 111

22110

200

211

DC in He 19.7 KV

110

222

211

200

20 DCMT
21-2 DCVA

DC in one condition

110	} 1 each
111	
211	
200	

18-3 + 3KV pulse He
19-4 + 3KV pulse vac

NS va 110
NS He 110
NS - 110 repeated => in ad unit
111 -
200 -

110 3 +
~~He~~ He +
1 4 +

111 3 +
4 +
~~He~~ end of pulse - no more for

Gohone.

2/6/77 D lip flushed

Mg 210⁰⁰ Ar 50

Scanned of photo @ ~ 5-7KV

blind

36 50 scan lots
 53 "
 60 little
 35
 460
 3 DIV →

vignette

8 + 1.73 KV

black

DW

more DIV

37

50

DW ← mag

DIV

more DIV

37

50

DW x 2

more DW

35

mag

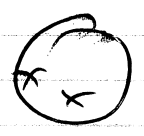
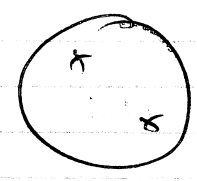
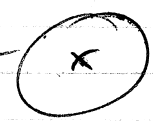
35

50

DW

DW

flushed



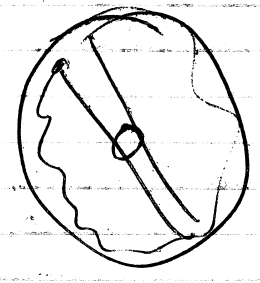
~ 9 + 1.73

Polished Zn (n, not v!) tip in dil HNO_3 , chem polish -
some pits in air, so is a/c - crumbly endform, but some
nicks & things, tip popped & @ 500v some hopeful looking
spikes sputter out of the remnants - worth trying a better polish/
reliable wire.

Also $\frac{1}{2}$ HClO_4 / acetic 10v neck down with remnants
 $\frac{1}{2}$ HClO_4 / butyric drop off end.
Immersion in air in is a/c

3/6/77 Time Log SAP 310⁰⁰ Ar.
 Delivered in HClO₂/butyryl.

Series of prod on end of My film.



~ 7W*
 Blank
 Pulser on, DW

77 50 sec
 61 9.5 + 1.97

My film
 DIV x 2
 54

Er 64, 66 -> 32 33

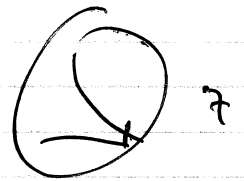
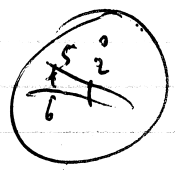
Er²⁺ 32/33 57 460 466 } checks ok.
 Ar 40 61 490 495
 Er⁺ 64/66 - 77 => 630

DW
 Er⁺ 20 sec ~ 10 pulses
 Ar⁺
 Er²⁺

Blank ^{translucent}

Ar again

DIV
 +
 Ar⁺
 Er⁺
 DIV x 2



More DIV x 2



Ar+
2+

10.7 + 1.93

DIV x 2

More DIV x 2

Zn+
Naph

Zn+
Ar+
Zn 2+

DIV

back to centre DIV

Zn+

Ar+

Zn 2+

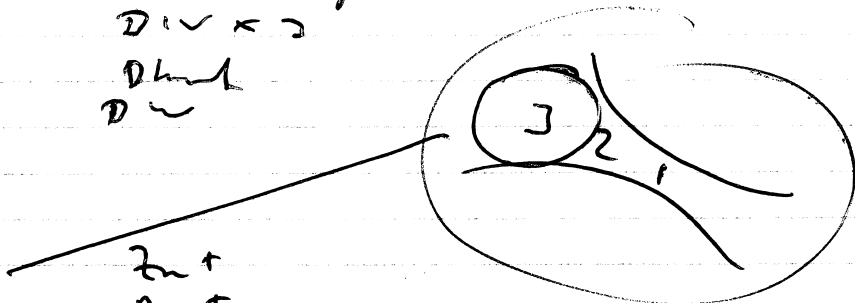
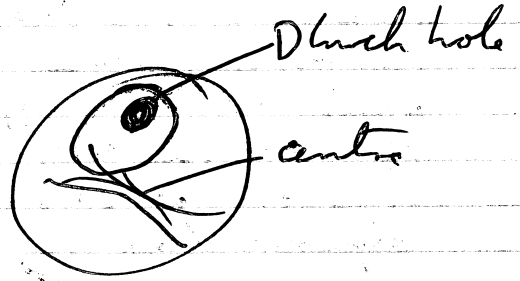
Zn 2+ rapid

Zn+ rapid

DIV x 2

Dumb

DIV



Zn+
Ar+
Zn 2+

DIV

Dumb

DC comp

NS 2+

1+

puber @ 3xV - (Ar
1 more gone.

Blank

3 x DC comp

3rd with pumps on.

Dumb

Naph

2+ diff

12 phases x 2

q rapid

1+ 12 phases x 2

Flashed

PTO → ? up

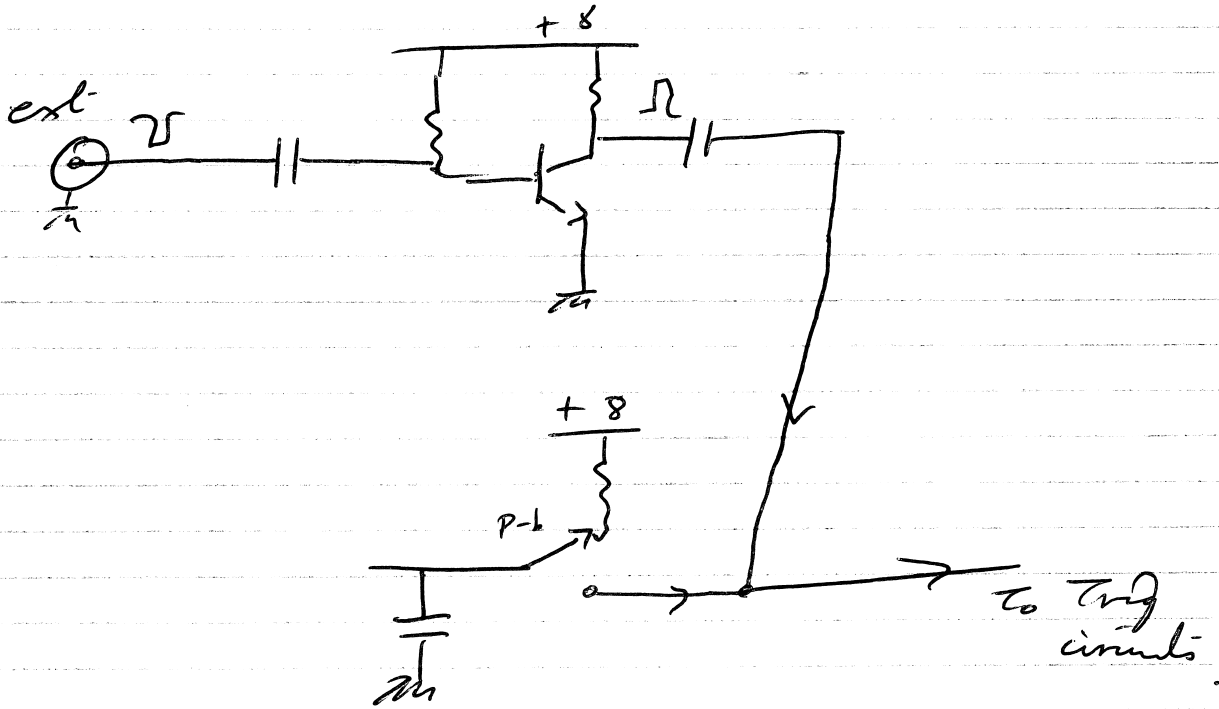
The specimen above was being evaporated when there was a pop, * followed which the specimen was seen to be evaporating * v. rapidly (i.e. a desorption image rather than a field-ion image was seen). No Ar image could be obtained of the Zn surface (though a few "bright spots" could be seen which were obviously adsorbed on the surface. Any attempt to produce an Ar image led to evaporation. Annular DC cryo & a 5 g. grid picture were taken. The initial (*) pictures showed)

pics were of the sharp evaporating rings, from a clean perfect surface. Later images were more diffuse presumably because contaminants / Ar had built-up on the surface. Zn^{2+} and Zn^{+} were detected, but no Ar^{+} .

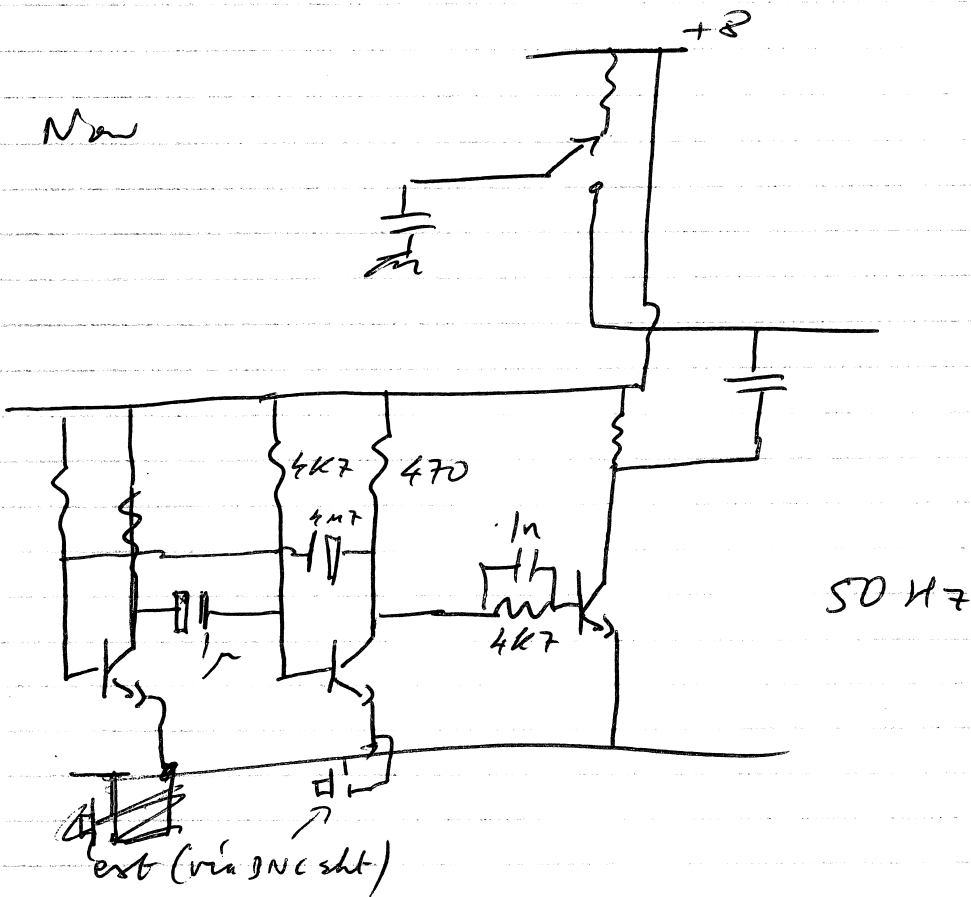
The images were apparently of (0001) - ? had a grain detached from the tip, or ? had the specimen ? twinned ? recrystallized during the pop to alter the orientation of the x tal. At the end, with a 3KV probe (tip volts not recorded) the spec was still desorbing slightly. The evap. rate was v. insensitive to V_{tip} .

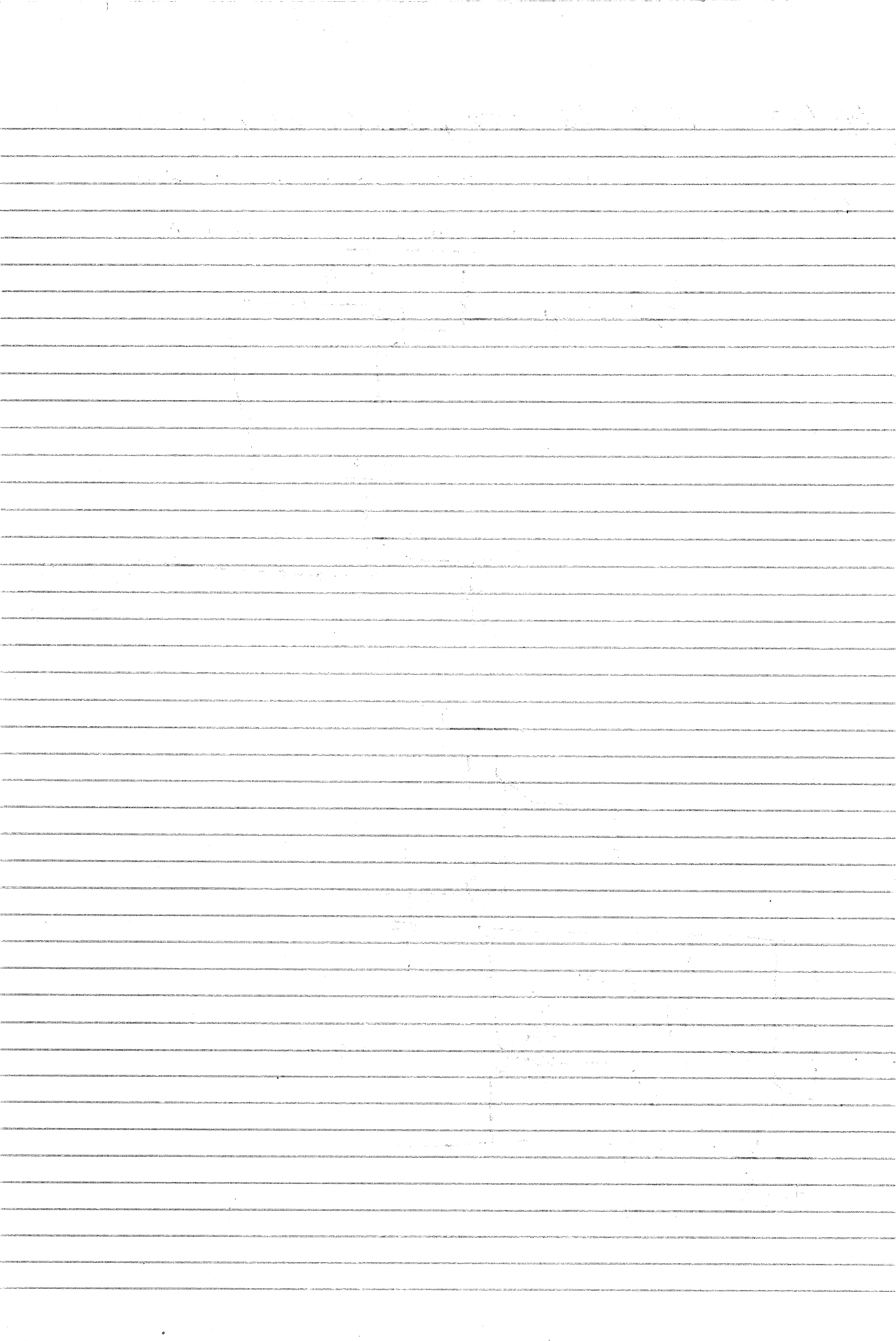
6/6/77 Mod to TTL pulser (paddy's old K022 pulser)

U/P was



Now





11/6/76

Looking @ Zn in E's of C

As drawn is fragile, heated 6 min @ 650 slightly better.

Polish in 2% perchloric/butanol - pits slightly, ~15V DC.
not perfect polish

Pics of g-b in as drawn wire SD, Ne.

Pics of single lead in heated wire, SD Ne.

1

13/6/77 Nichel, annealed --- 1 1/2 hr @ 900

Relaxed in 2% perchloric / butoxyethanol.

Ne, 50. Es. etc.

Series before hydrogen etching

" after " , - much better endform.

series DC etch in vac.

Series after ns pickup in Ne -> zone down

less flat flatter 220 regions
just in Ne -> no zone down,

Series ns pickup in vac.

Div of ns end - cloudy again

relt, Div.

3/6/77 condit Stefan wire DS 14080 34 mag
C. 55/.85 SE .35 Min 3/1.0 S .04 P.04
200° ± 5° for 30 min

Slices of pops

— slices of pops @ ~10kV

50 We

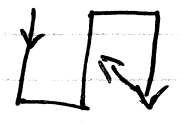
empt ~

empt ~

empt ~ slightly lower than DIV to be x-rayed

end of pops

14/6/77 Stephens patent wire (200° to hr)
 $1 \cdot 10^{-10}$ Ne 50

Screen @ 7W \approx 14KV 



Blank
 7W
 28 Fe²⁺ @ 44 = 360
 ∴ 6 C²⁺ @ 167 = 21
 20 Ne⁺ @ 200 36

Fe²⁺ 64 60 sec
 C²⁺
 C²⁺
 C²⁺ } @ 160ns from scope.

DIV
 Fe²⁺ 20 sec signal
 C²⁺
 C²⁺ }
 C²⁺ 40 sec (peltier timing)

diff Fe²⁺
 Blank
 C²⁺ } 30 sec
 C²⁺
 Fe²⁺ 20
 DIV

N⁺ 14 → 250 N⁺ dead
 N⁺ 30 sec

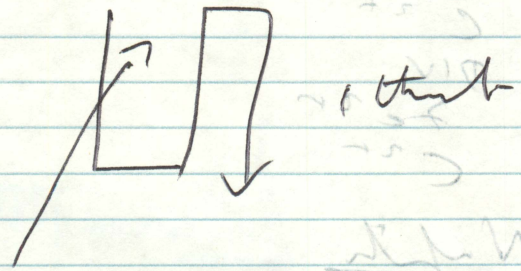
Notes

2

DIV
 NT 240
 N⁺ flushed.

Blank

New spectrum 2.5×10^{-10} $50 \times N_e$
 + PEs from Cs a/c



DIV ~ 9 KV $\times 3$
 Blank

Pulsar 1.45 Fe^{2+} @ 52 420 ns

SO C^{2+} @ 195 23

Fe^{2+} 1
 C^{2+} 30
 C^{2+} 1

DIV $\times 3$
 C^{2+} 30
 Fe^{2+} 40

DIV $\times 3$
 Nafik

DIV $\times 10$ or 4
 Fe^{2+} 30
 C^{2+} 40
 C^{2+} 40

N^+ should be 280 = 34

N^+
 Fe^{2+}
 C^{2+}

? Fe^{2+} } longer gated pulse
 C^{2+}

DIV $\times 2$

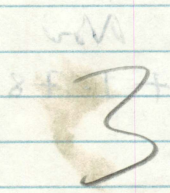
DIV $\times 3$ 10 KV
 C^{2+}

Fe^{2+}
 C^{2+}
 C^{2+}
 C^{2+}

} scope lighting up screen

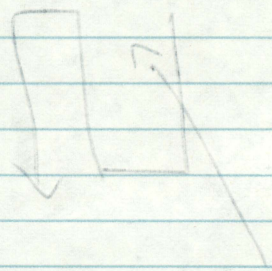
10-2KV

DIV $\times 2$



More DIV x 3

Fe^{2+}
 C^{2+}
 C^{2+}
DIV
 Fe^{2+}
 C^{2+}



N₂

DIV

4

scrubs C^{2+} Fe^{2+}
40ms

~~Fe^{2+}~~ N^+ some quite rapid 5-10 phum
not a lot

DIV

More DIV

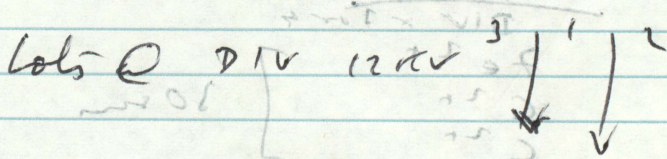
Dud Fe^{2+} - pulse getting

C^{2+} 60ms

C^{2+} 100ms - rapid

Fe^{2+} 60ms

DIV x 3



Now
+ 1.78

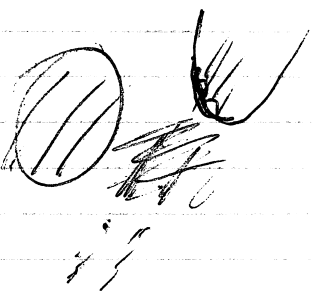
End of file

[Faint, mostly illegible handwritten notes and diagrams at the bottom of the page, including some chemical symbols like C²⁺ and Fe²⁺.]

16/6/77

Same tip He cooling, Ne

12.5KV DIV



DIV

1(5)

12.5KV + 2

Fe²⁺ 50 sus 44 = 360

#2 sp C²⁺ @ 165 50 sus

11.2 ? C⁺ @ 230 50 sus

N⁺ @ 256

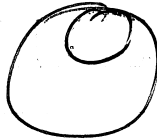
C²⁺

Fe²⁺

C²⁺

DIV x 3

More, DIV x 3 or 4



Fe²⁺

C²⁺

C²⁺

DIV

More DIV



Fe²⁺ 30 sus of signal (at 10 p.p.s)

C²⁺

C²⁺

Next 2(6)

(DIV)

Fe²⁺ — suddenly v signal

C²⁺

DIV

perhaps phasing up, so launch

Blank

1st Fe²⁺ @ 360s,
then C²⁺ @ 150

14 + 2KV

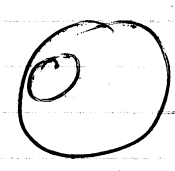
BIV
Diff Fe²⁺
Fe²⁺ 240 mins (4L)
C²⁺
C²⁺ 160ml

C⁺ @ 230, N⁺ @ 260

Dish
C⁺ a sudden rapid evap → allow evap on pan
C⁺ a
N⁺
N⁺

DW

More BIV (& above)



Fe²⁺
C⁺
C⁺

Fe²⁺ rapid
C⁺ rapid
DW
Fe²⁺ rapid
Mfite

Flushed

Newtip — flushed Eos HZ set not turned on

5/5/11

5¹¹ A/C

Ti polished in 2% HClO₄ in 35% butanol
65% CH₃OH

@ 25-20 v DC on big unit

(rough polished + Caconit + 10% perchloric/acetic)

PA in Ne, 50-60K

spotty

Hydrogen etch

still spotty, some stallography

Na⁺ counter here

C

try He⁺ - image ^{enough} below DIV

Fire sub pump with V_{top} = 0

add nS pulses

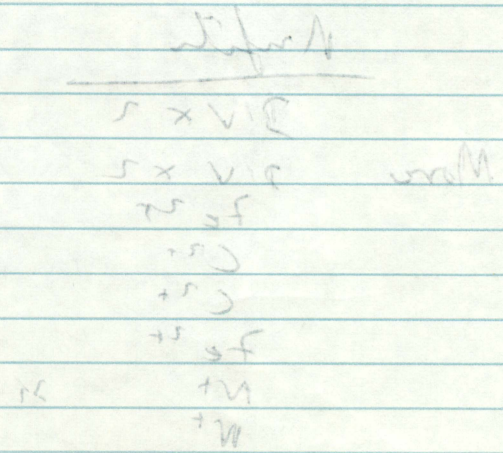
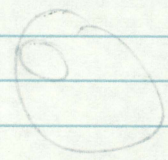
He pulse

~ 20KV

many nS desorption pulses

Ne DIV, still spotty

Flushed

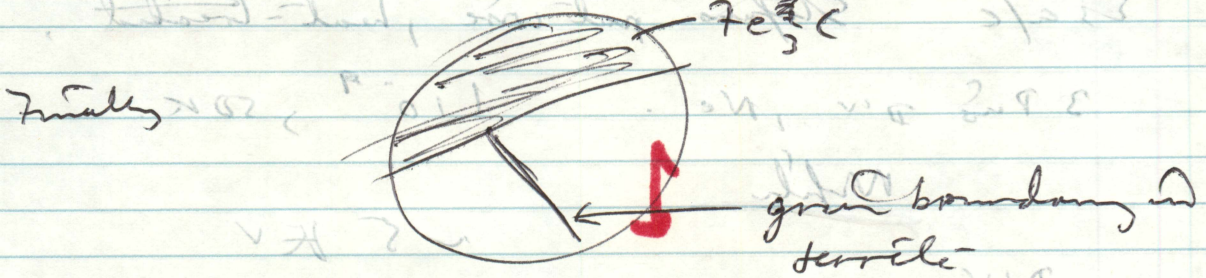


5 x V DIV

24/6/77

24 Fri Prod of unheated Patent elect wire (steps)

in Esak Ne ~ 45 KV → H - Ne → H → Ne



transferred to IAP. — but flushed when turned

Sent off paper on IAP to J Phys E

5/10/25

27 June 77 Mon. *background of RP*

Es a/c *Steps put wire, heat-treated,*

3 Puls Div, Ne. $1 \cdot 10^{-9}$, 50K.

Mph 1

~ 5 KeV

Div

H chit

Div

Ferrite

H chit

Div

~ 10 KeV

DC expt.

Div

H chit

Div

NS expt $\times 2$

Mph 2

BIV $f(2.8)$ *forming surface*

expt Div

Div $\frac{1}{2}$

H chit

Div

NS Puls $\times 10$ - *flatter*

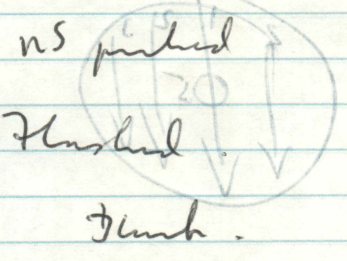
Div

DC expt

Div

54 FF | 3 | 5 | for bus 70

gas out 12KV + 2.5 011 FAI and amuk



V10 V11
down part 11 FF | 0 | FS

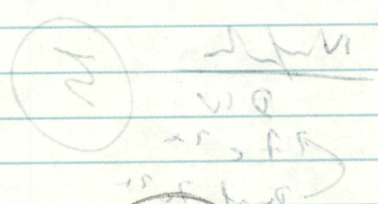
Notes of unannealed pul-st wire (new shg, cold done)
BIV + 1/2 day 19KV, No 60

New file 3
DW ? NS pulsed
Flushed
New file (repolish)
2000 02 75 of
182 55 + 50
085 20 + 1
050 0 + 20

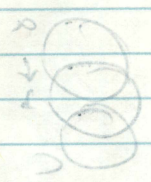
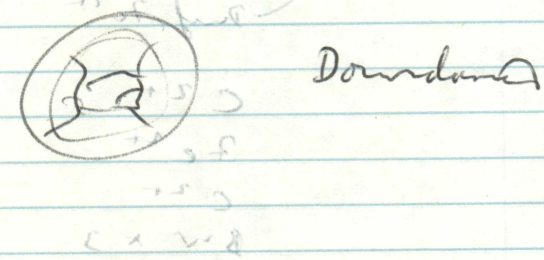
DW
H chit
BIV
DC concentrate
~ 20KV flushed

2000 02 75 of
carbon
V10 70M
+ 50 of

repolish
DW



H chit
BIV ~ 15KV

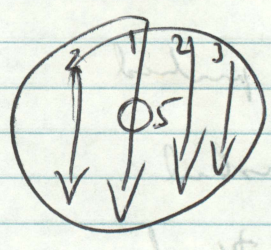


C x V10
V10
V10
V10
V10
V10
V10
V10
V10

on end of 17/6/77/2

Same tip 1A? 110⁻¹⁰

11KV DIV



~~27/6/77/4~~ Long series

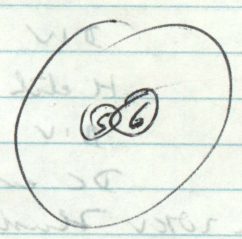
DIV x 2 (5)

Pulse 1.33

Fe ²⁺	50	4000
C ²⁺	22	185
C ⁺	32	260
N ⁺	34	280
C ²⁺	40	320

Fe²⁺ 30mm

Can't find C counts



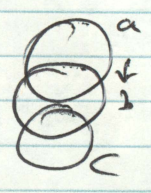
More DIV
Fe²⁺ 30mm

Graph
DIV (5)
Fe²⁺ 30mm
Fe²⁺

C²⁺ ~
Fe²⁺ ~
C²⁺ ~
DIV x 3

More slightly

Fe²⁺
C²⁺
Fe²⁺
C²⁺
C²⁺
DIV



More DIV C

Fe²⁺

C²⁺

C²⁺

DIV

More

DIV

Fe²⁺

30m

C²⁺

C²⁺

C²⁺

20 more rapid

DW

More DW

Fe²⁺

C²⁺

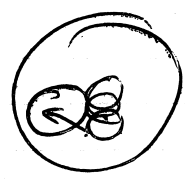
C²⁺

C²⁺

Fe²⁺



~ 6 or 7 layers.



↓
V probe 6
109KV

DIV x 3

Fe²⁺

5 plus rapid in UTM

C²⁺

C²⁺

C²⁺

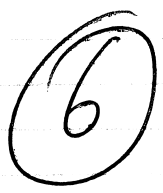
~ 10 plus ~ 30

14KV DW

end of film

Whole DW
Film ~ 14KV

V pretty



Nugeth

DIV



Fe²⁺

+ total 250

??, diff

+ Fe²⁺ 200ns

200ns

- ? Ne⁺

? C²⁺ 165

? N⁺ 250

- N⁺

DW

More

Fe²⁺



C²⁺ } several

Fe²⁺ — 350

Ne⁺

E²⁺ — 150

N⁺ — 250

DIV all around

DIV

~~Fe²⁺~~ C²⁺

Fe²⁺

350

N⁺

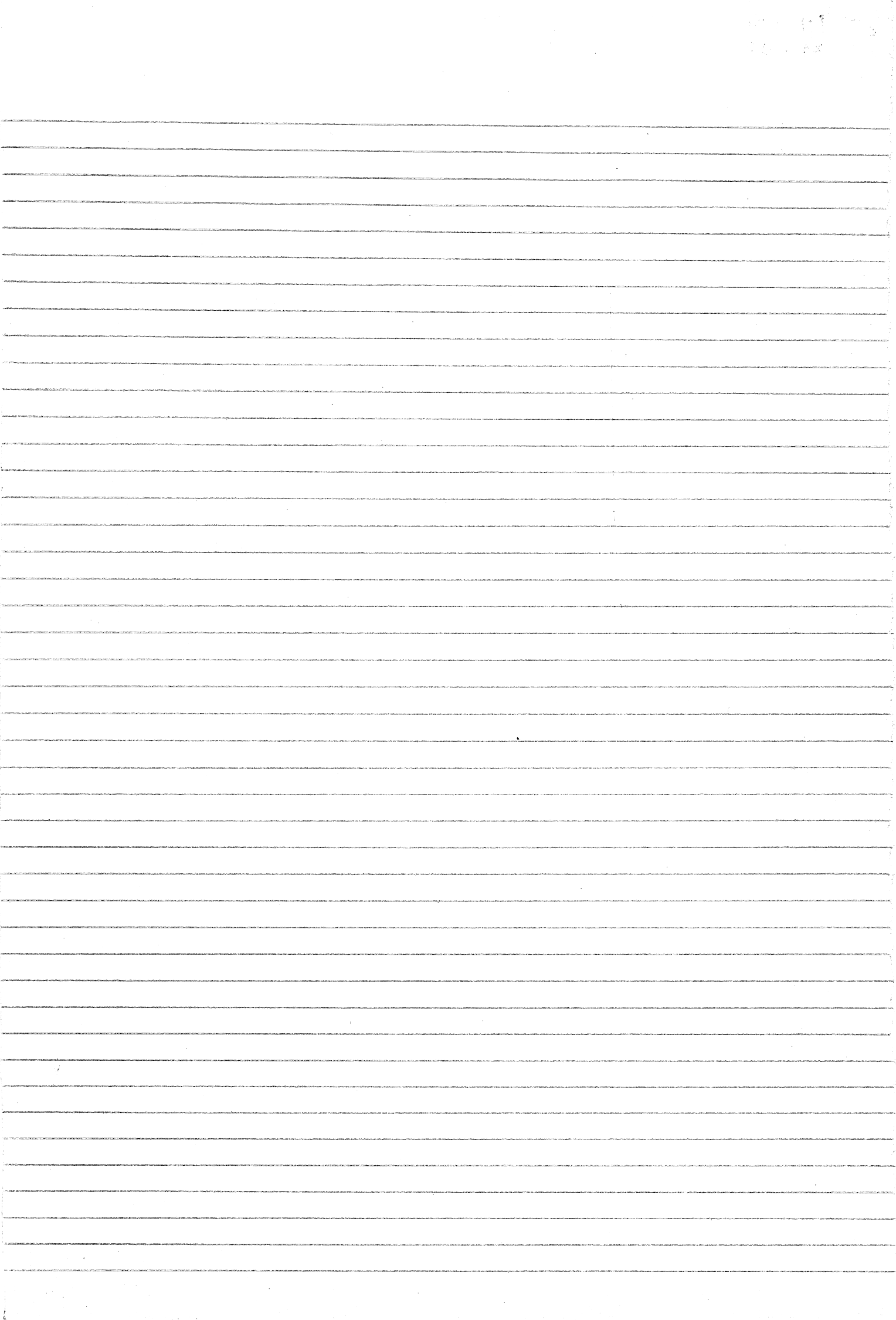
— ~~250~~ 240

C²⁺

DIV

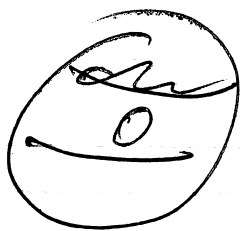
15-5 KV

End of plate →



c^m 17 c 21
 c^+ 22 = 30

DW



Sn^{2+} 20ms rapid

Fe^{2+}

Sn^{2+} - discharge

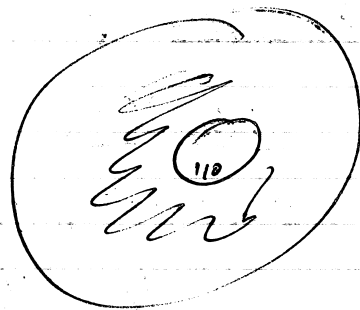
DW

- spiral on Cu^{110}

- DW - small asym

- small cap left.

DW



- 395 on bottom half pole 40ms

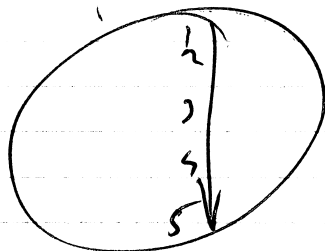
Fe^{2+} 30ms

DW - cap gone.

Manipulator best.

12 kV

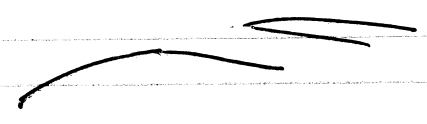
Wafers 8



DW

2/4 +2-2

Fe²⁺ 40 cm
Sn²⁺ 4
Sn²⁺ 2
? DW



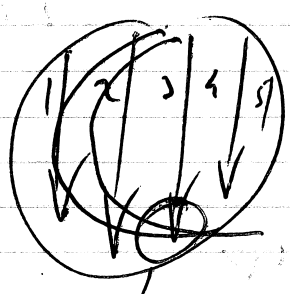
— pump out air on diff pumps in case of
flr as background getting high — fire sub pumps, have some
hot chocolate.

Blank

DW = top of pen

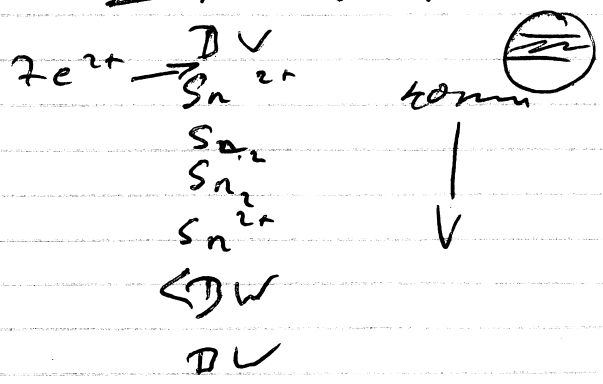
Nupik 6

(DU along bdary)



6,7

Nupik 7



DW

S_n^2 pop
 S_n^2 30m
 z_c^2 ~ 70

DW

DW of 2 void @ left

Boundary v narrow

DW of 1 void

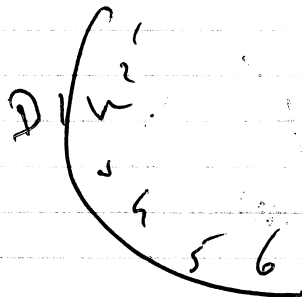
Short line

z_c^2 - pop
 S_n^2 | 76
 S_n^2 30m |
 S_n^2
 S_n^2 40 67-70

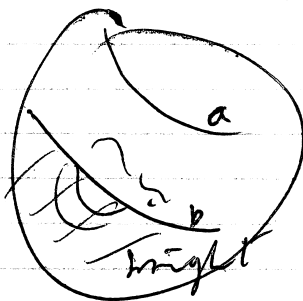
Mph 5

DW

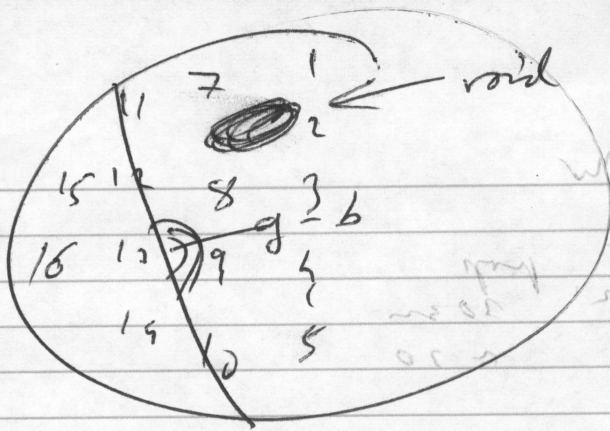
DW



DW



? which is b'dary



void appears



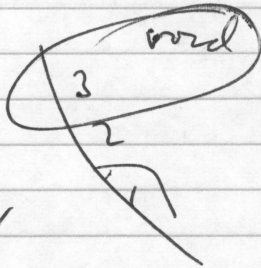
Sn

7e

Sn

Sn

DW



DW

Sn

DW

Mph 4
DW

top DW

+1.9 long line again

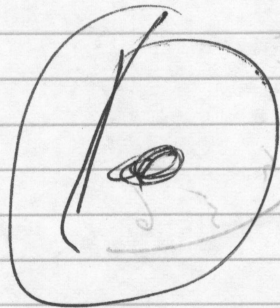
Sn

7e some signal

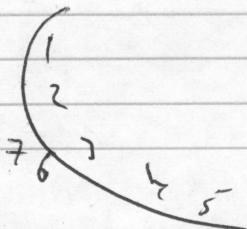
Sn - diffuse

Sn - some signal

DW



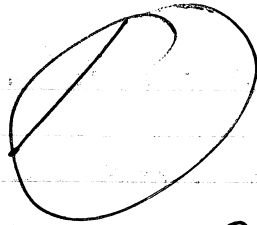
BIV



empty.

DIV top left

Muphu



2

BW

Fe 21
Sn 2

40 mm

Sn

20 mm

Sn

definitely 30 mm

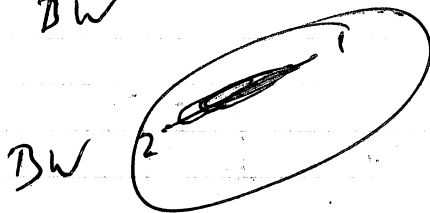
Sn

BW

more BW
a little

Sn	2	30
Sn	2	40
Fe	2	40
Sn	2	30

BW



? both

BW

Short C-line again

Sn	30
Fe	40
Sn	2
Sn	2
Fe	60
Sn	2

BW

empty DN



Muphu

3

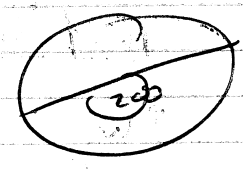
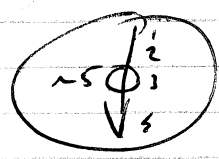
2/11/77

PRMs Fe/Sn



310⁻¹⁰, 60, Ne

DW



??

Fe²⁺ 61-62 = 490-500

Sn²⁺ = 724 = 110-111

Sn²⁺ = 826 = 124

C²⁺ 230 = 27

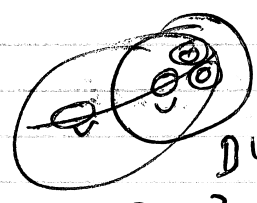
Sn⁺ 1021 = 146

wright a dwp ~ 7 + 1

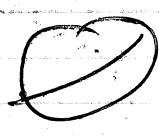
1

Fe²⁺ 70 sur
 Sn²⁺ 60 sur of right
 Sn²⁺ 4
 Sn²⁺ 2

DW



DW x 2 or so



Fe²⁺
 Sn
 Sn
 Sn
 Fe
 Sn
 Sn
 DW

More bottom left DW x 2 hump²



630 = 77 Sn²⁺
 + 20 110 Sn²⁺
 00 27 C²⁺

Fe²⁺ 9 + 1.25
 Sn²⁺

Charged line lengthened

DW

Back to 110 top site, void void

~ 10 + 1.6

DW x 2

Fe²⁺

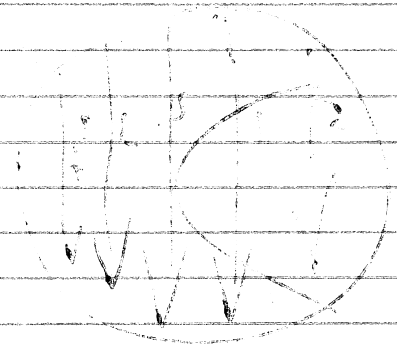
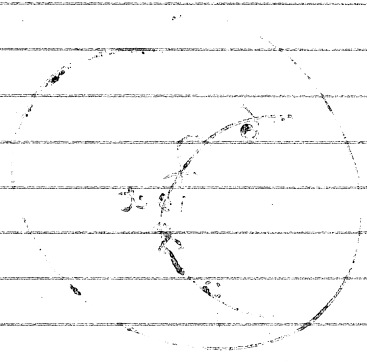
Sn²⁺

Sn²⁺

DW - void gone

Handwritten notes at the top of the page, including the word "Länge" and some numbers.

Handwritten notes in the middle section, including the word "Länge" and some numbers.



Handwritten notes to the right of the diagrams.

Handwritten notes below the diagrams.

Handwritten notes at the bottom of the page, including the word "Länge" and some numbers.

Park to Dotton.

Fe ²⁺ 40 sum
Sn ²⁺ 5
Fe ²⁺ 20
Sn ²⁺ 30
DW

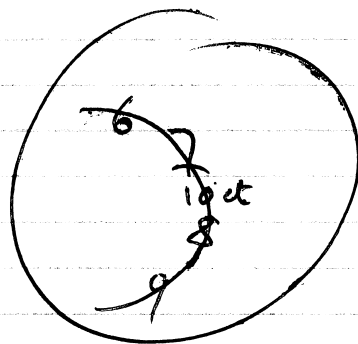
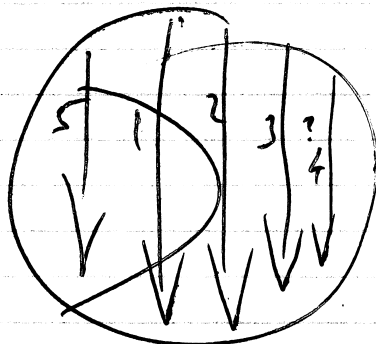
Middle Fe ²⁺ rapid

Sn ²⁺
Sn ²⁺

Mfich

DIV all around S

14KV.



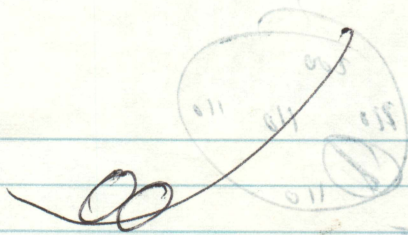
Extract tip.

transferred to PFM's app - spectrum
- Sn ²⁺, Sn ³⁺?, C ²⁺?

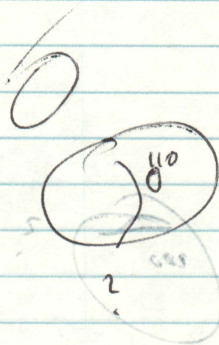
2 narrow pads

Bottom
DW

45 Fe²⁺ 45 hrs rapid
71-72 Sn²⁺ a note 5 x VIF
Sn²⁺ a
DW



antire
DW

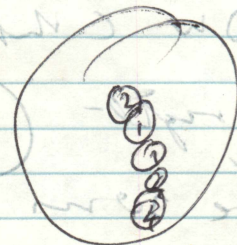
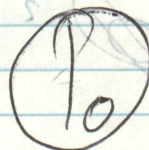


Multiph 4

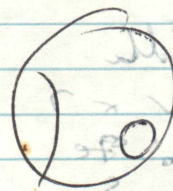
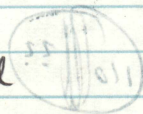
DW 110

Fe²⁺ 45 hrs
Sn²⁺ a 40
Sn²⁺ a
DW

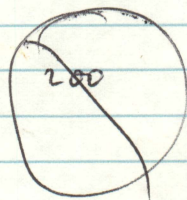
Bottom ?



Fe²⁺
Sn²⁺
Sn²⁺
Sn²⁺ rapid
DW



2 + 13 MW More to Top ?



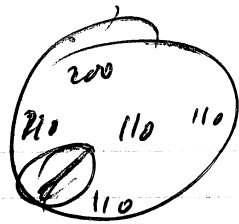
2-2

Fe²⁺
Sn²⁺
Sn²⁺
DW

vanish
cool down again

DW
DW

More



↑
Cunning region

DIV x 2

Fe 20

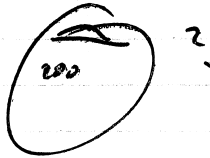
Sn 20

Sn 20

Sn 20

DIV

More to top
DIV x 2



Nupta 3

10KV + 1.8 DIV

Fe 20

Sn 20 note

DIV (shifted slightly)

Dolton right-
DIV



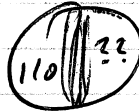
Fe 30ms

Sn "

Sn "

DIV

Middle



DIV x 7

Top Fe

Sn

?

DIV

Top DIV

Fe kern

Edged Fe 10 -

Sn

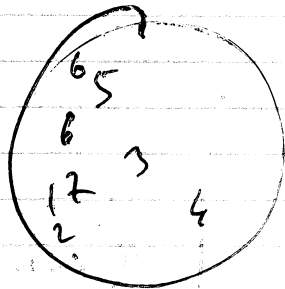
Sn

DIV

Dolton PW

Fe 2+	20mm
Su 2+	1
Su 2+	2

Mph 2

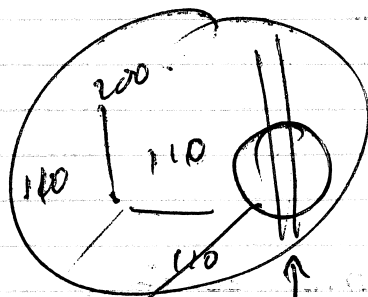


Fe 2+	1mm
Su 2+	"

Fe 2+	30mm spiral
Su 2+	"
Su 2+	"

DIV x 3 — ? void? gone.

Centre 110 - DIV x 2
 Bottom " 3W



9.5W

? Boundary

3W x 200

Fe 2+	30mm
Su 2+	"
Su 2+	"

DW x 3

27/10/77 Superalloy
Ne/60

1.510⁻¹⁰

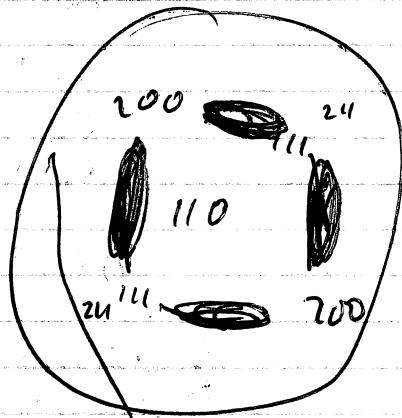
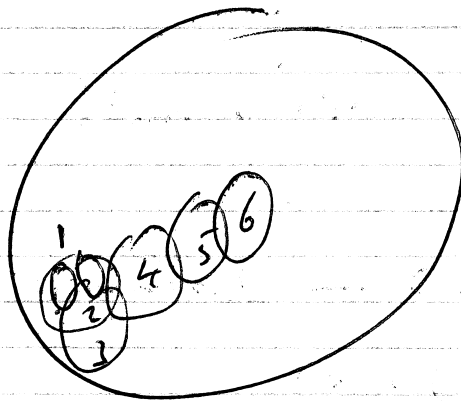
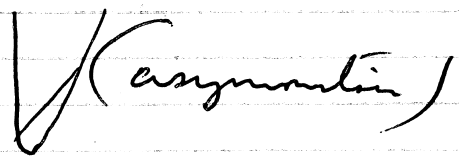
Prod yesterday on E's etc.

< DW - particles
- Div - "
empty -

Popped - flushed

1

PPM, Fe/Sn



gb at far left of tip

Prod @ 9kV

Dark

Small empty, DW area

1-75kV

Dark

80-3

28 Fe²⁺

DW
52-53 425

58

~~52~~ 74 601

52

Fe²⁺ edges

75

Sn²⁺ "

DW

Fe

Sn

Sn

1-8kV + 9

Sn⁺ 850 = 125

DC engine, series

BW - series

enpt - series

rect - dual polishes

Blank

pulsation 11 + 2.5 @ 1V

Wafers 5
D15

Series vs pulsing -> stripes

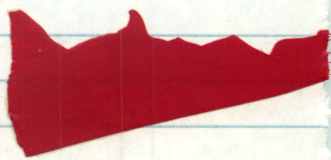
for faster rate -> wider stripes

disappear on erasing a few places only

as do pin - flashed copular jumping

5

5



A

13/10/77

Ti

Etch of surface

Tail end of a film

DIV in Ne 1/60

H etch a little

DIV

H etch a lot (@ a lower field)

DIV ~ 15KV

end of film

Cool down with He

BIV raising field

10 -> 15KV

except, DIV

H etch - H raise DIV

Remove H Ne ~

except BW 17KV - still spotty

- put in He - much less spotty

- cool down further

- flushed

Blank

2

Multi Ni (annealed)

Ne, cold DIV 9KV

H etch

Blank

DIV

Multi

DIV

except DIV

-> something etching it - DIV

~ except, DIV 9.5KV

Retich

DIV, & below

Multi

(5)

DIV
more
slightly DIV 200 units

Ni 30ms in 7pm
AL
My - flushed

Blank

5

27 32 260
31 34 280

(2)

11/10/77

110⁻¹⁰ Ni AC (same spec again!)
Ne 15kV DUV

200 (0)

DW DC

15+2

asphere - pop - ppt visible, (DUV
pds x 2

Blank

DW x several, around.

DW x several
except a bit!

probe 62.3

DW x 3

Blank

13.5 @ AC⁺⁺
25 = 210 nS

29 Ni²⁺ 40 320

My²⁺ 205

? My

Ni⁺ 50 sec.
AC ~
CAC 1
Blank (pop)
My ~
My ~
AC ~
DUV ~

Myth

2

DW

probe 2.5

Ni²⁺ 40 nS ~ 2 plus
AC ~
My²⁺ ~
~ ~
~ SD ~
DW

Ni 20-30 cm
AC 30
My 30
My 40
My 50
AC 30

AC 4cm 95hrs (150 ex eds)
210-10 Ne Kron (~~that was~~)

DLV + 22 KV

+3KV

Cu²⁺ 20 sus
Cu 40 351 v. p
Al⁺ 20 32 + JA
Al 40 2 15 JA

DLV x 2 or 4
Al 15 sus
Cu 15 sus

Mupih

D IV

more, DW

Al⁺ 20 sus
Cu⁺ -
Al 10
Cu
Al flunked!

Nutty - v warm, - extract, not on pin property

Dlvh.

DIV

DIV 34

AC + some

AC²⁺ - pp 4 Market

AC²⁺ -

DIV

DIV 11

AC + 5 plans

AC²⁺ 5

AC + 10

AC²⁺ 10

DIV 15

10 + 1-2

31K DC

My file

420

AC + 30mm

2+

+

2+

+

2+

10 plans (9)

15 + 2

DIV

Testime!

(15)

More pump on

Blank

420 9.5KV

420 9 + 1.4 rapid

220 ns → DC

9.5KV



Blank

Pump out He, then cool as much as poss (flow rate) 16 (pm)

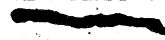
He . 2×10^{-5} Napht 5

8-5KV as core up

9KV just expts.

Pump all around, DC expts

ns pulse 220
Blank



Pump

Reduce pulse to 1.1 + 9.7

- prelties

Napht ^{DIV} 6

Napht 7

220 DW

Al⁺ 20 pulses, SD = 490ns

Al⁺ 10 pulses

Al²⁺ 6

Al²⁺ 2

DW

200 DIV

Al⁺ 5 pulses

Al⁺ 5

Al⁺ ^{max} 25

Al²⁺ 5 pulses

Al²⁺ 10 pulses

N

(2)

30/9/77 AC He cool $\sim 1 \cdot 10^{-10}$

Me 3KV DIV 220 2x8W

DW - 3.5KV, Me mounting force increasing

Mufsh
DW 420 1

lots DW, (DC compare in Me)

3 x 1 sec while evaporating)

5 + 1KV ns pulse
DW
Dinh
420 ns

200 DC

200 ns

420 ns

220 DC

Mufsh
220 DC 2

220 ns 4.8 + 0.75

~ 220 ns 4.5 + 1 @ DW 4-8

420 DC
420 ns ← whk

various pul @ 2KV all found, ns, ns-2DC etc.
5.2 DIV, 2.5 + 1.

111
Mufsh 3

few 420 ns-2DC

DC

DC, evaporating 1-3 sec exposure.

ns pulsed 2.7 + 1

ns pulsed

ns pulsed

420 DC, ns 2.7 + 1.4

Mufsh 4

(15)

DW safe

back to 310 DW 80

65 Fe²⁺ 60 sec
46 Sn²⁺ - random

DW - still odd.

no DW

Fe²⁺ 100 sec ~ spheres.

Vacuum DW

1572

310

43

Fe²⁺ 40 sec

63

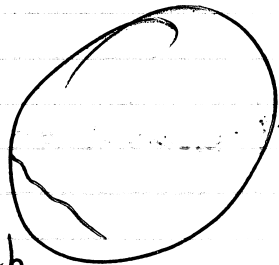
Sn²⁺ -

508

DW

crypt

DW all around.




g-b

DW - crypt few planes DW etc

- ns pulse - flashed.

(1)

27 Sept 77 Fe/Sn g.b.  as per m

110^{-10} Ne 60

DU ~ 8KV
imposed 6KV

pub @ ~ 25 of flushed end.

Fe²⁺ 25+

Fe²⁺ HZ went ~ 22KV

29/9/77 210^{-10}

Ne 60

flushed
blank.

Nuttip

Fe Sn

3(200)

5(222) | (110) 222

BI V

4 2(200)

8KV

5 3
4 2

DU 10KV

Nuttip

11.5 KV

Series spectra of ? spread on 310

Fe²⁺ 45 = 370 → c = 69.9

Sn²⁺ 59 ⇒ 537 → 65

Fe²⁺ 60 cm

Sn²⁺ " next

Series DIV



? = ?

110 DV

200 top ~

Nuttip

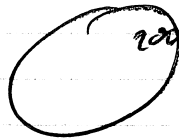
27
12
 $\frac{512}{227} \times 610$
 $\frac{N}{R^2} \times 650 = t$
 $n = \frac{t}{W \times 1000}$

2

~ 200

Fe²⁺
Sn²⁺
DIV

more slightly



DW

Fe²⁺ 50-57 ~ 1 min

2.2 67

2 Sn 174

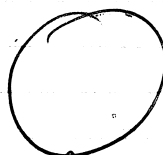
DW



split
DW



more DW



Fe²⁺ 47 50 sub 10

2 54

DW

no Sn²⁺ seen

200 DW

180V DW pulse to 1.6V



Fe²⁺ 70 seen rapid

Sn²⁺ - -

none

DIV

110 DIV

Fe²⁺ 70 seen rapid

Sn²⁺ 2

Sn²⁺ - pop out top left

DW


Flushed

Blank

23 Sept

DW Ne of Ni AC
 - small region looking
 at defect on central 200

Blank

Fe/Sn ex PFM
 g-b 

60 2×10^{-10} ne.

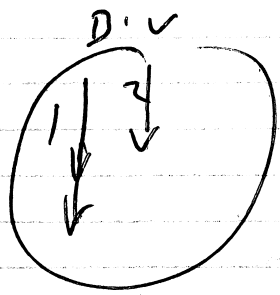
came up at ~ 5kV - dirty
 few pits
 pop
 better picture
 8.5kV, 200 peltz.



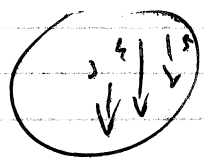
(1)

$28 = Fe^{2+} @ 51 = 410$

$59 = Sn^{2+} @ 74 = 600$



Nucltr
 DIV



2

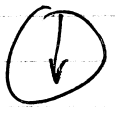
~ center

Fe²⁺ ~ 50 ma? 51
 Sn²⁺ ? ? - ~ 73

DW

Fe²⁺ - 52
 Sn²⁺? 73

$8.5 + 1.4$

DW 

DW / small canyon DW + 100 ft

42 Ni 50 m
27 AL - discharge
AL

]

~~Al~~ end of hole

DW x 2.0
Ni
AL
AL
Ni

DW
Ni
AL
AL
Ni

N

~~Al~~

DW
Ni
AL
AL
Ni

III
Ni
AL
AL

DW x 5
Ni
AL
AL
Ni

Thurs 22 Sept 77 10:00 approx 210-10 We 60.
Blank,

DIV - small copper cap 200

13.5 + 2

370 45 Ni²⁺ some ~ 3 planes
240 30 Al²⁺
Ni²⁺ some (rapid) ~ 4 planes
Al²⁺ "
Al²⁺ "
Ni²⁺ "

3

DIV x 5

slight jog
Ni²⁺ 40 ~ 6 planes
Al²⁺ "
Al²⁺ "
Ni²⁺ "

3W
more with DW

Ni²⁺ 40 ~ 4
Al²⁺ "
Al²⁺ "
Ni²⁺ "

DW
DW III top note
" 220 - "

~~220~~
? III

4

3118

Ni²⁺ 50 cu ~ 5 planes
Al
Al
Ni²⁺

III top left-

Ni²⁺ 40
Al 40
Al 50

13.5 + 2

Ni²⁺ 50 ~ 56 planes

DW x 2

Ni²⁺
Al
Al
Ni²⁺

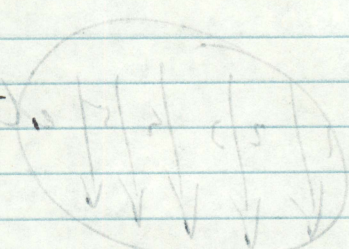
Teatime

20 sec JA
WT

HZ burst

Fix.

2 p @ 25KV - external



del
duplo

21 Sept 1977

Ni⁶³ Al cs Sally - same as in PST off series,

210⁻¹⁰ 110 Me 31V
~ 13KV

13 + 149KV

13.5 30 = 240

29 45 370

Ni⁶³ 50 sec ≈ 45

Al ~ ≈ 30

Ni⁶³ 60 ~

13.5 + 1.9

Al ~

Al prop ≈ 30

Div

move

DW



Ni⁶³ 80 sec

~ 3-4

Al ~

planes

Al ~

(200)

DW x 3

Move, top right

Ni⁶³ 50 sec

Al ~

Al ~

14 + 1.9

Ni⁶³ ~

Div

Move, top left

Div

Ni⁶³ 60

Al

Ni⁶³ 50 quanta

Al 30 sec

and
and in

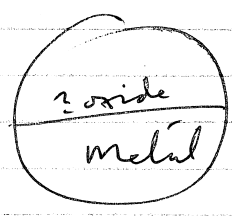
20/9/77 1/2 \downarrow 10^{-10} He 60

ann
96 Ir²⁺ 72 580
64 Ir³⁺ 56 460

$\therefore 16 = 0^+ = 27 \quad 230$

DIV
4
2
1

DIV 4
> DIV
wpt. DIV
> DIV



Ir²⁺ 30ms
O⁺
Ir³⁺ 40 57
O⁺ 4 25

18 + 2 - 3

DIV

Ir³⁺ 55
O⁺
DIV
> DIV

O⁺
Ir³⁺
O⁺ He triggered

recombinati
DIV

Second O⁺, Ir³⁺ alt, triggered

DIV
per He triggered
recombinati

DIV
DIV of both of spec.

Spectroscopy of AC/Si AC MgSi on 7500 Å, Si/Alc

IFES Oxford 5-10 Sept - (g-b regions $M_0, P, Fe/C$
{ Hexamethyl Ru Re Be
{ Al mixed valleys

17/8/77 Sun Tip of PST of PSW 17/8/77

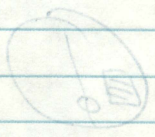
Mptu

DIV

Spectrum with Ph over Fm wings of carbide
at very edge — $\frac{1}{E}$ Fe₂O₃

but catch mainly Fe₂O₃
1000 wds
PDS

More to centre of hole
250 wds — again a little c.



lunch
except a little

blank

DIV x 2

More

DIV x 2

align after dark region

DIV x 3

OFF F

16/8/77 Put select wire / PST of / 60K 210^{-10} 210^{-5} We

DIV 1 2 + 8 6.5KV,

as expect +1KV DIV x 2

Move to black area DIV x 3

Broke \rightarrow ~ 1000 cond - lot of C

\rightarrow v. rapid suddenly so stop & take pics

DIV (6000) carbide $\sim \frac{1}{2}$ down

Move on axis DIV $\sim \frac{1}{2}$ down - pretty

Move to line of dark line (I think)

1100 cond

(7599)

DIV

More axial - DIV

7202

Move to other dark line

DIV

7500 + 1.2 spectrum ~ 1000 cond

\downarrow
7700



2/10/8

Remover polishing w/ rebuilt - now provides
AC or DC not - wave rectified / unsmoothed!

2/18/8
2/18/8

...
...
...
...

...
...
...

...
...

...
...

...
...

5/8/77 Drawings of Poschmieder section 6 v 9

8/8/77 PI7 cfp Pat 80 wire (200' cr)

- Ferrite BW ~ 9KV pds
- spectrum 500 wds T135

amp produced a lot of afterpulses/long pulses. Dunno why.

move to other side of 110

? on a b'dary but v faint if so

1000 wds T136

3/8/77 Al/Ag ex cdb $\epsilon' a/c$ 10^{-9} 60
Ar

puls → v spotty, little Al visible (unstable)

Mufiber ~~puls~~ ~~stip~~ ?

NS pulser → removes all the crud before a decent picture so long as pulser keeps running, slight pop

More puls
keep on capturing, increasing V_p/V_c ratio

→ eventually 50KV pulse on 10KV tip

Ag seems to be in v small clusters

flushed

Al/Si 200° shrs polished in 10% $HClO_4/CH_3OH$
cold ($< 0^\circ C$) @ $\approx 15v$ a-c + lacount

Ar puls @ $\approx 5-8KV$
? large Si ppt?
? Mufiber d

puls ? chul of

repeating ppt in matrix
puls below 7v



No Ne image (but residual Ar)

puls converted → flushed

DW

More to top

DW

Fe²⁺

C²⁺

C²⁺

Bonus rap

? C²⁺

Fe²⁺, Si²⁺ } 2 parts 35-37

DIV x 2

More

DW

Fe²⁺ +4 - 5 planes

C²⁺ 17-21

C²⁺

Fe²⁺ 40ms

1st

2nd

DW

more DW

6

Mpts

DIV

Fe²⁺ 30

C²⁺ 20

C²⁺

C²⁺ 40

Fe²⁺ 40

1st

2nd

DW

DW

Fe²⁺ 20

C²⁺ 20

C²⁺ 30

? C²⁺ 20

DW

C

Fe²⁺
C²⁺
C²⁺
C²⁺

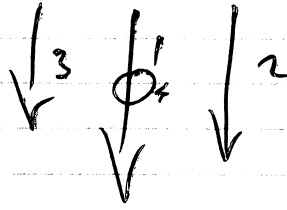
DW → DIV ↓¹ ↓²

13 KV
end of tube.

1/8/77

Same tips

$1 \cdot 10^{-10}$
 $N_e \cdot 2 \cdot 10^{-5}$



4

DW allowed 100V

DIV x 4

pulse 11 + 1.67

Fe²⁺ 46 50ms

28 = 380ns

6 = 175 = 21.5

C²⁺ 50ms 20-21

C²⁺

Fe²⁺ 50ms 46

1 "

2 "

C²⁺

C⁺ 250 => R

C⁺ 50ms (little)

C⁺ 50ms

N⁺, S_c²⁺ 14 = 270 = 33 N⁺, S_c²⁺ 50ms

DW

More DW x 3 or 4



N/A 5

DW Fe²⁺ 10ms

C⁺ 20 (rapid)

C⁺ 20

C⁺ 40

Fe²⁺ 40ms (rapid)

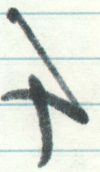
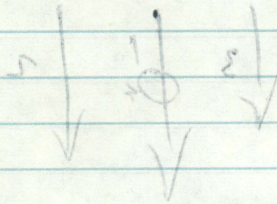
Blank 01011
11800 015 34

plus

blank

move to matrix

system 132 c



Wavelength WP

Wavelength

F 0.1 + 11 delay

20000 25 25

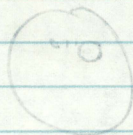
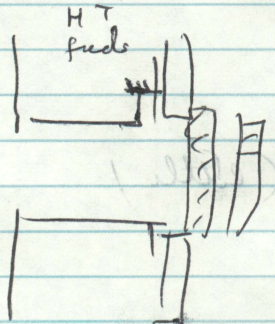
2.025 = 20

2.51 = 2

Cool with He

More plus

Transfer to IAP (relabel after crystal changed & dual ceramic replaced: shroud put around front of ep)



Wavelength
20000 25 25
2.025 = 20
2.51 = 2

28 July 77 { status put wire, as rec'd.

Es' acc DW
h edit
DIV

Mfilm (MPS) ~

Prod @ 3W, lots of b'dams.

→ PJC app = 140⁻² solid W.

Prod
~ 9.5KV
5 2 4
3

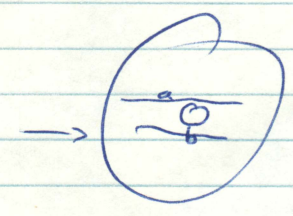
Prod of p-h on b'dams → Quartz

T131 Spectrum ~ 9.5 + 1.4 → 10 + 1.4 v.m.p.s

amp gain increased after ~ 500 ions → better det. ↑ < 10 p.p.m.
↓ > 15 -

prod - ? warmish
cool down - pin

move probe to different job, prod
~ 10.8 + 1.5



T132 spectrum
prod

blank
more slightly
pin



Mfilm 3
pin

132 b Na spectrum

→ dynamic Ne after 85 ions 'cor dirty, H on spectrum
210⁻² Ne

7 11.5 + 1.6

12

1

C

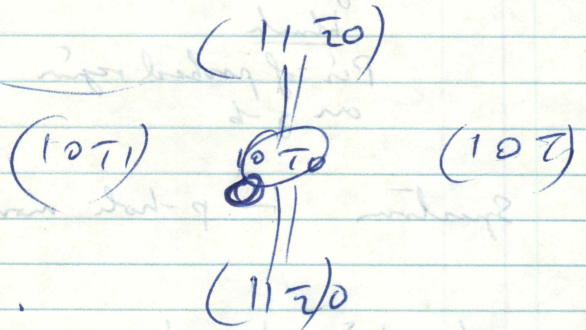
Fri 22 July 75 110^{-9} PST of He 60

Probe on end of Fe/C film

Depth

31V all around

Probe near 1070



~ 14 KV, 2-3KV pulse.
(cryostat bubble)

- v warm @ end ($\sim 1K$ conv)

but clean - looking
- pulse

Tape 121

1511
755

Cool down pulse of same phase.

Probe 31V 1070
1120
1121

depth

Spectrum 1071 pulse $\sim 14.9 + 2.3$

~ 1000 conv

- again warmish @ end of run Tape 122

Probe - warm
- cold

Move to 1120 - spectrum $\sim 14.9 + 2.4$ 110^{-7} He
again warmed up Tape 123

20 Thurs 757 AP Step Pt Steel wire 200° 1/2 in
60K $\sim 10^{-9}$
Ne

Prob g-b ~ 4.5 KV
g-b 5.5 KV

blunk
Pis of probed region $\sim 10^{-6}$ Ne
on g-b

pe 118

Spectrum - p-hole moved occasionally to etching boundary

Move to bigger boundary - prob
6.6 KV + 1

pe 119

150 ions - flashed

E 5 + P. H. 2 1701 spectrum

Tap 155
1000 ions
@ end of wire

prob - 1701
cell - 1701

Tap 153
1000 ions
@ end of wire

18-19 July 77

Visit to ICC — anode coating plant
— Costner-Kellner plant

etc.

Sat 16th July 77

E's a/c He cooling. \sim 3 or 4 films \downarrow

Be Ne 60k
few pins @ 'DIV' - faint.

cool, He
Ne DIV 1.5KV 1

Ne out dc expt, 20+ KV

He, (DIV \sim 20KV?) 2

DC expt
(Ne frozen) $>$ 22KV

Flushed.

Zn polished in dilute H_2PO_4 , \sim 20V DC.

No Ne image

put in Ar \rightarrow usual sort of pins.

\rightarrow H+Ar \rightarrow unstable, no improvement in spottiness of pins.

DC expt \rightarrow flushed.

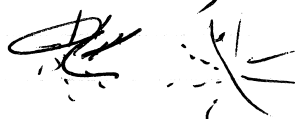
3

Mg (dil HNO₃ chemical polish)

Ar few pins \ll DIV

DC expt \rightarrow
stable

could to expt \rightarrow small areas of reasonable-looking
rays expting, bright & dark brown lines,
apparently to bright around 0001.



† DW

top left

7c^{2r}

e^{2r}

c^{1r} / rapid

7c^{2r} pushed

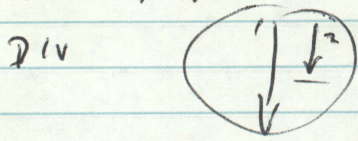
Dunk

N tip - uncooked wire

→ no good

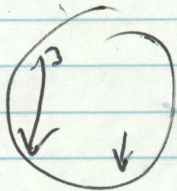
heat-treated

N dip L - proposed to r 14KVA



N film

DIV



15 + 2



Fe²⁺ 50 sec 43 = 750

C²⁺ => 160 = 20

C²⁺ 17/20
C²⁺ quite rapid

DIV

e > DIV

Fe²⁺ 40 sec

C²⁺ group

C²⁺ slow

? C²⁺

4 C²⁺ group

Fe²⁺ rap

DIV x 2 or 4 unit @ f 8

Move down 5p

DIV x 2 or 4

Fe²⁺ rap

C²⁺ 30 sec, slow

C²⁺

C²⁺

N film

DIV x 2 C²⁺ x 4 ? Fe²⁺

C²⁺

C²⁺

C²⁺ rap

DIV

4

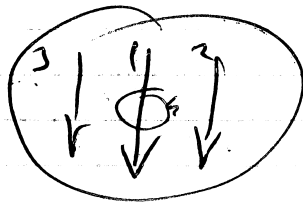
15/7/77

IAP

Sigma 200 wire

310° Ne 60

DIV ~ 6KV



1

DIV

6+1

Fe²⁺

100ms

65 = 530

DIV x 2

ep pulse 1500 us spully

C ²⁺	250	31
C ⁺	350	43
N ⁺	375	45
C ²⁺	425	52
C ²⁺	490	61

C⁺ 42+43 70ms v little

DIV x 2

4-2

C¹⁺

C²⁺

C⁺ little

N⁺

N⁺

DIV x 2

Blank

blank

N after 2

He cool.

7KV DIV x 3 of same phase.

Fe²⁺

C²⁺

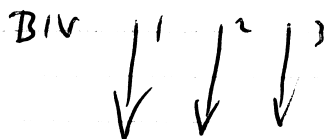
C²⁺

Fe²⁺

C²⁺


C²⁺

DIV



Flushed.

14/1/77 Stifora wire, cooked @ 200 for 1/2 hr.

2 P.Ds on ϵ 's of 

1st spec OK \Rightarrow IAP - flashed
Ne, H, Ne
2nd spec mostly cementite, little perovskite island.

3rd spec \rightarrow imaged in Ar accidentally
 \rightarrow H image
 \rightarrow Ne, flashed,

3rd spec fine perovskite
Ne, 6KV - 8KV

2 Nefton
More pins \rightarrow IAP - flashed

Multi (3 polished)

? More cementite Ne - faint or ? v warm
H

Ne some boundaries, more heterogeneity ~ 15 KV
& little perovskite.

\rightarrow IAP (realign of c)

3 Pins of mo

Gunning end from ~ 15 KV ~~flash~~
except to perfect \rightarrow flashed

Another Tip ϵ /de \rightarrow IAP on 15/7

Krypton In c-p probe replaced. New one is much
better - more stable, lower voltage probes possible, better τ , etc.

13/7/77 Fe/C Silicon PulWire uncooked.

Probe on ϵ^1 a/c

1 Good tip $\rightarrow \approx 15KV \rightarrow IAP$

2 Bad tip? Cementite, v faint
Probe, bright spots
H image a little better, but bright
We rods & strings, still faint
flushed.

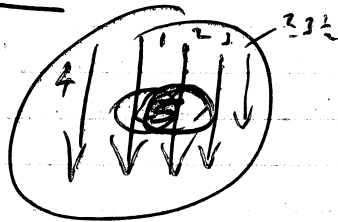
3 OK tip popped to $\approx 14KV$, good.

Tip 1, IAP $(2 \times 10^{-10} \text{ } 60 \text{ We.}$
 $\approx 14KV \text{ } 31V$

DIV 1 pm

Magn 2

DIV



$\frac{25}{76}$ $\frac{5}{7}$ $\frac{25}{49}$

360ns 44 28
250 31 14

Fe²⁺

? C⁺, N⁺ @ 31-33 grotty ep
Fe²⁺ lots, rapid

360ns = 28, then ? = 160 = 6 = 20

1070

Ru^{2+} a Kaplone (+v)
 Ru^{2+} ^

Series Ru^{2+} a/es

Last one is Ru^{3+}

72-3

Mufik }

DW all around

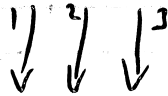
Transition Much clearer at end, but still some contrast.

Blank
Tip extracted to atom probe.

Nuttip 310'' Ne 60

Fe / 4C ex John Wood - 'amorphous' type wire
Some prob (PFM's common, & tip) forms E's of yesterday

Series @ DW, 15KV



Small region of pole near centre.

Fe^{2+} - duff.
Flushed, & put a load of hole spots onto cp.

Blank.

cont'd ↓

12/7/77 Ru 310⁻¹⁰ 60 still spotty

Wid @ 500, 490, & 120 ns from scope

Ru ≈ 100 , so $2+ \approx 50$ $\sqrt{2} \approx 1.414 \times \frac{50}{1.414} = 35.3$

$3+ \approx 33$ $\sqrt{1.5} \approx 1.225 \times \frac{33}{1.225} = 26.9$

He⁺ 4 2 1.4

10 T0 → DIV x 2, ns scale DIV
Ru²⁺ ~ 80 ions
Ru³⁺ ~
He⁺ ~ 50



14 + 2

Ru²⁺ 26 x 1/2 phases
Ru³⁺ ~ 30

Series @ DIV, ns shall escape

1 1/2 Mfih

Few more of 10 T0



Move to 10 T1

DIV, ns escape series

Ru²⁺ 60 ions ≈ 10 phase pairs

Ru³⁺ 1

He⁺ 2

? Ru⁴⁺ @ 310

DIV

Top of some DIV

Mfih 2

Move to 11 T0

series DIV

Ru²⁺ 490 60 ions

Ru³⁺ 400

? Ru⁴⁺ 310

He⁺ 110

total 1120 DIV x 3m

1122 DIV -

DIV

310 v all around

1/7/77

~~110~~ He Ru (KOH \approx .3N, 3-4 v ak) / 1, 1a
see

Prod on Σ 's ak - 16KV, 80K. 13/7/77

Move to IAP He $\approx 10^{-10}$, but spotty ≈ 4.0 .

Few pins of cruddy surface

Blank

2

10T0

10T1 tip

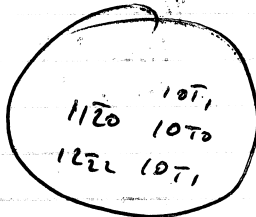
10T0

~~10T0~~ 10T1 bolt?

11T0 left

11T2 bolt

10T0



14KV 91V

Centre of prod. 11T0, but tip is off axis.

very dirty, so leave to pump.

Blank.

10/5/78

15/2/78

Mo 7×10^{-10} unbalanced in new configuration

7 and end of film

2+2 Mo³⁺ 53 40ms 2.08A = Cp 4KV input - 50
1 sec 100 Hz on new pulse
7ms $\mu s \times 2$ $\neq 1-2$

Mo³⁺

Mo²⁺

Mo⁴⁺

14KV

He x 2

$50 = 2.08A = 10R$
 $50 + 0 =$

N. trip Mo gas Piss on Es' etc last month or so
Piss on p-h c-p

8-SPWIAP BIV x 1/2 down

Mo³⁺ 62 = 500 Δ 320

2+ 77 = 630 \approx 45

$\therefore 16 = 380 = 46 \text{ orbit}$

Mo³⁺

0

0

Mo³

40ms 57

0+

60ms 37

definitely

9KV

1400 \uparrow

2 \downarrow m

3W x 3 or 4

Blank

gone

100ms

100ms

2nd x WB

1/2 m

16/2/78

Same type Mo gbs 110^{-9} 60 He 100KV + 2

BW x 3 or 4 - returned better gbs

32 Mo³⁺ @ 57-60 = 480ns

∴ 16 O⁺ @ 340ns = 42

A H7 set quit - change to other 300KV set.

11 + 2

57 = 440ns = 32 =

∴ O⁺ 37

Mo ³⁺	30ms	
O ⁺	30ms	35

Mo file

DW

O 60ms

Mo "

O "

O 30

Mo 30

O 30

dodgy Mo 30

12.57 DW

~ 3-4 planes
4-5 (g. required)

~ 6 planes.

extra little, more  DW x 3 or 4

13.5 pulses 2-2

O 40

50 Mo " ~ 5-6

O 60

∴ Mo

O 100ms

Mo 100ms 10 planes (counted)

BW x 4 or 5

Mo file

DIV
slight more

14KV
O 260
O 100
Mo 100
O 10cm
O 100

DIV 16KV

pulse to 2.5

O+ 100
Mo²⁺ 100 = 14 planes

DW x 7

O+ 60cm ? 15-20 planes in Ke⁺

Mo³⁺ ~ 15 planes

pulse to 2.9

15+

O+ ~ gas out

Mo²⁺ ~ 10 planes

~ 1 cm approx

~

~

~

16.5

DW x 2

Muph

DW

lunch

Blank

17KV

Move to other c-plate - prob overall view of +1.8, +4

Pulse to 3KV

Back to IAP different place

DIV

Mo²⁺ 47 = 350

O+ 247 = 30-31

O⁺⁺ 175 = 21-22

O+ 60 cm

Mo²⁺ ~ = 6 planes

O 40

Mo³⁺ 25 5 planes

O 50
 O 4
 O
 Mo²⁺ 50, 8 phases

gas out-

DW 50

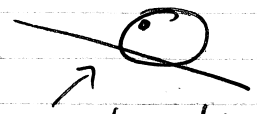
Mo²⁺ 7 phases

3W

More DW 18KV

Mpils

3W



Series of brate spot inside 110 ring array from boundary

O 40 in He
 O 40
 O 50
 Mo²⁺ 40 8 phases
 ft 4
 Mo²⁺ 4

36
? 52

O 10 cm ← pop up signal

O 20
O 20

2013

40

Mo²⁺

6 phases

lots
↓ DW

vuc

O 30
 O 30
 O 40
 Mo³ 40 5 phases

O 30 cm, signal

Mpils

Mo 10 pkm 10 cm
 O " "
 O " "
 Mo 5 " "
 DW x 3
 other c-p pins
 — try to get!

O 30
 Mo 20
 O 20
 Mo "
 O 20
 DW O 30 m up
 Mo 30
 O 30
 O 50

DW
 nor DV
 O

Mch

Mo 20
 O 30
 O 20 rapid
 Mo "
 DW
 nor DV
 O 30
 O 20 around
 Mo 30 8 pkm
 O 15 rapid
 O 20

DW
 nor DW

20×3
 7×10^{-10}

other c-p DW all around 1/4
 blank
 gshone.

var

N up to some time

in he

Tip extracted & put in PPM's of

- miss
- spectrum of b'dom

- spectrum of node

} total ≈ 750 words

but v noisy spectrum is ambiguous threshold
mis-set.

8/15/55

Polishing Ti

- most brass no good

HClO₄ / butanol / ethanol nbg

HClO₄ / methanol likewise

HF // HF/H₂SO₄ "

ZnCl₂ / HClO₄ / Citric Acid / butanol "

dil (< 1%) HClO₄ / acetone cold looks better



used water

5 x 100 Div 5

5 x 100 Div 5

5 x 100 Div 5

5 x 100 Div 5

5 x 100 Div 5

5 x 100 Div 5

5 x 100 Div 5

5 x 100 Div 5

5 x 100 Div 5

5 x 100 Div 5

W

22/2/78

Ti polished in 0.25% HClO₄ / Acetone, cold
at 80 → 60 v dc

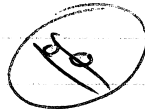
Ne / '60' / 110⁻⁹

Pics on p-h c-p 5-8 kv

blank
centre on cp

DIV → 9 kv

below 6w



pulse 1300 DIV x 2

pulse 21kv DIV x 2

probe, 6kv

evap DIV x 2

12+2 NS pulse DIV x 2

blank

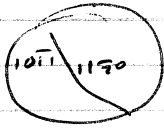
Ne 510⁻⁷ He 110⁻⁵

? @ less than 6kv, can't get decent He pic —
(Hydrogenous & spots)

blank

after lunch 4×10^{-10}
 3.8×10^{-5} Ne 11KV DV

IAP



Start on 10T1 (I think)

12+2

DIV x 2

τ_c^{2+} @ 44 = 360 ns

T 40 sec

? Ne 35 ~~35~~ 40 sec

τ_c^{2+} 23-25 am

Ne 20 \Rightarrow 328 ns = 41

35 = 290 ns = 16 (290)

$\therefore \tau_c^{2+}, O^{+}, T^{3+}$ presumably

or τ_c^{2+} 46-50

τ_c^{2+} 23-25

τ_c^{2+} 15 $\frac{1}{2}$ - 16 $\frac{2}{3}$

Move to 1120
 below 60V



↑
 2 out of
 done

Notes

τ_c^{2+} 40 sec

τ_c^{2+} "

τ_c^{2+} 43 - rapid

τ_c^{2+} 33 "

DIV x 2

< DIV x 1

13+2

→ 2.2 pulse

back to 10T1 2 x bw

τ_c^{2+} 40

τ_c^{2+} "

bw

pk cp. div x 4

on main cp

top 2



more to C

DIV 83

Move back to as 20, DW of plane
at top site of IAP

2+

40m



3+

2+

rough 20'

3+

DW

3/3/78 Mo 10KV tips heated to 400°C in air for 3 minutes
re substrate

60K / 1×10^{-9} Ne 3KV - \approx 6KV find ph cap
Mg film \rightarrow \rightarrow add He small crystals \approx 1 plane / μ m
pop
pins

\sim 10KV ? gbs or oxide tabs @ edges of tips

More 67AP, pins @ DIV RHE \odot ? oxide

10 + 2

1+ 2+
44 57

300ms 44

$\therefore O^+ 250ms = 31$

Mg film

O^+ dual
5ms - pop

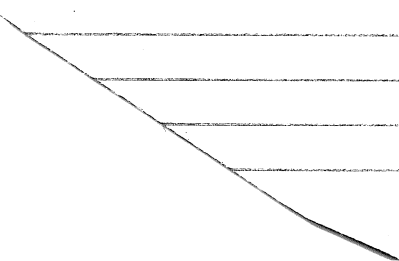
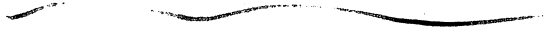
Flashed.

Blank

Multi Mg-g-b ex PFM's ap (T 164)

Find ph cap 11KV sw 60 He 2×10^{-10} 3×10^{-10}

Manipulator knocked.



1911

Received of _____
the sum of _____

for _____

20/4/78

KP amp fixed — lo noise in ground

double cp produces pulses 1-50 mV depending on voltage, good noise (spiky pulse) characteristic @ 2100 v on double cp, 5KV on screen.

Spraying tips with Mond (paint diluted 1:10 with n-pentanol) as spray at 120-140°, cook @ 350°C (max of heater) for 3-5 mins.

60K
30-20
tip in ~~EA~~ IAP — Ne + He

but end of a film 3V 5-8 KV slow scan

Maybe

More 31V — ^{shd. prop} grain boundaries

Ne but — peds in He

Blank,
gone.

Tip bent on reinserting.

25/4/78 Mo - vacuum (50K) - 110^{-9} He (210^{-5} reduced)

15 ^{bin}
12KV + 1.8KV

Scope single pulse 2µs/div, .5v/div (.05+ x 10 probe)

- 3 single pulses f 1.8 convert on
- 2 " " " " " off
- 3 " " " " " bigger DC
- 3 " " " f 2.8
- 3 " " " f 1.8 big pulses
- 3 + gradient " "
- 3 f 2.8 " "
- 3 no lens voltage f 2.8 + gradient " "

Exp 11KV

4 with f 2.8, no grad, lens = 5.8KV

End of film
 Mfilm chart
 3 x f 1.8
 4 x gradient f 1.8

< 3 x expanded x 5

lens off 3+1

2 expand 3+1

Multiply pulses x 2
 - flushed

26/4/78 Mo painted @ 120 / cooked 370
(1:10 paint:gas)

310⁻¹⁰
50

BW f5-6 x 2 1, 1/2 3KV (Mo) He/Ne 310⁻¹⁰
f4 x 2 ~ ~ ~ ~ ~

Sum of pds up to 4.5KV (1 1/2 1/2)

Move tip so crid at side over probe hole approx
BW

4 + .8

410

403

321

- eroded a lot by accident -

(He) 10 + 1 single shots

224 257	200	174 271	166	224
166 221	223	260	225	223
220 257	262	270	1455	221
220 261	225	267	264	224
220	227	165	220	547
222	225	220 267	166	261
260	262	266	223	261
263	264	264	265	223
221	262	222	226	226
166	211	226	266	223
263	227	165 277	265	221
262	225 265	203	221	264
221	262	222	225	222
224	261	270	226	166
267	264	222	166	230
226	262	224 265	223 261	226
261	261	165 221	225 266	166 221
224	226	225	225	224
227	166	226	2255	223
226	261	224	176 221	271
270	166 270	166	265	224
225	266	166	226	266
270	223	176	225	3227
221	266	225 261	264	223

166		224	266	266
166		222	166	166
222		166	264	165 264
221		263	265	166
264		261	166 225	264
262		166	220	266
261		266	225	1074
558		221	221	266
166		166	166	166
226		265	225	265
264		225	270	224
267		167	224	166
265		265	166	262
265		225	166	200
155		226	224	167
175		166	265	264
222 262		225	266	225
270		2036	221	225
225		226	166	264
166 175		225	223	226
226		230	166 224	2224
227		222	225	2470
262		222	265	224
264		264	225	222 264
224		265	226	264
224		221	265	265
260		165	265	267
221		265	173	225
261		262	2620	270
222		225	166 226	224
222		263	224	227
165		222 267	224	266
166		224	67	222
2544		222	226	266
3012		177	224	227
265		224	226	270
264		166		271
222		223 265	265	167
166		264	222	222
224		225 264	166	263
225		222	224 263	226
271		265	222	227
166		224	222	220
266		166 224	266	166

27/4/78

Mo painted @ 150°C with Mond I dil 1:100
dried @ 350° with penicillin

Ne / 50 / ~5KV first grids.

Blank
'BIV'

slow evapn up to 11.5KV 1, 1/2, 1/4 @ below 3W,

N-film

More pins → approx perfect @ 20KV.

- flushed.

Multi cooper sprayed 50s 1:100 @ 80C, cooked 750,

'DW' @ 4.5KV

5+ .74	325	3712	321	3331
	424 523	1686	305	1230
	420	726	400	1552
	321	374	12	2070
	2653	212 327	376	2774
	243	421	378	1166 2205
	1365	3605	2713	3512
	2102	1771	1747	2645
	2621	367	1501	3764
	1610	2743	2454	3606
	225	416	227	
	400	2134	415	
	274	3533	230 306	
	2424	2770	371	
	2761	373	420	
	406	56	3042	
	217	442	1313	
	375	375	56	
	50	340	1571	
	1126	425	3124	

↓
purchase
to art
+ 5.000

A

Blank - reimage

Ne DV x 2 5-DXV

5-2+18

120	523	217	266	260
262	346	224		260 505
212	352	344		341
363	305	376		462
214 201	50	147		260 474
277	226	354		214 223
360	3732	272		364
260	302	352		273
400	500	217		45 260
204	351	306		531
355	45	275 366		456
373	44	215 230		44
46	372	375		405
225	302	447		46
270	357	350		260
302	273	272 352		176
351 363	355	351		272 341
355	45	276		350
46	213	272 375		372
300	347	45		45 624
52	352	277 357		345 5.5+1
351	347	353		picture A - blank
305	353	352		red x 3 @ Ne DV
303 355	276	260		
301	330	372		
3660	227/352	636		
226 352	422	261		
356	1723	305		
45	352	45		
46 362	211	371		
360	262	113		
266	352	275		
401	401	465		
360	276 405	376		
266	346	260		
376	350	276		
271	570	225		
354	224	350 366		
276 377	374	274 351		
ht up	45 263	374		

New pictures on leaf

1 ↓

2 ↓

3 ↓

4 D

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2314	Picture B	301	2317
205	few pins DW - shift	312	2410
255 261	pop - pins	316	2662
42	7.571.2	312	→ Pin
462	break - 2 pins	2402	
45	7+1.5	40	
2775		654	Newsprint
267		332B	
260	321	1141	
2577	1511	41 335	
1066	206 220	41	
262	562	627	
337	546	3051	
274 344	127	247	
265	2613	2232	
33	2557	3422	
265	413	6 ???	
263	225 226	3522	
2556	1150	1706	
262	207	40	
254	3122	246 207	
232	654	246 212	
54	242	342	
3135	213	330	
344	242 206	1056	
1355	200 243	2221	
1044	263	2565	
265	250	41	
44	221	3160	
44	206 245	3711	
44	40	2065	
734	221 216	2610	
21	2645	1227	
237	261	3572	
601	332	3027	
247	311	2581	
44 225	244	2562	
240	40	2624	
45	42	3170	
344	157	2274	
2473	2376	1340	
2346	646	546	
244	216	523	
44 56 (6+1-2)	1572	12	



644 x 24
620 x
400 x

D

8+157	305		2025	1570
204	240	205	1302	2747
40	273	275	267	274
205	40	300	3274	13
205	301		207	1345
2640	237		1261	1675
243	305		2706	
227	207		240	going home time
206	226		303	8.5+1.57 KCV,
243	242		204	pins
241 303	206		241	<u>NuFit</u>
243	240	303	3053	Series @ & above DV
204	237		2312	blank
226	237	204	3313	
312	245		40	
3426	206		157	
310	244		241	
200	116		300	
42	1586		333	
323	212		240	
327	1403		241	
230 414	1103		1710	
206	332		37	
237	211		305	
241	264		2573	
241	2644		2164	
225 202	1643 ←		3567	
231	pins		1422	
303	226		242 200	
306	40		240	
306 323	37		2117	
236	76		3461	
242	306		236 204	
240	3473		520	
201	237		241	
46 204	200 203		210	
242	272		1222	
306	3160		27	
241 206	2427		201	
310	3276		3256	
304	204		71	
326	322		276 210	
235	3776		210	
	207			

28/4/78 Same Trip

18KV + 1.57

Pres @ & admin DW
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236
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 175 275
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 234 275
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 234 (276) 3378
 235 316
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 - pin
 pres ↑ all at 9KV
 +1.5

9+1-7	2177	276	276
	270	200	172
276	270	274	270
141 172	270	270	275
76 226	204	2560	170
202 275	227 870	272	275
200 270	274	2157	170
200	270	270	200
232	275	202	000
172	274	2032	0220
274	200	267	201
201	272	200	0654
500	270	200 000	275
36	204	06	0057
200	200	026	0141
203	105	201	226
202	272	1120	202
270	274	562	205
277	171	201	275
223	273	172	201
227	227	271	202
201	202	200	202 276
200	220	274	002
200	467	1612	0007
276	000	40	200
201	202 010	200	201 270
201	200 275	275	276
204	274	205	274
277	200	2452	2000
201	227	502	222
157	202 275	200	201
414	276	274	272
227	206	270	227 272
276	202	07	277
203 266	270	52	276
272	274	271	227
274	171	276	0047
227 272	226	270	274
170	172	270	274
276	172	1746	274
570	226	202 274	201 267
2214	270	201	274
201	204	600	462
232	271	202	277

522	270	202	272	1327	274
274		276		2566	000
270	putline C	276		1742	3762
200	117 up	2770		202	2101
3101	202	275		172	2725
276	275	2147		2050	266
2017	12 202	276		1045	227
2146	270	1501		2000	2561
37	370	1062		241	225
1250	1057	227		270	202 272
127	204	227		636	172
200 274	226 000	202	015	714	277
226	200	271		2101	270
204 272	200	265		3460	271
271	227	275		170	225
1414	172	202 270		170	227
201	2771	700		266	275
1460	202	227 271		2067	2152
275	2014	275		2122	270
200	204	275		3527	200
274	274	2612		271	171
3004	2271	2565		1617	36
000	1262	202		2657	270
276	3264	274		2605	171
760	002	275		2601	171
270	3562	200		166	3012
	3201	275		274	273
37	277	275		270	171
1560	25	502		272	200
204	2067	277		1410	205
12 200	226	2715		2257	266
77 166	271	271		410	267
225	277	2716		3401	274
2024	2716	2060		251	274
277	3000	0570		06	271
202 274	226	1545		2570	270
3572	227	266		227	1025
227	2400	2000		227	171
2125	0700	200		202	272
2401	272	202 276		227	276
276	200	200		225 271	746
270	200	250		272	277
205	270	172		267	227 277
227 270	720	1704		1725	276
275	1074				



274	272	171 227	171
272	270	272	272
270	265	266	270
266	270	271	271
272	273	271	227 272
275	2002	270	272
227 274	176	206	1760
2102	267	206	271
271	272	172	3244
276	171	271 271	226
1711	3970	270	271
271	420	227	227
2005	3777	270	225 270
270	3457	171	226 271
1514		271	1535
271	picture	224	2475
271	picture	226 270	227 267
274	picture	2661	227
270	picture	270	270
270	Move off 110	225	276
276	270	227	272
2075	270	272	272
272	270	272 271	271
270	271	276	273
270	272	270	271
1265	171	172	171
104	271 275	270	104
276	226	172	274
266	1672	227	171
270	3576	172	270
1122	172	265	227 275
1402	276	205	12 226
270	270	155	266
1255	266	270	270
226	227	273	171 270
273	170	227	171
225	274	271 265	276
271	227	267	275
270	204	227	270
172	270	2140	270
275	270	272	172
2427	271	271	201
2002	266	272	172
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 200 224
 225 271
 167

9.7
+ 1.8 KV

Grumpy home time

End of file

>> 2 x MC <<

below 9.7 - 2W

> 2W x 2 (9.7 - 2W)

4/5/78 1st substrate polished roughly in sat-CaCl₂ @ ~15V AC
 final polish 2.5V AC in sat-CaCl₂, freezing.
 → elliptical tip @ 2.5KV

- evaporate up to 8.00 KV in He, 70K

pts @ DW 7.02, & > bir.
 tip not quite perfect at edges.
 blank

2nd 1st substrate, same technique - 4KV → up to 6 points 10
 pts erupted 11.75, Div 10.28, 78, He

- coated 1st tip
 Ne/50
 pts 3.59 1 sec
 ~ 3.8
 4.26
 4.98
 5.28
 5.60

6.50 + 1KV to erupt

207 501	3227
501	1207
504	210 505
2770	3617
10	1070
205 502	2290
2290	501
204 477	1693
501	10
416	H7 6.61KV
734	230
2727	503 514
204	747
1107	500
143	616
477	534
2623	216
220	270
474	357
246	476
2037	24
2513	252
500	401

H7 6.71	1576
222	2174
167	444
1250	34
1727	520
1671	250
2400	56
265	546
3770	657
3550	1740
401	367
215	H7 6.81
475	700
H42	200
1070	1616
416	261
712	1574
472	221
1658	251
477	74
1072	
253	
1570	

MT 700

272

523

201

1155

217

1477

560

200

465

475

3244

375

1222

114

641

2253

2260

2052

653

571

1725

217 374

2210

350

1537

471

466

775

225

2460

217

447

505

1000

574

534

226

627

1130

3020

1002

517

216

375

1027

217 465

270

1733

1727

1771

571

1130

653

1761

MT 7.20

125

464

362

1725

157

215

1724

1706

2024

571

177

2715

462

2446

660

3747

370

711

220

3126

2570

372

1067

2740

460

2010

550

1040

462

1724

265

2726

1601

250

2562

706

267

1752

plus DIV = 5154 in Ne

- creditly 1r

5/5/78 Same tip 50 / He / 510¹⁰

in He 7.00 + 1 just-crowds
 more or less clean in
 - spectrum for calibration purposes.



642	1109	101 460	1725	100
1576	1260	3	2440	367
116	233	1046	1324	771
2640	621	101 460	466	1570
1154	1106	723	102	224
752	203	101 462	2507	100
1741	1770	460	255	462
571	304	102	177	1267
3271	101	101	101 461	1676
1066	252	101	1271	1277
405	211	101 273	226	22
1104	467	101	460	464
2200	21	101 271	1583	461
611	603	475	463	101 457
577	241	101	1676	7121
13	561	101 462	462	152
1577		604	100	1177
571	<u>7.00 + 1</u>	461	370	706
697	461	101 264	1270	461
450	2125	101	1021	1412
1171	547	1162	712	1164
577	2217	421	1250	1425
520	457	1160	7065	276
<u>moving -> 7.10 + 1</u>	277 460	461	462	102
1715	265	457	2000	1300
157	1762	462	41	526
617	101 267	1621	100 460	145
55	760	462	1266	1474
617	102 272	1112	101	114
261	100	271	464	1545
1245	25	1122	676	1617
1102	702	2682	101 270	457
1724	1611	1272	757	271
271	101 272	1204	101	122
202	461	3458	100 461	100
28	100 456	2175	101 457	101 457
15	464	2001	101 271	101
658	457	463	100 460	271

could

462	101 461	462	462	101 272
101 453	101	262	461	462
101 457	462	460	461	462
462	461	101	1416 1750	272
101 460	101 461	100	101	101
104	457	141	101 460	101 457
226	462	632	1530	101
464	271	462	100 271	462
462	462	101	461	460
371	460	457	101	462
270	101 457	461	461	100 456
100	101 462	100 270	11 270	1002
101 271	460	1115	462	456
460	101	100	1110	101
101 460	460	100	101	101 461
222	1226	457	462	101
1570	461	101 460	462	101
461	101 460	460	107	616
457	26	473	101 272	1645
100 461	102	100 456	463	460
457	100 461	100	101 457	460
1162	116	457	464	101 272
757	101	647	461	245
462	464	101 270	1002	464
771	1141	100 461	272	101 461
272	101	101	461	101 457
1726	101	101 271	462	457
524	102	101	461	460
1340	460	423	101 460	464
101	1153	101	100 457	460
101 461	101 271	101	464	164
101	101 460	625	101 461	551
100	100	101 461	1421	461
213	101	462	101 461	100
101 460	1124	101	101	1500
101	462	101	623	371
101 462	101	101	460	100 971
462	461	1120	457	100 271
457	60	101	370	571
100	101 122	100 457	101 457	457
102 272	101 461	456	456	272
215 272	101 461	1623	101	100
101 461	271	101 457	101	461
100 266	101 460	464	106	461
		171	461	1100

457	461	101 466	101 561	520
460	100	374	101	101 772
461	457	100	516	212
460	457	460	461	272
457	1602	101 461	460	1214
212	101	101	21	371
674	1120	461	464	464
467	1011	462	462	1164
461	4668	101 461	101	461
225	860	1074	100	101
140	1212	547	1616	101 461
461	372	657	1223	1116
101	174	376	1626	101
101	457	1000	1610	101
101	202 461	460	373	202
372	1505	100	101	1256
102	271	457	100	720
200	101	372	1017	602
100	101 460	460	101 460	1276
460	1000	347	461	100
1276	462	601	371	161
1231	527	101	462	100
640	460	1165	101 461	101
1572	457	1266	101	460
1065	101 770	458	101 2655	1020
101	457	102 463	101	101
463	464	101	215	461
101	457	167	464	457
552	1211	1288	101	61
71	101	1120	101	222
01	1416	1072	607	466
00	100	460	100 460	460
0	101 457	101 560	615	101
62	101	457	1027	462
612	101	771	141	371
872	100 770	771 460	101 460	371
01	101	1504	242	40
167	101 770	100	771	101
101	067	461	461	462
457	462	172	203	462
101	101	101	101 371	0
4071	1021	457	460	371
462	101	456	101 457	101
101	101 462	101 460	720	170

still 7-20-11

blurb

pub @ DIV / 7-30 KV

expts @ 8.11 KV, dirty-looking specimen, warmish.

undeposited lv 2×10^{-10} / Ne / 60

various pops etc 2.5, 3, 7 KV

pub @ 7.45 KV

~~pub~~

7.43+1

7.50+1

7.60+1

715
1101
113
2277
2121
2024
1066
565
146
1271
77
624
1662
567
545
1246
1257
117
1013
166

1027
620
1470
676
1572
177
747
164
1704
104
674
206
620
222
272
442
752
755
10
417
1054
562
404

1064
1710
776
604
1252
500
126
120
162
1992
1207
176

7.80
643
800
171220
171
2011
124
217
8.56+1
270
267437
455

~~pub~~

ple m - dritler
(HerMe)

10 + 1.5

170
160
40
150
625
154
672
402
150/402
156 275
121
427
26

10.40 + 1.5

39
157
157 277
152
152
151 220
152 270
151 276
276
222
377
377
1124
227
152 215
1405
1224
555
70 411
217
400
412
1160
2101
476
166 277
276

276 ~~276~~ 101
275 166 217
1620 276
265 275
277 575
1522
1605

10.5 + 1.5

400
150
376
422
1155
22
629
166
151
222
112
645
276
221
152
411
1212
1041
672
462
220
221
242
211
525
1076
664
152 276
401
316
155
165
220
251
223
220
346

10.70 + 1.5

264
317
150
154
221
66 216
164 272
621
66
272
175
150 216
742
272
266

42
150
1022
150 406
216
272
1675
66 274
65
206
25
62 111
151 275
216
150 274
67 216

270
274
277
150
260
216
66 213
164 272
150 272
67 274
165
164

150
372
162
240
26
272
150
1262
164
277
1101
27
151 212
1627
242
151

17
 274
 274
 274
 260
 120
 1122
 275
 700
 151
 66
 215
 471
 216 270
 1101

10.40 + 1.5
 215 272
 164 263
 113 215
 371
 66 272
 112 270

 66 271
 372
 267
 215
 220
 274
 214
 215
 214
 66 215
 272
 272
 371
 150 272
 66 151
 65 214
 245
 150 272
 112 271

275
 65
 150
 216
 67 216
 151
 152
 315
 65 214
 65 271
 66 214
 151
 2774
 272
 66 274
 mix x
myfiba
 norpus
 272
 275
 66 214
 276
 150 216
 216
 275
 246
 66 272
 (2,1) (1)
 (1,1)
 65 271
 151
 215
 276
 66 270
 65 272
 20
 20
 65 215
 515
 67 272
 66 157
 67 216
 216 271
 66 214

272
 372
 151 254
 1145
 45 150
 12
 267
 15
 412
 140
 101
 127
 274
 276
 66
 752
 66 275
 274
 150
 66 270
 214
 174
 77
 60
 270
 Timber kesesh 214
 272 - fixed(?) 150
 66 216
 214
 67
 272
 215
 66 271
 214
 214
 214 272
 150
 67 274
 66
 215
 272
 66 215
 274
 66 215
 274
 66 215
 274

67
 66 215
 66
 276
 157
 214
 66 214
 215
 217
 66
 215
 215
 277
 216
 201
 274
 216
 401
 66
 46
 66 215
 66
 150
 150
 67 220
 272
 215
 272
 272
 215
 66 215
 67
 66
 66 217
 214
 66 270
 66
 66 272
 150
 65 267
 275
 274

$$\frac{1}{2} u \frac{1}{E} = neE$$

b6 = He⁺
 167 = Ne⁺
 150 = O⁺
 215 = N²⁺
 274 = L²⁺

216	272	65 275	66	66
67	66	274	66 216	271
214	272	216	272	214 1533
216	272	215	66	215
66 272	66 272	421	215	66
271	217	216	67	215
150	272	276	66 216	216
216	66 275	272	65	215
215	274	66	216	277
66	66	67	272	276
217	66 272	167 221	66	66 274
66	274	66	67 274	277
271	1155	66 276	216	66 216
266	216	66	216	66 276
67	272	274	272	216
272	215	216	274	66 216
274	66	66 216	217	66
214	66	66	272	217
275	277	272	276	277
215	67 275	274	66 214	66
66 272	66 214	66 217	272	214
272	67 150	66 214	66	217
66 215	150 272	274	216	274
274	276	215	66 272	272
66	66	66 272	67 272	66 215
272	216	275	66 275	216
216	66 215	66 215	67 217	65 214
66	66	66 274	66 216	216
66	400	217	215	274
66 272	66 274	66	272	212
274	216	276	275	66
66	66	66	216	66
66	272	66 272	215	216
272	275	215	217	65 215
214	66	66 272	275	150
66	66	215	275	1427
215	216	214 272	277	216
216	66 217	66	16	274
216	66	66 274	216	66 272
66 272	66 271	217	276	67
66	66	274	274	217
66	216	216	274	216
272	214	66 274	67 274	277
163 215	274	274	66	277

lot of pairs
 @DW, pretty
 chem. to stop.

Disinfecting! Bottle 1 of mordant paint is brown.
 Bottle 2 of mordant paint is green.

??

Recoat 1st tip with Bottle 2 paint, detected 2nd: sand will
 penetrate (too thick, probably).
 coat at 170, work to 250 for 15 mins.

tip has some 'cracked mud' on shank & a ^{small} blob on the
 very tip.

All today tips coated while pointing downhill so
 any droplets tend to run towards tip.

3.60 kV μ
 3.92 μ 2' $\frac{1}{2}$
 4.24 1' $\frac{1}{2}$

more slightly 4.24 1' $\frac{1}{4}$ $\frac{1}{2}$ \approx

align 1' $\frac{1}{2}$
 blank

4.97 + .7			
351	5.10 + .7	672	656
1131	50	1521	64
<u>5.00 + .7</u>	2750	1674	3251
1574	1471	557	146
250	2224	52	40
51	2574	1276	647
1747	2147		1247
557	2007	<u>5.20 + .7</u>	
572	2777	246 553	
534	177	1226	
2176	147	2067	
2472	716	1911	
2603	164	1017	
2427	246	2276	
2256	245	1322	
65	1221	507	
215	1316	2726	
2647	1570	246	
	42	2201	

put in He

- evidently several 1/2 tips sticking out of
ragged end.

pins 5.20

pins 5.74

Move to crystallite @ edge
- pin

5.20 + 1.7

1020

5.71 + 1.7

1070

1744

1154

2112

1660

~~81~~

HT set dead - surge

5.22 + 1

210

1000

21

5.22 + 1

50

556

5.60 + 1

47 102

3761

539

46 100

1601

1425

2064

1052

2066

1657

250

2271

1214

1274

1266

1647

5.65 + 1

10

244 525

1544

1027

7601

1620

2615

5.95 + 1

751

256

2329

2152

722

155

2067

1177

422

2221

462

1154

1721

666

575

66

2520

1650

2616

657

557

6.00 + 1

2564

1514

328

1612

2570

1225

652

550

1200

242

2174

120

52

1766

271

421

Check crystallite
still there - do

314

1506

1156

1200

2052

2422

2715

6.26 + 1

1203

1767

511

1577

2070

475

1204

511

505

507

6-26-71 cont'd

1072	6:30 +1	67	7:00 +1
516	1112	1203	465
1464	1252	1036	122
57 124	74	17	376
1507	653	216	467
1704	1551	410	102
523	1800	525	417
1530	101	222	102 470
1055	230		400
421	111	<u>6:60 +1</u>	101 466
207		102 476	1462
550	<u>6:50 +1</u>	20	275
1277	501	1210	471
445	275 371	56	465
1171	213	477	472
504	225	2400	466
404	14	104	467
721	1170	107	670
1521	722	162	5
242	1600	202	262
1547	1574	224	102
350	607	667	104
1350	722	660	466
113	241	441	512
1127	1270	471	154
101	505	476	1071
527	420		127
645	1427	<u>6:70 +1</u>	477
1076	447	102	104
505	500	375	465
1603	477	264	465
430	741	1550	464
154	500	550	466
253	1623	1020	262
45	141	720	23
64	644	477	101
260	62	475	
510	1650	177	<u>7:20 +1</u>
520	501	1102	461
420	626	103	371
412	655		101
563	216		460
1526	615		101
	775		50 145
			1667

712

157

212

676

1211

670

405

074

7-70+1

212

470

pts DIV 7.65

centre u

equiv to 8.96

more (or less) perfect.

Tip extracted -

6/5/78

Notes in / partial reprint / 4×10^{-10} / 2×10^5 Ne / 60

Notes 4.07 spots
 4.79
 5.03
 blank
 5.41
 5.82
 6.31 1 1/2

5.90 <u>5.9+1KV</u> 2707	514 2126	6.70+1 633 2203 322 1077 1043 1642 2457 2435 <u>6.80+1</u> 1010 2022 1177 1461 2732 313 2264 <u>6.90+1</u> 504 252 2222 1464 341 440 3611 2733 2010 1600 2775 1400 252 506 2450	3745 710 1261 475 2630 203 <u>7.00+1</u> 44 3534 3007 2677 2451 1662 4 2731 1377 713 1547 2153 14 <u>7.00+1.2</u> 176 3766 3567 2737 744 1344 37 2574 674 2730
6.00+1 445 1125 45 232 232 2042 1204 <u>6.10+1</u> 433 2722 264 <u>6.20+1</u> 2307 <u>6.30+1</u> 721 2435 <u>6.40+1</u> 2270 44 523 225 445 46 536 2005 47 215 452 1253 <u>6.47 H</u> 501 <u>6.50+1</u> 2761	6.60+1 6.70+1 505 211 472 2471 571 2043 470 <u>6.80+1</u> 160 171 2706 1774 44 2235 2063 <u>6.90+1</u> 1550 2432 -blank 6.90 6.67 3x pins - spotty <u>6.60+1</u> (more present) 500 2456 2462 1651 2173 1704		

7+1.20 added

2117	422 (?)	2615	2725	167
441	356	2147	1562	37
057	1440	<u>8.40 + 1.4</u>	1604	37
1742	2264	3503	2170	1057
2667	2204	162 420	24	117
1660	14	2742	727	422
1277	2527	40	<u>9.80 + 1.4</u>	115
17 465	2126	40	176	1624
1657	567	1122	261 422	2251
2304		423	620	27
	<u>7.60 + 1.4</u>	40	27	3725
<u>7+1.4</u>	245	2067	161 420	2252
460	5	2526	2774	2141
43 472	1140	1101	2014	425
261	456	426	27	423
42	1104	1017	2503	2466
474	172	40	1610	615
42 437	601	252	2570	526
441	1164 ND	202 257	424	100
476	1164	116 420	424	<u>9.20 + 1.4</u>
261	244	2771	2221	415
	1614	3456	1704	27
	2222	110 421	2404	157
<u>7 20 + 1.4</u>	1220	256	152	174
42 470	2725	2117	225	157 415
42		1156	162 226	722
42	<u>miss</u>	420	715	522
250	<u>8.00 + 1.4</u>	2227	1260	440
202	2261	1750	422	105
42	2056	511	214	2767
1557	1054	2054	1215	2672
1274	474	462	613	511
122	2622	<u>8.60 + 1.4</u>	27	1572
2040	455	114 422	2001	222
2	267 + ?	242	1555	1606
204 467	1277	1012	444	454
56	<u>8.20 + 1.4</u>	274	<u>9.00 + 1.4</u>	27 1162
2602	1662	2422	112	1072
<u>7.40 + 1.4</u>	426	2527	420	2177
1610	207	1767	1774	1676
42	424	2126	2742	2520
2712	701	476	1172	2462
2226	1725	2200	160	471
2755	2722	2655	165 416	255 415

3240	411	969	2017	1737
207	411	2676	1424	171
0580	1455	1526	409	<u>9-90 + 1.6</u>
9356	411	2360	1274	407
<u>9.40 + 1.4</u>	2720	<u>9.50 + 1.6</u>	1474	167 222
412	2206	150	170 + ?	157
237	172	1167	2277	417
163	1074	1416	207	407
173	2677	156	2057	223 402
171	155	155	154	2462
444	1407	157 406	1706	167
158 412	3445	2772	171	402
411	76	155 405	2556	516
166	450	1177	76	229
174	1571	2361	170	402
411	172 + ?	1465	405	2117
2605	167	2201	284	567
2602	422	2522	2007	221
173 412	144	1755	157	170 401
1584	54	137 324	26 226	405
126	2705	171 410	2282	167
3155	279	407	404	224
2012	1757	156	115	402
2570	1012	1757	1502	2602
2507	1670	406	2257	401
232	1042	352	750	157 220
2114	2252	1402	402	407
2577	77	2081	154 406	167 222
2207	1576	2560	170	210
1471	2580	420	406	170
1421	2772	155	172	401
532	216	460	127	23
1161 ←	1771	2021	1646	406
26	2205	1226	1540	1122
277	467	757	170 405	2267
177	<u>9.50 + 1.5</u>	172	157 405	402
211	1642	<u>9.20 + 1.6</u>	324	402
2470	2245	407	406	402
0560	416	405	1203	400
2774	76	170 402	400	322
<u>9.40 + 1.5</u>	2276	170	1024	2760
250	2572	2422	2126	402
1055	112 411	404	2173	167 401
678	155 220		115	1561

2702
7 227
167

222
227
276

157
402
224 402
402
167
167 401
760

1647
2024
2024
12 267
166 222

2700
2766
2571
11 277

531
113 460
167 401
166 221
167 401
2572

2021
117
126 161

166
170 401
Temen bancher,
pack up.

pick @ 7.3 > NeD IV
at 5.1 in 200

pack up.

Clean in Ne, 2.5KV pulses
- press.

4/5/78 old 1/2 substrate / crystal clean / painted new paint 130°C (distilled 2:1 from above)
/ cooled in furnace 450°C for 5 minutes in air
5/10-10 / 2.10⁵ Ne / 60K.

slite pop at 2.76

something emptying @ 2.51 - few emptying spots only

- try probing

3.10 + 0.8				
262	4.00 + .80	52	4.80 + .80	
	540	53	1307	
3.64 + .8	662	2055	142 271	
366 612 (100, 85)	2562	67	4.90 + .80	
342	222	1525	277	
1075	4.10 + .80	52	5.00 180	
433	3232	2471	50	
1756	2561	1155	47	
	344	2611	50	
3.80 + .8	1734	1565	5.10 / 50	
1276	2011	2221		
2051	264	1062		
55	4.20 + .80	136		
3.87 + .8	2405	5/1 ← !		
333	226 (28)	1272		
3.90 + .8	670 (100)	564		
535	653 (112 100 ⁺)	2476		
1276	713	2207		
472	1771	505		
2177	53	257 gas down		
3.96 + .8	53	4.60 + .8		
333 343 (28, 302)	2766	2521		
276 (14.6)	12	2174		
242 (15.76)		1705		
276		57		
374	4.70 + .80	2502		
2772	2156	2747		
267 (19.6)	1267	2700		
332	320 500	2741		
247 752 (16.3 150)	325	1712		
1454	451	1612		
276	225			
	446			
	1606			

3.96
4.76

↓ previous film

- blank

- pin (KDIV) 5.20xV, Ne

5.20 + .8

- align properly

400 (48)

202 (12.5)

5.40 + .8

47 (1.15)

2776

164 (10.2)

5.60 + .80

457 (72.3)

47

276 557 (28.4 102.5)

2777

46

2157

46

572

46

(112.5)

$$102 = Ru^t \text{ or } (1+r)^t$$

5.80 + .80
260 (48)
 46
 217 (16.6)
 46.542 (117/102)
 2100
 47

6.40 + 1.00
44 222
 44 575
 45 60
 2521
 6.50 + 1

2501
 40
 205
8.21 + 1.40
 1712

200 D42
 2712
 200 242
 200
 1255
 2524
 425

6.00 + .80
212 577 (16/94)

317
 2112
 1161

201 246
 210
 201

200
 420
 1255

6.20 + .80
1442
 2074
 274
 424
 2670
 575

6.70 + 1
44
 47
 676
 7.20 + 1
1604

2757
 2170
 247
 542
 2145
 2572

342
 177
 2224
 200, 237
 206 242

6.11 prices $\frac{1}{2}$ $\frac{1}{2}$

7.2571
254

2160
 245
 2205
 1021

2077
 1702
 1120
 292
 200

6.20 + .8

7.69 + 1
260

201

8.50 + 1.4

1110
 2646
 211
 705
 741
 2410
 504
 1744
 1170
 1424
 2046

8.00
 202
 2220
 1774
 2161
 2420
 2745
 20

8.41 + 1.40
210
 200
 342
 206 424
 347
 2720
 1620
 425
 547
 425
 1240
 200

424
 177 242
 1707
 205 422
 8.60 + 1.4
 1120
 177 741
 240
 270 = 20

6.20 + 1.00

8.21 + 1.2
202

2460
 200 425
 415

8.80 + 1.4
711

520
 2266
 520
 2677
 011
 2226
 1676
 2064

422
 202
 2602
 202
 2120
 202

27 425
 241
 200 244
 200 344
 1671
 2146

177 = 20.9
 175 = Ne
 326
 37 = 1.25
 25 = H+
 255
 416 = 1.2^+ , 94.6
 227
 227

Nupte
 - μ @ 6.29 NeDiv
 - μ @ 1.2

ms 626 KV
- controls to

Move to 200 - dark hole

227

176

177

206 422

1670

2775

176 422

1426

211

177

8.80 + 1.50

420

227

2162

275

175 417

176

227

8.50 + 1.50

200

201

200

425

8.00 + 1.50

202 416

put in the corner)

ns pulse ~ ~ ~
- (except fault-out-of-lip)

9.26 + 1.50 = 1 plane / sec in 2×10^5 He

10.28 + 1.50 " " " " no He

Few ns des pins + 1.8

+ 4

- flashed.

15/5/78 Residuals in netlets conf - poster + PPM + MSS

16/5/78 Ti polished - 25% HClO₄ / acetone / cold 80-60 de
510⁻¹⁰ / Ne / 60

few faint spots → spots @ 7KV

6.71			(16.1/32.9) ←		
<u>6.27+1</u>		203 (16)	200 267		7.80 +1
301 (=33)		43 177	322 7		230 = 25
210 (=16.4)		43 177	266		42
		257	43		42
<u>6.33+1</u>		44 240	237 (25)		227
366 (54.5)		276	237		43
		257	264 (32)		1116
<u>6.64+1</u>		272	13 46 ?		43
260 (29.1)		44 240	1776		221
245 256 (25.6 28.5)		255			276
3906		210			42
243 260		44 177	<u>7.1 +1</u>		256 (32.7)
404 (64)		1602	43 331		1217
65 (2.6)		271 (32.8)	240		42 230
774		203	43 236		2634
257		"	43 (29)		3710
242 (24.6)		<u>6.85+1</u>	252 266		1172
203 406 (16 64.5)		255 270	236 264 = 33		256
471 (92)		213 647	236		175
716 (200)		177	2153		42
44 201 (1.2 15.6)		43	<u>7.2 +1</u>		42 227
274 (33.2)		44	202 236		175
410 (65.5)		255	1466		244 (29.1)
325 (42.6)		44	2155		221
257		246 (26.6)			3453
		240	<u>7.4 +1</u>		43
<u>6.80+1</u>		402 = (61) = 26	317 (44.3)		
270 (32.4)		203 243	blank		<u>7.90 +1</u>
44 255		177	gas in - photo		2407
240 (24.5)		237	few spots @ middle		173 225
414 (68.9)		255 = (29)	1 1/2 1/4		41
164 334 (12.9 46.4)		44			242 = 29
200 (15.7)					670
257 343 (29) 49.4		<u>7 +1</u>			444
404 (64.8)		331 (46.3)			41 226
240 311 (24.5 38.7)		270			173
44		237 265			174

398
64
462

32 98

226	8.00 + 1	41 222	222	221
420	200	246	41 221	166
160 226	254	250	42 222	41
42 226	223	41 221	250	217
226	220	222	41 245	220
257	222	222	226	40
42 227	220	41	222	41
200	200	222	216	220
201	224	254	225	220
225	41 220	545	220	40
227	220	170 221		220
42 227	220	250	8.60 + 1	40 220
170 220	41	221	<u>220</u>	220
226	220		40	40
3452	16 17 ??	8.50 + 1	204	40
226		<u>224</u>	40	42
242	8.40 + 1	221		07
42	<u>224</u>	247	8.60 + 1.1	200
1120	217	217	<u>215</u>	40 216
170 242	171	222	166 220	217
1202	41 217	1607	40 245	220
	222	41	41	41 220
<u>8.00 + 1</u>	222	41	217 207	41 220
255	41	40 221	164 215	220
242	2050	170 222	166 220	41
225	42	41	217	166
42	41	221	221	40
41	221	251	217	220
2562	41	221	222	216
241	226	211 250	215	220 246
202	170	41 220	220 250	220 246
170 226	41	41	220 246	40 214
3650	41	222	221	220
241	222	222	221	40 220
42	1002 = 25	221	221	40
42 227	147 = 161 220	216	166 217	217
242	220	41	40	41
	220	221	41 217	40 220
<u>8.10 + 1</u>	250 = 32.6	221	150	2262
41 250	241	220	217	220
250	220	41	40	217
42 170	222	1306	41 220	220 203
	222	222 250	40	40
	41 220	220	250	220

8.6 + 1.1 could

217

220	40 627	220	216 241	215
220 247	217	217	221	216
41 220	166	220	41 215	217
167	217	217	247	217
41	217	221	40 217	40 217
216	216	215	214	216
	40 214	217	40	217
<u>8.60 + 1.2</u>	216	217 245	242	217
40 214	217	217	165 216	165 216
40	244	217	216	156 217
216	40	165	213	41 222
40	3567	220	41 217	217
217	41 221	216	220	217
245	215	220	41	217
217	40	41 222	217	220
217	220	40	217	217
217	217	213	214	40 222
9066	41 222	217	41	216
217	40	217	40 217	41
40	217	217	40	244
40	217	203 217	220	41
40	40	72	214	221
40 220	244	40	217	40 215
217	217	156	216	220
242	41 220	216	222	217
217	245	220	41	215
41 217	217	215	41	217
217	215	166 221	216	217
156 221	41	216	41	40 217
220		40 217	217	217
215	<u>8.60 1.2</u>	245 = 21.1	41	40 216
221	220	220	217	217
216	40	217	217	220
40 217	213	220	40 217	217
40 217	214	220	217	217
217	40 244	217	217	40
216	217	226	222	41
215	215	40 217	40 217	40
246	222	222	216	40
41	216	213	216	41 220
215	40 217	217	41 211	220
216	220	217	216	40 217
220	215	215	37 217	216
41	41 217	217	40	40

210⁻¹⁰, 60

1

6.00 + 1
 n⁺ 42 160 (=11)
 236 (21.5)
 405 (58.6)
 3141
 257 (26.14)
 265 (28.2)
 43
 465 (82.2)
 253 264 (25.2 27.8)
 41
 — 3
 265
 42 234
 201 (14.3)
 12 41 ?
 237 265 ← 6.20+1
 440
 402
 173

261
 41 260
 4175
 245 257
 13 254
 14 273
 262
 14 37
 2,1
 41 257
 42 376
 256
 42 157
 442 (76.5)
 262
 172 232
 245
 173
 233
 172 232
 373 (=57)
 370

6.5 + 1
 42 234
 37
 260
 42 232
 264
 42 257
 42
 12
 42
 376
 15 265
 373
 233
 256
 12
 42
 257
 376
 12
 12
 372
 372
 12
 12
 42 260
 231 255
 172
 243
 42
 261
 245
 42 260
 315 (38.8)
 12
 256
 401
 13 35
 41 211
 7
 12
 257
 12 37

260 425 71
 41 230
 11 13
 14
 42
 260
 262
 12
 70
 6.60 + 1
 276 257
 42 424
 14 315
 13 157
 13 42
 375
 246
 430
 13 42
 14 403
 260
 257 371
 14
 14 226
 263
 260
 256
 12
 257
 175 224
 264
 11 255
 12 42
 366
 14 75
 261
 244 260
 374
 12 230
 231
 14 42
 4 257
 13

6.40 + 1
 1054
 250
 176 247
 250 377
 149 170
 42 161
 (12 200)
 250
 261
 176 261
 41 173
 230 260
 172 261 (13.5)
 44
 43
 12 41 = 28.5
 42 261
 177
 262
 172
 41 173
 43 167

262
 13
 12
 175
 7 40 ??
 12 260
 13 41
 42 230
 42 226
 374
 11
 12
 1221
 172 233
 12
 11 12
 172

$(Run0)^{3+} = 72!$

257	256	256	256
42	40 200	200	257
11 270	257	245 257	176
14	175	250 424	40 257
256	254	244	42
12 41	201 255	42	254 424
245	201	226 252	271
12	37	255	256
170 225	256	266	256
114	41	260	41
12 254	225	42	242
270	224	257	42 257
42	42	174 264	224
10 257	406	175	256
11	242	240	40 227
12 200	261	41 227	42 175
171	165	256	245
226 245	257	42	170
42 <u>delay time ↑</u>	174	220	256
226	41 45	41	254
270	257	260	227 240
170	244	3254	260
255	226	270	41
	256	256	256
<u>6.70 + 1</u>	256	244 254	2267
175	264	27	241
220	260	256	272
255	260	240 256	257
172 260	42 201	254	265
243	40	170 227	256
366	257	256	245
<u>270</u>	242	250	260
40	367	40	42 174
242 256	260	42	77
41 227	40 254	255	2045
40 276	270	266 422	Comp No
244	27 422	270	261
174	262	42	257
42	207 265	170 267	227
240	256	256	255
256	260	41	201
227	57	244	244 256
262	54 225	256	41
265		226	171 270

166 222	243	241	265
40 174	250	242	265
<u>264</u>	41	167 176	226
164 222	262	255	255
256 207	207	241	256
42 170	225 253	47 225	41
<u>215</u>		<u>265</u>	40 226
170 245	No information	257	226
170	@6.4kV	255	256
40 260		40	242
221	6.90 + 1	173	<u>264</u>
253	<u>225</u>	174 262	<u>225</u>
40 227	166	41	173
41	<u>362</u>	227	253
<u>374</u>	271 240	242 255	227
<u>243</u>	40	173	<u>264</u>
170 250	256	40 226	<u>255</u>
255	166 226	167 256	256
42	242	<u>264</u>	256
256 267	167	167	170 226
170	257	165 240	227 256
41	<u>364</u>	41 221	41 257
261	42	170	41 172
<u>272</u>	41 220	250	56
226 241	166 224	253	242
42 177	<u>270</u>	255	242
255 262	42 256	255	250
<u>227</u>	252	242 257	163 227
167	242	42	41 167
55	255	42	56
<u>271</u>	170	170 257	<u>364</u>
42	165	254	<u>167</u>
<u>427</u>	163	167 252	430
27 220	173	166 254	255
<u>274</u>	42	173	243
253	257	73	42 226
41	257	42	242
171	260	255	247
42 255	173	170	365
42	40	241	<u>227</u>
<u>267</u>	167	<u>264</u>	241
42	220	42	<u>265</u>
226	255	227	<u>260</u>
		173	<u>564</u>

7.00+1	220	251	241
227	415	221	225
55	<u>254</u> 265	227	35 221
225 226	225	40 171	246
165 217	42	40 226	<u>262</u>
250	205	222 247	<u>250</u>
41	217	224 1502	<u>257</u>
27 220	252	221	240 251
240 250	41 171	357	250
160	252	<u>225</u>	226
<u>260</u>	217 255	252	242
170	222 250	160	27
224 250	27 257	40	41
	41 250	41	167 222
7.10 +1	223 240	41 224	40 221
251	227	27 222	252
	221	260	226
7.00 + 1.2	41	<u>161</u> 255	171 251
251	<u>360</u>	250	252
252 207	40	252	226
247	40 246	172	40 220
241	250	40 215	222
225	<u>652</u>	250	41
241 251	252	307 266	41 164
40 163	225 226	225	252
250	222 254	225 <u>256</u>	240
246	250	41 241	227
41	222 251	227	220
40 220	241 250	27	220
246	225 <u>260</u>	226	221
225	41 167	40 226	<u>355</u>
257	223	221	<u>260</u>
<u>361</u>	225	167 240	263
42 224	222	226	<u>211</u>
	252	226	<u>574</u>
251	220	40 226	<u>253</u>
171 247	252	<u>366</u>	166 250
40 255	223	40 225	302
27 251	27 170	175	<u>262</u>
225	227	251	<u>202</u>
40 220	220	224	<u>357</u>
223	251	256	227
<u>260</u>	222	40	<u>262</u>
41	41 226	40	27 247

$$40 = (CO_2)^{2+}$$

S

7.00+1.2 cont'd.

1235	166	220	256	246
40	240	40	167	225
220	250	27	222	250
227	255	40		220
	41	27	220	255
<u>7.10+1.2</u>	3015	157		<u>355</u>
<u>355</u>	225	255		220
217	156	251		224
250	224	252		<u>260</u>
226	26	220		221
226	40	222		41
216	221	27	222	<u>257</u>
160	227	222	255	157
221	257	40	221	250
27	226	252		251
250	40	40		227
224	220	167		225
217	40	220		260
41	256	222		<u>222</u>
167	<u>224</u>	40		225
224	247	40		227
264	251	225		164
<u>257</u>	170	223		220
220	222	<u>256</u>		226
260	222	226		160
235	224	222		226
166	164	222		HT sel
<u>306</u> = 40	226	220		drafting
40	225	27	221	again
224	222	252		
<u>207</u>	41	40		
<u>257</u>	170	220	244	
41	252	41	56	
220	252	217		
225	226	247		
171	250	220		
222	40	247		
240	37	40	244	
257	40	222	225	
220	252	167		
41	204	115		
227	<u>226</u>	222	224	
250	280	166	255	
157	166	26		
220	220			

through + 02.5

New Ht set;	247	277	275
recording	27	40	25
26 157	40		215
26 172	220		36
24 111 141	204	7.5 + 14	242
163		240 + 8	27
206 267	7.20 + 1.2	215	164
221	27 162	164	40
255	170 257	215	221
250	224	155 213	246
250	221	252	227 227
225		27 215	40
252	7.2 + 1.25	160	214 221
41	217	40	221
221	217 245	250	217
41 222	154 172	217	215
166	40	227 242	247
222	220	220	260
41	221	220	215
170	222 + 8	217	155 220
40	24	155	215 220
222	156	212	220
247	220	222 242	241
164	227	165 217	215
256	246	246	245
255	27	242	220
256	2100	162 213	35 213
1475	27	162	244
252	235 246	226	40
250		224	225
254	7.20 + 1.2	227	215 242
254	570	27	37 240
40		242	215
27 156	7.20 + 1.4	215	225
257	252	37	350
256	222	215	215
220	215	220	36
41	245	216	25
260	26 140	215	35
41 164	27	216	277
221	216 220	220	26 217
222	222	164	27 216
226	244	215	216 220
224	216	216	41

7.50 + 2.4 count

222	200 242	212	214
221 221	215	210	26 207
216 220	210	210	26 210
160	200	241	24 147 13
245			26 141 11.1
210	<u>7.8 + 1.4</u>	<u>7.9 + 1.5</u>	204
27	216	225	36
222	26 210	161 211	206
221	40	227	210
40	242	200	224
245	214	25	26 211
240	26	214	266
214 225	244	226	27
153	215	27 211	26
162	214	210	25
54	210	210	210
214	210	211 226	211
245	144 <u>404</u>	212	207
227	210 225		214
214	210	<u>8 + 1.5</u>	210 241
220	27	201	207
227	212	225	210
227	27 226	171	25 210
27 171	207	160	223
216 222	220	157	210
40 160	226	<u>8.1 + 1.5</u>	206
40 204	210 225	222	212
210	210	212	241
40	211	211	217
40	210	206	206 221
27	214	<u>354</u> 65.7	210
	220	<u>252</u> 64.6	27
<u>7.6 + 1.4</u>	212	<u>207 221</u>	26
26	212	207 221	225
214	210 226	25	220
216	226	25	210 222
210	26 210	224	210
		205	220 224
<u>7.7 + 1.4</u>	<u>7.90 + 1.2</u>	221 220	214
210	226 (25.7)	211	210
214	226	150 205	186
40 214	211	25	220
220	<u>207 (40.5)</u>	224	211
210	161 211	211	27 205

224	25	66	221	216	710
27	271	210	25	215	211 222
220	26	25	25	25	25
210	27 210	210	26	26	25 212
212	26 211	211	26	26	210
225	26 212	225	216	216	22
212	25 207	26	222	222	24
150 211	200	245	212	212	27
22 141	210	225	33 210	33 210	210 222
22 204	26	27 210	226	226	211
22	41		211	211	225
25	35	<u>Topology N2</u>		226	25
207	212		26	26	211
207	24	25 147	206	206	210
24	25	224	26 207	26 207	211
207	27	224	211	211	25
25	242	224	240	240	207
27	211	207	26 207	26 207	210
226 257	221	205	26 157	26 157	25
24	211	150 204	207	207	211 225
206	215	27 207	202 220	202 220	26 212
26 210	210	227	206	206	26 220
27 207	211	210	210	210	26
25	212	220	26	26	225
210 226	210 222	211 224	212	212	211
220	212	210	25	25	25
26	210	25	26	26	212
212	207	207	26	26	211
210	211	223	211	211	26 210
212	26 160 14.8	154 13.7	207	207	215
25 207	25 161	212 (6.8)	22 155	22 155	35
210	220	114 207	210	210	211
34	210 220	25 150	26	26	26
210	26	24 206	25	25	211
212	25	142	222	222	26 211
225	157 211	26	26	26	210
207 222	26	27	212	212	27
212	25	207	210	210	161 224
220	26 211	200	240 59.2	240 59.2	27 206
205	212	24 220	207	207	25
211	210	13 151 210	207	207	225 27
210	25 206	226	26 210	26 210	210 222
212	204	210	26 210	26 210	225
212	26 207	207	26 210	26 210	205 22

26
 27 207
 207
 210 204
 26 206
 22) 274
 210
 212
 206
 212
 35 204
 22)
 221
 27 207
 206 225
 250
 212
 210
 210
 207
 25
 24
 26 211
 157
 212
 211
 222
 26 206
 211
 210
 210
 2424
 221
 224
 25
 (22 116) ^{FSP} ~~fixed~~
 225
 220
 210 261
 66/67 ?

8.20 + 2.5

 210
 25
 25
 210 222
 26 205
 26
 206 220
 27
 222
 267
 212
 25 206
 207
 206
 220
 261
 207
 210
 157 211
 40 222
 207
 220
 207
 225
 210
 210
 210
 225
 256
 210
 207
 150
 210
 222
 210
 224
 221
 221
 221
 27
 210
 204
 26
 25

8.20 + 2.5

 206 221
 210
 36
 25 207
 25
 211 224
 25 220
 226
 210 224
 210
 210
 36
 204
 206
 26 157
 210
 204
 210
 212
 35
 25 211
 206
 26 225
 157
 26
 220
 207 220
 205
 207
 26 207
 26 207
 207
 26
 25 205
 24
 36
 25 221
 207 222
 157
 25
 222
 25 207
 205

25
 207
 210
 212
 207
 207
 26
 224
 211
 207
 221
 211
 147 222
 210
 27
 25 211
 25
 220 27
 25
 205
 217
 220
 25
 225
 210
 25
 208
 157
 147 206
 25 206
 207 224
 211
 25 207
 26
 210
 26 206
 25
 24 206
 147
 35 207
 202
 210
 210 27
 27 207

1
ob: ... (unclear) ...

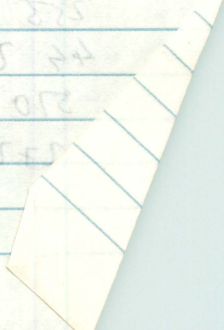
34 207	205 271
25	212
156	222
210	25
211	207
210	24
27 206	210
221	211
207	35
25	207
147	211
25	222
212	27 271
220	207
25	224
210	27
27	<u>225</u> (59)
26	222
27 205	206
26 221	224
25 207	26 210
27	157
220	26 157
211 221	206
25 152	206
24 205	23 205
24 207	206
24	26 206
27	27
26 211	26 207
207	25 206
221	216
26	217
220	207
27 222	25
25 206	27
211 222	207
220	206
35	27
25	222
222	207
210	25 207
207	

going home time
8:21 + 1.5 ↑

blank (8-24)
~ DV
- faint graphic

End of job

↑ minutes
should be 2.8 x KV
not 1.8 x KV



17/5/78

Same Trip - var (no Neatull) 310⁰⁰, 60

Var 60

3.1 + 2.5

370
47 645
420
221
220
375
50 212
224
226 (15.5)
3.22 (20.5)
212
214

4.2 + 2.5

44
210
266
55
272
270
270
271
270
262
270 (28)
271
267

277
300
300
272
301
277
300
276
277
300
277
276
300
271
276
277
301

277
300
277
400
277
300
300
300
17 275
301
301
300
271
300
301
277
277

32
277
202
277
277
276
276
277

brandy!
Some
evapor

2.4 + 2.5

404
360
552
225
320
215
224
247
406

4.4 + 2.5

264
300
277
301
310
301
277
301
277

300
306
300
301
266 276
277
276
300
200 275
275

277
277
300
300
264
300
276
301
300
307

2.8 + 2.5

271
46
275
270

300
301
300
301

300
276
300
277
300
277

277
300
277
300
276

2.9 + 2.5

45 250

300
300

276
302
300

300
300

4 + 2.5

301
271
304
255
44 260
570
272 412

300
300
17 274
300
277
300
301
277
277
277

300
304
301
300
302
277
276
278
302
277
277

277
302
277
302
301
277
300
302

2

5.6 + 2.5

267
284 221
265
254
42

6 + 2.5

40
220
220
262
41

6.5 + 2.5

248
254
41 261
252
265
40 113
241 250
40 241
247
224
254
254
255
165 252
262
241
255 262
227
255
250
360
250
40
246

~~7 + 2.5~~

~~7 + 2.5~~

27 222
222 220
27 216
27 220
40 160
40
224 240
27
361
221 222
27 222
40 256
165 252

250
221
26 240
250
27 240
270
225
257
225 244
247
247
155
167
250
246
216 221
225
60
225
247
257
244

7.5 + 2.5

227 226
214
220
142 212
150
244
162
241
214
216
162
212 220
111 240
155
220
275
164

→
increase
7.5 > 37

plotted

8.90+2.5

2.5+2.5

2.5+2.5

2.5+2.5

201	202	203	201 216	202
204	155 220	200	205	203
203	77	204 221	202	204
205	203	204	201	206
203	205	205	204	205
204	203	206	202	203
203	206	201	202	204
204 227	202	205	201	203
203	217	155 201	204	203
203 221	202	203	206	217
210	202	205	201	204
204	201	205	200	202
203	205	205	206 257	201
204	205	204	203 227	203
204	204	201	205	203
202	201	202	204	205
154 203	204	205	205	207
25 200	203	204	204	204
110	207	205	207	205
117	206	206	20210	200
20	204	203	204	204
25	201	200	205	203
107	204	206	201	204 216
20	204	204	203	203
107	204	204	201	206
101	202	203	204	204 222
207	204	203	203	204
202	206	205	204	224
227	203	204	205	203
204	204	203	203	204
204	205	144 202	205	211
203	204	203	203	201
177	204	203	203	176
216	203	203	201	206 217
204	222	204	154 201	145
22	205	204	204	204
	205	205	202	205
	204	204	202	201
	205	202	205	200
	204	204	203 216	204
	207	204	206	205
			205	
			203	

209	207	change any cable
201	210	25 206
	210	211
admit $-1 \times 10^{-8} \text{ Ne}$	211	27 214
	215	27
	211	210
8.00 + 2.5	212	24
212	212	210
206	210	27
212	160 202	155 211
213	211	205 216
226	24	213
211	210	211 221
211	213	24 221
214	210	147 210
210	215	20
215	211	26 24
213	210	
240	210	
	211	

8-20 + 2.5	211	24 205 (20 ↓)	← DV ↑
206	25 210		- DV ≈ 12
210	26		- pup to 14
210	25		- photos (Mph)
211	211		
211	25 206		- flushed
212	26		
214	207		
206	26		
152	25 205		
211	228		
207	207		
224 261	22		
210	210		
211	21		
207	40 206		
211	215		
224	25		
215	25		
211	205		
211	26		
221	25		
213			
211			
210			

17/5/78
N. L. P.

1.125% NCCB₂/autone/cold. 310⁻¹⁰/60

2.6 + 1	2.8 + 1	209	4.20 + 1	274 200
54 210	327	204	200	256
55 221	205	200	216	200
55 210	204	204	201	204
214	210	206	200	277
54	2721	210	215	200
54	210	204	277	200
246	210	201	276	277
315	210	204	200	277
54 227	210	204	277	277
55	211	204	277	200
55	211	200	200	277
55	212	204	276	217
gule ant H	210	207	200	277
214	207	200	277	300
320	210	64 110	277	200
212	210 = 24	240 277	200	275
214	204	205	276	277
211	226	205	277	277
467	310	202	274	200
250		277	200	300
320	4.00 + 1	202	277	421
316	204	247		301
214	200	205	4.20 + 1	275 225
215	222	200	277	201
311	210	210	200	277
214	200	200	200	202
217	202	207	200	277
214	200	77	201	276
225	107	204	277	200
	200	200	277	300
	201	204	277	210 277
	200		277	277
	201		200	200
	207		277	277
	205		200	200
	202		200	200
	247		200	201
	204		201	201
	202		277	200
			300	277

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18/5/78

Ordered 2: tip, no emergency gas @ all. No^o.

60 van

1.1 + 1	<u>1.6 + 1</u>	<u>2.4 + 1</u>	<u>2.70 + 1</u>
504 = 27	525	607	477
506	640	670	416 540
573 (37)	471	611	416 540
571		711	501 616
602	<u>1.7 + 1</u>	377	420
510	354	602	420
607 (29.4)	742 754	562 657	442 573
1076	1120	440 666	563
		410	660
1.2 + 1	<u>1.8 + 1</u>	571 1157	545 1115
501 (22.8)	466	475	677
501		67	461 617
500		750	255 537
562	<u>1.9 + 1</u>		777
376	707	<u>2.5 + 1</u>	410
375	724	276	476
376	1170	707	461 1137
372 (16.4)	1055	607	767 404
584	477 722	474	570
372		652	1057
566		402 625	677
275	<u>2.2 + 1</u>	731	61
570	1747	776	675 772
	740 676	264 775	405 1101
1.3 + 1	1111 96.8	375	770
366		402	257
265	<u>2.3 + 1</u>	651	610
1055	657	606 647	277 777
767	711	267	752
766	407	400	773
507	670 671	1106	677
741	557		724
	521 425		562
	420	<u>2.60 + 1</u>	422
1.5 + 1	470	412 1077	
525	587	777	
610 707	777	645 1022	
526	1014	367	
356		770 724	
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425	211	218	200
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46 205	205	257	206
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205		266	252
271	<u>5.8+1</u>	206	45
470	214	272	45
205	207	207	202
46	266 207	45 250	212
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46 204	207	207 424	46
207	202	207	205
210	207	207	201
46 207	200	420	274
427	267	204	205
214	207	267	46 202
425	204	266	271 271
205	425	207	205
271	252	465	202
205	427	46	202
205	45 250	45	266
426	427	203	175
422	424		202
472	206 202	<u>5.9+1</u>	277
275	254	202	46
206	270	201	252
271	420	257	274
254	46	201	426
215	252	266	202
210	45 257	266	45
427	207	427	212
205	427	204	421
203	206	202	46
270	460	421	671
205	427	257	247 204
207	271	415	211 257
272 207	214	266	46
204	204	200	
205	207	265	
427	257 272	202	

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414	413	260	45 276	260
416	247	277	44	206
414	412	206 241	261	220
421	247 200	245	257	406
44	261 277	276	44	241
44	45 277	256	244	261
200	244	260	242 272	275
282	415	247	44	247
277	242	247	242	406
201	246	244	271	44
46	245	272	274	244
	415	206 260	44 246	240
<u>6.4+1</u>	245 277	44 244	247	414
210 244	410	241	44	257
410	45 246	44 206	44	272
245 260	244	247	274	256
44 244	261	215 247	242 272	247 256
201	276	275	257 272	406
260 277	262	45	44	270
207 276	207 244	44	45	44 255
45 244	275	44 247	260	47
207	262	205	1104	272
417	45 245	242	246	406
272	245	247	245=25	255
244	276	245	407	242 261
417	277	206 247	274=22	242
244	262 417	226	252=26.6	256
246 415	45	274	247	261
44 247		44 247	44	241 406
245		411	277	45
244	<u>6.5+1</u>	277 260	45 277	277 257
250 274	427	260		257
411	260	277	<u>6.5+1.1</u>	257
244	277	44 242	258	44 241
247	411	414	272	242
245	275 412	257	246	44
417	277	260	261	44
276	261	277	272	241
273	244	277	241 256	411
276	247	414	277	247
244	247	45	256	406
247	45	256	272	47 271
45 165	260	261	241 277	272
276	277	247	271	255

44 220	45	170 220	277	40 275
406	405	241	277 266	277
257	204	276	276	276
217	241	242	275	277
241	241	44	211 277	237
240	44	276	254	44 275
241 256	277	44	277	2400
274	255 266	276	276	
256	255 405	274	241	6.8 + 1.2
241	243 271	266	270	<u>265</u>
241 256	270	40	44	40
242	240		241	242
275	241		277	45
256 270		6.7 + 1.2	43	276
241	6.6 + 1.2	<u>277</u>	266	170 = 4
44	241	44 400	277	271
242	276	277 250	270	275
242	250	274 266	276	276
272	277	44	274	276
242	240	40	240	277
242	204	276	277	276
204 = 16	277	40	40	271
44	44 204	241	250	205 270
272	205	265 29.8	257	40 270
44	240	266 215	277	277
244	40 270	202 276	276	277
	44	240	277	277
	272	276	270	315
6.6 + 1.1	42	44	276	275
44 230	240	406	277	272
44 207	240 256	240	277	276
260 420 = 70	200	40	40	254
204	324	254	266	276
275 211 = 38	272	270	276	275
257	241	266	277	274
256	254	250	260	40
274	267	242	214	40
267	240	271	45	270
255	240	276	240	277
266	240	250	276	276
44 271	44	236	242 270	44
271	40	277	44 275	274
241	404	405	241 267	274
44 241	240	276	276	44
277				

225	241	224 252	<u>7+12</u>	251
251	227	241	40 222	224
40 240	44	240	226 251	267
226		225	224	222
44 226	<u>6.9+1.2</u>	224	222	40 220
40		223	222	222 250
222 253	40 224	222	251	42
225	264	257 267	224	225 250
38	252	225	224	224
225	222	227	222	230
36 222	265	44	42 220	40 225
227	242	254 265	225	257
252	47 225	265	222	207
227	225	225	224	42 222
2 226	225 255	40 222	47 222	40 222
226	225	221	222	222
252 266	251 262	225	250	224 252
266	264	252	262	224
226	40	40 262	222	42
226	202	603	224	40
240	224	226	262	222
226	225	224	224	224
227	225 251	252	42	225
0 226	264	40 252	40	40 225
241	40	40 225	222	40
226	40	222	262	224
226	44	40	262	224
267	40	225	222	260
256	251 267	267	224 251	226
240	40	225 252	224	44
244	42	40	40	40
314	40	224	222	2171
40	224	224	224	225
250	225	226	224	240
224	226	226	40	242
224	224	40 225	224	225
44	40	224	252	40
226	240	225	265	224
227	40 225	225	42	<u>225</u>
226	40	225	40	40
40 266	225	40 225	225	225
226	40 222	40	40	250
227	225	225	221	222 250
171	225	266	225	42

250 285	47 274	277	177	47 274
274	47	2004	272	47
274	277	272	47 277	277
47	271	274	47	177
271	47 275	42	275	276
270	273	275	274	270
44	277	271	42	271
272	277	272	277	277
267	47	47 277	271	277
277	47	267	47	247
	277	42 270	277	47
Exp. imp L ₁₂	277	271	274	47 274
277	272	247	676	277 = 24.8
277	274	47	42	275
267	277	271	272	277
247	47 272	272	47 277	47
251	277	271	277	42
277	275	272	277	274
277	277	274	47	47
44 277	275 275	271	42	47
277	277	277	271	272
266	277	272	251	270
257	177	272	277	42 277
274	47 274	277	272	272 277 = 24
272	271	271	271	47
271	277	277	275	277
276	272	274	272	277
274		272	272	42
166 277		272 262	272	274
277	$\frac{7 \cdot 1 + 1 \cdot 2}{246}$	274	277	47 277
277	246		272	277
42	270	$\frac{7 \cdot 2 + 1 \cdot 2}{47 274}$	276	262 = 32.7
274	262	47 274	277 263	247
277	267	42 272	277	277
277	47 277	277	277	47
264	276	42	42 277	277
242	272 262	274	274	271
277	277	47 277	47 277	42 277
277	47	47	264	47
277	272	47	42	42
277 267	275 270	271	277	277
275	270	167 277	47	272
275	275	42	277	277
240	272	277	275	277

כח	<u>7.4+1.2</u>	202	226	42 200
47	201	205		200
204	202	42	<u>7.5+1.2</u>	200
202	202	227	227	200
202	42 201	176 = 16.6	42 200	200
42 206	42 226	202	227	42 201
47	201	201	226	42
202	226	42	202	42
42	202	201	226	225
47	200	42	42	201
כח כח	202	201	200	201
42 202	202	202	202	202
204	201	201	202	201
	201	42 201	42	226
<u>7.7+1.2</u>	201	201	42	200
245	201	200 245	227	47
202	201	2445	200	42 200
42 201	40 202	42 201	202	200
245	42 202	40 201	201	201
202	227	201	47	227
231	261	202	230	165
202	202	200	42	201
254	43	202	47	227
202	202	42 201	201	200
42 202	200	201	201	200
202	47	225	41	42
202	201	47	200	226
202	245	201	200 260	202
202	42	42 200	47	201
247	202	42	201	231
226	226	200	227	200
202	201	200	201	201
42	201	42 200	244 = 28.8	200
202	201	201	201	262
202	202	225	42 201	200 260
202	177 כח	47	201	200
201	226	202	225	166 14.9
202	201	201	200	201
	226	202	200	200
	202	201	200	202
	260	202	200	200
	202	42	200	201
	201	47	202	225
	47	200	200	201

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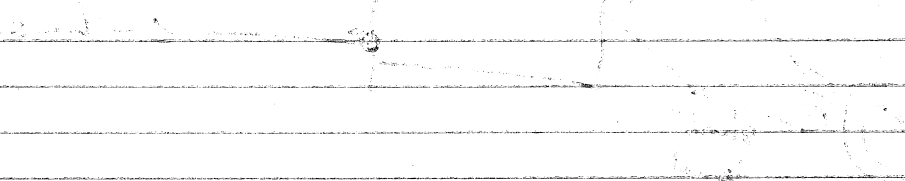
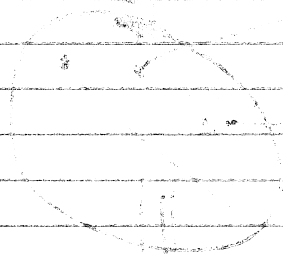
002 23

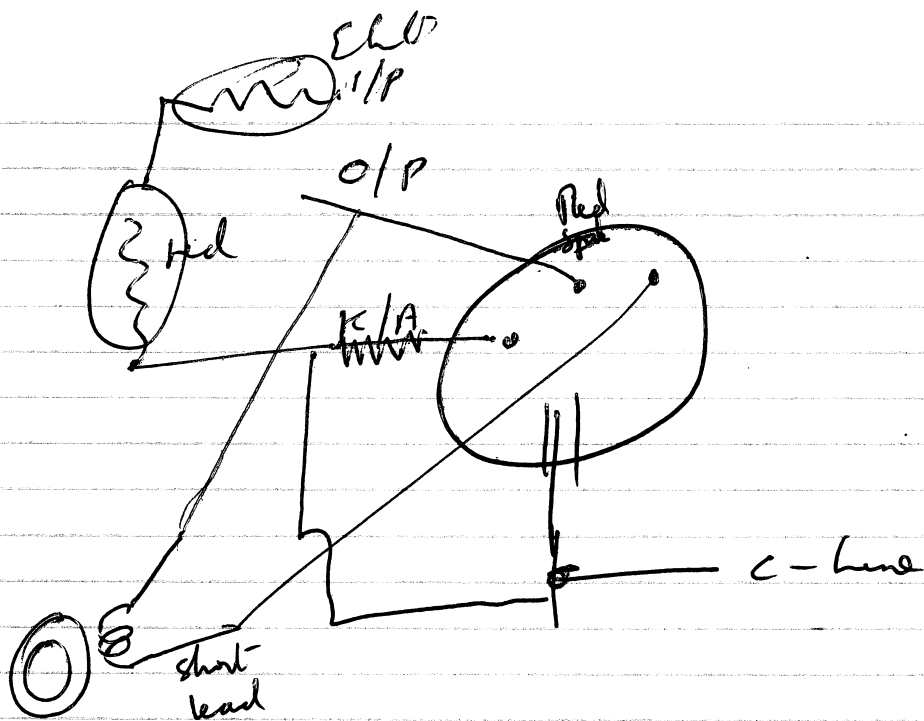
002 23

002

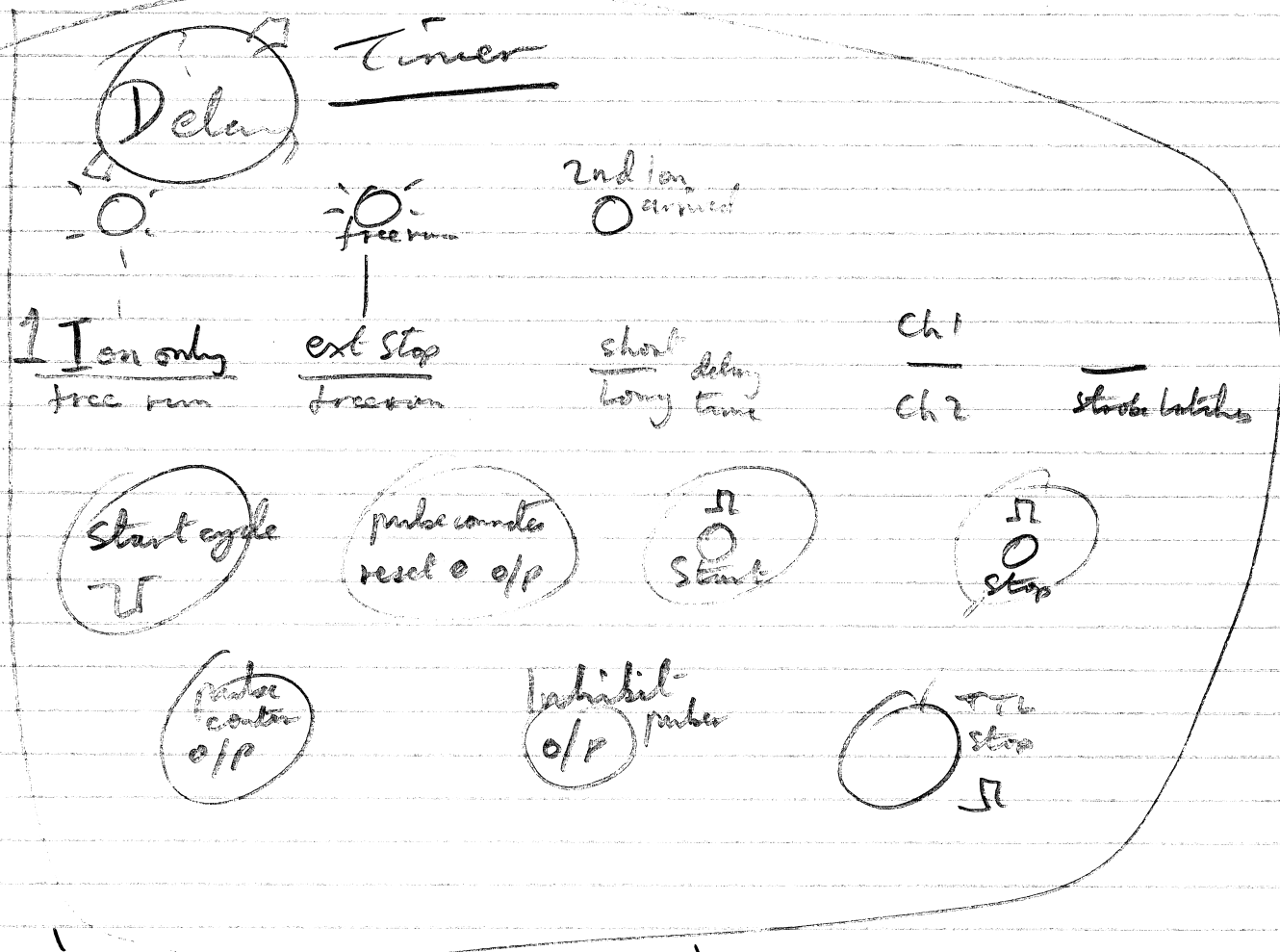
002

002 23



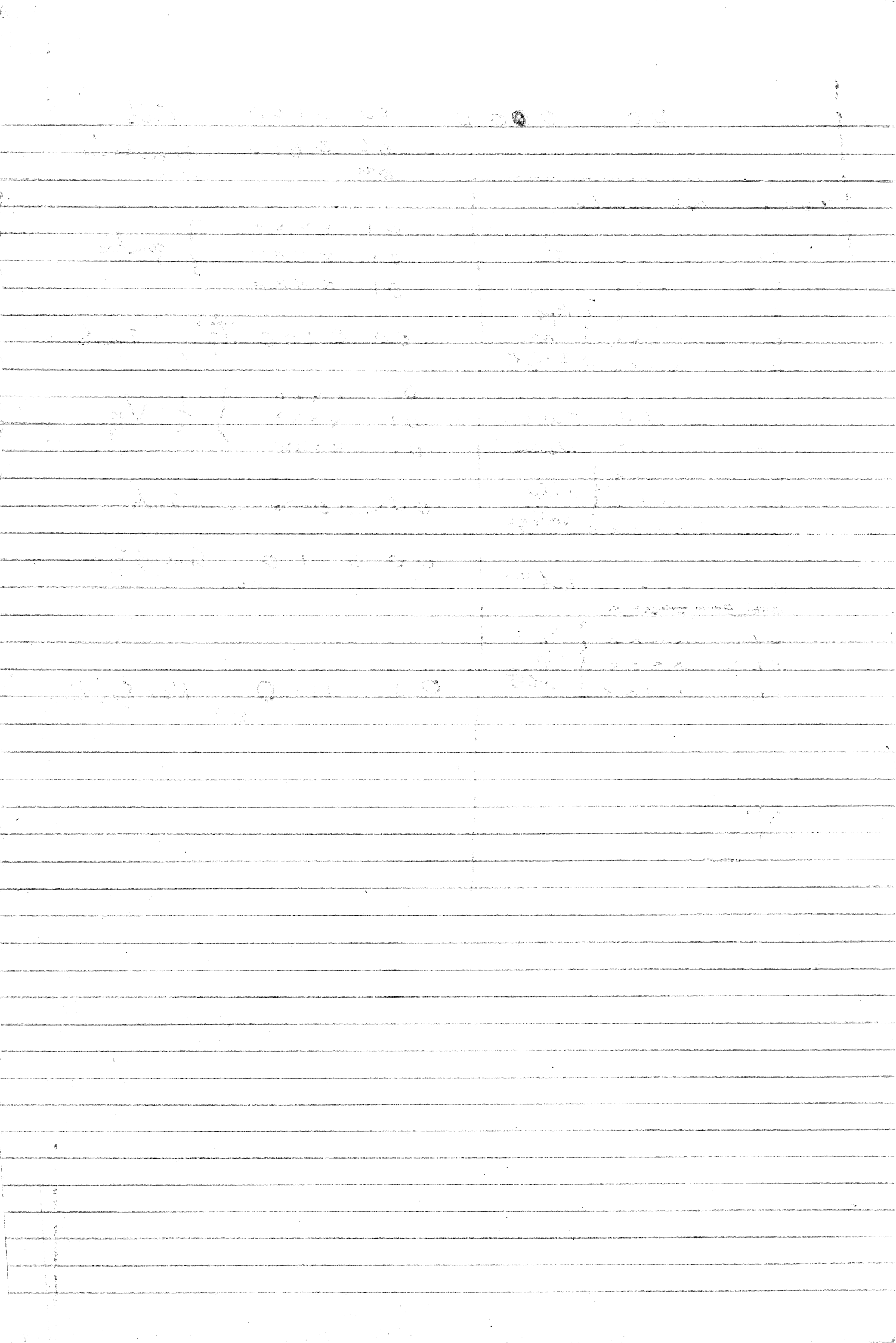


KN27



$$\begin{aligned}
 5'' &= 35 \\
 8 &= 35 \\
 x &= 35 \times 5 \\
 &= 350 \times 5 \\
 &= 1750
 \end{aligned}$$

$$\begin{aligned}
 1.5'' &\Rightarrow 1 \\
 &\Rightarrow 35 \\
 x &= 350 \\
 x &= 625
 \end{aligned}$$



00 0000

00 0100

Tab

00 0010

Newline

on

002

To enter tape number

00 0100 ⁰⁰⁴ Tab

00 0001 ⁰⁰¹

01 xxxx } tape
01 xxxx } no.
01 xxxx } 3 digits.

00 0100 Tab ⁰⁰⁴

00 0010 Newline ⁰⁰²

01 xxxx } pulse
01 xxxx } voltage
01 xxxx }

00 0100 Tab ⁰⁰⁴

~~00 0000~~
01 xxxx } 1/2
01 xxxx } tip
01 xxxx } volts.

01 xxxx

01 xxxx

01 xxxx

} pulse

00 0100 ^{autom stop}

Tab ⁰⁰⁴

01 xxxx

01 xxxx

01 xxxx

} 1/2 V tip

00 0000 Tab

00 0110 End of tape
⁰⁰⁶

01 1110 New Spectrum
⁴⁶⁸

Decimal / Octal Conversion Chart

10	8	10	8	10	8
1	1	41	51	81	121
2	2	42	52	82	122
3	3	43	53	83	123
4	4	44	54	84	124
5	5	45	55	85	125
6	6	46	56	86	126
7	7	47	57	87	127
8	<u>10</u>	48	<u>60</u>	88	<u>130</u>
9	11	49	61	89	131
<u>10</u>	12	<u>50</u>	62	<u>90</u>	132
11	13	51	63	91	133
12	14	52	64	92	134
13	15	53	65	93	135
14	16	54	66	94	136
15	17	55	67	95	137
16	<u>20</u>	56	<u>70</u>	96	<u>140</u>
17	21	57	71	97	141
18	22	58	72	98	142
19	23	59	73	99	143
<u>20</u>	24	<u>60</u>	74	<u>100</u>	144
21	25	61	75	101	145
22	26	62	76	102	146
23	27	63	77	103	147
24	<u>30</u>	64	<u>80</u>	104	<u>150</u>
25	31	65	81	105	151
26	32	66	82	106	152
27	33	67	83	107	153
28	34	68	84	108	154
29	35	69	85	109	155
<u>30</u>	36	<u>70</u>	86	<u>110</u>	156
31	37	71	87	111	157
32	<u>40</u>	72	<u>90</u>	112	<u>160</u>
33	41	73	91	113	161
34	42	74	92	114	162
35	43	75	93	115	163
36	44	76	94	116	164
37	45	77	95	117	165
38	46	78	96	118	166
39	47	79	97	119	167
<u>40</u>	<u>50</u>	<u>80</u>	<u>100</u>	<u>120</u>	<u>170</u>

101	101	101	101	101	101
102	102	102	102	102	102
103	103	103	103	103	103
104	104	104	104	104	104
105	105	105	105	105	105
106	106	106	106	106	106
107	107	107	107	107	107
108	108	108	108	108	108
109	109	109	109	109	109
110	110	110	110	110	110
111	111	111	111	111	111
112	112	112	112	112	112
113	113	113	113	113	113
114	114	114	114	114	114
115	115	115	115	115	115
116	116	116	116	116	116
117	117	117	117	117	117
118	118	118	118	118	118
119	119	119	119	119	119
120	120	120	120	120	120
121	121	121	121	121	121
122	122	122	122	122	122
123	123	123	123	123	123
124	124	124	124	124	124
125	125	125	125	125	125
126	126	126	126	126	126
127	127	127	127	127	127
128	128	128	128	128	128
129	129	129	129	129	129
130	130	130	130	130	130
131	131	131	131	131	131
132	132	132	132	132	132
133	133	133	133	133	133
134	134	134	134	134	134
135	135	135	135	135	135
136	136	136	136	136	136
137	137	137	137	137	137
138	138	138	138	138	138
139	139	139	139	139	139
140	140	140	140	140	140
141	141	141	141	141	141
142	142	142	142	142	142
143	143	143	143	143	143
144	144	144	144	144	144
145	145	145	145	145	145
146	146	146	146	146	146
147	147	147	147	147	147
148	148	148	148	148	148
149	149	149	149	149	149
150	150	150	150	150	150