

Legend for gun dark current measurements
from November 1998 to April 2001

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Contents

1	1998	2
1.1	November '98	2
1.2	December '98	2
2	1999	4
2.1	January '99	4
2.2	February '99	4
2.3	March '99	4
2.4	July '99	5
2.5	August '99	5
2.6	September '99	5
2.7	October '99	6
2.8	November '99	6
2.9	December '99	7
3	2000	8
3.1	January '00	8
3.2	February '00	9
3.3	March '00	11
3.4	April '00	14
3.5	June '00	17
3.6	July '00	18
3.7	August '00	19
3.8	September '00	22
3.9	October '00	23
3.10	November '00	24
3.11	December '00	26
4	2001	27
4.1	January '01	27
4.2	February '01	28

Chapter 1

1998

1.1 November '98

Nov. 26 around 18 h.

- Insert Mo cathode not polished.
- Start conditioning.

1.2 December '98

Dec. 11

- Mo cathode dark current measurements $26\mu\text{A}$ @ 2.3 MW. Primary solenoid to 300 A and secondary off.
- Change to Cs_2Te not polished.
- Cs_2Te dark current measurement 0.21 mA @ 1.3 MW with solenoids off.

Dec. 12

- Cs_2Te dark current measurement 1.3 mA @ 2.2 MW with solenoids on (Primary 90A, secondary 90A).

Dec. 16

- Cs_2Te dark current measurement 0.91 mA @ 2.3 MW with solenoid off.
- Cs_2Te dark current measurement 1.61 mA @ 2.3 MW with solenoids on (Primary 300A, secondary 90A).

Dec.20

- New transport system connected (serie 1).

Chapter 2

1999

2.1 January '99

Jan. 6

- Cs_2Te dark current measurement 0.77 mA @ 2.2 MW with solenoids off.
- Cs_2Te dark current measurement 0.92 mA @ 2.2 MW with solenoid on (Primary 300A and secondary 90A).

2.2 February '99

Feb. 9

- Cs_2Te dark current measurement 0.51 mA @ 2.2 MW with solenoid on (Primary 264A and secondary 86A).

Feb. 10

- Cs_2Te dark current measurement 0.33 mA @ 2.3 MW with solenoid on.

2.3 March '99

March. 11

- New Cs_2Te cathode inserted (#13). This cathode is polished.

March. 16

- Cs_2Te dark current measurement $15 \mu A$ @ 2.2 MW with solenoid on (Primary 165 A, secondary 90A).

2.4 July '99

July 22

- No visible dark current on the screen and not measurable with FC.

July 29

- Dark current $11.2 \mu A$ @1.6 MW.

July 30

- Dark current $90 \mu A$ 1.87 MW. Dark current measurement.

2.5 August '99

August 2

- Dark current $57 \mu A$ @2.2 MW.

August 4

- Dark current $77 \mu A$ @2.2 MW.

August 31

- Cathode retracted and TSPs fired.

2.6 September '99

Sept. 2

- Dark current 1.2 mA @2.2 MW.

Sept. 30

- Dark current 1.2 mA @2.2 MW.

2.7 October '99

Oct. 4

- Start couplers conditionig.

Oct. 27

- Dark current 0.4 mA @2.2 MW (19:30).
- Dark current 0.6 mA @2.2 MW (20:30).

Oct. 28

- Removed cathode
- Fired TSP in cathode chamber with cathode in.

Oct. 30

- Cathode back.

Oct. 31

- Change cathode to n. 3 (#12).

2.8 November '99

Nov. 1

- Dark current 0.15 mA @2.2 MW (15:50).
- Dark current 0.17 mA @2.2 MW (16:10).
- Stop modulator.

Nov. 2

- Restart modulator.
- Dark current 0.16 mA @2.2 MW (Primary 165A, secondary 90A).

Nov. 11

- Restart modulator.
- Dark current 0.20 mA @ 2.2 MW (15:57)(Primary 180A, secondary 93A).
- Dark current 0.29 mA @ 2.2 MW (18:35).

- Dark current 0.31 mA @ 2.2 MW (21:02).

Nov. 12

- Restart modulator (18:00).
- Dark current 0.16 mA @ 2.2 MW (18:05).
- Dark current 0.31 mA @ 2.2 MW (18:50).

Nov. 15

- New transport system connected to the gun (serie 2).

2.9 December '99

Dec. 21

- Retracted cathode and TSPs fired.

Dec. 26

- TSPs fired.

Dec. 30

- TSPs fired.

Chapter 3

2000

3.1 January '00

Jan. 4

- Cathode back in place.
- Dark current not measurable.

Jan. 5

- Dark current 0.1 mA @ 2.2 MW (Primary 200A, secondary off).

Jan. 8

- Dark current 60 μ A.

Jan. 17

- Dark current 70 μ A .

Jan. 28

- Dark current 0.12 mA.

Jan. 29

- Problem to restart gun after reflected power event. A bright spot appears on a picture from inside of the gun.

Jan. 31

- Removed cathode (15:05).

- Fired TSPs and cathode back (17:00). No improvement.
- Change cathode. New cathode in the gun (# 22).

3.2 February '00

Feb. 2

- Put cathode back to transport chamber and put #12 in the gun.
- Disconnected transport chamber and connected chamber with Mo cathodes.

Feb. 4

- TSPs fired.
- Removed cathode # 12 and put Mo cathode not polished.
- Removed transport chamber and put back chamber with serie 2.
- Start conditioning.
- Very high dark current 9 mA @ 2.7 MW.
- Vacuum event and pressure raising up to 10^{-7} mbar.

Feb. 5

- Fired TSPs (11:26) 3 times.
- Find leak on viewport at gun 10 way cross.
- Venting of the gun and replacing of the leaking window.
- Start pumping (15:00).

Feb. 6

- Fired TSPs 3 times.
- Restart gun (12:45).
- Dark current $60 \mu\text{A}$ @ 2.27 MW (13:50).
- Dark current $100 \mu\text{A}$ @ 2.27 MW (15:04).

Feb. 7

- Fired TSPs 2 times.
- Dark current $163 \mu\text{A}$ @ 2.35 MW.

Feb. 8

- Fired TSPs 3 times.
- Dark current $165\ \mu\text{A}$ @ 2.38 MW.
- Dark current $143\ \mu\text{A}$ @ 2.45 MW.

Feb. 9

- Dark current $0.32\ \text{mA}$ @ 2.7 MW.
- Dark current $0.29\ \text{mA}$ @ 2.8 MW.

Feb. 10

- Dark current $0.28\ \text{mA}$ @ 2.8 MW.

Feb. 11

- Fired TSPs (9:00) 3 times.
- Removed Mo cathode.
- Inserted cathode # 22 in the gun.
- Dark current $190\ \mu\text{A}$ @ 2.4 MW (morning).

Feb. 16

- Dark current $284\ \mu\text{A}$ @ 2.4 MW (07:30).
- Dark current $290\ \mu\text{A}$ @ 2.4 MW (14:43).

Feb. 17

- Dark current $284\ \mu\text{A}$ @ 2.4 MW (07:30).
- Removed cathode #22.
- Fired TSPs 5 times.
- Put back cathode.
- Dark current $54\ \mu\text{A}$ @ 2.4 MW (18:03).
- Dark current $222\ \mu\text{A}$ @ 2.4 MW (22:00).

Feb. 18

- Dark current $240\ \mu\text{A}$ @ 2.4 MW (06:00).
- Removed cathode #22.

- Put in the gun cathode #23.
- Dark current $37.4 \mu\text{A}$ @ 2.4 MW.

Feb. 19

- Dark current $46 \mu\text{A}$ @ 2.4 MW.

Feb. 20

- Dark current $60 \mu\text{A}$ @ 2.4 MW.

Feb. 21

- Dark current $44 \mu\text{A}$ @ 2.4 MW.

Feb. 24

- Dark current $37.4 \mu\text{A}$ @ 2.4 MW.

Feb. 28

- Observed orbit jumps.
- Dark current $120 \mu\text{A}$ @ 2.4 MW.

3.3 March '00

Mar. 2

- Dark current $170 \mu\text{A}$ @ 2.4 MW.

Mar. 7

- Dark current $210 \mu\text{A}$ @ 2.4 MW.
- Removed cathode #23 from the gun (16:55).
- Cathode back to the gun (18:05).
- Dark current $235 \mu\text{A}$ @ 2.4 MW.
- Removed cathode for all the night.

Mar. 8

- Cathode moved back in the gun (9:15).
- Dark current $96.8 \mu\text{A}$ @ 2.4 MW (09:28).

- Dark current $90.2 \mu\text{A}$ @ 2.4 MW (10:57).
- Dark current $100 \mu\text{A}$ @ 2.4 MW (13:45).
- Beam jumps back (? 15:00).

Mar. 9

- Dark current $250 \mu\text{A}$ @ 2.4 MW (00:34).
- Cathode removed.
- Pumping over night.
- Cathode back (9:15).
- Dark current $115 \mu\text{A}$ @ 2.4 MW (9:40).
- Beam jumps back (around 14:00).
- Dark current $280 \mu\text{A}$ @ 2.4 MW (14:40).
- Dark current $300 \mu\text{A}$ @ 2.6 MW (22:00).
- Removed cathode #23 from the gun and prepared to insert #22.

Mar. 10

- Cathode #22 inserted (12:00).
- Dark current $100 \mu\text{A}$ @ 2.6 MW.
- Beam jumps (19:18).
- Dark current $460 \mu\text{A}$ @ 2.4 MW (19:39).

Mar. 11

- Dark current $660 \mu\text{A}$ @ 2.6 MW (00:20).
- Dark current $730 \mu\text{A}$ @ 2.6 MW (03:30).
- Dark current $770 \mu\text{A}$ @ 2.6 MW (06:55).
- Dark current $740 \mu\text{A}$ @ 2.6 MW (07:15).
- Beam jumps every 6 minutes.
- Dark current vs. gradient. Dark current $612 \mu\text{A}$ @ 2.2 MW.
- Dark current pictures.
- Cathode #22 out again (13:35).
- Cathode #21 inserted (17:30).
- Dark current vs. gradient. Dark current $152 \mu\text{A}$ @ 2.3 MW.

Mar. 12

- No beam jumps (03:35).
- Dark current $200\ \mu\text{A}$ @ 2.6 MW (05:29).
- Kly 3 broken. No beam!!
- Dark current $40\ \mu\text{A}$ @ 1.6 MW (21:30).

Mar. 13

- Dark current vs. gradient. Dark current $134\ \mu\text{A}$ @ 2.3 MW.
- Dark current $205\ \mu\text{A}$ @ 2.5 MW.
- Due to power cut in Halle 3, cathode removed (20:00).

Mar. 15

- Cathode back (11:00).
- Dark current vs. gradient. Dark current $29\ \mu\text{A}$ @ 2.2 MW (14:55).
- Dark current $150\ \mu\text{A}$ @ 2.5 MW (20:25).

Mar. 16

- Dark current $190\ \mu\text{A}$ @ 2.5 MW (7:30).
- Dark current $170\ \mu\text{A}$ @ 2.5 MW (9:00).

Mar. 17

- Dark current $141\ \mu\text{A}$ @ 2.5 MW (9:30).
- Beam jumps observed.
- Dark current $143\ \mu\text{A}$ @ 2.5 MW (12:45).
- Dark current $130\ \mu\text{A}$ @ 2.5 MW (15:45).
- Dark current $147\ \mu\text{A}$ @ 2.5 MW (21:08).
- Beam jump after 4 hours of stable beam.

Mar. 18

- Dark current $150\ \mu\text{A}$ @ 2.5 MW (morning).
- Dark current $134\ \mu\text{A}$ @ 2.5 MW (evening).

Mar. 19

- Dark current 152 μA @ 2.5 MW (morning).

Mar. 21

- Removed cathode.
- Gun vented, mirrors replaced, pumping.

Mar. 22

- Mo cathode inserted (14:45).
- Gun conditioning up to 40 MV/m (3.0 MW).

Mar. 23

- Fired TSPs.
- Cathode #21 in.
- Gun conditioning.
- Reached working point. Dark current 48 μA @ 2.5 MW (17:30).

Mar. 24

- Dark current 50 μA @ 2.3 MW (09:55).

Mar. 24

- Dark current 25 μA @ 2.3 MW (07:40).

Mar. 28

- Dark current 35 μA @ 2.4 MW (07:40).

Mar. 29

- Dark current 22 μA @ 2.4 MW (07:40).

3.4 April '00

Apr. 2

- Dark current 50 μA @ 2.4 MW (07:31).
- Dark current 66 μA @ 2.4 MW (evening).

Apr. 5

- Dark current 103 μA @ 2.4 MW (07:08).
- Dark current 110 μA @ 2.4 MW (13:49).
- Dark current 154 μA @ 2.4 MW (23:00).

Apr. 6

- Dark current measurements. Dark current 194 μA @ 2.4 MW (morning).

Apr. 7

- Dark current 430 μA @ 2.4 MW (15:52).
- Dark current 560 μA @ 2.4 MW (20:30).

Apr. 8

- Dark current 1.17 mA @ 2.4 MW (01:17).
- Dark current 0.8 mA @ 2.4 MW (07:00) after 20 minutes of gun stop.
- Dark current 1.85 mA @ 2.4 MW (18:39).
- Gun vacuum event. Valves had been closed.
- Dark current 0.97 mA @ 2.4 MW (23:30).

Apr. 9

- Dark current 2.332 mA @ 2.4 MW (05:37).
- Dark current 6.2 mA @ 2.4 MW (21:11).
- Dark current measurements. Dark current 14.2 mA @ 2.4 MW (?????).
- Pump over night.

Apr. 10

- Dark current measurements. Dark current 97 μA @ 2.4 MW (10:44).
- Dark current 1.98 mA @ 2.4 MW (morning).
- Dark current measurements. Dark current 5.85 mA @ 2.4 MW (16:00).
- Cathode #21 removed.

- Cathode #23 inserted.
- Dark current measurements. Dark current $80\mu\text{A}$ @ 2.4 MW (17:57).

Apr. 11

- Dark current $740\mu\text{A}$ @ 2.4 MW (02:15).
- Dark current $640\mu\text{A}$ @ 2.4 MW (08:05).
- Dark current $550\mu\text{A}$ @ 2.4 MW (15:45).
- cathode #23 out.
- Cathode #22 inserted (17:30).
- dark current measurements. Dark current $220\mu\text{A}$ @ 2.4 MW (17:40).

Apr. 12

- Dark current 1.5 mA @ 2.4 MW (07:00).
- Cathode #22 removed and #23 inserted.
- Cathode chamber serie 3 installed.
- Gun restarted. Dark current $88\mu\text{A}$ @ 2.4 MW (12:00).
- Readjusted laser path to the cathode.
- Dark current $132\mu\text{A}$ @ 2.4 MW (17:45).

Apr. 13

- Dark current $240\mu\text{A}$ @ 2.4 MW (13:45).
- Dark current $190\mu\text{A}$ @ 2.4 MW (21:00).

Apr. 14

- Dark current $230\mu\text{A}$ @ 2.4 MW (07:32).

Apr. 15

- Dark current $374\mu\text{A}$ @ 2.4 MW (06:07).

Apr. 16

- Dark current $341\mu\text{A}$ @ 2.4 MW (16:00).
- Dark current $380\mu\text{A}$ @ 2.4 MW (23:00).

Apr. 18

- Dark current 634 μA @ 2.4 MW (07:09).
- Stop beam operation for roughly 6 hours.
- Dark current 430 μA @ 2.4 MW (14:35).
- Dark current 710 μA @ 2.4 MW (23:50).

Apr. 19

- Dark current 970 μA @ 2.4 MW (04:45).
- Stop beam operation at 5 o'clock.
- Dark current 1.13 mA @ 2.4 MW (07:19).
- Dark current 1.04 mA @ 2.4 MW (07:20).
- Dark current measurements. Dark current 900 μA @ 2.4 MW (08:30).
- Cathode #23 retracted and TSPs fired (8:55).
- Cathodes exchanged. Taken #33 (10:00).
- Cathode closed to the gun.
- Cathode #33 inserted (12:00).
- Dark current 94 μA @ 2.4 MW (12:15).

Apr. 20

- Dark current 92 μA @ 2.4 MW (10:30).
- Dark current 92.4 μA @ 2.4 MW (15:30).

Apr. 25

- Dark current 53 μA @ 2.4 MW (08:30).
- Dark current 68 μA @ 2.4 MW (23:15)

Apr. 27

- Dark current 82 μA @ 2.4 MW (03:56).
- SHUT DOWN.

3.5 June '00

June 21

- Inserted Mo cathode for gun conditioning.

3.6 July '00

July 14

- Inserted cathode #33 but tuned (14:00).
- Gun tuned with cathode #33 (16:30).

July 16

- Dark current $90\ \mu\text{A}$ @ 2.2 MW.

July 17

- Dark current $86\ \mu\text{A}$ @ 2.2 MW (06:45).
- Dark current $70\ \mu\text{A}$ @ 2.2 MW (20:00).

July 18

- Dark current $77\ \mu\text{A}$ @ 2.2 MW (22:00).

July 19

- Dark current $71\ \mu\text{A}$ @ 2.2 MW (05:17).

July 20

- Dark current $80\ \mu\text{A}$ @ 2.2 MW (21:00).

July 23

- Dark current $600\ \mu\text{A}$ @ 2.2 MW (03:00).
- Dark current $300\ \mu\text{A}$ @ 2.2 MW (07:30).
- Dark current $530\ \mu\text{A}$ @ 2.2 MW (14:15).
- Dark current $610\ \mu\text{A}$ @ 2.2 MW (22:30).

July 24

- Dark current $550\ \mu\text{A}$ @ 2.2 MW (00:50).
- Dark current $1.17\ \text{mA}$ @ 2.2 MW (10:30).
- Rotated cathode a little. Dark current $0.58\ \text{mA}$ @ 2.2 MW (10:40).
- Rotated cathode again a little. Dark current $0.39\ \text{mA}$ @ 2.2 MW (10:50).

- Rotated cathode again a little. Dark current 0.48 mA @ 2.2 MW (11:00).
- Cathode #33 out and #36 in (12:00).
- Cathode transport chamber exchanged.
- Dark current 80 μ A @ 2.2 MW (22:50).

July 25

- Dark current 50 μ A @ 2.2 MW (05:20).
- Dark current 31 μ A @ 1.8 MW (14:08).
- Dark current measurement. Dark current 108 μ A @ 2.2 MW (14:18).
- Dark current 80 μ A @ 2.2 MW (23:08).

July 28

- Dark current 50 μ A @ 2.2 MW (19:11).

July 29

- Dark current 44 μ A @ 2.2 MW (10:11).

July 30

- Dark current 100 μ A @ 2.2 MW (10:11).

July 31

- Dark current 60 μ A @ 2.2 MW (19:22).

3.7 August '00

Aug. 1

- Dark current 60 μ A @ 2.2 MW (00:22).

Aug. 2

- Dark current 70 μ A @ 2.2 MW (21:35).

Aug. 3

- Dark current 50 μ A @ 2.2 MW (17:48).

Aug. 4

- Vacuum event. Pressure burst in 2INJ1. Valves closed (06:15).
- Gun trips (CH. 23) and vacuum rise at 2INJ1.
- Dark current $110\ \mu\text{A}$ @ 2.2 MW (15:59). Still vacuum activity at the gun.

Aug. 5

- Vacuum event. Pressure burst in 2INJ1. Gun vacuum interlock (04:15).

Aug. 6

- Dark current $105\ \mu\text{A}$ @ 2.2 MW (09:27).
- Vacuum event. Pressure burst in 2INJ1. Valves closed (23:39).

Aug. 7

- Valves opened (00:15).
- Dark current $110\ \mu\text{A}$ @ 2.2 MW (09:26).

Aug. 8

- Cathode transport chamber is leaking. Pressure 10^{-7} .
- Vacuum event. Pressure burst in 2INJ1. Valves closed (21:32).
- Valves opened (21:50).
- Vacuum event. Pressure burst in 2INJ1. Valves closed (22:16).
- Dark current $90.2\ \mu\text{A}$ @ 2.2 MW (22:56).

Aug. 9

- Vacuum event. Pressure burst in 2INJ1. Valves closed (12:00).
- Vacuum event. Pressure burst in 2INJ1. Valves closed (14:15).
- Vacuum event. Pressure burst in 2INJ1. Valves closed (14:40).
- Gun rf pulse shortened to $150\ \mu\text{s}$.
- Vacuum event. Pressure burst in 2INJ1. Valves closed (16:00).

Aug. 10

- Vacuum event. Pressure burst in 2INJ1. Valves closed (09:00).

- Vacuum event. Pressure burst in 2INJ1. Valves closed (11:40).
- Vacuum event. Pressure burst in 2INJ1. Valves closed (11:50).
- Dark current $134\ \mu\text{A}$ @ 2.2 MW (14:45).

Aug. 11

- Cathode transport chamber exchanged. Found leak at the small viewport of the old chamber.
- Cathode removed and TSPs fired (11:20).
- Cathode back (13:30).

Aug. 15

- Dark current $66\ \mu\text{A}$ @ 2.2 MW (18:29).
- Dark current $70\ \mu\text{A}$ @ 2.2 MW (23:06).

Aug. 16

- Dark current $84\ \mu\text{A}$ @ 2.2 MW (16:10).

Aug. 17

- Dark current $116\ \mu\text{A}$ @ 2.2 MW (07:30).
- Dark current $86\ \mu\text{A}$ @ 2.2 MW (23:48).

Aug. 18

- Dark current $81\ \mu\text{A}$ @ 2.2 MW (07:30).
- Dark current $106\ \mu\text{A}$ @ 2.2 MW (21:21).

Aug. 19

- Dark current $127\ \mu\text{A}$ @ 2.2 MW (15:20).

Aug. 20

- Dark current $100\ \mu\text{A}$ @ 2.2 MW (05:40).
- Dark current $105\ \mu\text{A}$ @ 2.2 MW (16:35).

Aug. 21

- Dark current $135\ \mu\text{A}$ @ 2.2 MW (22:15).

Aug. 22

- Gun rf pulse shortened to 155 μs from 185 μs .

Aug. 23

- Dark current 145 μA @ 2.2 MW (23:15).

Aug. 24

- Dark current 308 μA @ 2.2 MW (08:18).
- Dark current 312 μA @ 2.2 MW (15:18).
- Dark current 205 μA @ 2.2 MW (23:38).

Aug. 25

- Dark current 147 μA @ 2.2 MW (12:37).
- Cathode can not be inserted in the gun. It stops 5 mm before complete insertion. The gun has to be opened. The gun position has been surveyed.

Aug. 30

- Gun opened. The cathode can not be inserted in the spring also by hand. The flange has been modified (reduced nose length) and the gun closed again.

3.8 September '00

Sept. 3

- Gun restarted with conditioning.

Sept. 5

- TSPs fired (18:05)

Sept. 6

- Inserted old cathode #36 (01:00).
- Dark current 180 μA @ 2.2 MW (04:40).

Sept. 7

- Inserted Mo cathode for conditioning.

- Inserted Cs₂Te cathode #36 (18:45).

Sept. 8

- Dark current 650 μ A @ 2.2 MW (01:20).
- Dark current 300 μ A @ 2.2 MW (03:35).

Sept. 9

- Dark current 248 μ A @ 2.2 MW (13:46).

Sept. 11

- Dark current 200 μ A @ 2.2 MW (12:46).
- Dark current 200 μ A @ 2.2 MW (23:12).

Sept. 13

- Dark current 202 μ A @ 2.2 MW (06:11).

Sept. 16

- Dark current 260 μ A @ 2.2 MW (13:54).

Sept. 20

- Dark current 268 μ A @ 2.2 MW (11:23).

Sept. 21

- Cathode #36 out, Mo cathode in (16:30). Start gun conditioning.

Sept. 28

- Due to increase in pressure in transport chamber, the carrier with the cathodes has been moved in the main chamber after moving Mo cathode out from the gun.

Sept. 29

- CF16 viewport at transport chamber is leaking. Mo cathode removed from gun. Cathodes moved in the main chamber. CF16 replaced with a blank flange.

3.9 October '00

Oct. 2

- Mo cathode put back in the gun. Restart gun processing.

Oct. 27

- Mo cathode removed. The Cs₂Te cathode can not be inserted. Round spring change with oval one.

3.10 November '00

Nov. 1

- Mo cathode put back in the gun. Restart gun processing. Field not balanced in half and full cell.

Nov. 2

- Mo cathode out. Cs₂Te cathode #36 in.
- Dark current 210 μA @ 2.2 MW(??) (11:23).
- Dark current 180 μA @ 1.7 MW(35 MV/m) (18:50).
- Dark current 283 μA @ ?? MW(37 MV/m) (19:00).
- Dark current measurement.

Nov. 3

- Vacuum spikes in the gun.
- Dark current 48 μA @ ?? MW(?? MV/m) (12:50).

Nov. 4

- Dark current 53 μA @ ?? MW(?? MV/m) (06:49).
- Dark current 50 μA @ ?? MW(35 MV/m) (06:49).

Nov. 5

- Dark current 106 μA @ ?? MW(37.15 MV/m) (12:50).

Nov. 9

- Dark current 75 μA @ 1.8 MW(34.72 MV/m) (12:50).

Nov. 10

- Dark current $62\ \mu\text{A}$ @ 1.8 MW(34.9 MV/m) (12:50).

Nov. 12

- It has been found that the cathode is not inserted completely in the gun.
- Dark current $22\ \mu\text{A}$ @ 1.7 MW(35.3 MV/m) (17:10).

Nov. 14

- Dark current $60\ \mu\text{A}$ @ 1.8 MW(35 MV/m) (07:39).

Nov. 16

- Dark current $70\ \mu\text{A}$ @ 1.8 MW(35 MV/m) (07:19).
- Huntington manipulator is roughly 3 mm out from position for complete cathode insertion.

Nov. 17

- Start inspection of the spring area. The cathode can hardly be inserted by hand. The oval spring is removed. Round spring and old flange without nose are installed.
- Start pump down.

Nov. 20

- Huntington X-ray.
- Mo cathode inserted in the gun. Start conditioning.
- TSPs fired.
- Mo dark current $90\ \mu\text{A}$ @ 1.9 MW (18:23).
- Mo dark current $110\ \mu\text{A}$ @ 2.0 MW (22:53).

Nov. 21

- Mo dark current $106\ \mu\text{A}$ @ 2.0 MW (11:17).
- Mo cathode back (16:20).
- Cs_2Te cathode (#36) back in the gun (18:00).
- Dark current $66\ \mu\text{A}$ @ 1.9 MW (21:19).

Nov. 22

- Dark current 120 μA @ 1.9 MW (06:43).

Nov. 26

- Dark current 110 μA @ 2.2 MW (20:00).
- Dark current measurement.

Nov. 30

- Dark current 220 μA @ 1.9 MW (12:56).
- Dark current 216 μA @ 2.0 MW (15:54).

3.11 December '00

Dec. 1

- Dark current 233 μA @ 1.9 MW (10:56).

Dec. 2

- Dark current 185 μA @ 1.9 MW (10:56).

Dec. 7

- Gun vacuum event. Valves closed.

Dec. 9

- Gun vacuum events while moving solenoids.

Dec. 10

- Dark current 84 μA @ 2.0 MW (17:32).

Dec. 15

- Dark current 110 μA @ 2.0 MW (07:38).

Dec. 17

- Dark current 205 μA @ 1.9 MW (19:56).
- Dark current measurement.

Dec. 19

- Dark current $340\ \mu\text{A}$ @ ?? MW (20:08).

Dec. 21

- Dark current $185\ \mu\text{A}$ @ ?? MW (07:58).

Chapter 4

2001

4.1 January '01

Jan. 5

- Dark current $295 \mu\text{A}$ @ 2.3 MW (11:00).

Jan. 7

- Dark current $500 \mu\text{A}$ @ 2.3 MW (11:00). Different solenoids settings.

Jan. 8

- Dark current $170 \mu\text{A}$ @ 2.3 MW (08:35).

Jan. 9

- Dark current $128 \mu\text{A}$ @ 2.3 MW (10:48).

Jan. 11

- Dark current $150 \mu\text{A}$ @ 2.3 MW (09:09).

Jan. 12

- Dark current $145 \mu\text{A}$ @ 2.37 MW (08:03).

Jan. 15

- Dark current $130 \mu\text{A}$ @ 2.3 MW (07:02).

Jan. 21

- Dark current 160 μA @ 2.3 MW (03:13).

Jan. 25

- Dark current 178 μA @ 2.3 MW (23:59).

Jan. 27

- Dark current 140 μA @ 2.2 MW (08:13).

4.2 February '01

Feb. 3

- Gun vacuum event (07:50).

Feb. 5

- Dark current 150 μA @ 2.1 MW (04:13).

Feb. 8

- Dark current 230 μA @ 2.2 MW (08:41).

Feb. 9

- Dark current 265 μA @ 2.1 MW (08:13).
- Dark current measurement.

Feb. 10

- Dark current 400 μA @ 2.2 MW (08:13).

Feb. 11

- Dark current 300 μA @ 2.2 MW (14:30).
- Dark current 300 μA @ 2.2 MW (15:37).

Feb. 12

- Removed Cs_2Te #36.
- Fired TSPs.
- Insterted KCsTe #50.
- Dark current 90 μA @ 2.2 MW (16:55). Very high QE.

Feb. 13

- Dark current $30\ \mu\text{A}$ @ 2.2 MW (07:57).

Feb. 21

- Dark current $48\ \mu\text{A}$ @ 2.2 MW (08:15).

Feb. 28

- Dark current $28\ \mu\text{A}$ @ 2.2 MW (08:08).

4.3 March '01

Mar. 5

- Gun studies. Increased gradient up to 43 MV/m.

Mar. 22

- Gun studies.
- Dark current $20\ \mu\text{A}$ @ 2.2 MW (09:53).