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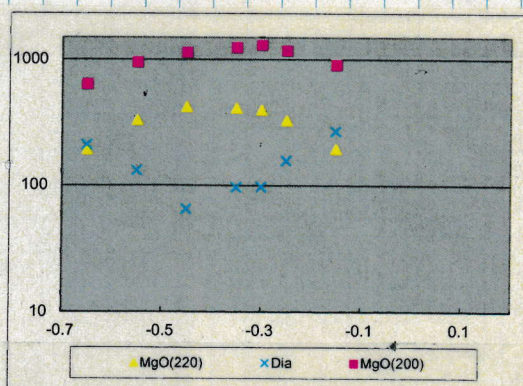
M1991 T. Ishii, T. Kawazoe, W. Lin, T. Katsura, Z. Liu

14:00 Put cell



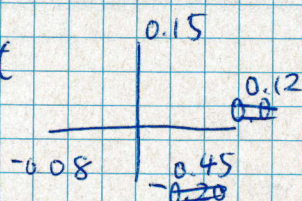
14:25 X scan

X	MgO(200)	Dia	MgO(220)
-0.25	1189	158	332
-0.35	1256	97	413
-0.45	1147	65	423
-0.55	955	131	331
-0.65	638	210	193
-0.75	319	260	95
-0.15	918	271	197
-0.3	1321	98	401

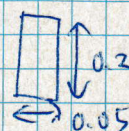


X = -0.3

TC slit



Incident slit



記入者

確認者

日付

年

月

日

14:30 M1991001 MgO, 0 MN, RT, $K=0^\circ$

$2\theta = \cancel{7.98440} 7.98227$, MgO (111) (200) (220) (311) (222)
(400) (222) (420) (422)

$$P = 0.004651 \pm 0.02256 \text{ GPa}$$

$$V = 74.777955 \pm 0.010953 \text{ \AA}^3$$

$$V/V_0 = 0.999998 \pm 0.000146$$

$$2\theta = \cancel{7.98532} 7.9869$$

Lattice Caluculate

PeakData	UsePeak	Peak(Ch)	Peak(keV)	D(Obs)	D(Cal)	D(R)	DDet(Initial)	Miller Indi	Use	FitTyp	2Theta
1		1193.1292	96.6017	2.4333	2.4324	0.0004	0.0010	(1 1 1)	<input checked="" type="checkbox"/>	A	7.9880
2		1921.2427	42.2607	2.1075	2.1065	0.0005	0.0010	(2 0 0)	<input checked="" type="checkbox"/>	M	7.9880
3		1903.5928	58.7765	1.4900	1.4895	0.0003	0.0004	(2 2 0)	<input checked="" type="checkbox"/>	A	7.9883
4		2247.5050	70.1227	1.2701	1.2703	-0.0001	-0.0001	(3 1 1)	<input checked="" type="checkbox"/>	M	7.9857
5		2285.0013	70.6498	1.2607	1.2703	-0.0076	-0.0096	(3 1 1)	<input checked="" type="checkbox"/>	M	7.9857
6		2950.2927	78.2142	1.2165	1.2162	0.0002	0.0003	(2 2 2)	<input checked="" type="checkbox"/>	A	7.9856
7		2950.3821	78.2169	1.2164	1.2162	0.0002	0.0003	(2 2 2)	<input checked="" type="checkbox"/>	M	7.9856
8		2727.6567	84.5687	1.0532	1.0532	0.0000	0.0000	(4 0 0)	<input checked="" type="checkbox"/>	M	7.9851
9		3059.6302	94.5474	0.9420	0.9421	-0.0001	-0.0001	(4 2 0)	<input checked="" type="checkbox"/>	M	7.9848
10		3359.8423	103.5754	0.8599	0.8600	-0.0001	-0.0001	(4 2 2)	<input checked="" type="checkbox"/>	M	7.9846

Initial Value

Pressure Marker ☒ Sample ☐

Crystal Data: Cubic

Sample: MgO Jamieson et al. (1982)

a: 4.213000 b: 4.213000 c: 4.213000
 α : 90.000000 β : 90.000000 γ : 90.000000

Pressure Calculation

Temperature: 27.000 $^\circ\text{C}$ 2Theta: 7.98227 deg

2Theta Calibration for Cubic Type

Expected 2Theta: 7.98227 deg

Pickup range: 0.0400 (dA)

Results

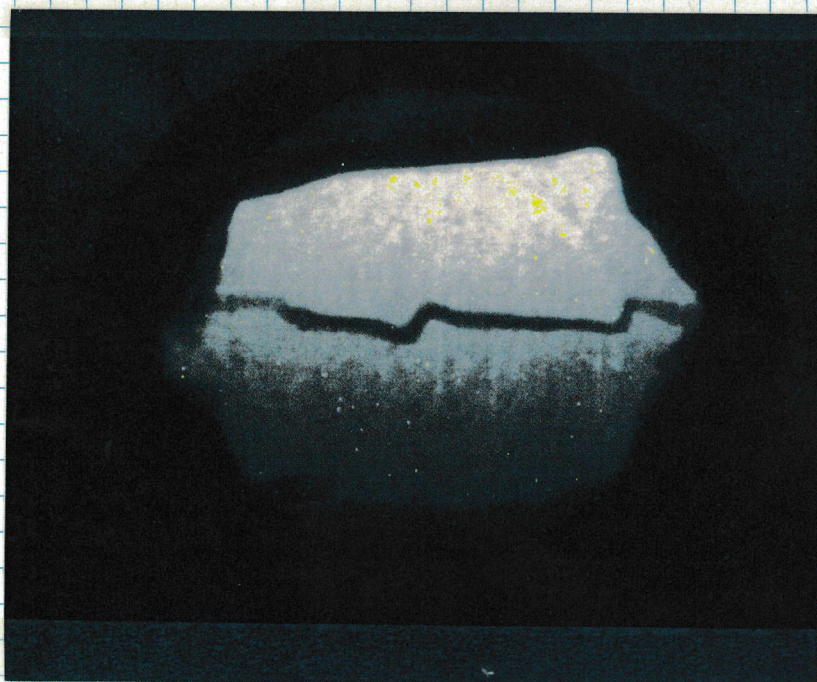
	Initial	Calculated	
a	4.213000	4.212997+0.00020	A
b	4.213000	4.212997+0.00020	A
c	4.213000	4.212997+0.00020	A
α	90.000000	90.000000	deg
β	90.000000	90.000000	deg
γ	90.000000	90.000000	deg
P	0.04651+0.02256		GPa
V	74.777955+0.010953		\AA^3
V/V ₀	999998+-000146		

M1991002

Fe-free Fo

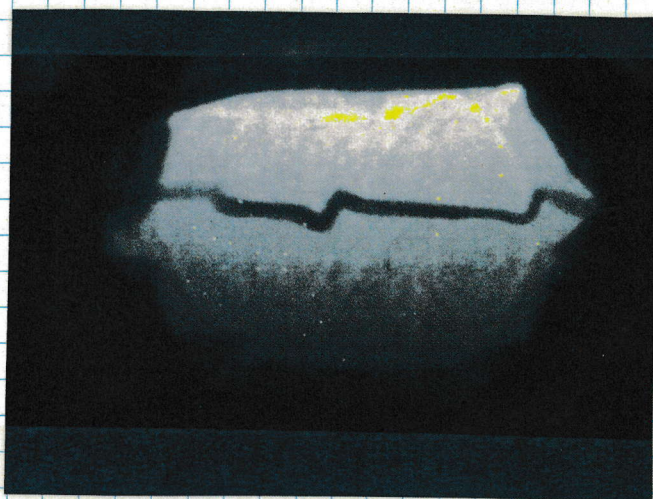
M1991003

Fe-bearing Fo



8 ton

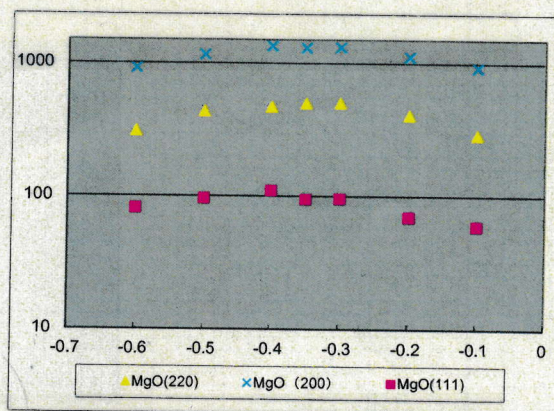
123



50 ton
[M1991004] PM, 0.5 MN

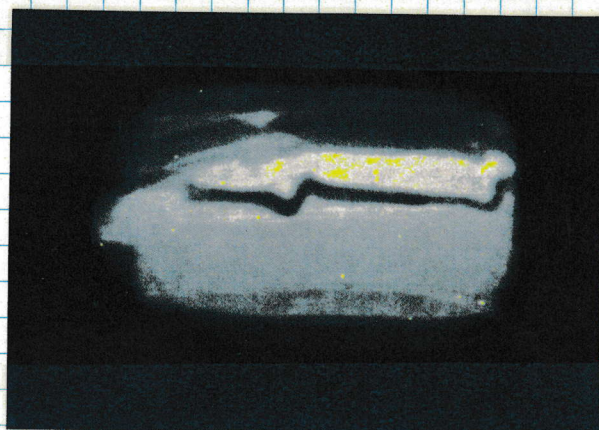
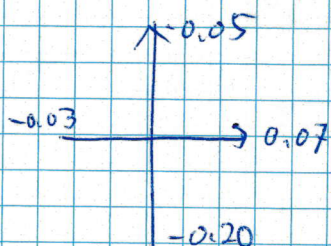
15:31 X scan at 0.5 MN

X	MgO(111)	MgO(200)	MgO(220)
-0.3	96	1303	501
-0.4	110	1330	468
-0.5	96	1143	433
-0.6	81	909	307
-0.2	70	1108	406
-0.1	60	924	290
-0.35	95	1289	500



17:38 4 MN

TC shift



M1991005 MgO 4MN.

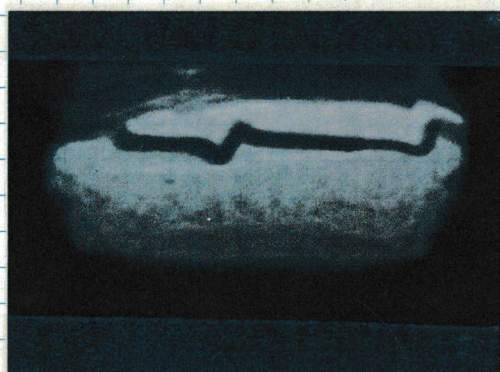
(111) (200) (220) (311) (222) (400) (420) (422)

2491 ± 0.21 GPa

$a = 4.046576$ (1109) $V = 66.26181$ (5450.1)

$V/V_0 = 0.887249$

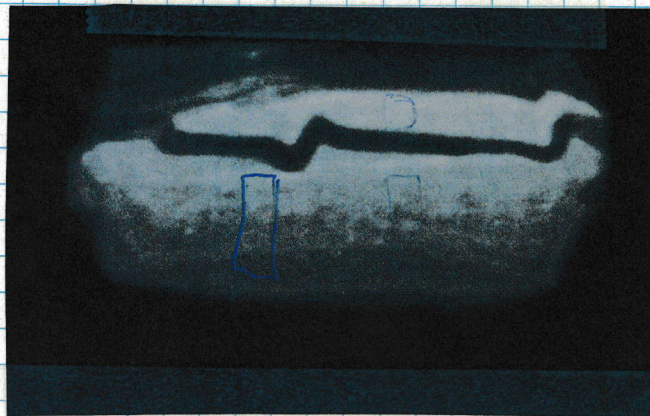
6.9 MN image M1991-700 Ton. $\kappa = 0^\circ$



8.0 MN.

Sample
Position

Image "M1991-800ton"



	F100
MgO	F070

X = -0.5

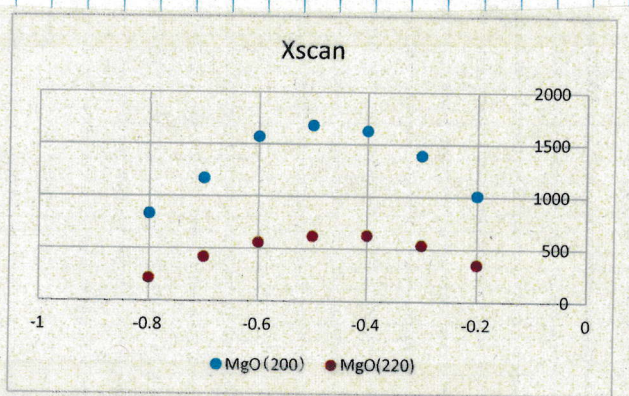
Sample Position

	Y ₂	Z	Slit Vertical	Slit horizontal
MgO	-1.10	-2.565	0.22	0.05
F070	-1.40	-2.85	0.26	0.05
F100	-1.40	-2.85 -2.764	0.08	0.05

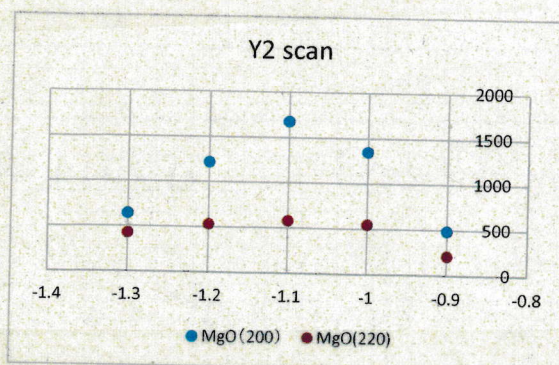
X scan

Optimized X = -0.5

X	MgO(200)	MgO(220)
-0.4	1630	630
-0.5	1680	621
-0.6	1572	561
-0.7	1170	421
-0.8	832	219
-0.3	1393	540
-0.2	1011	355



Y2	MgO(200)	MgO(220)
-1.1	1674	577
-1.2	1216	529
-1.3	639	424
-1	1348	547
-0.9	485	213



91006 MgO RT 8.0MN 9.060mm ³⁰⁰~~600~~S VS=0.22
 $X = -0.50$ $Y = -1.10$ $Z = -2.55$ $K = 0 \sim 8^\circ$
 $P = 31.43$ (0.18220)
 $V = 64.694960 \pm 0.041382$ $a = 4.014426(85)$
 $V/V_0 = 0.866269 \pm 0.000554$
 (111) (200) (220) (311) (222) (400) (420) (422)

91007 Fe70 RT 8.0MN 9.062mm 300 S VS=0.26
 $X = -0.50$ $Y = -1.40$ $Z = -2.55$ $K = 0 \sim 8^\circ$

91008 F100 RT 8.0MN 300 S VS=0.08
 $X = -0.50$ $Y = -1.40$ $Z = -2.76$ $K = 0 \sim 8^\circ$

Heating		Heating to 1100K				Transformer setting				□10
Time	Temp	V_1	I_1	R_1	P_1	V_2	I_2	R_2	P_2	Sta
20:48	27.5	0.18	0.08	23.0	0.0	0.05	2.0	25.5	0.1	9.06
20:51	128.2	21.87	8.48	25.9	185.9	0.50	84.1	5.9	42.4	9.06
20:52	226.2	28.13	10.69	26.3	300.7	0.69	105.1	6.5	72.1	9.06
20:53	328.8	32.00	11.95	26.7	383.1	0.84	117.8	7.1	99.1	9.06
20:54	430.1	34.58	12.79	27.0	442.0	0.97	125.7	7.7	121.1	9.06
20:55	535.1	36.86	13.41	27.5	494.3	1.08	131.6	8.2	141.8	9.06
20:56	631.3	38.85	13.90	27.8	541.7	1.20	137.2	8.7	164.6	9.06
20:58	729.0	40.45	14.35	28.2	580.2	1.29	141.1	9.2	182.0	9.07
20:59	830.1	41.92	14.69	28.5	616.0	1.38	144.6	9.6	199.9	9.08

M1991009 MgO 1100K 8.0MN 9.097mm 600S

$V_1 = 41.92$ $I_1 = 14.69$ $R_1 = 28.5$ $P_1 = 616.0$

$V_2 = 1.38$ $I_2 = 144.6$ $R_2 = 9.6$ $P_2 = 199.9$

$X = -0.50$ $Y = -1.10$ $Z = -2.52$ $K = 0 \sim 8^\circ$ VS:

(111) (200) (220) (311) (22) (400) (420) (422)

$p = 25.32 (0.06)$

$a = 4.07206$ $U = 67.421332 (0.016514)$
 $4.070044 (33)$

$V/V_0 = 0.902775 (221)$

10

F070

1100K 8.0MN 9.146mm 600S

 $X = -0.50$ $Y_2 = -1.40$ $Z = -2.52$ $K = 0 \sim 8^\circ$ $VS = 0.22$ $V_1 = 41.74$, $I_1 = 14.63$, $R_1 = 28.6$, $P_1 = 609.3$ $V_2 = 1.36$, $I_2 = 143.5$, $R_2 = 9.5$, $P_2 = 195.6$

91011 F0100 1100K 8.0MN 9.150 600S

 $X = -0.50$ $Y_2 = -1.40$ $Z = -2.7$ $K = 0 \sim 8^\circ$ $VS = 0.08$ $V_1 = 42.03$, $I_1 = 14.62$, $R_1 = 28.8$, $P_1 = 615.3$ $V_2 = 1.38$, $I_2 = 143.7$, $R_2 = 9.6$, $P_2 = 197.8$

91012 MgO 1100K 8.0MN 9.159 300S

 $VS = 0.22$ $X = \cancel{-0.50} -0.50$ $Y_2 = -1.10$ $Z = -2.52$ $K = 0 \sim 8^\circ$

(111) (200) (220) (311) (222) (400) (420) (420)

 $P = 24.27$ (005) $a = 4.075864$ $V = 6710965$ (14196) $V/V_0 = 0.906654$ (190) $V_1 = 42.39$, $I_1 = 14.62$, $R_1 = 29.0$, $P_1 = 619.0$ $V_2 = 1.38$, $I_2 = 143.5$, $R_2 = 9.7$, $P_2 = 198.6$

21:59

Heating to 1700K

Time	Temp(°C)	V ₁	I ₁	R ₁	P ₁	V ₂	I ₂	R ₂	P ₂	Stro
22:00	830.5	42.69	14.64	29.2	624.3	1.40	143.6	9.7	200.1	9.16
22:02	1030.5	45.68	15.33	29.8	700.7	1.60	150.8	10.6	239.6	9.16
22:03	1226.8	48.66	16.09	30.3	782.0	1.79	157.9	11.3	283.6	9.16
22:05	1425.8	51.38	16.74	30.6	860.9	1.98	164.7	12.0	325.9	9.16

~~M1991013~~ 8.00MN $\xrightarrow{40\text{min}}$ 8.50 $\xrightarrow{40\text{min}}$ 8.80 $\xrightarrow{40\text{min}}$ 9.00

M1991013 MgO 1700K 8.00MN 9.162mm 300Sec
 $X = -0.50$ $Y = -1.70$ $Z = -2.49$ $K = 0 \sim 80$ VS
 $V_1 = 51.38$ $I_1 = 16.74$ $R_1 = 30.3$ $P_1 = 782$
 $V_2 = 1.98$ $I_2 = 164.7$ $R_2 = 12.0$ $P_2 = 325.9$
 $(111) (200) (220) (311) (222) (400) (420) (422)$
 $P = 23.76645 (5148) \rightarrow 23.83(5)$
 $a = 4.101595(31)$ $V = 69.001463 (15731)$
 $V/V_0 = 0.923933 (211)$

M1991014 Fe70 1700K 8.11MN 9.195mm 300sec
 $X = -0.50$ $Y = -1.70$ $Z = -2.49$ $K = 0 \sim 80$ VS
 $V_1 = 51.73$ $I_2 = 16.85$ $R_1 = 30.7$ $P_1 = 870.1$
 $V_2 = 2.00$ $I_2 = 165.4$ $R_2 = 12.1$ $P_2 = 331.7$
~~Rug~~ Rug + fpc + st

91015 MgO 1700K 8.15 MN 9.208 mm 300sec
 $X = -0.50$ $Y = -1.10$ $Z = -2.43$ $K = 0 \sim 80^\circ$ $VS = 0.22$

$$V_1 = 52.34, I_1 = 16.93, R_1 = 30.9, P_1 = 885.0$$

$$V_2 = 2.05, I_2 = 166.2, R_2 = 12.3, P_2 = 340.3$$

(111) (200) (220) (311) (222) (400) (420) (422)

$$P = 23.37(0.08)$$

$$Q = 4.104012(50) \quad V = 69.123548(25649)$$

$$V/N_0 = 0.925568(343)$$

91016 FeO 1700K 8.32 MN 9.244 mm 600S
 $X = -0.50$ $Y = -1.40$ $Z = -2.63$ $K = 0 \sim 80^\circ$ $VS = 0.08$

$$V_1 = 52.09, I_1 = 16.82, R_1 = 31.0, P_1 = 876.5$$

$$V_2 = 2.05, I_2 = 165.4, R_2 = 12.4, P_2 = 336.5$$

(111) Bragg!
 $V/P =$

91017 MgO 1700K 8.48 MN 9.272 mm ~~600~~³⁰⁰S
 $X = -0.50$ $Y = -1.10$ $Z = -2.40$ $K = 0 \sim 80^\circ$ $VS = 0.22$

$$V_1 = 52.26, I_1 = 16.86, R_1 = 31.0, P_1 = 882.1$$

$$V_2 = 2.06, I_2 = 165.8, R_2 = 12.4, P_2 = 342.5$$

(111) (200) (220) (311) (222) (400) (420) (422)

$$P = 23.46(0.07) \quad 23.45462(6504)$$

$$V = 69.097072(0.020012)$$

$$V/N_0 = 0.925214(268)$$

$$Q = 4.103488(39)$$

M1991018

F070 1700K 8.56MN 9.290mm 300S
 $X = -0.50$ $Y = -1.40$ $Z = -2.40$ $K = 0 \sim 80$ $V =$
 $V_1 = 52.42$, $I_1 = 16.89$, $R_1 = 31.1$, $P_1 = 885.5$
 $V_2 = 2.07$, $I_2 = 166.1$, $R_2 = 12.5$, $P_2 = 343.8$

 R_1

M1991019

MgO 1700K 8.60MN 9.296mm 300S
 $X = -0.50$ $Y = -1.10$ $Z = -2.39$ $K = 0 \sim 80$ $V = +$
 $V_1 = 52.62$, $I_1 = 16.94$, $R_1 = 31.1$, $P_1 = 889.4$
 $V_2 = 2.08$, $I_2 = 166.2$, $R_2 = 12.5$, $P_2 = 346.3$
 $(111) (200) (220) (311) (222) (400) (420) (422)$
 $P = 23.36271 (0, 12) \rightarrow 23.45485 (2064)$
 $V = 69125379 (37010) \rightarrow 69.097000 (6351)$
 $V/V_0 = 0.925593 (496) \rightarrow 0.925213 (85)$
 $a = 4.104049 (73) \rightarrow 4.103487 (12)$

M1991020

F0100 1700K 8.69^{MN} 9.313mm 600S
 $X = -0.50$ $Y = -1.40$ $Z = -2.60$ $K = 0 \sim 80$ $V = +$
 $V_1 = 52.66$, $I_1 = 16.96$, $R_1 = 31.1$, $P_1 = 892.1$
 $V_2 = 2.08$, $I_2 = 166.4$, $R_2 = 12.5$, $P_2 = 346.6$
 Breg!

1021

MgO 1700K 8.75 MN 9.323 mm 300S

 $X = -0.50$ $Y = -1.40$ $Z = -2.39$ $K = 0 \sim 80$ $V = 0.22$ $V_1 = 52.72$, $I_1 = 16.97$, $R_1 = 31.0$, $P_1 = 894.0$ $V_2 = 2.09$, $I_2 = 166.8$, $R_2 = 12.5$, $P_2 = 349.1$ ~~(111) (200) (220) (311) (222) (400) (420) (422)~~ ~~$23.36 (12) P = 23.36271 (12005)$ $P = 23.45485 (002064)$~~ ~~$a = 4.104049 (73)$~~ ~~$a = 4.103487 (12)$~~ ~~$V = 69.125379 (37010)$~~ ~~$V = 69.097 (0.006351)$~~ ~~$V/V_0 = 0.925593 (496)$~~ ~~$V/V_0 = 0.925213 (0.000085)$~~ ~~Full~~~~*~~~~Na (311) (111)~~1991
022

MgO 1700K 8.84 MN 9.341 mm

Total
600S

Add 300S to M1991021

(111) (200) (220)

1021

(111) (200) (220) (311) (222) (400) (420) (422)

 $P = 23.68437 (16626)$

(111) (200) (220)

(222) (400) (420)

 $P = 23.52192 (04856)$

(111) (200) (220) (311) (222) (400) (420) (422)

 $P = 23.58153 (0.020053)$

(111) (200) (220)

(222) (400) (420) (422)

 $P = 23.71292 (0.11485)$

M1991023

MgO 1700K 890MN, 9.35/mm

Add 6005 To M1991022 total 12005

(111) (200) (220) (311) (222) (400) (420) (422)

23.56984 (0.13835)

(100) (200) (220) (222) (400) (420)

23.48908 (0.04387)

23

1:55~

Quench. dec
in 4h

2:23 (01.06.2016). blow out at 3.14 MN