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NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

TECHNICAL NOTE

No. 1000

TABLE OF INTERPLANAR SPACINGS FOR CRYSTAL-STRUCTURE DETERMINATIONS BY X-RAY DIFFRACTION WITH MOLYBDENUM, COPPER, COBALT, IRON, AND CHROMIUM RADIATIONS

By J. Howard Kittel

Aircraft Engine Research Laboratory
Cleveland, Ohio

Washington
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INTRODUCTION

A widely used technique in X-ray-diffraction investigations consists in placing a powdered or small polycrystalline specimen in a Debye-Scherrer camera and allowing a beam of monochromatic X-rays to fall upon the specimen. A fraction of this primary beam of X-rays will be diffracted by the specimen. The diffracted rays leave the specimen in the form of cones, the axes of which are identical with the primary X-ray beam. The cones of diffracted X-rays, if allowed to fall on a sensitized film in a Debye-Scherrer camera, will produce a pattern of arcs which are symmetrical about the axis of the undeviated primary X-ray beam. If the dimensions of the camera and the wave length of the X-rays are known, it is possible to compute the spacings of the atomic planes of the crystalline specimen from the distances of the arcs from the primary beam. A knowledge of the interplanar distances d will provide information, often not obtainable by other methods, regarding the crystal structure and chemical composition of the specimen, the identification of phases present, and the determination of grain size, solid solubilities, and the presence of internal and applied stresses.

For a simple diffraction pattern, the time required to calculate interplanar distances from measurements of the pattern is not excessive. If more than a few lines are present, however, or if several simple patterns are to be studied, it is very advantageous to have available a table giving interplanar spacings directly in terms of the linear measurements made on the film of the lines appearing in the diffraction pattern. The preparation of a table was undertaken at the NACA Cleveland laboratory when the expansion of research involving X-ray diffraction techniques indicated that such a table would greatly decrease the time

required to analyze diffraction patterns. The table was prepared for use with $K\alpha_1$ radiation from the following target materials: molybdenum, copper, cobalt, iron, and chromium. The d values for cobalt were obtained from reference 1. The sine values of the angle θ formed by incidence of the primary X-ray beam on an atomic plane were obtained from reference 2 and range from 0 to 1.0000. The d values for molybdenum, copper, iron, and chromium were calculated by the Computing Section of the Engine Research Division under the direction of Miss Margaret L. Strickland.

DESCRIPTION OF TABLE

Symbols and Units

R distance in millimeters, measured on film, between central point and arc of a diffracted line on a pattern made in a camera 143.2 millimeters in diameter

R' distance in millimeters, measured on film, between central point and arc of a diffracted line on a pattern made in a camera having a diameter other than 143.2 millimeters

θ angle in degrees formed by incidence of primary X-ray beam on an atomic plane

$K\alpha_1$ most intense part of characteristic X-ray spectrum of each radiation listed in table

λ wave length in angstrom units of X-rays being scattered

d interplanar distance in angstrom units in a particular set of atomic planes in a crystal

Equations Used in Calculations

For the type of powder diffraction pattern made in a Debye-Scherrer camera, the central spot is most easily found by locating the midpoint of the distance 2R, measured on the film, between arcs formed by the same cone of diffracted X-rays. When the central point is located, the R values for the remaining diffraction lines can be readily measured.

The table was computed for direct use with a commercially obtainable Debye-Scherrer camera 143.2 millimeters in diameter

now being used at this laboratory. For a camera of this diameter the following relation gives θ in terms of R:

$$\theta = 0.4R$$

The angle θ was calculated for values of R ranging from 0.1 millimeter to 225.0 millimeters in increments of 0.1 millimeter. In order to compute the interplanar spacing d for each value of R, the sine of the corresponding value of θ was inserted in the Bragg equation

$$\lambda = 2d \sin \theta$$

The values of sin θ ranged from 0 to 1.0000.

The wave length λ was determined by the target material of the particular X-ray tube being used. Tubes with targets of molybdenum, copper, cobalt, iron, and chromium are now in use at this laboratory. Values of R against d are listed in the table for $K\alpha_1$ radiation from each of these target materials. The values of wave length for each $K\alpha_1$ listed were obtained from reference 3 and are as follows:

Mo $K\alpha_1$	0.7078
Cu $K\alpha_1$	1.5374
Co $K\alpha_1$	1.7853
Fe $K\alpha_1$	1.9321
Cr $K\alpha_1$	2.2850

Although the d values were calculated for as many as five significant figures, ordinary work will require the use of only three or four figures. For precise work all five figures can be used.

APPLICATION OF TABLE

For use with a Debye-Scherrer powder camera having a diameter of 143.2 millimeters, the table may be used directly by first locating a value of R measured from a diffraction pattern and then reading the corresponding d value listed for the particular radiation used.

For example, if R is found to be 56.1 millimeters and if Cu $K\alpha_1$ radiation was used, the d value of the particular diffraction line measured is 2.0138.

The table may also be applied to measurements of patterns made in cameras of diameters other than 143.2 millimeters by first multiplying the measured R' value by the ratio of the two camera diameters and then locating in the table the new value of R thus obtained.

For example, if a 57.3-millimeter-diameter camera is being used and if a value of R' from a pattern made with this camera is found to equal 35.7 millimeters, then R is found as follows:

$$R = R' \times \frac{143.2}{57.3} = 89.2$$

The value of R thus obtained is located in the table and the corresponding d value is found as before.

It is also possible to apply the table to measurements of patterns made in cameras other than the Debye-Scherrer type by using the value of $\sin \theta$ for each diffraction line instead of R to locate corresponding d values.

For example, if a transmission pattern made of a thin polycrystalline specimen is recorded on a flat film, a pattern consisting of a number of concentric Debye rings will be obtained. If Mo $K\alpha_1$ radiation was used, and if the diameter of one of the rings is found to be 68.0 millimeters and the film specimen distance is 50.0 millimeters, then

$$2\theta = \tan^{-1} \frac{34.0}{50.0} = 34.22^{\circ}$$

From the values of $\sin \theta$ in the table the value of d is found to be 1.203.

Aircraft Engine Research Laboratory,
National Advisory Committee for Aeronautics,
Cleveland, Ohio, March 1, 1945.

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NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

TABLE OF INTERPLANAR SPACINGS FOR CRYSTAL STRUCTURE DETERMINATIONS BY X-RAY DIFFRACTION WITH MOLYBDENUM, COPPER, COBALT, IRON, AND CHROMIUM RADIATIONS

By J. Howard Kittel

Aircraft Engine Research Laboratory
Cleveland, Ohio

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ = 0.7078	Cu $K\alpha_1$ = 1.5374	Co $K\alpha_1$ = 1.7853	Fe $K\alpha_1$ = 1.9321	Cr $K\alpha_1$ = 2.2850
.1	.00070	505.5714	1098.1429	1275.2143	1380.0714	1632.1429
.2	.00140	252.7857	549.0714	637.6071	690.0357	816.0714
.3	.00209	169.3301	367.7990	427.1053	462.2249	546.6507
.4	.00279	126.8459	275.5197	319.9462	346.2545	409.4982
.5	.00349	101.4040	220.2579	255.7736	276.8052	327.3639
.6	.00419	84.4630	183.4606	213.0430	230.5609	272.6730
.7	.00489	72.3722	157.1984	182.5460	197.5562	233.6401
.8	.00559	63.3095	137.5134	159.6869	172.8175	204.3828
.9	.00628	56.3535	122.4045	142.1417	153.8296	181.9268
1.0	.00698	50.7020	110.1289	127.8868	138.4026	163.6819
1.1	.00768	46.0807	100.0912	116.2305	125.7878	148.7630
1.2	.00838	42.2315	91.7303	106.5215	115.2804	136.3365
1.3	.00908	38.9758	84.6586	98.3095	106.3932	125.8260
1.4	.00977	36.2231	78.6796	91.3664	98.8792	116.9396
1.5	.01047	33.8013	73.4193	85.2579	92.2684	109.1213
1.6	.01117	31.6831	68.8183	79.9150	86.4861	102.2829
1.7	.01187	29.8147	64.7599	75.2022	81.3858	96.2511
1.8	.01257	28.1543	61.1535	71.0143	76.8536	90.8910
1.9	.01326	26.6893	57.9713	67.3190	72.8544	86.1614

R (mm)	Sin Φ	d (Å) Mo $K\alpha_1$ = 0.7078	Cu $K\alpha_1$ = 1.5374	Co $K\alpha_1$ = 1.7853	Fe $K\alpha_1$ = 1.9321	Cr $K\alpha_1$ = 2.2850
2.0	.01396	25.3510	55.0645	63.9434	69.2013	81.8410
2.1	.01466	24.1405	52.4352	60.8902	65.8970	77.9332
2.2	.01536	23.0404	50.0456	58.1152	62.8939	74.3815
2.3	.01606	22.0361	47.8643	55.5822	60.1526	71.1395
2.4	.01675	21.1284	45.8925	53.2925	57.6746	68.2090
2.5	.01745	20.2808	44.0516	51.1547	55.3610	65.4728
2.6	.01815	19.4986	42.3526	49.1818	53.2259	62.9477
2.7	.01885	18.7745	40.7798	47.3554	51.2493	60.6101
2.8	.01955	18.1023	39.3197	45.6596	49.4143	58.4399
2.9	.02024	17.4852	37.9793	44.1033	47.7297	56.4476
3.0	.02094	16.9007	36.7097	42.6289	46.1342	54.5606
3.1	.02164	16.3540	35.5222	41.2500	44.6419	52.7957
3.2	.02234	15.8415	34.4091	39.9575	43.2431	51.1414
3.3	.02304	15.3602	33.3637	38.7435	41.9293	49.5877
3.4	.02373	14.9136	32.3936	37.6169	40.7101	48.1458
3.5	.02443	14.4863	31.4654	36.5391	39.5436	46.7663
3.6	.02513	14.0828	30.5889	35.5213	38.4421	45.4636
3.7	.02583	13.7011	29.7600	34.5587	37.4003	44.2315
3.8	.02653	13.3396	28.9748	33.6468	36.4135	43.0645
3.9	.02722	13.0015	28.2403	32.7939	35.4904	41.9728
4.0	.02792	12.6755	27.5322	31.9717	34.6006	40.9205
4.1	.02862	12.3655	26.8588	31.1897	33.7544	39.9196
4.2	.02932	12.0703	26.2176	30.4451	32.9485	38.9666
4.3	.03002	11.7888	25.6063	29.7352	32.1802	38.0580
4.4	.03071	11.5239	25.0309	29.0671	31.4572	37.2029
4.5	.03141	11.2671	24.4731	28.4193	30.7561	36.3738
4.6	.03211	11.0215	23.9396	27.7998	30.0856	35.5808
4.7	.03281	10.7864	23.4288	27.2066	29.4438	34.8217
4.8	.03350	10.5642	22.9463	26.6463	28.8373	34.1045
4.9	.03420	10.3480	22.4766	26.1009	28.2471	33.4064
5.0	.03490	10.1404	22.0258	25.5774	27.6805	32.7364
5.1	.03560	9.9410	21.5927	25.0744	27.1362	32.0927
5.2	.03629	9.7520	21.1821	24.5977	26.6203	31.4825
5.3	.03699	9.5675	20.7813	24.1322	26.1165	30.8867
5.4	.03769	9.3898	20.3953	23.6840	25.6315	30.3131
5.5	.03839	9.2186	20.0234	23.2521	25.1641	29.7604
5.6	.03909	9.0535	19.6649	22.8358	24.7135	29.2274
5.7	.03978	8.8964	19.3238	22.4397	24.2848	28.7205
5.8	.04048	8.7426	18.9896	22.0516	23.8649	28.2238
5.9	.04118	8.5940	18.6668	21.6768	23.4592	27.7440

R (mm)	Sin θ	d (Å) Mo K_1 = 0.7078	Cu K_1 = 1.5374	Co K_1 = 1.7853	Fe K_1 = 1.9321	Cr K_1 = 2.2850
6.0	.04188	8.4503	18.3548	20.3143	23.0671	27.2803
6.1	.04257	8.3134	18.0573	20.9738	22.6932	26.8381
6.2	.04327	8.1789	17.7651	20.6578	22.3261	26.4040
6.3	.04397	8.0487	17.4824	20.3287	21.9707	25.9836
6.4	.04467	7.9225	17.2084	20.0145	21.6264	25.5764
6.5	.04536	7.8020	16.9466	19.7055	21.2974	25.1874
6.6	.04606	7.6835	16.6891	19.4059	20.9737	24.8046
6.7	.04676	7.5684	16.4393	19.1194	20.6598	24.4333
6.8	.04746	7.4568	16.1968	18.8203	20.3550	24.0729
6.9	.04815	7.3499	15.9647	18.5504	20.0633	23.7279
7.0	.04885	7.2446	15.7359	18.2845	19.7758	23.3879
7.1	.04955	7.1423	15.5136	18.0259	19.4965	23.0575
7.2	.05024	7.0442	15.3006	17.7783	19.2287	22.7408
7.3	.05094	6.9474	15.0903	17.5338	18.9645	22.4283
7.4	.05164	6.8532	14.8857	17.2993	18.7074	22.1243
7.5	.05234	6.7616	14.6867	17.0678	18.4572	21.8284
7.6	.05303	6.6736	14.4956	16.8424	18.2170	21.5444
7.7	.05373	6.5866	14.3067	16.6259	17.9797	21.2637
7.8	.05443	6.5019	14.1227	16.4119	17.7485	20.9903
7.9	.05512	6.4205	13.9459	16.2063	17.5263	20.7275
8.0	.05582	6.3400	13.7710	16.0029	17.3065	20.4676
8.1	.05652	6.2615	13.6005	15.8046	17.0922	20.2141
8.2	.05722	6.1849	13.4341	15.6139	16.8831	19.9668
8.3	.05791	6.1112	13.2740	15.4250	16.6819	19.7289
8.4	.05861	6.0382	13.1155	15.2433	16.4827	19.4933
8.5	.05931	5.9670	12.9607	15.0632	16.2881	19.2632
8.6	.06000	5.8983	12.8117	14.8874	16.1008	19.0417
8.7	.06070	5.8303	12.6639	14.7179	15.9152	18.8221
8.8	.06140	5.7638	12.5195	14.5476	15.7337	18.6075
8.9	.06209	5.6998	12.3804	14.3790	15.5589	18.4007
9.0	.06279	5.6362	12.2424	14.2140	15.3854	18.1956
9.1	.06349	5.5741	12.1074	14.0530	15.2158	17.9950
9.2	.06418	5.5142	11.9773	13.8954	15.0522	17.8015
9.3	.06488	5.4547	11.8480	13.7415	14.8898	17.6094
9.4	.06558	5.3965	11.7216	13.5908	14.7309	17.4215
9.5	.06627	5.3403	11.5996	13.4434	14.5775	17.2401
9.6	.06697	5.2845	11.4783	13.3191	14.4251	17.0599
9.7	.06767	5.2298	11.3595	13.1834	14.2759	16.8834
9.8	.06836	5.1770	11.2449	13.0485	14.1318	16.7130
9.9	.06906	5.1245	11.1309	12.9182	13.9886	16.5436

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
10.0	.06976	5.0731	11.0192	12.7886	13.8482	16.3776
10.1	.07045	5.0234	10.9113	12.6616	13.7126	16.2172
10.2	.07115	4.9740	10.8039	12.5389	13.5777	16.0576
10.3	.07185	4.9255	10.6987	12.4151	13.4454	15.9012
10.4	.07254	4.8787	10.5969	12.2987	13.3175	15.7499
10.5	.07324	4.8321	10.4956	12.1813	13.1902	15.5994
10.6	.07393	4.7870	10.3977	12.0660	13.0671	15.4538
10.7	.07463	4.7421	10.3001	11.9545	12.9445	15.3089
10.8	.07533	4.6980	10.2044	11.8435	12.8242	15.1666
10.9	.07602	4.6554	10.1118	11.7361	12.7078	15.0289
11.0	.07672	4.6129	10.0196	11.6290	12.5919	14.8918
11.1	.07742	4.5712	9.9290	11.5239	12.4780	14.7572
11.2	.07811	4.5308	9.8412	11.4222	12.3678	14.6268
11.3	.07881	4.4905	9.7538	11.3208	12.2580	14.4969
11.4	.07950	4.4516	9.6692	11.2226	12.1516	14.3711
11.5	.08020	4.4127	9.5848	11.1247	12.0455	14.2456
11.6	.08089	4.3751	9.5030	11.0285	11.9428	14.1241
11.7	.08159	4.3375	9.4215	10.9352	11.8403	14.0029
11.8	.08229	4.3006	9.3414	10.8423	11.7396	13.8838
11.9	.08298	4.2649	9.2637	10.7522	11.6420	13.7684
12.0	.08368	4.2292	9.1862	10.6623	11.5446	13.6532
12.1	.08437	4.1946	9.1110	10.5739	11.4502	16.5415
12.2	.08507	4.1601	9.0361	10.4881	11.3559	13.4301
12.3	.08576	4.1266	8.9634	10.4026	11.2646	13.3221
12.4	.08646	4.0932	8.8908	10.3196	11.1734	13.2142
12.5	.08716	4.0603	8.8194	10.2367	11.0836	13.1081
12.6	.08785	4.0285	8.7501	10.1552	10.9966	13.0051
12.7	.08855	3.9966	8.6810	10.0876	10.9097	12.9023
12.8	.08924	3.9657	8.6138	9.9972	10.8253	12.8026
12.9	.08994	3.9348	8.5468	9.9205	10.7410	12.7029
13.0	.09063	3.9049	8.4817	9.8461	10.6593	12.6062
13.1	.09133	3.8749	8.4167	9.7738	10.5776	12.5096
13.2	.09202	3.8459	8.3536	9.7027	10.4983	12.4158
13.3	.09272	3.8169	8.2906	9.6315	10.4190	12.3220
13.4	.09341	3.7887	8.2293	9.5613	10.3420	12.2310
13.5	.09411	3.7605	8.1681	9.4902	10.2651	12.1400
13.6	.09480	3.7331	8.1086	9.4200	10.1904	12.0517
13.7	.09550	3.7058	8.0492	9.3520	10.1157	11.9634
13.8	.09619	3.6792	7.9915	9.2839	10.0431	11.8775
13.9	.09689	3.6526	7.9337	9.2178	9.9706	11.7917

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ = 0.7078	Cu $K\alpha_1$ = 1.5374	Co $K\alpha_1$ = 1.7853	Fe $K\alpha_1$ = 1.9321	Cr $K\alpha_1$ = 2.2850
14.0	.09758	3.6268	7.8776	9.1516	9.9001	11.7083
14.1	.09828	3.6009	7.8215	9.0863	9.8296	11.6249
14.2	.09897	3.5758	7.7670	9.0230	9.7610	11.5439
14.3	.09967	3.5507	7.7125	8.9596	9.6925	11.4628
14.4	.10036	3.5263	7.6594	8.8980	9.6258	11.3840
14.5	.10106	3.5019	7.6064	8.8363	9.5592	11.3052
14.6	.10175	3.4781	7.5548	8.7755	9.4943	11.2285
14.7	.10245	3.4544	7.5032	8.7164	9.4295	11.1518
14.8	.10314	3.4313	7.4530	8.6572	9.3664	11.0772
14.9	.10383	3.4085	7.4034	8.5996	9.3042	11.0036
15.0	.10453	3.3856	7.3539	8.5420	9.2418	10.9299
15.1	.10522	3.3634	7.3056	8.4853	9.1812	10.8582
15.2	.10592	3.3412	7.2574	8.4299	9.1206	10.7864
15.3	.10661	3.3196	7.2104	8.3746	9.0615	10.7166
15.4	.10731	3.2979	7.1634	8.3207	9.0024	10.6467
15.5	.10800	3.2769	7.1176	8.2667	8.9449	10.5787
15.6	.10869	3.2560	7.0724	8.2136	8.8881	10.5115
15.7	.10939	3.2352	7.0272	8.1617	8.8312	10.4443
15.8	.11008	3.2149	6.9831	8.1098	8.7759	10.3788
15.9	.11078	3.1946	6.9390	8.0585	8.7204	10.3132
16.0	.11147	3.1748	6.8960	8.0087	8.6665	10.2494
16.1	.11216	3.1553	6.8536	7.9587	8.6131	10.1863
16.2	.11286	3.1357	6.8111	7.9100	8.5597	10.1232
16.3	.11355	3.1167	6.7697	7.8612	8.5077	10.0616
16.4	.11424	3.0979	6.7288	7.8137	8.4563	10.0009
16.5	.11494	3.0790	6.6878	7.7661	8.4048	9.9400
16.6	.11563	3.0606	6.6479	7.7191	8.3547	9.8807
16.7	.11632	3.0425	6.6085	7.6733	8.3051	9.8220
16.8	.11702	3.0243	6.5690	7.6275	8.2554	9.7633
16.9	.11771	3.0065	6.5305	7.5827	8.2070	9.7061
17.0	.11840	2.9890	6.4924	7.5379	8.1592	9.6495
17.1	.11910	2.9715	6.4542	7.4936	8.1113	9.5928
17.2	.11979	2.9543	6.4171	7.4505	8.0645	9.5375
17.3	.12048	2.9374	6.3803	7.4072	8.0183	9.4829
17.4	.12118	2.9204	6.3435	7.3650	7.9720	9.4281
17.5	.12187	2.9039	6.3075	7.3246	7.9269	9.3747
17.6	.12256	2.8876	6.2720	7.2827	7.8823	9.3220
17.7	.12326	2.8712	6.2364	7.2426	7.8375	9.2690
17.8	.12395	2.8552	6.2017	7.2017	7.7939	9.2174
17.9	.12464	2.8394	6.1674	7.1618	7.7507	9.1664

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ = 0.7078	Cu $K\alpha_1$ = 1.5374	Co $K\alpha_1$ = 1.7853	Fe $K\alpha_1$ = 1.9321	Cr $K\alpha_1$ = 2.2850
18.0	.12533	2.8237	6.1334	7.1223	7.7081	9.1159
18.1	.12603	2.8081	6.0993	7.0828	7.6652	9.0653
18.2	.12672	2.7928	6.0661	7.0442	7.6235	9.0159
18.3	.12741	2.7776	6.0333	7.0061	7.5822	8.9671
18.4	.12810	2.7627	6.0008	6.9684	7.5414	8.9188
18.5	.12880	2.7477	5.9682	6.9305	7.5004	8.8703
18.6	.12949	2.7330	5.9364	6.8935	7.4604	8.8231
18.7	.13018	2.7185	5.9049	6.8570	7.4209	8.7763
18.8	.13087	2.7042	5.8738	6.8209	7.3818	8.7300
18.9	.13156	2.6900	5.8430	6.7851	7.3430	8.6842
19.0	.13226	2.6758	5.8120	6.7492	7.3042	8.6383
19.1	.13295	2.6619	5.7819	6.7141	7.2663	8.5935
19.2	.13364	2.6482	5.7520	6.6795	7.2287	8.5491
19.3	.13433	2.6346	5.7225	6.6452	7.1916	8.5052
19.4	.13502	2.6211	5.6932	6.6112	7.1549	8.4617
19.5	.13572	2.6076	5.6639	6.5771	7.1180	8.4181
19.6	.13641	2.5944	5.6352	6.5438	7.0820	8.3755
19.7	.13710	2.5813	5.6069	6.5109	7.0463	8.3333
19.8	.13779	2.5684	5.5788	6.4783	7.0110	8.2916
19.9	.13848	2.5556	5.5510	6.4460	6.9761	8.2503
20.0	.13917	2.5429	5.5235	6.4141	6.9415	8.2094
20.1	.13986	2.5304	5.4962	6.3820	6.9073	8.1689
20.2	.14056	2.5178	5.4688	6.3511	6.8729	8.1282
20.3	.14125	2.5055	5.4421	6.3196	6.8393	8.0885
20.4	.14194	2.4933	5.4157	6.2889	6.8060	8.0492
20.5	.14263	2.4812	5.3895	6.2584	6.7731	8.0102
20.6	.14332	2.4693	5.3635	6.2283	6.7405	7.9717
20.7	.14401	2.4575	5.3378	6.1985	6.7082	7.9335
20.8	.14470	2.4457	5.3124	6.1689	6.6762	7.8956
20.9	.14539	2.4341	5.2872	6.1397	6.6445	7.8582
21.0	.14608	2.4226	5.2622	6.1106	6.6132	7.8211
21.1	.14677	2.4113	5.2374	6.0819	6.5821	7.7843
21.2	.14746	2.4000	5.2129	6.0535	6.5513	7.7479
21.3	.14815	2.3888	5.1887	6.0252	6.5208	7.7118
21.4	.14885	2.3776	5.1643	5.9973	6.4901	7.6755
21.5	.14954	2.3666	5.1404	5.9693	6.4601	7.6401
21.6	.15023	2.3557	5.1168	5.9304	6.4305	7.6050
21.7	.15092	2.3450	5.0934	5.9151	6.4011	7.5702
21.8	.15161	2.3343	5.0702	5.8877	6.3719	7.5358
21.9	.15230	2.3237	5.0473	5.8576	6.3431	7.5016

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ = 0.7078	Cu $K\alpha_1$ = 1.5374	Co $K\alpha_1$ = 1.7853	Fe $K\alpha_1$ = 1.9321	Cr $K\alpha_1$ = 2.2850
22.0	.15299	2.3132	5.0245	5.8347	6.3145	7.4678
22.1	.15368	2.3028	5.0020	5.8085	6.2861	7.4343
22.2	.15437	2.2925	4.9796	5.7829	6.2580	7.4010
22.3	.15506	2.2823	4.9574	5.7567	6.2302	7.3681
22.4	.15574	2.2724	4.9358	5.7317	6.2030	7.3359
22.5	.15643	2.2624	4.9140	5.7063	6.1756	7.3036
22.6	.15712	2.2524	4.8924	5.6809	6.1485	7.2715
22.7	.15781	2.2426	4.8710	5.6564	6.1216	7.2397
22.8	.15850	2.2328	4.8498	5.6315	6.0950	7.2082
22.9	.15919	2.2231	4.8288	5.6074	6.0685	7.1770
23.0	.15988	2.2135	4.8080	5.5832	6.0423	7.1460
23.1	.16057	2.2040	4.7873	5.5593	6.0164	7.1153
23.2	.16126	2.1946	4.7668	5.5354	5.9906	7.0848
23.3	.16195	2.1852	4.7465	5.5119	5.9651	7.0546
23.4	.16264	2.1760	4.7264	5.4885	5.9398	7.0247
23.5	.16333	2.1668	4.7064	5.4653	5.9147	6.9950
23.6	.16401	2.1578	4.6869	5.4423	5.8902	6.9660
23.7	.16470	2.1488	4.6673	5.4199	5.8655	6.9369
23.8	.16539	2.1398	4.6478	5.3972	5.8410	6.9079
23.9	.16608	2.1309	4.6285	5.3748	5.8168	6.8792
24.0	.16677	2.1221	4.6093	5.3525	5.7927	6.8508
24.1	.16746	2.1133	4.5903	5.3305	5.7688	6.8225
24.2	.16815	2.1047	4.5715	5.3086	5.7452	6.7945
24.3	.16883	2.0962	4.5531	5.2869	5.7220	6.7672
24.4	.16952	2.0877	4.5346	5.2657	5.6987	6.7396
24.5	.17021	2.0792	4.5162	5.2443	5.6756	6.7123
24.6	.17090	2.0708	4.4980	5.2232	5.6527	6.6852
24.7	.17159	2.0625	4.4799	5.2022	5.6300	6.6583
24.8	.17227	2.0543	4.4622	5.1814	5.6078	6.6320
24.9	.17296	2.0461	4.4444	5.1610	5.5854	6.6056
25.0	.17365	2.0380	4.4267	5.1405	5.5632	6.5793
25.1	.17434	2.0299	4.4092	5.1204	5.5412	6.5533
25.2	.17502	2.0221	4.3921	5.1003	5.5197	6.5278
25.3	.17571	2.0141	4.3748	5.0802	5.4980	6.5022
25.4	.17640	2.0062	4.3577	5.0603	5.4765	6.4768
25.5	.17708	1.9985	4.3410	5.0409	5.4554	6.4519
25.6	.17777	1.9908	4.3241	5.0213	5.4343	6.4268
25.7	.17846	1.9830	4.3074	5.0020	5.4133	6.4020
25.8	.17915	1.9754	4.2908	4.9827	5.3924	6.3773
25.9	.17983	1.9680	4.2746	4.9639	5.3720	6.3532

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ = 0.7078	Cu $K\alpha_1$ = 1.5374	Co $K\alpha_1$ = 1.7853	Fe $K\alpha_1$ = 1.9321	Cr $K\alpha_1$ = 2.2850
26.0	.18052	1.9604	4.2583	4.9449	5.3515	6.3289
26.1	.18121	1.9530	4.2420	4.9260	5.3311	6.3048
26.2	.18189	1.9457	4.2262	4.9076	5.3112	6.2813
26.3	.18258	1.9383	4.2102	4.8890	5.2911	6.2575
26.4	.18327	1.9310	4.1944	4.8710	5.2712	6.2340
26.5	.18395	1.9239	4.1789	4.8527	5.2517	6.2109
26.6	.18464	1.9167	4.1632	4.8345	5.2321	6.1877
26.7	.18532	1.9097	4.1480	4.8168	5.2129	6.1650
26.8	.18601	1.9026	4.1326	4.7989	5.1935	6.1421
26.9	.18670	1.8956	4.1173	4.7815	5.1743	6.1194
27.0	.18738	1.8887	4.1024	4.7638	5.1556	6.0972
27.1	.18807	1.8817	4.0873	4.7463	5.1367	6.0749
27.2	.18875	1.8750	4.0726	4.7292	5.1181	6.0530
27.3	.18944	1.8681	4.0577	4.7120	5.0995	6.0309
27.4	.19012	1.8615	4.0432	4.6951	5.0813	6.0094
27.5	.19081	1.8547	4.0286	4.6782	5.0629	5.9876
27.6	.19149	1.8481	4.0143	4.6613	5.0449	5.9664
27.7	.19218	1.8415	3.9999	4.6449	5.0268	5.9449
27.8	.19286	1.8350	3.9858	4.6282	5.0091	5.9240
27.9	.19355	1.8285	3.9716	4.6119	4.9912	5.9029
28.0	.19423	1.8221	3.9577	4.5959	4.9737	5.8822
28.1	.19492	1.8156	3.9437	4.5794	4.9561	5.8614
28.2	.19560	1.8093	3.9300	4.5636	4.9389	5.8410
28.3	.19629	1.8029	3.9161	4.5476	4.9215	5.8205
28.4	.19697	1.7967	3.9026	4.5319	4.9046	5.8004
28.5	.19766	1.7904	3.8890	4.5160	4.8874	5.7801
28.6	.19834	1.7843	3.8757	4.5006	4.8707	5.7603
28.7	.19903	1.7781	3.8622	4.4852	4.8538	5.7403
28.8	.19971	1.7721	3.8491	4.4697	4.8373	5.7208
28.9	.20039	1.7661	3.8360	4.4546	4.8208	5.7014
29.0	.20108	1.7600	3.8229	4.4393	4.8043	5.6818
29.1	.20176	1.7541	3.8100	4.4243	4.7881	5.6627
29.2	.20245	1.7481	3.7970	4.4095	4.7718	5.6434
29.3	.20313	1.7422	3.7843	4.3945	4.7558	5.6245
29.4	.20381	1.7364	3.7716	4.3798	4.7400	5.6057
29.5	.20450	1.7306	3.7589	4.3650	4.7240	5.5868
29.6	.20518	1.7248	3.7465	4.3505	4.7083	5.5683
29.7	.20586	1.7191	3.7341	4.3361	4.6928	5.5499
29.8	.20655	1.7134	3.7216	4.3217	4.6771	5.5313
29.9	.20723	1.7078	3.7094	4.3075	4.6617	5.5132

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ = 0.7078	Cu $K\alpha_1$ = 1.5374	Co $K\alpha_1$ = 1.7853	Fe $K\alpha_1$ = 1.9321	Cr $K\alpha_1$ = 2.2850
30.0	.20791	1.7022	3.6973	4.2934	4.6465	5.4952
30.1	.20859	1.6966	3.6852	4.2793	4.6313	5.4773
30.2	.20928	1.6910	3.6731	4.2653	4.6161	5.4592
30.3	.20996	1.6856	3.6612	4.2515	4.6011	5.4415
30.4	.21064	1.6801	3.6494	4.2377	4.5863	5.4239
30.5	.21132	1.6747	3.6376	4.2242	4.5715	5.4065
30.6	.21201	1.6693	3.6258	4.2104	4.5566	5.3889
30.7	.21269	1.6639	3.6142	4.1969	4.5421	5.3717
30.8	.21337	1.6586	3.6027	4.1836	4.5276	5.3545
30.9	.21405	1.6534	3.5912	4.1703	4.5132	5.3375
31.0	.21474	1.6480	3.5797	4.1568	4.4987	5.3204
31.1	.21542	1.6428	3.5684	4.1437	4.4845	5.3036
31.2	.21610	1.6377	3.5571	4.1307	4.4704	5.2869
31.3	.21678	1.6325	3.5460	4.1177	4.4564	5.2703
31.4	.21746	1.6274	3.5349	4.1048	4.4424	5.2538
31.5	.21814	1.6224	3.5239	4.0921	4.4286	5.2375
31.6	.21882	1.6173	3.5129	4.0794	4.4148	5.2212
31.7	.21951	1.6122	3.5019	4.0667	4.4009	5.2048
31.8	.22019	1.6072	3.4911	4.0629	4.3873	5.1887
31.9	.22087	1.6023	3.4803	4.0415	4.3738	5.1727
32.0	.22155	1.5974	3.4696	4.0291	4.3604	5.1568
32.1	.22223	1.5925	3.4590	4.0167	4.3471	5.1411
32.2	.22291	1.5876	3.4485	4.0046	4.3338	5.1254
32.3	.22359	1.5828	3.4380	3.9924	4.3206	5.1098
32.4	.22427	1.5780	3.4276	3.9802	4.3075	5.0943
32.5	.22495	1.5732	3.4172	3.9682	4.2945	5.0789
32.6	.22563	1.5685	3.4069	3.9563	4.2816	5.0636
32.7	.22631	1.5638	3.3967	3.9444	4.2687	5.0484
32.8	.22699	1.5591	3.3865	3.9325	4.2559	5.0333
32.9	.22767	1.5544	3.3764	3.9207	4.2432	5.0182
33.0	.22835	1.5498	3.3663	3.9091	4.2306	5.0033
33.1	.22903	1.5452	3.3563	3.8975	4.2180	4.9884
33.2	.22971	1.5406	3.3464	3.8860	4.2055	4.9737
33.3	.23039	1.5361	3.3365	3.8745	4.1931	4.9590
33.4	.23107	1.5316	3.3267	3.8631	4.1808	4.9444
33.5	.23175	1.5271	3.3169	3.8518	4.1685	4.9299
33.6	.23243	1.5226	3.3072	3.8405	4.1563	4.9155
33.7	.23311	1.5182	3.2976	3.8294	4.1442	4.9011
33.8	.23378	1.5138	3.2881	3.8184	4.1323	4.8871
33.9	.23446	1.5094	3.2786	3.8073	4.1203	4.8729

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ = 0.7078	Cu $K\alpha_1$ = 1.5374	Co $K\alpha_1$ = 1.7853	Fe $K\alpha_1$ = 1.9321	Cr $K\alpha_1$ = 2.2850
34.0	.23514	1.5051	3.2691	3.7962	4.1084	4.8588
34.1	.23582	1.5007	3.2597	3.7853	4.0966	4.8448
34.2	.23650	1.4964	3.2503	3.7744	4.0848	4.8309
34.3	.23718	1.4921	3.2410	3.7636	4.0731	4.8170
34.4	.23786	1.4878	3.2317	3.7528	4.0614	4.8032
34.5	.23853	1.4837	3.2227	3.7423	4.0500	4.7898
34.6	.23921	1.4795	3.2135	3.7316	4.0385	4.7761
34.7	.23989	1.4753	3.2044	3.7211	4.0271	4.7626
34.8	.24057	1.4711	3.1953	3.7105	4.0157	4.7491
34.9	.24124	1.4670	3.1865	3.7001	4.0045	4.7359
35.0	.24192	1.4629	3.1775	3.6898	3.9933	4.7226
35.1	.24260	1.4588	3.1686	3.6795	3.9821	4.7094
35.2	.24328	1.4547	3.1597	3.6692	3.9709	4.6962
35.3	.24395	1.4507	3.1511	3.6590	3.9600	4.6833
35.4	.24463	1.4467	3.1423	3.6489	3.9490	4.6703
35.5	.24531	1.4427	3.1336	3.6388	3.9381	4.6574
35.6	.24598	1.4387	3.1250	3.6290	3.9274	4.6447
35.7	.24666	1.4348	3.1164	3.6189	3.9165	4.6319
35.8	.24734	1.4308	3.1079	3.6090	3.9058	4.6191
35.9	.24801	1.4270	3.0995	3.5992	3.8952	4.6067
36.0	.24869	1.4231	3.0910	3.5894	3.8846	4.5941
36.1	.24937	1.4192	3.0826	3.5795	3.8740	4.5815
36.2	.25004	1.4154	3.0743	3.5700	3.8636	4.5693
36.3	.25072	1.4115	3.0660	3.5603	3.8531	4.5569
36.4	.25139	1.4078	3.0578	3.5507	3.8428	4.5447
36.5	.25207	1.4040	3.0495	3.5413	3.8325	4.5325
36.6	.25274	1.4003	3.0415	3.5319	3.8223	4.5205
36.7	.25342	1.3965	3.0333	3.5224	3.8121	4.5083
36.8	.25410	1.3928	3.0252	3.5129	3.8018	4.4963
36.9	.25477	1.3891	3.0172	3.5037	3.7919	4.4844
37.0	.25545	1.3854	3.0092	3.4944	3.7818	4.4725
37.1	.25612	1.3818	3.0013	3.4853	3.7719	4.4608
37.2	.25680	1.3781	2.9934	3.4762	3.7619	4.4490
37.3	.25747	1.3745	2.9856	3.4670	3.7521	4.4374
37.4	.25814	1.3710	2.9778	3.4578	3.7423	4.4259
37.5	.25882	1.3674	2.9700	3.4489	3.7325	4.4143
37.6	.25949	1.3638	2.9623	3.4400	3.7229	4.4029
37.7	.26017	1.3603	2.9546	3.4311	3.7131	4.3914
37.8	.26084	1.3568	2.9470	3.4220	3.7036	4.3801
37.9	.26152	1.3532	2.9394	3.4133	3.6940	4.3687

R (mm)	Sin Θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
38.0	.26219	1.3498	2.9318	3.4046	3.6845	4.3575
38.1	.26286	1.3463	2.9244	3.3959	3.6752	4.3464
38.2	.26354	1.3429	2.9168	3.3873	3.6657	4.3352
38.3	.26421	1.3395	2.9094	3.3785	3.6564	4.3242
38.4	.26488	1.3361	2.9021	3.3700	3.6471	4.3133
38.5	.26556	1.3327	2.8946	3.3614	3.6378	4.3022
38.6	.26623	1.3289	2.8874	3.3529	3.6286	4.2914
38.7	.26690	1.3260	2.8801	3.3445	3.6195	4.2806
38.8	.26757	1.3226	2.8729	3.3360	3.6105	4.2699
38.9	.26825	1.3193	2.8656	3.3276	3.6013	4.2591
39.0	.26892	1.3160	2.8585	3.3193	3.5923	4.2485
39.1	.26959	1.3127	2.8514	3.3112	3.5834	4.2379
39.2	.27026	1.3095	2.8443	3.3029	3.5745	4.2274
39.3	.27094	1.3062	2.8372	3.2946	3.5655	4.2168
39.4	.27161	1.3030	2.8302	3.2865	3.5568	4.2064
39.5	.27228	1.2998	2.8232	3.2784	3.5480	4.1960
39.6	.27295	1.2966	2.8163	3.2704	3.5393	4.1857
39.7	.27362	1.2934	2.8094	3.2624	3.5306	4.1755
39.8	.27429	1.2902	2.8025	3.2543	3.5220	4.1653
39.9	.27497	1.2870	2.7956	3.2463	3.5133	4.1550
40.0	.27564	1.2839	2.7888	3.2384	3.5048	4.1449
40.1	.27631	1.2808	2.7820	3.2305	3.4963	4.1348
40.2	.27698	1.2777	2.7753	3.2228	3.4878	4.1248
40.3	.27765	1.2746	2.7686	3.2150	3.4794	4.1149
40.4	.27832	1.2716	2.7619	3.2073	3.4710	4.1050
40.5	.27899	1.2685	2.7553	3.1995	3.4627	4.0951
40.6	.27966	1.2655	2.7487	3.1919	3.4544	4.0853
40.7	.28033	1.2624	2.7421	3.1842	3.4461	4.0756
40.8	.28100	1.2594	2.7356	3.1766	3.4379	4.0658
40.9	.28167	1.2564	2.7291	3.1691	3.4297	4.0562
41.0	.28234	1.2535	2.7226	3.1616	3.4216	4.0465
41.1	.28301	1.2505	2.7162	3.1541	3.4135	4.0370
41.2	.28368	1.2475	2.7097	3.1466	3.4054	4.0274
41.3	.28435	1.2446	2.7034	3.1392	3.3974	4.0179
41.4	.28502	1.2417	2.6970	3.1319	3.3894	4.0085
41.5	.28569	1.2388	2.6907	3.1245	3.3815	3.9991
41.6	.28636	1.2359	2.6844	3.1172	3.3736	3.9897
41.7	.28703	1.2330	2.6781	3.1100	3.3657	3.9804
41.8	.28769	1.2301	2.6720	3.1027	3.3580	3.9713
41.9	.28836	1.2273	2.6658	3.0956	3.3502	3.9621

R (mm)	sinθ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
42.0	.28903	1.2244	2.6596	3.0885	3.3424	3.9529
42.1	.28970	1.2216	2.6534	3.0813	3.3347	3.9437
42.2	.29037	1.2188	2.6473	3.0742	3.3270	3.9346
42.3	.29104	1.2160	2.6412	3.0671	3.3193	3.9256
42.4	.29170	1.2132	2.6352	3.0600	3.3118	3.9167
42.5	.29237	1.2105	2.6292	3.0531	3.3042	3.9077
42.6	.29304	1.2077	2.6232	3.0461	3.2966	3.8988
42.7	.29371	1.2049	2.6172	3.0393	3.2891	3.8899
42.8	.29438	1.2022	2.6113	3.0323	3.2818	3.8812
42.9	.29504	1.1995	2.6054	3.0255	3.2743	3.8724
43.0	.29571	1.1968	2.5995	3.0186	3.2669	3.8636
43.1	.29637	1.1941	2.5937	3.0119	3.2596	3.8550
43.2	.29704	1.1914	2.5879	3.0051	3.2523	3.8463
43.3	.29771	1.1887	2.5820	2.9983	3.2449	3.8376
43.4	.29837	1.1861	2.5763	2.9918	3.2378	3.8291
43.5	.29904	1.1835	2.5706	2.9851	3.2305	3.8206
43.6	.29971	1.1808	2.5648	2.9784	3.2233	3.8120
43.7	.30037	1.1782	2.5592	2.9718	3.2162	3.8036
43.8	.30104	1.1756	2.5535	2.9652	3.2090	3.7952
43.9	.30171	1.1730	2.5479	2.9586	3.2020	3.7869
44.0	.30237	1.1704	2.5422	2.9522	3.1949	3.7785
44.1	.30303	1.1678	2.5366	2.9458	3.1879	3.7701
44.2	.30370	1.1653	2.5311	2.9393	3.1809	3.7619
44.3	.30436	1.1627	2.5255	2.9329	3.1739	3.7537
44.4	.30503	1.1602	2.5201	2.9264	3.1671	3.7455
44.5	.30570	1.1577	2.5146	2.9200	3.1601	3.7373
44.6	.30636	1.1552	2.5091	2.9137	3.1533	3.7293
44.7	.30702	1.1527	2.5037	2.9074	3.1465	3.7213
44.8	.30769	1.1502	2.4983	2.9012	3.1397	3.7132
44.9	.30835	1.1477	2.4929	2.8949	3.1330	3.7052
45.0	.30902	1.1452	2.4875	2.8886	3.1262	3.6972
45.1	.30968	1.1428	2.4822	2.8825	3.1195	3.6893
45.2	.31034	1.1404	2.4770	2.8763	3.1129	3.6814
45.3	.31101	1.1379	2.4716	2.8701	3.1062	3.6735
45.4	.31167	1.1355	2.4664	2.8640	3.0996	3.6657
45.5	.31233	1.1331	2.4612	2.8581	3.0930	3.6580
45.6	.31300	1.1307	2.4559	2.8519	3.0864	3.6502
45.7	.31366	1.1283	2.4507	2.8459	3.0799	3.6425
45.8	.31432	1.1259	2.4456	2.8399	3.0735	3.6348
45.9	.31499	1.1235	2.4404	2.8339	3.0669	3.6271

R		d (Å)				
		Mo $K\alpha_1$	Cu $K\alpha_1$	Co $K\alpha_1$	Fe $K\alpha_1$	Cr $K\alpha_1$
(mm)	Sin θ	=0.7078	=1.5374	=1.7853	=1.9321	=2.2850
46.0	.31565	1.1212	2.4353	2.8279	3.0605	3.6195
46.1	.31631	1.1188	2.4302	2.8220	3.0541	3.6120
46.2	.31697	1.1165	2.4252	2.8161	3.0478	3.6044
46.3	.31764	1.1142	2.4200	2.8103	3.0415	3.5968
46.4	.31830	1.1118	2.4150	2.8044	3.0350	3.5894
46.5	.31896	1.1095	2.4100	2.7986	3.0287	3.5820
46.6	.31963	1.1073	2.4050	2.7927	3.0225	3.5746
46.7	.32039	1.1050	2.4001	2.7870	3.0163	3.5672
46.8	.32095	1.1027	2.3952	2.7812	3.0101	3.5599
46.9	.32160	1.1004	2.3902	2.7754	3.0039	3.5525
47.0	.32227	1.0981	2.3853	2.7697	2.9976	3.5452
47.1	.32293	1.0959	2.3804	2.7642	2.9915	3.5379
47.2	.32359	1.0937	2.3755	2.7586	2.9854	3.5307
47.3	.32425	1.0914	2.3707	2.7530	2.9793	3.5235
47.4	.32491	1.0892	2.3659	2.7474	2.9733	3.5164
47.5	.32557	1.0870	2.3611	2.7418	2.9673	3.5092
47.6	.32623	1.0848	2.3563	2.7362	2.9613	3.5021
47.7	.32689	1.0826	2.3516	2.7307	2.9553	3.4951
47.8	.32755	1.0804	2.3468	2.7252	2.9493	3.4880
47.9	.32821	1.0783	2.3421	2.7198	2.9434	3.4810
48.0	.32887	1.0761	2.3374	2.7143	2.9375	3.4740
48.1	.32953	1.0740	2.3327	2.7089	2.9316	3.4671
48.2	.33018	1.0718	2.3281	2.7034	2.9258	3.4602
48.3	.33084	1.0697	2.3235	2.6981	2.9200	3.4533
48.4	.33150	1.0676	2.3189	2.6927	2.9142	3.4465
48.5	.33216	1.0655	2.3142	2.6874	2.9084	3.4396
48.6	.33282	1.0633	2.3097	2.6820	2.9026	3.4328
48.7	.33348	1.0612	2.3051	2.6768	2.8969	3.4260
48.8	.33414	1.0591	2.3005	2.6715	2.8912	3.4192
48.9	.33479	1.0571	2.2961	2.6663	2.8855	3.4126
49.0	.33545	1.0550	2.2915	2.6611	2.8799	3.4059
49.1	.33611	1.0529	2.2870	2.6558	2.8742	3.3992
49.2	.33677	1.0509	2.2826	2.6506	2.8686	3.3925
49.3	.33742	1.0488	2.2782	2.6455	2.8630	3.3860
49.4	.33808	1.0468	2.2737	2.6403	2.8575	3.3794
49.5	.33874	1.0448	2.2693	2.6351	2.8519	3.3728
49.6	.33939	1.0428	2.2649	2.6301	2.8464	3.3663
49.7	.34005	1.0407	2.2605	2.6251	2.8409	3.3598
49.8	.34071	1.0387	2.2562	2.6200	2.8354	3.3533
49.9	.34136	1.0367	2.2519	2.6150	2.8300	3.3469

R		d (Å)				
		Mo $K\alpha_1$	Cu $K\alpha_1$	Co $K\alpha_1$	Fe $K\alpha_1$	Cr $K\alpha_1$
(mm)	Sin θ	=0.7078	=1.5374	=1.7853	=1.9321	2.2850
50.0	.34202	1.0347	2.2475	2.6099	2.8245	3.3404
50.1	.34268	1.0327	2.2432	2.6049	2.8191	3.3340
50.2	.34333	1.0308	2.2390	2.5999	2.8138	3.3277
50.3	.34399	1.0288	2.2347	2.5949	2.8084	3.3213
50.4	.34464	1.0269	2.2304	2.5900	2.8031	3.3151
50.5	.34530	1.0249	2.2262	2.5851	2.7977	3.3087
50.6	.34595	1.0230	2.2220	2.5803	2.7925	3.3025
50.7	.34661	1.0210	2.2178	2.5755	2.7871	3.2962
50.8	.34726	1.0191	2.2136	2.5706	2.7819	3.2900
50.9	.34792	1.0172	2.2094	2.5657	2.7766	3.2838
51.0	.34857	1.0153	2.2053	2.5609	2.7715	3.2777
51.1	.34923	1.0134	2.2011	2.5560	2.7662	3.2715
51.2	.34988	1.0115	2.1970	2.5513	2.7611	3.2654
51.3	.35053	1.0096	2.1930	2.5465	2.7560	3.2594
51.4	.35119	1.0077	2.1888	2.5417	2.7508	3.2532
51.5	.35184	1.0059	2.1848	2.5371	2.7457	3.2472
51.6	.35250	1.0040	2.1807	2.5324	2.7406	3.2411
51.7	.35315	1.0021	2.1767	2.5277	2.7355	3.2352
51.8	.35380	1.0003	2.1727	2.5230	2.7305	3.2292
51.9	.35445	.9984	2.1687	2.5184	2.7255	3.2233
52.0	.35511	.9966	2.1647	2.5137	2.7204	3.2173
52.1	.35576	.9948	2.1607	2.5091	2.7155	3.2114
52.2	.35641	.9930	2.1568	2.5045	2.7105	3.2056
52.3	.35706	.9911	2.1529	2.4999	2.7056	3.1997
52.4	.35772	.9893	2.1489	2.4954	2.7006	3.1938
52.5	.35837	.9875	2.1450	2.4909	2.6957	3.1880
52.6	.35902	.9857	2.1411	2.4864	2.6908	3.1823
52.7	.35967	.9840	2.1372	2.4819	2.6859	3.1765
52.8	.36032	.9822	2.1334	2.4774	2.6811	3.1708
52.9	.36097	.9804	2.1295	2.4729	2.6763	3.1651
53.0	.36162	.9787	2.1257	2.4685	2.6714	3.1594
53.1	.36228	.9769	2.1218	2.4639	2.6666	3.1536
53.2	.36293	.9751	2.1180	2.4595	2.6618	3.1480
53.3	.36358	.9734	2.1143	2.4552	2.6570	3.1424
53.4	.36423	.9716	2.1105	2.4507	2.6523	3.1368
53.5	.36488	.9699	2.1067	2.4465	2.6476	3.1312
53.6	.36553	.9682	2.1030	2.4421	2.6429	3.1256
53.7	.36618	.9665	2.0992	2.4377	2.6382	3.1201
53.8	.36683	.9648	2.0955	2.4335	2.6335	3.1145
53.9	.36748	.9630	2.0918	2.4292	2.6288	3.1090

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ = 0.7078	Cu $K\alpha_1$ = 1.5374	Co $K\alpha_1$ = 1.7853	Fe $K\alpha_1$ = 1.9321	Cr $K\alpha_1$ = 2.2850
54.0	.36812	.9614	2.0882	2.4249	2.6243	3.1036
54.1	.36877	.9597	2.0845	2.4205	2.6197	3.0981
54.2	.36942	.9580	2.0808	2.4163	2.6150	3.0927
54.3	.37007	.9563	2.0772	2.4121	2.6105	3.0873
54.4	.37072	.9546	2.0735	2.4078	2.6059	3.0818
54.5	.37137	.9530	2.0699	2.4036	2.6013	3.0764
54.6	.37202	.9513	2.0663	2.3995	2.5968	3.0711
54.7	.37266	.9497	2.0627	2.3953	2.5923	3.0658
54.8	.37331	.9480	2.0591	2.3912	2.5878	3.0605
54.9	.37396	.9464	2.0556	2.3870	2.5833	3.0551
55.0	.37461	.9447	2.0520	2.3829	2.5788	3.0498
55.1	.37525	.9431	2.0485	2.3787	2.5744	3.0446
55.2	.37590	.9415	2.0450	2.3747	2.5700	3.0394
55.3	.37655	.9398	2.0414	2.3706	2.5655	3.0341
55.4	.37719	.9383	2.0380	2.3665	2.5612	3.0290
55.5	.37784	.9366	2.0345	2.3625	2.5568	3.0238
55.6	.37849	.9350	2.0310	2.3584	2.5524	3.0186
55.7	.37913	.9335	2.0275	2.3545	2.5481	3.0135
55.8	.37978	.9319	2.0241	2.3505	2.5437	3.0083
55.9	.38042	.9303	2.0207	2.3465	2.5394	3.0033
56.0	.38107	.9287	2.0172	2.3425	2.5351	2.9981
56.1	.38172	.9271	2.0138	2.3385	2.5308	2.9930
56.2	.38236	.9256	2.0104	2.3346	2.5265	2.9880
56.3	.38301	.9240	2.0070	2.3307	2.5223	2.9830
56.4	.38365	.9225	2.0036	2.3267	2.5181	2.9780
56.5	.38430	.9209	2.0003	2.3228	2.5138	2.9729
56.6	.38494	.9194	1.9969	2.3189	2.5096	2.9680
56.7	.38558	.9178	1.9936	2.3150	2.5054	2.9631
56.8	.38623	.9163	1.9903	2.3113	2.5012	2.9581
56.9	.38687	.9148	1.9870	2.3074	2.4971	2.9532
57.0	.38752	.9132	1.9836	2.3036	2.4929	2.9482
57.1	.38816	.9117	1.9804	2.2997	2.4888	2.9434
57.2	.38880	.9102	1.9771	2.2959	2.4847	2.9385
57.3	.38945	.9087	1.9738	2.2921	2.4805	2.9336
57.4	.39009	.9072	1.9706	2.2883	2.4765	2.9288
57.5	.39073	.9057	1.9673	2.2845	2.4724	2.9240
57.6	.39137	.9043	1.9641	2.2808	2.4684	2.9192
57.7	.39202	.9028	1.9609	2.2771	2.4643	2.9144
57.8	.39266	.9013	1.9577	2.2734	2.4603	2.9096
57.9	.39330	.8998	1.9545	2.2696	2.4563	2.9049

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
58.0	.39394	.8984	1.9513	2.2659	2.4523	2.9002
58.1	.39458	.8969	1.9481	2.2623	2.4483	2.8955
58.2	.39522	.8954	1.9450	2.2586	2.4443	2.8908
58.3	.39587	.8940	1.9418	2.2550	2.4403	2.8860
58.4	.39651	.8925	1.9387	2.2513	2.4364	2.8814
58.5	.39715	.8911	1.9355	2.2476	2.4325	2.8767
58.6	.39779	.8897	1.9324	2.2440	2.4285	2.8721
58.7	.39843	.8882	1.9293	2.2404	2.4246	2.8675
58.8	.39907	.8868	1.9262	2.2368	2.4206	2.8629
58.9	.39971	.8854	1.9231	2.2332	2.4169	2.8583
59.0	.40035	.8840	1.9201	2.2296	2.4130	2.8538
59.1	.40099	.8826	1.9170	2.2261	2.4092	2.8492
59.2	.40163	.8812	1.9140	2.2225	2.4053	2.8447
59.3	.40227	.8798	1.9109	2.2191	2.4015	2.8401
59.4	.40291	.8784	1.9079	2.2155	2.3977	2.8356
59.5	.40355	.8770	1.9048	2.2120	2.3939	2.8311
59.6	.40418	.8756	1.9019	2.2086	2.3901	2.8267
59.7	.40482	.8742	1.8989	2.2051	2.3864	2.8222
59.8	.40546	.8728	1.8959	2.2016	2.3826	2.8178
59.9	.40610	.8715	1.8929	2.1981	2.3788	2.8133
60.0	.40674	.8701	1.8899	2.1946	2.3751	2.8089
60.1	.40737	.8687	1.8870	2.1912	2.3714	2.8046
60.2	.40801	.8674	1.8840	2.1878	2.3677	2.8002
60.3	.40865	.8660	1.8811	2.1843	2.3640	2.7958
60.4	.40929	.8647	1.8781	2.1809	2.3603	2.7914
60.5	.40992	.8633	1.8752	2.1776	2.3567	2.7871
60.6	.41056	.8628	1.8723	2.1742	2.3530	2.7828
60.7	.41120	.8607	1.8694	2.1709	2.3493	2.7785
60.8	.41183	.8593	1.8665	2.1675	2.3457	2.7742
60.9	.41247	.8580	1.8636	2.1642	2.3421	2.7699
61.0	.41310	.8567	1.8608	2.1609	2.3385	2.7657
61.1	.41374	.8554	1.8579	2.1575	2.3349	2.7614
61.2	.41438	.8540	1.8551	2.1542	2.3313	2.7571
61.3	.41501	.8528	1.8522	2.1509	2.3278	2.7529
61.4	.41565	.8514	1.8494	2.1476	2.3242	2.7487
61.5	.41628	.8501	1.8466	2.1443	2.3207	2.7445
61.6	.41692	.8488	1.8438	2.1411	2.3171	2.7403
61.7	.41755	.8476	1.8410	2.1378	2.3136	2.7362
61.8	.41818	.8463	1.8382	2.1345	2.3101	2.7321
61.9	.41882	.8450	1.8354	2.1313	2.3066	2.7279

R (mm)	Sin θ	d (Å) Mo K_1 = 0.7078	Cu $K\alpha_1$ = 1.5374	Co $K\alpha_1$ = 1.7853	Fe $K\alpha_1$ = 1.9321	Cr $K\alpha_1$ = 2.2850
62.0	.41945	.8437	1.8326	2.1282	2.3031	2.7238
62.1	.42009	.8424	1.8298	2.1250	2.2996	2.7197
62.2	.42072	.8412	1.8271	2.1218	2.2962	2.7156
62.3	.42135	.8399	1.8244	2.1186	2.2927	2.7115
62.4	.42199	.8386	1.8216	2.1154	2.2893	2.7074
62.5	.42262	.8374	1.8189	2.1122	2.2859	2.7034
62.6	.42325	.8361	1.8162	2.1090	2.2825	2.6994
62.7	.42388	.8349	1.8135	2.1059	2.2791	2.6953
62.8	.42452	.8336	1.8108	2.1028	2.2756	2.6913
62.9	.42515	.8324	1.8081	2.0996	2.2723	2.6873
63.0	.42578	.8312	1.8054	2.0965	2.2689	2.6833
63.1	.42641	.8300	1.8027	2.0934	2.2655	2.6793
63.2	.42704	.8287	1.8001	2.0903	2.2622	2.6754
63.3	.42767	.8275	1.7974	2.0872	2.2589	2.6715
63.4	.42830	.8263	1.7948	2.0841	2.2555	2.6675
63.5	.42894	.8251	1.7921	2.0811	2.2522	2.6635
63.6	.42957	.8238	1.7895	2.0781	2.2489	2.6596
63.7	.43020	.8226	1.7868	2.0750	2.2456	2.6557
63.8	.43083	.8214	1.7842	2.0719	2.2423	2.6519
63.9	.43146	.8202	1.7816	2.0689	2.2390	2.6480
64.0	.43209	.8190	1.7790	2.0659	2.2358	2.6441
64.1	.43272	.8178	1.7764	2.0629	2.2325	2.6403
64.2	.43334	.8167	1.7739	2.0599	2.2293	2.6365
64.3	.43397	.8155	1.7713	2.0569	2.2261	2.6327
64.4	.43460	.8143	1.7689	2.0539	2.2228	2.6289
64.5	.43523	.8131	1.7662	2.0510	2.2196	2.6250
64.6	.43586	.8120	1.7636	2.0480	2.2164	2.6213
64.7	.43649	.8108	1.7611	2.0451	2.2132	2.6175
64.8	.43712	.8096	1.7586	2.0421	2.2100	2.6137
64.9	.43774	.8085	1.7561	2.0392	2.2069	2.6100
65.0	.43837	.8073	1.7535	2.0363	2.2037	2.6062
65.1	.43900	.8062	1.7510	2.0334	2.2006	2.6025
65.2	.43963	.8050	1.7485	2.0305	2.1974	2.5988
65.3	.44025	.8039	1.7461	2.0276	2.1943	2.5951
65.4	.44088	.8027	1.7436	2.0247	2.1912	2.5914
65.5	.44151	.8016	1.7411	2.0218	2.1881	2.5877
65.6	.44213	.8004	1.7386	2.0189	2.1850	2.5841
65.7	.44276	.7993	1.7362	2.0160	2.1819	2.5804
65.8	.44338	.7982	1.7337	2.0132	2.1788	2.5768
65.9	.44401	.7971	1.7315	2.0104	2.1757	2.5731

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
66.0	.44464	.7959	1.7288	2.0076	2.1727	2.5695
66.1	.44526	.7948	1.7264	2.0047	2.1696	2.5659
66.2	.44589	.7937	1.7240	2.0019	2.1666	2.5623
66.3	.44651	.7926	1.7216	1.9991	2.1636	2.5587
66.4	.44713	.7915	1.7192	1.9963	2.1606	2.5552
66.5	.44776	.7904	1.7168	1.9935	2.1575	2.5516
66.6	.44838	.7893	1.7144	1.9909	2.1545	2.5481
66.7	.44901	.7882	1.7120	1.9881	2.1515	2.5445
66.8	.44963	.7871	1.7096	1.9852	2.1485	2.5410
66.9	.45025	.7860	1.7073	1.9826	2.1456	2.5375
67.0	.45088	.7849	1.7049	1.9798	2.1426	2.5339
67.1	.45150	.7838	1.7025	1.9771	2.1396	2.5305
67.2	.45212	.7828	1.7002	1.9743	2.1367	2.5270
67.3	.45275	.7817	1.6978	1.9716	2.1337	2.5235
67.4	.45337	.7806	1.6955	1.9689	2.1308	2.5200
67.5	.45399	.7795	1.6932	1.9662	2.1279	2.5166
67.6	.45461	.7785	1.6909	1.9635	2.1250	2.5131
67.7	.45523	.7774	1.6886	1.9608	2.1221	2.5097
67.8	.45586	.7763	1.6863	1.9581	2.1192	2.5063
67.9	.45648	.7753	1.6840	1.9555	2.1163	2.5028
68.0	.45710	.7742	1.6817	1.9528	2.1134	2.4995
68.1	.45772	.7732	1.6794	1.9502	2.1106	2.4961
68.2	.45834	.7721	1.6771	1.9475	2.1077	2.4927
68.3	.45896	.7711	1.6749	1.9450	2.1049	2.4893
68.4	.45958	.7700	1.6726	1.9423	2.1020	2.4860
68.5	.46020	.7690	1.6704	1.9397	2.0992	2.4826
68.6	.46082	.7680	1.6681	1.9371	2.0964	2.4793
68.7	.46144	.7669	1.6659	1.9345	2.0936	2.4759
68.8	.46206	.7659	1.6636	1.9319	2.0907	2.4726
68.9	.46268	.7649	1.6614	1.9293	2.0879	2.4693
69.0	.46330	.7639	1.6592	1.9267	2.0852	2.4660
69.1	.46391	.7629	1.6570	1.9242	2.0824	2.4628
69.2	.46453	.7618	1.6548	1.9216	2.0796	2.4595
69.3	.46515	.7608	1.6526	1.9190	2.0769	2.4562
69.4	.46577	.7598	1.6504	1.9165	2.0741	2.4529
69.5	.46639	.7588	1.6482	1.9139	2.0713	2.4497
69.6	.46700	.7578	1.6460	1.9114	2.0686	2.4465
69.7	.46762	.7568	1.6439	1.9089	2.0659	2.4432
69.8	.46824	.7558	1.6417	1.9063	2.0632	2.4400
69.9	.46886	.7548	1.6395	1.9038	2.0604	2.4368

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
70.0	.46947	.7538	1.6374	1.9013	2.0577	2.4336
70.1	.47009	.7528	1.6352	1.8989	2.0550	2.4304
70.2	.47070	.7519	1.6331	1.8964	2.0524	2.4272
70.3	.47132	.7509	1.6310	1.8940	2.0497	2.4240
70.4	.47194	.7499	1.6288	1.8915	2.0470	2.4209
70.5	.47255	.7489	1.6267	1.8889	2.0443	2.4177
70.6	.47317	.7479	1.6246	1.8865	2.0417	2.4146
70.7	.47378	.7470	1.6225	1.8841	2.0390	2.4115
70.8	.47440	.7460	1.6204	1.8817	2.0364	2.4083
70.9	.47501	.7450	1.6183	1.8792	2.0337	2.4052
71.0	.47562	.7441	1.6162	1.8768	2.0311	2.4021
71.1	.47624	.7431	1.6141	1.8744	2.0285	2.3990
71.2	.47685	.7422	1.6120	1.8720	2.0259	2.3959
71.3	.47747	.7412	1.6099	1.8696	2.0233	2.3928
71.4	.47808	.7403	1.6079	1.8671	2.0207	2.3898
71.5	.47869	.7393	1.6058	1.8647	2.0181	2.3867
71.6	.47930	.7384	1.6038	1.8624	2.0155	2.3837
71.7	.47992	.7374	1.6017	1.8600	2.0129	2.3806
71.8	.48053	.7365	1.5997	1.8576	2.0104	2.3776
71.9	.48114	.7355	1.5977	1.8552	2.0078	2.3746
72.0	.48175	.7346	1.5956	1.8530	2.0053	2.3716
72.1	.48237	.7337	1.5936	1.8506	2.0027	2.3685
72.2	.48298	.7327	1.5916	1.8482	2.0002	2.3655
72.3	.48359	.7318	1.5896	1.8459	1.9977	2.3625
72.4	.48420	.7309	1.5876	1.8436	1.9951	2.3596
72.5	.48481	.7300	1.5856	1.8412	1.9926	2.3566
72.6	.48542	.7291	1.5836	1.8389	1.9901	2.3536
72.7	.48603	.7281	1.5816	1.8366	1.9876	2.3507
72.8	.48664	.7272	1.5796	1.8343	1.9851	2.3477
72.9	.48725	.7263	1.5776	1.8320	1.9827	2.3448
73.0	.48786	.7254	1.5757	1.8297	1.9802	2.3419
73.1	.48847	.7245	1.5737	1.8274	1.9777	2.3389
73.2	.48908	.7236	1.5717	1.8251	1.9752	2.3360
73.3	.48969	.7227	1.5698	1.8229	1.9728	2.3331
73.4	.49030	.7218	1.5678	1.8206	1.9703	2.3302
73.5	.49090	.7209	1.5659	1.8184	1.9679	2.3274
73.6	.49151	.7200	1.5640	1.8161	1.9655	2.3245
73.7	.49212	.7191	1.5620	1.8138	1.9630	2.3216
73.8	.49273	.7182	1.5601	1.8116	1.9606	2.3187
73.9	.49333	.7174	1.5582	1.8093	1.9582	2.3159

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
74.0	.49394	.7165	1.5563	1.8072	1.9558	2.3130
74.1	.49455	.7156	1.5543	1.8050	1.9534	2.3102
74.2	.49516	.7147	1.5524	1.8028	1.9510	2.3073
74.3	.49576	.7139	1.5505	1.8006	1.9486	2.3045
74.4	.49637	.7130	1.5486	1.7984	1.9462	2.3017
74.5	.49697	.7121	1.5468	1.7964	1.9439	2.2989
74.6	.49758	.7112	1.5449	1.7940	1.9415	2.2961
74.7	.49819	.7104	1.5430	1.7918	1.9391	2.2933
74.8	.49879	.7095	1.5411	1.7896	1.9368	2.2905
74.9	.49940	.7086	1.5392	1.7875	1.9344	2.2877
75.0	.50000	.7078	1.5374	1.7853	1.9321	2.2850
75.1	.50060	.7070	1.5356	1.7831	1.9298	2.2823
75.2	.50121	.7061	1.5337	1.7810	1.9274	2.2795
75.3	.50181	.7052	1.5319	1.7788	1.9251	2.2768
75.4	.50242	.7044	1.5300	1.7767	1.9228	2.2740
75.5	.50302	.7036	1.5282	1.7745	1.9205	2.2713
75.6	.50362	.7027	1.5263	1.7724	1.9182	2.2686
75.7	.50423	.7019	1.5245	1.7703	1.9159	2.2658
75.8	.50483	.7010	1.5227	1.7682	1.9136	2.2631
75.9	.50543	.7002	1.5209	1.7661	1.9113	2.2605
76.0	.50603	.6994	1.5191	1.7640	1.9091	2.2578
76.1	.50664	.6985	1.5172	1.7619	1.9068	2.2551
76.2	.50724	.6974	1.5155	1.7598	1.9045	2.2524
76.3	.50784	.6969	1.5137	1.7577	1.9023	2.2497
76.4	.50844	.6960	1.5119	1.7557	1.9000	2.2471
76.5	.50904	.6952	1.5101	1.7536	1.8978	2.2444
76.6	.50964	.6944	1.5083	1.7516	1.8956	2.2418
76.7	.51024	.6936	1.5065	1.7495	1.8933	2.2391
76.8	.51084	.6928	1.5048	1.7474	1.8911	2.2365
76.9	.51144	.6920	1.5030	1.7454	1.8889	2.2339
77.0	.51204	.6912	1.5012	1.7433	1.8867	2.2313
77.1	.51264	.6903	1.4995	1.7413	1.8845	2.2287
77.2	.51324	.6895	1.4977	1.7392	1.8823	2.2261
77.3	.51384	.6887	1.4960	1.7372	1.8801	2.2235
77.4	.51444	.6879	1.4942	1.7352	1.8779	2.2209
77.5	.51504	.6871	1.4925	1.7331	1.8757	2.2183
77.6	.51564	.6863	1.4908	1.7311	1.8735	2.2157
77.7	.51623	.6855	1.4891	1.7291	1.8714	2.2132
77.8	.51683	.6848	1.4873	1.7271	1.8692	2.2106
77.9	.51743	.6840	1.4856	1.7251	1.8670	2.2080

R (mm)	Sin θ	d (Å) Mo Kα$_1$ =0.7078	Cu Kα$_1$ =1.5374	Co Kα$_1$ =1.7853	Fe Kα$_1$ =1.9321	Cr Kα$_1$ =2.2850
78.0	.51803	.6832	1.4839	1.7231	1.8649	2.2055
78.1	.51862	.6824	1.4822	1.7212	1.8627	2.2030
78.2	.51922	.6816	1.4805	1.7192	1.8606	2.2004
78.3	.51982	.6808	1.4788	1.7172	1.8584	2.1979
78.4	.52041	.6800	1.4771	1.7153	1.8563	2.1954
78.5	.52101	.6793	1.4754	1.7133	1.8542	2.1929
78.6	.52161	.6785	1.4737	1.7114	1.8521	2.1903
78.7	.52220	.6777	1.4720	1.7094	1.8500	2.1879
78.8	.52280	.6769	1.4704	1.7075	1.8478	2.1853
78.9	.52339	.6762	1.4687	1.7055	1.8458	2.1829
79.0	.52399	.6754	1.4670	1.7036	1.8436	2.1804
79.1	.52458	.6746	1.4654	1.7017	1.8416	2.1779
79.2	.52517	.6739	1.4637	1.6997	1.8395	2.1755
79.3	.52577	.6731	1.4620	1.6978	1.8374	2.1730
79.4	.52636	.6724	1.4604	1.6959	1.8353	2.1706
79.5	.52696	.6716	1.4587	1.6940	1.8333	2.1681
79.6	.52755	.6708	1.4571	1.6921	1.8312	2.1657
79.7	.52814	.6701	1.4555	1.6902	1.8292	2.1633
79.8	.52873	.6693	1.4539	1.6883	1.8271	2.1608
79.9	.52933	.6686	1.4522	1.6864	1.8250	2.1584
80.0	.52992	.6678	1.4506	1.6845	1.8230	2.1560
80.1	.53051	.6671	1.4490	1.6826	1.8210	2.1536
80.2	.53110	.6664	1.4474	1.6807	1.8190	2.1512
80.3	.53169	.6656	1.4458	1.6788	1.8169	2.1488
80.4	.53229	.6649	1.4441	1.6770	1.8149	2.1464
80.5	.53288	.6641	1.4425	1.6751	1.8129	2.1440
80.6	.53347	.6634	1.4409	1.6732	1.8109	2.1416
80.7	.53406	.6627	1.4394	1.6714	1.8089	2.1393
80.8	.53465	.6619	1.4378	1.6696	1.8069	2.1369
80.9	.53524	.6612	1.4362	1.6678	1.8049	2.1346
81.0	.53583	.6605	1.4346	1.6660	1.8029	2.1322
81.1	.53642	.6597	1.4330	1.6641	1.8009	2.1299
81.2	.53701	.6590	1.4314	1.6623	1.7989	2.1275
81.3	.53759	.6583	1.4299	1.6605	1.7970	2.1252
81.4	.53818	.6576	1.4283	1.6587	1.7950	2.1229
81.5	.53877	.6569	1.4268	1.6568	1.7931	2.1206
81.6	.53936	.6561	1.4252	1.6550	1.7911	2.1183
81.7	.53995	.6554	1.4236	1.6532	1.7891	2.1159
81.8	.54053	.6547	1.4221	1.6514	1.7872	2.1137
81.9	.54112	.6540	1.4206	1.6496	1.7853	2.1114

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
82.0	.54171	.6533	1.4190	1.6478	1.7833	2.1091
82.1	.54229	.6526	1.4175	1.6460	1.7814	2.1068
82.2	.54288	.6519	1.4160	1.6443	1.7795	2.1045
82.3	.54347	.6512	1.4144	1.6425	1.7776	2.1022
82.4	.54405	.6505	1.4129	1.6407	1.7757	2.1000
82.5	.54464	.6498	1.4114	1.6389	1.7737	2.0977
82.6	.54522	.6491	1.4099	1.6372	1.7719	2.0955
82.7	.54581	.6484	1.4084	1.6354	1.7699	2.0932
82.8	.54639	.6477	1.4069	1.6337	1.7681	2.0910
82.9	.54698	.6470	1.4054	1.6319	1.7662	2.0887
83.0	.54756	.6463	1.4039	1.6302	1.7643	2.0865
83.1	.54815	.6456	1.4024	1.6284	1.7624	2.0843
83.2	.54873	.6449	1.4009	1.6267	1.7605	2.0821
83.3	.54931	.6443	1.3994	1.6249	1.7587	2.0799
83.4	.54990	.6436	1.3979	1.6233	1.7568	2.0776
83.5	.55048	.6429	1.3964	1.6216	1.7549	2.0755
83.6	.55106	.6422	1.3949	1.6199	1.7531	2.0733
83.7	.55165	.6415	1.3935	1.6182	1.7512	2.0711
83.8	.55223	.6409	1.3920	1.6165	1.7494	2.0689
83.9	.55281	.6402	1.3905	1.6148	1.7475	2.0667
84.0	.55339	.6395	1.3891	1.6131	1.7457	2.0645
84.1	.55397	.6388	1.3876	1.6114	1.7439	2.0624
84.2	.55455	.6382	1.3862	1.6097	1.7420	2.0602
84.3	.55513	.6375	1.3847	1.6080	1.7402	2.0581
84.4	.55572	.6368	1.3832	1.6063	1.7384	2.0559
84.5	.55630	.6362	1.3818	1.6046	1.7366	2.0537
84.6	.55688	.6355	1.3804	1.6029	1.7348	2.0516
84.7	.55746	.6348	1.3789	1.6013	1.7329	2.0495
84.8	.55803	.6342	1.3775	1.5996	1.7312	2.0474
84.9	.55861	.6335	1.3761	1.5980	1.7294	2.0453
85.0	.55919	.6329	1.3747	1.5963	1.7276	2.0431
85.1	.55977	.6322	1.3732	1.5946	1.7258	2.0410
85.2	.56035	.6316	1.3718	1.5931	1.7240	2.0389
85.3	.56093	.6309	1.3704	1.5913	1.7222	2.0368
85.4	.56151	.6303	1.3690	1.5897	1.7204	2.0347
85.5	.56208	.6296	1.3676	1.5881	1.7187	2.0326
85.6	.56266	.6290	1.3662	1.5865	1.7169	2.0305
85.7	.56324	.6283	1.3648	1.5848	1.7152	2.0284
85.8	.56381	.6277	1.3634	1.5832	1.7134	2.0264
85.9	.56439	.6270	1.3620	1.5816	1.7117	2.0243

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
86.0	.56497	.6264	1.3606	1.5799	1.7099	2.0222
86.1	.56554	.6258	1.3592	1.5784	1.7082	2.0202
86.2	.56612	.6251	1.3578	1.5768	1.7064	2.0181
86.3	.56669	.6245	1.3565	1.5752	1.7047	2.0161
86.4	.56727	.6239	1.3551	1.5736	1.7030	2.0140
86.5	.56784	.6232	1.3537	1.5720	1.7013	2.0120
86.6	.56842	.6226	1.3523	1.5704	1.6995	2.0100
86.7	.56899	.6220	1.3510	1.5689	1.6978	2.0079
86.8	.56957	.6213	1.3496	1.5672	1.6961	2.0059
86.9	.57014	.6207	1.3483	1.5657	1.6944	2.0039
87.0	.57071	.6201	1.3469	1.5641	1.6927	2.0019
87.1	.57129	.6195	1.3456	1.5625	1.6910	1.9999
87.2	.57186	.6189	1.3442	1.5610	1.6893	1.9979
87.3	.57243	.6182	1.3429	1.5594	1.6876	1.9959
87.4	.57300	.6176	1.3415	1.5578	1.6860	1.9939
87.5	.57358	.6170	1.3402	1.5563	1.6842	1.9919
87.6	.57415	.6164	1.3388	1.5547	1.6826	1.9899
87.7	.57472	.6158	1.3375	1.5532	1.6809	1.9879
87.8	.57529	.6152	1.3362	1.5516	1.6792	1.9860
87.9	.57586	.6146	1.3349	1.5501	1.6776	1.9840
88.0	.57643	.6140	1.3336	1.5485	1.6759	1.9820
88.1	.57700	.6133	1.3322	1.5470	1.6743	1.9801
88.2	.57757	.6127	1.3309	1.5455	1.6726	1.9781
88.3	.57814	.6121	1.3296	1.5440	1.6710	1.9762
88.4	.57871	.6115	1.3283	1.5424	1.6693	1.9742
88.5	.57928	.6109	1.3270	1.5409	1.6677	1.9723
88.6	.57985	.6103	1.3257	1.5394	1.6660	1.9703
88.7	.58042	.6097	1.3244	1.5379	1.6644	1.9684
88.8	.58099	.6091	1.3231	1.5364	1.6628	1.9665
88.9	.58156	.6085	1.3218	1.5349	1.6611	1.9645
89.0	.58212	.6080	1.3205	1.5334	1.6595	1.9627
89.1	.58269	.6074	1.3192	1.5320	1.6579	1.9607
89.2	.58326	.6068	1.3179	1.5305	1.6563	1.9588
89.3	.58382	.6062	1.3167	1.5290	1.6547	1.9569
89.4	.58439	.6056	1.3154	1.5275	1.6531	1.9550
89.5	.58496	.6050	1.3141	1.5260	1.6515	1.9531
89.6	.58552	.6044	1.3128	1.5245	1.6499	1.9513
89.7	.58609	.6038	1.3116	1.5231	1.6483	1.9494
89.8	.58666	.6032	1.3103	1.5216	1.6467	1.9475
89.9	.58722	.6027	1.3090	1.5201	1.6451	1.9456

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
90.0	.58779	.6021	1.3078	1.5187	1.6435	1.9437
90.1	.58835	.6015	1.3065	1.5172	1.6420	1.9419
90.2	.58891	.6009	1.3053	1.5158	1.6404	1.9400
90.3	.58948	.6004	1.3040	1.5143	1.6388	1.9381
90.4	.59004	.5998	1.3028	1.5129	1.6373	1.9363
90.5	.59061	.5992	1.3015	1.5114	1.6357	1.9344
90.6	.59117	.5986	1.3003	1.5100	1.6341	1.9326
90.7	.59173	.5981	1.2991	1.5085	1.6326	1.9308
90.8	.59229	.5975	1.2978	1.5071	1.6310	1.9290
90.9	.59286	.5969	1.2966	1.5056	1.6295	1.9271
91.0	.59342	.5964	1.2954	1.5042	1.6279	1.9253
91.1	.59398	.5958	1.2942	1.5028	1.6264	1.9235
91.2	.59454	.5952	1.2929	1.5014	1.6249	1.9217
91.3	.59510	.5947	1.2917	1.5000	1.6233	1.9198
91.4	.59566	.5941	1.2905	1.4986	1.6218	1.9180
91.5	.59622	.5936	1.2893	1.4971	1.6203	1.9162
91.6	.59679	.5930	1.2881	1.4957	1.6187	1.9144
91.7	.59735	.5924	1.2868	1.4943	1.6172	1.9126
91.8	.59790	.5919	1.2857	1.4929	1.6157	1.9109
91.9	.59846	.5914	1.2845	1.4915	1.6142	1.9091
92.0	.59902	.5908	1.2833	1.4901	1.6127	1.9073
92.1	.59958	.5902	1.2821	1.4887	1.6112	1.9055
92.2	.60014	.5897	1.2809	1.4874	1.6097	1.9037
92.3	.60070	.5891	1.2797	1.4861	1.6082	1.9019
92.4	.60126	.5886	1.2785	1.4847	1.6067	1.9002
92.5	.60182	.5880	1.2773	1.4833	1.6052	1.8984
92.6	.60237	.5875	1.2761	1.4819	1.6037	1.8967
92.7	.60293	.5870	1.2749	1.4805	1.6023	1.8949
92.8	.60349	.5864	1.2738	1.4792	1.6008	1.8932
92.9	.60404	.5859	1.2726	1.4778	1.5993	1.8914
93.0	.60460	.5853	1.2714	1.4764	1.5978	1.8897
93.1	.60516	.5848	1.2702	1.4751	1.5964	1.8879
93.2	.60571	.5843	1.2691	1.4737	1.5949	1.8862
93.3	.60627	.5837	1.2679	1.4724	1.5934	1.8845
93.4	.60682	.5832	1.2668	1.4710	1.5920	1.8828
93.5	.60738	.5827	1.2656	1.4697	1.5905	1.8810
93.6	.60793	.5821	1.2645	1.4683	1.5891	1.8793
93.7	.60848	.5816	1.2633	1.4670	1.5876	1.8776
93.8	.60904	.5811	1.2622	1.4657	1.5862	1.8759
93.9	.60959	.5806	1.2610	1.4643	1.5848	1.8742

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
94.0	.61015	.5800	1.2599	1.4630	1.5833	1.8725
94.1	.61070	.5795	1.2587	1.4617	1.5819	1.8708
94.2	.61125	.5790	1.2576	1.4604	1.5804	1.8691
94.3	.61180	.5785	1.2565	1.4590	1.5790	1.8674
94.4	.61236	.5779	1.2553	1.4577	1.5776	1.8657
94.5	.61291	.5774	1.2542	1.4564	1.5762	1.8641
94.6	.61346	.5769	1.2531	1.4551	1.5748	1.8624
94.7	.61401	.5764	1.2519	1.4538	1.5733	1.8607
94.8	.61456	.5759	1.2508	1.4525	1.5719	1.8591
94.9	.61511	.5753	1.2497	1.4512	1.5705	1.8574
95.0	.61566	.5748	1.2486	1.4499	1.5691	1.8557
95.1	.61621	.5743	1.2475	1.4486	1.5677	1.8541
95.2	.61676	.5738	1.2464	1.4473	1.5663	1.8524
95.3	.61731	.5733	1.2452	1.4460	1.5649	1.8508
95.4	.61786	.5728	1.2441	1.4447	1.5635	1.8491
95.5	.61841	.5723	1.2430	1.4434	1.5622	1.8475
95.6	.61896	.5718	1.2419	1.4421	1.5608	1.8458
95.7	.61951	.5713	1.2408	1.4410	1.5594	1.8442
95.8	.62005	.5708	1.2397	1.4397	1.5580	1.8426
95.9	.62060	.5703	1.2386	1.4384	1.5566	1.8410
96.0	.62115	.5697	1.2375	1.4371	1.5553	1.8393
96.1	.62169	.5693	1.2365	1.4359	1.5539	1.8377
96.2	.62224	.5688	1.2354	1.4346	1.5525	1.8361
96.3	.62279	.5682	1.2343	1.4333	1.5512	1.8345
96.4	.62333	.5678	1.2332	1.4321	1.5498	1.8329
96.5	.62388	.5673	1.2321	1.4308	1.5485	1.8313
96.6	.62443	.5668	1.2310	1.4296	1.5471	1.8297
96.7	.62497	.5663	1.2300	1.4283	1.5458	1.8281
96.8	.62552	.5658	1.2289	1.4271	1.5444	1.8265
96.9	.62606	.5653	1.2278	1.4258	1.5431	1.8249
97.0	.62660	.5648	1.2268	1.4246	1.5417	1.8233
97.1	.62715	.5643	1.2257	1.4233	1.5404	1.8217
97.2	.62769	.5638	1.2246	1.4221	1.5391	1.8202
97.3	.62823	.5633	1.2236	1.4209	1.5377	1.8186
97.4	.62878	.5628	1.2225	1.4197	1.5364	1.8170
97.5	.62932	.5624	1.2215	1.4184	1.5351	1.8155
97.6	.62986	.5619	1.2204	1.4172	1.5338	1.8139
97.7	.63040	.5614	1.2194	1.4160	1.5324	1.8123
97.8	.63095	.5609	1.2183	1.4148	1.5311	1.8108
97.9	.63149	.5604	1.2173	1.4135	1.5298	1.8092

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
98.0	.63203	.5599	1.2162	1.4123	1.5285	1.8077
98.1	.63257	.5595	1.2152	1.4111	1.5272	1.8061
98.2	.63311	.5590	1.2142	1.4099	1.5259	1.8046
98.3	.63365	.5585	1.2131	1.4087	1.5246	1.8030
98.4	.63419	.5580	1.2121	1.4075	1.5233	1.8015
98.5	.63473	.5576	1.2111	1.4063	1.5220	1.8000
98.6	.63527	.5571	1.2100	1.4051	1.5207	1.7984
98.7	.63581	.5566	1.2090	1.4039	1.5194	1.7969
98.8	.63635	.5561	1.2080	1.4027	1.5181	1.7954
98.9	.63689	.5557	1.2070	1.4015	1.5168	1.7939
99.0	.63742	.5552	1.2060	1.4004	1.5156	1.7924
99.1	.63796	.5547	1.2049	1.3992	1.5143	1.7909
99.2	.63850	.5543	1.2039	1.3980	1.5130	1.7894
99.3	.63904	.5538	1.2029	1.3968	1.5117	1.7878
99.4	.63957	.5533	1.2019	1.3957	1.5105	1.7864
99.5	.64011	.5529	1.2009	1.3946	1.5092	1.7848
99.6	.64065	.5524	1.1999	1.3934	1.5079	1.7833
99.7	.64118	.5520	1.1989	1.3922	1.5067	1.7819
99.8	.64172	.5515	1.1979	1.3911	1.5054	1.7804
99.9	.64225	.5510	1.1969	1.3899	1.5042	1.7789
100.0	.64279	.5506	1.1959	1.3887	1.5029	1.7774
100.1	.64332	.5501	1.1949	1.3876	1.5017	1.7759
100.2	.64386	.5497	1.1939	1.3864	1.5004	1.7745
100.3	.64439	.5492	1.1929	1.3853	1.4992	1.7730
100.4	.64492	.5488	1.1919	1.3841	1.4979	1.7715
100.5	.64546	.5483	1.1909	1.3830	1.4967	1.7701
100.6	.64599	.5478	1.1900	1.3818	1.4955	1.7686
100.7	.64652	.5474	1.1890	1.3807	1.4942	1.7672
100.8	.64706	.5469	1.1880	1.3796	1.4930	1.7657
100.9	.64759	.5465	1.1870	1.3784	1.4918	1.7642
101.0	.64812	.5460	1.1860	1.3773	1.4905	1.7628
101.1	.64865	.5456	1.1851	1.3762	1.4893	1.7614
101.2	.64918	.5451	1.1841	1.3750	1.4881	1.7599
101.3	.64971	.5447	1.1831	1.3739	1.4869	1.7585
101.4	.65024	.5443	1.1822	1.3728	1.4857	1.7570
101.5	.65077	.5438	1.1812	1.3717	1.4845	1.7556
101.6	.65130	.5434	1.1803	1.3705	1.4833	1.7542
101.7	.65183	.5429	1.1793	1.3694	1.4821	1.7528
101.8	.65236	.5425	1.1783	1.3683	1.4809	1.7513
101.9	.65289	.5421	1.1774	1.3672	1.4797	1.7499

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
102.0	.65342	.5416	1.1764	1.3661	1.4785	1.7485
102.1	.65395	.5412	1.1755	1.3650	1.4773	1.7471
102.2	.65448	.5407	1.1745	1.3639	1.4761	1.7457
102.3	.65500	.5403	1.1736	1.3628	1.4749	1.7443
102.4	.65553	.5399	1.1726	1.3617	1.4737	1.7429
102.5	.65606	.5394	1.1717	1.3606	1.4725	1.7415
102.6	.65659	.5390	1.1707	1.3595	1.4713	1.7400
102.7	.65711	.5386	1.1698	1.3584	1.4701	1.7387
102.8	.65764	.5381	1.1689	1.3573	1.4690	1.7373
102.9	.65816	.5377	1.1680	1.3562	1.4678	1.7359
103.0	.65869	.5373	1.1670	1.3551	1.4666	1.7345
103.1	.65921	.5369	1.1661	1.3541	1.4655	1.7331
103.2	.65974	.5364	1.1652	1.3530	1.4643	1.7317
103.3	.66026	.5360	1.1642	1.3519	1.4631	1.7304
103.4	.66079	.5356	1.1633	1.3508	1.4620	1.7290
103.5	.66131	.5351	1.1624	1.3499	1.4608	1.7276
103.6	.66184	.5347	1.1615	1.3488	1.4596	1.7262
103.7	.66236	.5343	1.1605	1.3477	1.4585	1.7249
103.8	.66288	.5339	1.1596	1.3467	1.4574	1.7235
103.9	.66340	.5335	1.1587	1.3456	1.4562	1.7222
104.0	.66393	.5330	1.1578	1.3445	1.4550	1.7208
104.1	.66445	.5326	1.1569	1.3435	1.4539	1.7195
104.2	.66497	.5322	1.1560	1.3424	1.4528	1.7181
104.3	.66549	.5318	1.1551	1.3414	1.4516	1.7168
104.4	.66601	.5314	1.1542	1.3403	1.4505	1.7154
104.5	.66653	.5310	1.1533	1.3393	1.4494	1.7141
104.6	.66705	.5305	1.1524	1.3382	1.4482	1.7128
104.7	.66757	.5301	1.1515	1.3372	1.4471	1.7114
104.8	.66809	.5297	1.1506	1.3361	1.4460	1.7101
104.9	.66861	.5293	1.1497	1.3351	1.4449	1.7088
105.0	.66913	.5289	1.1488	1.3341	1.4437	1.7074
105.1	.66965	.5285	1.1479	1.3330	1.4426	1.7061
105.2	.67017	.5281	1.1470	1.3320	1.4415	1.7048
105.3	.67069	.5277	1.1461	1.3310	1.4404	1.7035
105.4	.67120	.5273	1.1453	1.3299	1.4393	1.7022
105.5	.67172	.5269	1.1444	1.3289	1.4382	1.7009
105.6	.67224	.5264	1.1435	1.3279	1.4371	1.6995
105.7	.67275	.5260	1.1426	1.3268	1.4360	1.6983
105.8	.67327	.5256	1.1417	1.3258	1.4349	1.6969
105.9	.67379	.5252	1.1409	1.3248	1.4338	1.6956

R (mm)	Sin θ	d (Å) Mo Kα$_1$ =0.7078	Cu Kα$_1$ =1.5374	Co Kα$_1$ =1.7853	Fe Kα$_1$ =1.9321	Cr Kα$_1$ =2.2850
106.0	.67430	.5248	1.1400	1.3238	1.4327	1.6943
106.1	.67482	.5244	1.1391	1.3228	1.4316	1.6930
106.2	.67533	.5240	1.1383	1.3218	1.4305	1.6918
106.3	.67585	.5236	1.1374	1.3208	1.4294	1.6905
106.4	.67636	.5232	1.1365	1.3197	1.4283	1.6892
106.5	.67688	.5228	1.1357	1.3187	1.4272	1.6879
106.6	.67739	.5224	1.1348	1.3177	1.4261	1.6866
106.7	.67790	.5221	1.1339	1.3167	1.4251	1.6854
106.8	.67842	.5217	1.1331	1.3157	1.4240	1.6841
106.9	.67893	.5213	1.1322	1.3148	1.4229	1.6828
107.0	.67944	.5209	1.1314	1.3138	1.4218	1.6815
107.1	.67995	.5205	1.1305	1.3128	1.4208	1.6803
107.2	.68047	.5201	1.1297	1.3118	1.4197	1.6790
107.3	.68098	.5197	1.1288	1.3108	1.4186	1.6777
107.4	.68149	.5193	1.1280	1.3098	1.4176	1.6765
107.5	.68200	.5189	1.1271	1.3088	1.4165	1.6752
107.6	.68251	.5185	1.1263	1.3078	1.4154	1.6740
107.7	.68302	.5181	1.1254	1.3069	1.4144	1.6727
107.8	.68353	.5178	1.1246	1.3059	1.4133	1.6715
107.9	.68404	.5174	1.1238	1.3049	1.4123	1.6702
108.0	.68455	.5170	1.1229	1.3039	1.4112	1.6690
108.1	.68506	.5166	1.1221	1.3030	1.4102	1.6677
108.2	.68556	.5162	1.1213	1.3021	1.4091	1.6665
108.3	.68607	.5158	1.1204	1.3011	1.4081	1.6653
108.4	.68658	.5155	1.1196	1.3002	1.4070	1.6640
108.5	.68709	.5151	1.1188	1.2991	1.4060	1.6628
108.6	.68759	.5147	1.1180	1.2983	1.4050	1.6616
108.7	.68810	.5143	1.1171	1.2973	1.4039	1.6604
108.8	.68861	.5139	1.1163	1.2963	1.4029	1.6591
108.9	.68911	.5136	1.1155	1.2954	1.4019	1.6579
109.0	.68962	.5132	1.1147	1.2944	1.4008	1.6567
109.1	.69012	.5128	1.1139	1.2935	1.3998	1.6555
109.2	.69063	.5124	1.1130	1.2926	1.3988	1.6543
109.3	.69113	.5121	1.1122	1.2916	1.3978	1.6531
109.4	.69164	.5117	1.1114	1.2907	1.3968	1.6519
109.5	.69214	.5113	1.1106	1.2897	1.3957	1.6507
109.6	.69265	.5109	1.1098	1.2888	1.3947	1.6495
109.7	.69315	.5106	1.1090	1.2878	1.3937	1.6483
109.8	.69365	.5102	1.1082	1.2869	1.3927	1.6471
109.9	.69416	.5098	1.1074	1.2860	1.3917	1.6459

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
110.0	.69466	.5095	1.1066	1.2850	1.3907	1.6447
110.1	.69516	.5091	1.1058	1.2841	1.3897	1.6435
110.2	.69566	.5087	1.1050	1.2832	1.3887	1.6423
110.3	.69616	.5084	1.1042	1.2822	1.3877	1.6411
110.4	.69666	.5080	1.1034	1.2813	1.3867	1.6400
110.5	.69717	.5076	1.1026	1.2804	1.3857	1.6388
110.6	.69767	.5073	1.1018	1.2795	1.3847	1.6376
110.7	.69817	.5069	1.1010	1.2786	1.3837	1.6364
110.8	.69867	.5065	1.1002	1.2776	1.3827	1.6352
110.9	.69916	.5062	1.0995	1.2767	1.3817	1.6341
111.0	.69966	.5058	1.0987	1.2758	1.3807	1.6329
111.1	.70016	.5055	1.0979	1.2749	1.3798	1.6318
111.2	.70066	.5051	1.0971	1.2740	1.3788	1.6306
111.3	.70116	.5047	1.0963	1.2731	1.3778	1.6294
111.4	.70166	.5044	1.0955	1.2722	1.3768	1.6283
111.5	.70215	.5040	1.0948	1.2713	1.3758	1.6271
111.6	.70265	.5037	1.0940	1.2704	1.3749	1.6260
111.7	.70315	.5033	1.0932	1.2695	1.3739	1.6248
111.8	.70364	.5030	1.0925	1.2686	1.3729	1.6237
111.9	.70414	.5026	1.0917	1.2677	1.3720	1.6225
112.0	.70463	.5022	1.0909	1.2668	1.3710	1.6214
112.1	.70513	.5019	1.0902	1.2659	1.3700	1.6203
112.2	.70562	.5015	1.0894	1.2650	1.3691	1.6191
112.3	.70612	.5012	1.0886	1.2641	1.3681	1.6180
112.4	.70661	.5008	1.0878	1.2632	1.3671	1.6168
112.5	.70711	.5005	1.0871	1.2623	1.3662	1.6157
112.6	.70760	.5001	1.0863	1.2615	1.3652	1.6146
112.7	.70809	.4998	1.0856	1.2606	1.3643	1.6135
112.8	.70859	.4994	1.0848	1.2597	1.3633	1.6124
112.9	.70908	.4991	1.0841	1.2588	1.3624	1.6112
113.0	.70957	.4988	1.0833	1.2581	1.3615	1.6101
113.1	.71006	.4984	1.0826	1.2572	1.3605	1.6090
113.2	.71055	.4981	1.0818	1.2563	1.3596	1.6079
113.3	.71104	.4977	1.0811	1.2555	1.3586	1.6068
113.4	.71154	.4974	1.0803	1.2546	1.3577	1.6057
113.5	.71203	.4970	1.0796	1.2537	1.3568	1.6046
113.6	.71252	.4967	1.0788	1.2529	1.3558	1.6035
113.7	.71301	.4963	1.0781	1.2520	1.3549	1.6024
113.8	.71350	.4960	1.0774	1.2511	1.3540	1.6013
113.9	.71398	.4957	1.0766	1.2503	1.3530	1.6002

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
114.0	.71447	.4953	1.0759	1.2494	1.3521	1.5991
114.1	.71496	.4950	1.0752	1.2486	1.3512	1.5980
114.2	.71545	.4947	1.0744	1.2477	1.3503	1.5969
114.3	.71594	.4943	1.0737	1.2468	1.3493	1.5958
114.4	.71642	.4940	1.0730	1.2460	1.3484	1.5947
114.5	.71691	.4936	1.0722	1.2451	1.3475	1.5936
114.6	.71740	.4933	1.0715	1.2443	1.3466	1.5926
114.7	.71788	.4930	1.0708	1.2434	1.3457	1.5915
114.8	.71837	.4926	1.0701	1.2426	1.3448	1.5904
114.9	.71885	.4923	1.0693	1.2418	1.3439	1.5893
115.0	.71934	.4920	1.0686	1.2409	1.3430	1.5883
115.1	.71982	.4916	1.0679	1.2401	1.3421	1.5872
115.2	.72031	.4913	1.0672	1.2393	1.3412	1.5861
115.3	.72079	.4910	1.0665	1.2384	1.3403	1.5851
115.4	.72128	.4907	1.0657	1.2376	1.3394	1.5840
115.5	.72176	.4903	1.0650	1.2368	1.3385	1.5829
115.6	.72224	.4900	1.0643	1.2359	1.3376	1.5819
115.7	.72273	.4897	1.0636	1.2351	1.3367	1.5808
115.8	.72321	.4893	1.0629	1.2343	1.3358	1.5798
115.9	.72369	.4890	1.0622	1.2335	1.3349	1.5787
116.0	.72417	.4887	1.0615	1.2326	1.3340	1.5777
116.1	.72465	.4884	1.0608	1.2318	1.3331	1.5766
116.2	.72513	.4880	1.0601	1.2310	1.3322	1.5756
116.3	.72561	.4877	1.0594	1.2302	1.3314	1.5745
116.4	.72609	.4874	1.0587	1.2294	1.3305	1.5735
116.5	.72657	.4871	1.0580	1.2286	1.3296	1.5725
116.6	.72705	.4868	1.0573	1.2277	1.3287	1.5714
116.7	.72753	.4864	1.0566	1.2269	1.3278	1.5704
116.8	.72801	.4861	1.0559	1.2261	1.3270	1.5693
116.9	.72849	.4858	1.0552	1.2253	1.3261	1.5683
117.0	.72897	.4855	1.0545	1.2245	1.3252	1.5673
117.1	.72945	.4852	1.0538	1.2237	1.3244	1.5662
117.2	.72992	.4848	1.0531	1.2229	1.3235	1.5652
117.3	.73040	.4845	1.0524	1.2221	1.3226	1.5642
117.4	.73088	.4842	1.0517	1.2213	1.3218	1.5632
117.5	.73135	.4839	1.0511	1.2205	1.3209	1.5622
117.6	.73183	.4836	1.0504	1.2197	1.3200	1.5612
117.7	.73231	.4833	1.0497	1.2189	1.3192	1.5601
117.8	.73278	.4830	1.0490	1.2181	1.3183	1.5591
117.9	.73326	.4826	1.0483	1.2173	1.3175	1.5581

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
118.0	.73373	.4823	1.0477	1.2165	1.3166	1.5571
118.1	.73420	.4820	1.0470	1.2157	1.3158	1.5561
118.2	.73468	.4817	1.0463	1.2150	1.3149	1.5551
118.3	.73515	.4814	1.0456	1.2142	1.3141	1.5541
118.4	.73562	.4811	1.0450	1.2134	1.3132	1.5531
118.5	.73610	.4808	1.0443	1.2127	1.3124	1.5521
118.6	.73657	.4805	1.0436	1.2119	1.3116	1.5511
118.7	.73704	.4802	1.0430	1.2112	1.3107	1.5501
118.8	.73751	.4799	1.0423	1.2104	1.3099	1.5491
118.9	.73798	.4796	1.0416	1.2096	1.3090	1.5481
119.0	.73846	.4792	1.0410	1.2088	1.3082	1.5471
119.1	.73893	.4789	1.0403	1.2081	1.3074	1.5462
119.2	.73940	.4786	1.0396	1.2073	1.3065	1.5452
119.3	.73987	.8783	1.0390	1.2065	1.3057	1.5442
119.4	.74034	.4780	1.0383	1.2058	1.3049	1.5432
119.5	.74080	.4777	1.0377	1.2050	1.3041	1.5423
119.6	.74127	.4774	1.0370	1.2042	1.3032	1.5413
119.7	.74174	.4771	1.0363	1.2035	1.3024	1.5403
119.8	.74221	.4768	1.0357	1.2027	1.3016	1.5393
119.9	.74268	.4765	1.0350	1.2019	1.3008	1.5383
120.0	.74314	.4762	1.0344	1.2012	1.3000	1.5374
120.1	.74361	.4759	1.0337	1.2004	1.2991	1.5364
120.2	.74408	.4756	1.0331	1.1997	1.2983	1.5355
120.3	.74454	.4753	1.0324	1.1989	1.2975	1.5345
120.4	.74501	.4750	1.0318	1.1982	1.2967	1.5335
120.5	.74548	.4747	1.0311	1.1974	1.2959	1.5326
120.6	.74594	.4744	1.0305	1.1967	1.2951	1.5316
120.7	.74641	.4741	1.0299	1.1959	1.2943	1.5307
120.8	.74687	.4738	1.0292	1.1952	1.2935	1.5297
120.9	.74733	.4736	1.0286	1.1945	1.2927	1.5288
121.0	.74780	.4733	1.0279	1.1937	1.2919	1.5278
121.1	.74826	.4730	1.0273	1.1930	1.2911	1.5269
121.2	.74872	.4727	1.0267	1.1922	1.2903	1.5259
121.3	.74919	.4724	1.0260	1.1915	1.2895	1.5250
121.4	.74965	.4721	1.0254	1.1908	1.2887	1.5240
121.5	.75011	.4718	1.0248	1.1900	1.2879	1.5231
121.6	.75057	.4715	1.0242	1.1893	1.2871	1.5222
121.7	.75103	.4712	1.0235	1.1886	1.2863	1.5212
121.8	.75149	.4709	1.0229	1.1878	1.2855	1.5203
121.9	.75195	.4706	1.0223	1.1871	1.2847	1.5194

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
122.0	.75241	.4704	1.0217	1.1864	1.2839	1.5185
122.1	.75287	.4701	1.0210	1.1856	1.2832	1.5175
122.2	.75333	.4698	1.0204	1.1849	1.2824	1.5166
122.3	.75379	.4695	1.0198	1.1842	1.2816	1.5157
122.4	.75425	.4692	1.0192	1.1835	1.2808	1.5147
122.5	.75471	.4689	1.0185	1.1827	1.2800	1.5138
122.6	.75517	.4686	1.0179	1.1820	1.2792	1.5129
122.7	.75562	.4684	1.0173	1.1813	1.2785	1.5120
122.8	.75608	.4681	1.0167	1.1806	1.2777	1.5111
122.9	.75654	.4678	1.0161	1.1799	1.2769	1.5102
123.0	.75700	.4675	1.0155	1.1792	1.2762	1.5092
123.1	.75745	.4672	1.0149	1.1785	1.2754	1.5084
123.2	.75791	.4669	1.0142	1.1778	1.2746	1.5074
123.3	.75836	.4667	1.0136	1.1770	1.2739	1.5065
123.4	.75882	.4664	1.0130	1.1763	1.2731	1.5056
123.5	.75927	.4661	1.0124	1.1756	1.2723	1.5047
123.6	.75973	.4658	1.0118	1.1749	1.2716	1.5038
123.7	.76018	.4655	1.0112	1.1742	1.2708	1.5029
123.8	.76063	.4653	1.0106	1.1735	1.2701	1.5020
123.9	.76109	.4650	1.0100	1.1728	1.2693	1.5011
124.0	.76154	.4647	1.0094	1.1721	1.2685	1.5002
124.1	.76199	.4644	1.0088	1.1714	1.2678	1.4994
124.2	.76244	.4642	1.0082	1.1707	1.2670	1.4985
124.3	.76289	.4639	1.0076	1.1700	1.2663	1.4976
124.4	.76335	.4636	1.0070	1.1693	1.2655	1.4967
124.5	.76380	.4633	1.0064	1.1686	1.2648	1.4958
124.6	.76425	.4631	1.0058	1.1680	1.2640	1.4949
124.7	.76470	.4628	1.0052	1.1673	1.2633	1.4940
124.8	.76515	.4625	1.0046	1.1667	1.2626	1.4932
124.9	.76560	.4623	1.0040	1.1660	1.2618	1.4923
125.0	.76604	.4620	1.0035	1.1653	1.2611	1.4914
125.1	.76649	.4617	1.0029	1.1646	1.2604	1.4906
125.2	.76694	.4614	1.0023	1.1639	1.2596	1.4897
125.3	.76739	.4612	1.0017	1.1633	1.2589	1.4888
125.4	.76784	.4609	1.0011	1.1626	1.2581	1.4879
125.5	.76828	.4606	1.0005	1.1619	1.2574	1.4871
125.6	.76873	.4604	1.0000	1.1612	1.2567	1.4862
125.7	.76918	.4601	.9994	1.1606	1.2559	1.4853
125.8	.76962	.4598	.9988	1.1599	1.2552	1.4845
125.9	.77007	.4596	.9982	1.1592	1.2545	1.4836

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
126.0	.77051	.4593	.9976	1.1585	1.2538	1.4828
126.1	.77096	.4590	.9971	1.1579	1.2530	1.4819
126.2	.77140	.4588	.9965	1.1572	1.2523	1.4811
126.3	.77185	.4585	.9959	1.1565	1.2516	1.4802
126.4	.77229	.4582	.9954	1.1559	1.2509	1.4794
126.5	.77273	.4580	.9948	1.1552	1.2502	1.4785
126.6	.77318	.4577	.9942	1.1545	1.2494	1.4777
126.7	.77362	.4575	.9936	1.1539	1.2487	1.4768
126.8	.77406	.4572	.9931	1.1532	1.2480	1.4760
126.9	.77450	.4569	.9925	1.1526	1.2473	1.4751
127.0	.77494	.4567	.9919	1.1519	1.2466	1.4743
127.1	.77539	.4564	.9914	1.1512	1.2459	1.4735
127.2	.77583	.4562	.9908	1.1506	1.2452	1.4726
127.3	.77627	.4559	.9902	1.1499	1.2445	1.4718
127.4	.77671	.4556	.9897	1.1492	1.2438	1.4709
127.5	.77715	.4554	.9891	1.1486	1.2431	1.4701
127.6	.77859	.4551	.9886	1.1479	1.2424	1.4693
127.7	.77802	.4549	.9880	1.1473	1.2417	1.4685
127.8	.77846	.4546	.9875	1.1467	1.2410	1.4676
127.9	.77890	.4544	.9869	1.1460	1.2403	1.4668
128.0	.77934	.4541	.9863	1.1454	1.2396	1.4660
128.1	.77978	.4538	.9858	1.1448	1.2389	1.4652
128.2	.78021	.4536	.9852	1.1441	1.2382	1.4643
128.3	.78065	.4533	.9847	1.1435	1.2375	1.4635
128.4	.78108	.4531	.9842	1.1428	1.2368	1.4627
128.5	.78152	.4528	.9836	1.1422	1.2361	1.4619
128.6	.78196	.4526	.9830	1.1415	1.2354	1.4611
128.7	.78239	.4523	.9825	1.1409	1.2347	1.4603
128.8	.78283	.4521	.9820	1.1403	1.2340	1.4594
128.9	.78326	.4518	.9814	1.1396	1.2334	1.4586
129.0	.78369	.4516	.9809	1.1390	1.2327	1.4578
129.1	.78413	.4513	.9803	1.1384	1.2320	1.4570
129.2	.78456	.4511	.9798	1.1378	1.2313	1.4562
129.3	.78499	.4508	.9792	1.1371	1.2307	1.4554
129.4	.78542	.4506	.9787	1.1365	1.2300	1.4546
129.5	.78586	.4503	.9782	1.1359	1.2293	1.4538
129.6	.78629	.4501	.9776	1.1352	1.2286	1.4530
129.7	.78672	.4498	.9771	1.1346	1.2279	1.4522
129.8	.78715	.4496	.9766	1.1340	1.2273	1.4514
129.9	.78758	.4494	.9260	1.1334	1.2266	1.4506

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
130.0	.78801	.4491	.9755	1.1328	1.2259	1.4499
130.1	.78844	.4489	.9750	1.1321	1.2253	1.4491
130.2	.78887	.4486	.9744	1.1315	1.2246	1.4483
130.3	.78930	.4484	.9739	1.1309	1.2239	1.4475
130.4	.78973	.4481	.9734	1.1303	1.2233	1.4467
130.5	.79016	.4479	.9728	1.1297	1.2226	1.4459
130.6	.79058	.4476	.9723	1.1291	1.2220	1.4451
130.7	.79101	.4474	.9718	1.1285	1.2213	1.4444
130.8	.79144	.4472	.9713	1.1278	1.2206	1.4436
130.9	.79186	.4469	.9708	1.1272	1.2200	1.4428
131.0	.79229	.4467	.9702	1.1266	1.2193	1.4420
131.1	.79272	.4464	.9697	1.1260	1.2187	1.4412
131.2	.79314	.4462	.9692	1.1254	1.2180	1.4405
131.3	.79357	.4460	.9687	1.1248	1.2173	1.4397
131.4	.79399	.4457	.9681	1.1242	1.2167	1.4389
131.5	.79441	.4455	.9676	1.1236	1.2161	1.4382
131.6	.79484	.4452	.9671	1.1230	1.2154	1.4374
131.7	.79526	.4450	.9666	1.1224	1.2148	1.4366
131.8	.79568	.4448	.9661	1.1218	1.2141	1.4359
131.9	.79611	.4445	.9656	1.1213	1.2135	1.4351
132.0	.79653	.4443	.9651	1.1207	1.2128	1.4343
132.1	.79695	.4441	.9646	1.1201	1.2122	1.4336
132.2	.79737	.4438	.9640	1.1195	1.2115	1.4328
132.3	.79779	.4436	.9635	1.1189	1.2109	1.4321
132.4	.79822	.4434	.9630	1.1183	1.2103	1.4313
132.5	.79864	.4431	.9625	1.1177	1.2096	1.4306
132.6	.79906	.4429	.9620	1.1172	1.2090	1.4298
132.7	.79948	.4427	.9615	1.1166	1.2083	1.4291
132.8	.79989	.4424	.9610	1.1160	1.2077	1.4283
132.9	.80031	.4422	.9605	1.1154	1.2071	1.4276
133.0	.80073	.4420	.9600	1.1148	1.2065	1.4268
133.1	.80115	.4417	.9595	1.1142	1.2058	1.4261
133.2	.80157	.4415	.9590	1.1137	1.2052	1.4253
133.3	.80198	.4413	.9585	1.1131	1.2046	1.4246
133.4	.80240	.4411	.9580	1.1125	1.2040	1.4239
133.5	.80282	.4408	.9575	1.1119	1.2033	1.4231
133.6	.80323	.4406	.9570	1.1113	1.2027	1.4224
133.7	.80365	.4404	.9565	1.1108	1.2021	1.4216
133.8	.80406	.4401	.9560	1.1102	1.2015	1.4209
133.9	.80448	.4399	.9555	1.1096	1.2008	1.4202

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
134.0	.80489	.4397	.9550	1.1091	1.2002	1.4194
134.1	.80531	.4395	.9545	1.1085	1.1996	1.4187
134.2	.80572	.4392	.9541	1.1079	1.1990	1.4180
134.3	.80613	.4390	.9536	1.1073	1.1984	1.4173
134.4	.80655	.4388	.9531	1.1068	1.1978	1.4165
134.5	.80696	.4386	.9526	1.1062	1.1971	1.4158
134.6	.80737	.4383	.9521	**1.1056**	**1.1965**	**1.4151**
134.7	.80778	.4381	.9516	1.1051	1.1959	1.4144
134.8	.80820	.4379	.9511	1.1045	1.1953	1.4136
134.9	.80861	.4377	.9506	1.1039	1.1947	1.4129
135.0	.80902	.4374	.9502	1.1034	1.1941	1.4122
135.1	.80943	.4372	.9497	1.1028	1.1935	1.4115
135.2	.80984	.4370	.9492	1.1023	1.1929	1.4108
135.3	.81025	.4368	.9487	1.1017	1.1923	1.4101
135.4	.81066	.4366	.9482	1.1012	1.1917	1.4093
135.5	.81106	.4363	.9478	1.1006	1.1911	1.4086
135.6	.81147	.4361	.9473	1.1000	**1.1905**	1.4079
135.7	.81188	.4359	.9468	1.0995	1.1899	1.4072
135.8	.81229	.4357	.9463	1.0989	1.1893	1.4065
135.9	.81269	.4355	.9459	1.0984	1.1887	1.4058
136.0	.81310	.4352	.9454	1.0978	1.1881	1.4051
136.1	.81351	.4350	.9449	1.0973	1.1875	1.4044
136.2	.81391	.4348	.9445	1.0967	1.1869	1.4037
136.3	.81432	.4346	.9440	1.0962	1.1863	1.4030
136.4	.81472	.4344	.9435	1.0956	1.1857	1.4023
136.5	.81513	.4342	.9430	1.0951	1.1851	**1.4016**
136.6	.81553	.4340	.9426	1.0945	1.1846	1.4009
136.7	.81594	.4337	.9421	1.0940	1.1840	1.4002
136.8	.81634	.4335	.9416	1.0935	1.1834	1.3995
136.9	.81674	.4333	.9412	1.0929	1.1828	1.3989
137.0	.81714	.4331	.9407	1.0924	1.1822	1.3982
137.1	.81755	.4329	.9402	1.0918	1.1816	1.3975
137.2	.81795	.4327	.9398	**1.0913**	1.1811	1.3968
137.3	.81835	.4325	.9393	1.0908	1.1805	1.3961
137.4	**.81875**	.4322	.9389	1.0902	1.1799	1.3954
137.5	.81915	.4320	.9384	1.0897	1.1793	1.3947
137.6	.81955	.4318	.9380	1.0892	1.1788	1.3941
137.7	.81995	.4316	.9375	1.0886	1.1782	1.3934
137.8	.82035	.4314	.9370	1.0881	1.1776	1.3927
137.9	.82075	.4312	.9366	1.0876	1.1770	1.3920

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
138.0	.82115	.4310	.9361	1.0870	1.1765	1.3913
138.1	.82155	.4308	.9357	1.0865	1.1759	1.3907
138.2	.82195	.4306	.9352	1.0860	1.1753	1.3900
138.3	.82234	.4304	.9348	1.0855	1.1748	1.3893
138.4	.82274	.4301	.9343	1.0849	1.1742	1.3887
138.5	.82314	.4299	.9339	1.0844	1.1736	1.3880
138.6	.82353	.4297	.9334	1.0839	1.1731	1.3873
138.7	.82393	.4295	.9330	1.0834	1.1725	1.3866
138.8	.82432	.4293	.9325	1.0829	1.1719	1.3860
138.9	.82472	.4291	.9321	1.0823	1.1714	1.3853
139.0	.82511	.4289	.9316	1.0818	1.1708	1.3847
139.1	.82551	.4287	.9312	1.0813	1.1702	1.3840
139.2	.82590	.4285	.9307	1.0808	1.1697	1.3833
139.3	.82630	.4283	.9303	1.0803	1.1691	1.3827
139.4	.82669	.4281	.9299	1.0797	1.1686	1.3820
139.5	.82708	.4279	.9294	1.0792	1.1680	1.3814
139.6	.82747	.4277	.9290	1.0787	1.1675	1.3807
139.7	.82786	.4275	.9285	1.0782	1.1669	1.3801
139.8	.82826	.4273	.9281	1.0777	1.1664	1.3794
139.9	.82865	.4271	.9277	1.0772	1.1658	1.3787
140.0	.82904	.4269	.9272	1.0767	1.1653	1.3781
140.1	.82943	.4267	.9268	1.0762	1.1647	1.3775
140.2	.82982	.4265	.9263	1.0757	1.1642	1.3768
140.3	.83021	.4263	.9259	1.0753	1.1636	1.3762
140.4	.83060	.4261	.9255	1.0748	1.1631	1.3755
140.5	.83098	.4259	.9251	1.0743	1.1625	1.3749
140.6	.83137	.4257	.9246	1.0737	1.1620	1.3742
140.7	.83176	.4255	.9242	1.0732	1.1615	1.3736
140.8	.83215	.4253	.9238	1.0727	1.1609	1.3729
140.9	.83253	.4251	.9233	1.0722	1.1604	1.3723
141.0	.83292	.4249	.9229	1.0717	1.1598	1.3717
141.1	.83331	.4247	.9225	1.0713	1.1593	1.3710
141.2	.83369	.4245	.9220	1.0708	1.1588	1.3704
141.3	.83408	.4243	.9216	1.0703	1.1582	1.3698
141.4	.83446	.4241	.9212	1.0698	1.1577	1.3691
141.5	.83485	.4239	.9208	1.0693	1.1572	1.3685
141.6	.83523	.4237	.9203	1.0688	1.1566	1.3679
141.7	.83562	.4235	.9199	1.0683	1.1561	1.3672
141.8	.83600	.4233	.9195	1.0678	1.1556	1.3666
141.9	.83638	.4231	.9191	1.0673	1.1550	1.3660

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
142.0	.83676	.4229	.9187	1.0668	1.1545	1.3654
142.1	.83715	.4227	.9182	1.0663	1.1540	1.3647
142.2	.83753	.4226	.9178	1.0658	1.1535	1.3641
142.3	.83791	.4224	.9174	1.0654	1.1529	1.3635
142.4	.83829	.4222	.9170	1.0649	1.1524	1.3629
142.5	.83867	.4220	.9166	1.0644	1.1519	1.3623
142.6	.83905	.4218	.9162	1.0639	1.1514	1.3617
142.7	.83943	.4216	.9157	1.0634	1.1508	1.3610
142.8	.33981	.4214	.9153	1.0629	1.1503	1.3604
142.9	.84019	.4212	.9149	1.0625	1.1498	1.3598
143.0	.84057	.4210	.9145	1.0619	1.1493	1.3592
143.1	.84094	.4208	.9141	1.0615	1.1488	1.3586
143.2	.84132	.4206	.9137	1.0610	1.1483	1.3580
143.3	.84170	.4204	.9133	1.0605	1.1477	1.3574
143.4	.84208	.4203	.9129	1.0601	1.1472	1.3568
143.5	.84245	.4201	.9125	1.0596	1.1467	1.3562
143.6	.84283	.4199	.9120	1.0591	1.1462	1.3556
143.7	.84320	.4197	.9116	1.0586	1.1457	1.3550
143.8	.84358	.4195	.9112	1.0582	1.1452	1.3543
143.9	.84395	.4193	.9108	1.0577	1.1447	1.3538
144.0	.84433	.4191	.9104	1.0572	1.1442	1.3531
144.1	.84470	.4190	.9100	1.0568	1.1437	1.3526
144.2	.84508	.4188	.9096	1.0563	1.1431	1.3519
144.3	.84545	.4186	.9092	1.0558	1.1426	1.3514
144.4	.84582	.4184	.9088	1.0554	1.1421	1.3508
144.5	.84619	.4182	.9084	1.0549	1.1416	1.3502
144.6	.84656	.4180	.9080	1.0544	1.1411	1.3496
144.7	.84694	.4179	.9076	1.0540	1.1406	1.3490
144.8	.84731	.4177	.9072	1.0535	1.1401	1.3484
144.9	.84768	.4175	.9068	1.0530	1.1396	1.3478
145.0	.84805	.4173	.9064	1.0526	1.1391	1.3472
145.1	.84842	.4171	.9060	1.0521	1.1386	1.3466
145.2	.84879	.4169	.9056	1.0517	1.1381	1.3460
145.3	.84916	.4168	.9052	1.0512	1.1377	1.3454
145.4	.84952	.4166	.9049	1.0507	1.1372	1.3449
145.5	.84989	.4164	.9045	1.0503	1.1367	1.3443
145.6	.85026	.4162	.9041	1.0498	1.1362	1.3437
145.7	.85063	.4160	.9037	1.0494	1.1357	1.3431
145.8	.85099	.4159	.9033	1.0489	1.1352	1.3426
145.9	.85136	.4157	.9029	1.0485	1.1347	1.3420

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
146.0	.85173	.4155	.9025	1.0480	1.1342	1.3414
146.1	.85209	.4153	.9021	1.0476	1.1337	1.3408
146.2	.85246	.4152	.9017	1.0471	1.1332	1.3402
146.3	.85282	.4150	.9014	1.0467	1.1328	1.3397
146.4	.85319	.4148	.9010	1.0462	1.1323	1.3391
146.5	.85355	.4146	.9006	1.0458	1.1318	1.3385
146.6	.85391	.4144	.9002	1.0453	1.1313	1.3380
146.7	.85428	.4143	.8998	1.0449	1.1308	1.3374
146.8	.85464	.4141	.8994	1.0445	1.1304	1.3368
146.9	.85500	.4139	.8991	1.0440	1.1299	1.3363
147.0	.85536	.4137	.8987	1.0436	1.1294	1.3357
147.1	.85573	.4136	.8983	1.0431	1.1289	1.3351
147.2	.85609	.4134	.8979	1.0427	1.1284	1.3346
147.3	.85645	.4132	.8975	1.0422	1.1280	1.3340
147.4	.85681	.4130	.8972	1.0418	1.1275	1.3334
147.5	.85717	.4129	.8968	1.0414	1.1270	1.3329
147.6	.85753	.4127	.8964	1.0409	1.1265	1.3323
147.7	.85789	.4125	.8960	1.0405	1.1261	1.3318
147.8	.85824	.4124	.8957	1.0401	1.1256	1.3312
147.9	.85860	.4122	.8953	1.0396	1.1251	1.3307
148.0	.85896	.4120	.8949	1.0392	1.1247	1.3301
148.1	.85932	.4118	.8945	1.0387	1.1242	1.3295
148.2	.85967	.4117	.8942	1.0383	1.1237	1.3290
148.3	.86003	.4115	.8938	1.0379	1.1233	1.3284
148.4	.86039	.4113	.8934	1.0375	1.1228	1.3279
148.5	.86074	.4112	.8931	1.0370	1.1223	1.3273
148.6	.86110	.4110	.8927	1.0366	1.1219	1.3268
148.7	.86145	.4108	.8923	1.0362	1.1214	1.3263
148.8	.86181	.4106	.8920	1.0357	1.1210	1.3257
148.9	.86216	.4105	.8916	1.0353	1.1205	1.3252
149.0	.86251	.4103	.8912	1.0349	1.1200	1.3246
149.1	.86287	.4101	.8909	1.0345	1.1196	1.3241
149.2	.86322	.4100	.8905	1.0340	1.1191	1.3235
149.3	.86357	.4098	.8901	1.0336	1.1187	1.3230
149.4	.86392	.4096	.8898	1.0332	1.1182	1.3225
149.5	.86427	.4095	.8894	1.0328	1.1178	1.3219
149.6	.86463	.4093	.8891	1.0324	1.1173	1.3214
149.7	.86498	.4091	.8887	1.0319	1.1168	1.3208
149.8	.86533	.4090	.8883	1.0315	1.1164	1.3203
149.9	.86568	.4088	.8880	1.0311	1.1159	1.3198

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
150.0	.86603	.4086	.8876	1.0307	1.1155	1.3192
150.1	.86637	.4085	.8873	1.0303	1.1151	1.3187
150.2	.86672	.4083	.8869	1.0299	1.1146	1.3182
150.3	.86707	.4082	.8865	1.0295	1.1142	1.3177
150.4	.86742	.4080	.8862	1.0291	1.1137	1.3171
150.5	.86777	.4078	.8858	1.0287	1.1133	1.3166
150.6	.86811	.4077	.8855	1.0283	1.1128	1.3161
150.7	.86846	.4075	.8851	1.0279	1.1124	1.3155
150.8	.86880	.4073	.8848	1.0275	1.1119	1.3150
150.9	.86915	.4072	.8844	1.0271	1.1115	1.3145
151.0	.86949	.4070	.8841	1.0267	1.1111	1.3140
151.1	.86984	.4069	.8837	1.0263	1.1106	1.3135
151.2	.87018	.4067	.8834	1.0258	1.1102	1.3129
151.3	.87053	.4065	.8830	1.0254	1.1097	1.3124
151.4	.87087	.4064	.8827	1.0250	1.1093	1.3119
151.5	.87121	.4062	.8823	1.0246	1.1089	1.3114
151.6	.87156	.4061	.8820	1.0242	1.1084	1.3109
151.7	.87190	.4059	.8816	1.0238	1.1080	1.3104
151.8	.87224	.4057	.8813	1.0234	1.1076	1.3098
151.9	.87258	.4056	.8810	1.0230	1.1071	1.3093
152.0	.87292	.4054	.8806	1.0226	1.1067	1.3088
152.1	.87326	.4053	.8803	1.0222	1.1063	1.3083
152.2	.87360	.4051	.8799	1.0218	1.1058	1.3078
152.3	.87394	.4049	.8796	1.0214	1.1054	1.3073
152.4	.87428	.4048	.8792	1.0210	1.1050	1.3068
152.5	.87462	.4046	.8789	1.0206	1.1045	1.3063
152.6	.87496	.4045	.8786	1.0202	1.1041	1.3058
152.7	.87530	.4043	.8782	1.0198	1.1037	1.3053
152.8	.87563	.4042	.8779	1.0194	1.1033	1.3048
152.9	.87597	.4040	.8775	1.0191	1.1028	1.3043
153.0	.87631	.4039	.8772	1.0187	1.1024	1.3038
153.1	.87664	.4037	.8769	1.0183	1.1020	1.3033
153.2	.87698	.4035	.8765	1.0179	1.1016	1.3028
153.3	.87731	.4034	.8762	1.0175	1.1012	1.3023
153.4	.87765	.4032	.8759	1.0171	1.1007	1.3018
153.5	.87798	.4031	.8755	1.0167	1.1003	1.3013
153.6	.87832	.4029	.8752	1.0163	1.0999	1.3008
153.7	.87865	.4028	.8749	1.0159	1.0995	1.3003
153.8	.87898	.4026	.8745	1.0156	1.0991	1.2998
153.9	.87932	.4024	.8742	1.0152	1.0986	1.2993

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
154.0	.87965	.4023	.8739	1.0148	1.0982	1.2988
154.1	.87998	.4022	.8735	1.0144	1.0978	1.2983
154.2	.88031	.4020	.8732	1.0140	1.0974	1.2978
154.3	.88064	.4019	.8729	1.0136	1.0970	1.2974
154.4	.88097	.4017	.8726	1.0133	1.0966	1.2969
154.5	.88130	.4016	.8722	1.0129	1.0962	1.2964
154.6	.88163	.4014	.8719	1.0125	1.0958	1.2959
154.7	.88196	.4013	.8716	1.0121	1.0953	1.2954
154.8	.88229	.4011	.8713	1.0117	1.0949	1.2949
154.9	.88262	.4010	.8709	1.0114	1.0945	1.2944
155.0	.88295	.4008	.8706	1.0110	1.0941	1.2940
155.1	.88328	.4007	.8703	1.0106	1.0937	1.2935
155.2	.88360	.4005	.8700	1.0102	1.0933	1.2930
155.3	.88393	.4004	.8696	1.0099	1.0929	1.2925
155.4	.88426	.4002	.8693	1.0095	1.0925	1.2920
155.5	.88458	.4001	.8690	1.0091	1.0921	1.2916
155.6	.88491	.3999	.8687	1.0087	1.0917	1.2911
155.7	.88523	.3998	.8684	1.0084	1.0913	1.2906
155.8	.88556	.3996	.8680	1.0080	1.0909	1.2901
155.9	.88588	.3995	.8677	1.0076	1.0905	1.2897
156.0	.88620	.3993	.8674	1.0073	1.0901	1.2892
156.1	.88653	.3992	.8671	1.0069	1.0897	1.2887
156.2	.88685	.3991	.8668	1.0065	1.0893	1.2883
156.3	.88717	.3989	.8665	1.0062	1.0889	1.2878
156.4	.88749	.3988	.8662	1.0058	1.0885	1.2873
156.5	.88782	.3986	.8658	1.0054	1.0881	1.2869
156.6	.88814	.3985	.3655	1.0051	1.0877	1.2864
156.7	.88846	.3983	.8652	1.0047	1.0873	1.2859
156.8	.88878	.3982	.8649	1.0043	1.0869	1.2855
156.9	.88910	.3980	.8646	1.0040	1.0865	1.2850
157.0	.88942	.3979	.8643	1.0036	1.0862	1.2845
157.1	.88974	.3978	.8640	1.0033	1.0858	1.2841
157.2	.89005	.3976	.8637	1.0029	1.0854	1.2836
157.3	.89037	.3975	.8633	1.0025	1.0850	1.2832
157.4	.89069	.3973	.8630	1.0022	1.0846	1.2827
157.5	.89101	.3972	.8627	1.0018	1.0842	1.2823
157.6	.89132	.3971	.8624	1.0015	1.0838	1.2818
157.7	.89164	.3969	.8621	1.0011	1.0835	1.2813
157.8	.89196	.3968	.8618	1.0008	1.0831	1.2809
157.9	.89227	.3966	.8615	1.0004	1.0827	1.2804

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
158.0	.89259	.3965	.8612	.10000	1.0823	1.2800
158.1	.89290	.3963	.8609	.99997	1.0819	1.2795
158.2	.89321	.3962	.8606	.99937	1.0815	1.2791
158.3	.89353	.3961	.8603	.99901	1.0812	1.2786
158.4	.89384	.3959	.8600	.99866	1.0808	1.2782
158.5	.89415	.3958	.8597	.99832	1.0804	1.2777
158.6	.89447	.3957	.8594	.99797	1.0800	1.2773
158.7	.89478	.3955	.8591	.99762	1.0796	1.2768
158.8	.89509	.3954	.8588	.99727	1.0793	1.2764
158.9	.89540	.3952	.8585	.99692	1.0789	1.2760
159.0	.89571	.3951	.8582	.99657	1.0785	1.2755
159.1	.89602	.3950	.8579	.99623	1.0782	1.2751
159.2	.89633	.3948	.8576	.99588	1.0778	1.2746
159.3	.89664	.3947	.8573	.99554	1.0774	1.2742
159.4	.89695	.3946	.8570	.99520	1.0770	1.2738
159.5	.89726	.3944	.8567	.99486	1.0767	1.2733
159.6	.89757	.3943	.8564	.99452	1.0763	1.2729
159.7	.89787	.3942	.8561	.99418	1.0759	1.2725
159.8	.89818	.3940	.8558	.99384	1.0756	1.2720
159.9	.89849	.3939	.8555	.99350	1.0752	1.2716
160.0	.89879	.3938	.8553	.99316	1.0748	1.2712
160.1	.89910	.3936	.8550	.99282	1.0745	1.2707
160.2	.89941	.3935	.8547	.99249	1.0741	1.2703
160.3	.89971	.3933	.8544	.99214	1.0737	1.2699
160.4	.90001	.3932	.8541	.99180	1.0734	1.2694
160.5	.90032	.3931	.8538	.99147	1.0730	1.2690
160.6	.90062	.3930	.8535	.99114	1.0726	1.2686
160.7	.90093	.3928	.8532	.99082	1.0723	1.2681
160.8	.90123	.3927	.8529	.99048	1.0719	1.2677
160.9	.90153	.3926	.8527	.99015	1.0716	1.2673
161.0	.90183	.3924	.8524	.98982	1.0712	1.2669
161.1	.90213	.3923	.8521	.98949	1.0709	1.2664
161.2	.90243	.3922	.8518	.98916	1.0705	1.2660
161.3	.90274	.3920	.8515	.98882	1.0701	1.2656
161.4	.90304	.3919	.8512	.98849	1.0698	1.2652
161.5	.90334	.3918	.8510	.98816	1.0694	1.2648
161.6	.90363	.3916	.8507	.98782	1.0691	1.2643
161.7	.90393	.3915	.8504	.98751	1.0687	1.2639
161.8	.90423	.3914	.8501	.98718	1.0684	1.2635
161.9	.90453	.3913	.8498	.98686	1.0680	1.2631

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
162.0	.90483	.3911	.8496	.98653	1.0677	1.2627
162.1	.90512	.3910	.8493	.98622	1.0673	1.2623
162.2	.90542	.3909	.8490	.98589	1.0670	1.2618
162.3	.90572	.3907	.8487	.98557	1.0666	1.2614
162.4	.90601	.3906	.8484	.98525	1.0663	1.2610
162.5	.90631	.3905	.8482	.98492	1.0659	1.2606
162.6	.90660	.3904	.8479	.98461	1.0656	1.2602
162.7	.90690	.3902	.8476	.98428	1.0652	1.2598
162.8	.90719	.3901	.8473	.98397	1.0649	1.2594
162.9	.90748	.3900	.8471	.98365	1.0645	1.2590
163.0	.90778	.3899	.8468	.98333	1.0642	1.2586
163.1	.90807	.3897	.8465	.98301	1.0638	1.2582
163.2	.90836	.3896	.8462	.98270	1.0635	1.2578
163.3	.90865	.3895	.8460	.98238	1.0632	1.2574
163.4	.90895	.3894	.8457	.98207	1.0628	1.2569
163.5	.90924	.3892	.8454	.98176	1.0625	1.2565
163.6	.90953	.3891	.8452	.98145	1.0621	1.2561
163.7	.90982	.3890	.8449	.98114	1.0618	1.2557
163.8	.91011	.3889	.8446	.98082	1.0615	1.2553
163.9	.91040	.3887	.8444	.98051	1.0611	1.2549
164.0	.91068	.3886	.8441	.98019	1.0608	1.2546
164.1	.91097	.3885	.8438	.97988	1.0605	1.2542
164.2	.91126	.3884	.8436	.97957	1.0601	1.2538
164.3	.91155	.3882	.8433	.97927	1.0598	1.2534
164.4	.91183	.3881	.8430	.97896	1.0595	1.2530
164.5	.91212	.3880	.8428	.97865	1.0591	1.2526
164.6	.91241	.3879	.8425	.97833	1.0588	1.2522
164.7	.91269	.3878	.8422	.97802	1.0585	1.2518
164.8	.91298	.3876	.8420	.97772	1.0581	1.2514
164.9	.91326	.3875	.8417	.97742	1.0578	1.2510
165.0	.91355	.3874	.8414	.97712	1.0575	1.2506
165.1	.91383	.3873	.8412	.97682	1.0571	1.2502
165.2	.91411	.3872	.8409	.97651	1.0568	1.2498
165.3	.91440	.3870	.8407	.97621	1.0565	1.2495
165.4	.91468	.3869	.8404	.97591	1.0562	1.2491
165.5	.91496	.3868	.8401	.97562	1.0558	1.2487
165.6	.91524	.3867	.8399	.97531	1.0555	1.2483
165.7	.91552	.3866	.8396	.97501	1.0552	1.2479
165.8	.91580	.3864	.8394	.97472	1.0549	1.2475
165.9	.91608	.3863	.8391	.97442	1.0545	1.2472

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
166.0	.91636	.3862	.8389	.97412	1.0542	1.2468
166.1	.91664	.3861	.8386	.97382	1.0539	1.2464
166.2	.91692	.3860	.8384	.97352	1.0536	1.2460
166.3	.91720	.3858	.8381	.97322	1.0533	1.2456
166.4	.91748	.3857	.8378	.97293	1.0529	1.2453
166.5	.91775	.3856	.8376	.97265	1.0526	1.2449
166.6	.91803	.3855	.8373	.97235	1.0523	1.2445
166.7	.91831	.3854	.8371	.97206	1.0520	1.2441
166.8	.91858	.3853	.8368	.97177	1.0517	1.2438
166.9	.91886	.3852	.8366	.97147	1.0514	1.2434
167.0	.91914	.3850	.8363	.97117	1.0510	1.2430
167.1	.91941	.3849	.8361	.97089	1.0507	1.2426
167.2	.91968	.3848	.8358	.97059	1.0504	1.2423
167.3	.91996	.3847	.8356	.97031	1.0501	1.2419
167.4	.92023	.3846	.8353	.97002	1.0498	1.2415
167.5	.92050	.3845	.8351	.96974	1.0495	1.2412
167.6	.92078	.3843	.8348	.96944	1.0492	1.2408
167.7	.92105	.3842	.8346	.96916	1.0489	1.2404
167.8	.92132	.3841	.8343	.96887	1.0485	1.2401
167.9	.92159	.3840	.8341	.96859	1.0482	1.2397
168.0	.92186	.3839	.8339	.96830	1.0479	1.2393
168.1	.92213	.3838	.8336	.96803	1.0476	1.2390
168.2	.92240	.3837	.8334	.96775	1.0473	1.2386
168.3	.92267	.3836	.8331	.96746	1.0470	1.2383
168.4	.92294	.3835	.8329	.96718	1.0467	1.2379
168.5	.92321	.3833	.8326	.96689	1.0464	1.2375
168.6	.92348	.3832	.8324	.96661	1.0461	1.2372
168.7	.92375	.3831	.8322	.96633	1.0458	1.2368
168.8	.92401	.3830	.8319	.96606	1.0455	1.2365
168.9	.92428	.3829	.8317	.96577	1.0452	1.2361
169.0	.92455	.3828	.8314	.96549	1.0449	1.2357
169.1	.92481	.3827	.8312	.96522	1.0446	1.2354
169.2	.92508	.3826	.8310	.96494	1.0443	1.2350
169.3	.92534	.3825	.8307	.96466	1.0440	1.2347
169.4	.92561	.3823	.8305	.96438	1.0437	1.2343
169.5	.92587	.3822	.8302	.96411	1.0434	1.2340
169.6	.92613	.3821	.8300	.96384	1.0431	1.2336
169.7	.92640	.3820	.8298	.96356	1.0428	1.2333
169.8	.92666	.3819	.8295	.96330	1.0425	1.2329
169.9	.92692	.3818	.8293	.96303	1.0422	1.2326

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
170.0	.92718	.3817	.8291	.96276	1.0419	1.2322
170.1	.92745	.3816	.8288	.96249	1.0416	1.2319
170.2	.92771	.3815	.8286	.96220	1.0413	1.2315
170.3	.92797	.3814	.8284	.96193	1.0410	1.2312
170.4	.92823	.3813	.8281	.96166	1.0407	1.2308
170.5	.92849	.3812	.8279	.96139	1.0405	1.2305
170.6	.92874	.3811	.8277	.96114	1.0402	1.2302
170.7	.92900	.3810	.8274	.96087	1.0399	1.2298
170.8	.92926	.3808	.8272	.96060	1.0396	1.2295
170.9	.92952	.3807	.8270	.96033	1.0393	1.2291
171.0	.92978	.3806	.8268	.96006	1.0390	1.2288
171.1	.93003	.3805	.8265	.95980	1.0387	1.2285
171.2	.93029	.3804	.8263	.95953	1.0384	1.2281
171.3	.93055	.3803	.8261	.95927	1.0381	1.2278
171.4	.93080	.3802	.8258	.95900	1.0379	1.2274
171.5	.93106	.3801	.8256	.95874	1.0376	1.2271
171.6	.93131	.3800	.8254	.95849	1.0373	1.2268
171.7	.93156	.3799	.8252	.95822	1.0370	1.2264
171.8	.93182	.3798	.8249	.95796	1.0367	1.2261
171.9	.93207	.3797	.8247	.95769	1.0365	1.2258
172.0	.93232	.3796	.8245	.95745	1.0362	1.2254
172.1	.93258	.3795	.8243	.95719	1.0359	1.2251
172.2	.93283	.3794	.8241	.95692	1.0356	1.2248
172.3	.93308	.3793	.8238	.95666	1.0353	1.2244
172.4	.93333	.3792	.8236	.95641	1.0351	1.2241
172.5	.93358	.3791	.8234	.95615	1.0348	1.2238
172.6	.93383	.3790	.8232	.95589	1.0345	1.2235
172.7	.93408	.3789	.8229	.95564	1.0342	1.2231
172.8	.93433	.3788	.8227	.95538	1.0339	1.2228
172.9	.93458	.3787	.8225	.95513	1.0337	1.2225
173.0	.93483	.3786	.8223	.95487	1.0334	1.2221
173.1	.93507	.3785	.8221	.95462	1.0331	1.2218
173.2	.93532	.3784	.8219	.95437	1.0329	1.2215
173.3	.93557	.3783	.8216	.95412	1.0326	1.2212
173.4	.93581	.3782	.8214	.95388	1.0323	1.2209
173.5	.93606	.3781	.8212	.95362	1.0320	1.2205
173.6	.93630	.3780	.8210	.95338	1.0318	1.2202
173.7	.93655	.3779	.8208	.95312	1.0315	1.2199
173.8	.93679	.3778	.8206	.95288	1.0312	1.2196
173.9	.93704	.3777	.8203	.95263	1.0310	1.2193

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
174.0	.93728	.3776	.8201	.95238	1.0307	1.2190
174.1	.93753	.3775	.8199	.95213	1.0304	1.2186
174.2	.93777	.3774	.8197	.95188	1.0302	1.2183
174.3	.93801	.3773	.8195	.95164	1.0299	1.2180
174.4	.93825	.3772	.8193	.95139	1.0296	1.2177
174.5	.93849	.3771	.8191	.95115	1.0294	1.2174
174.6	.93873	.3770	.8189	.95090	1.0291	1.2171
174.7	.93897	.3769	.8187	.95066	1.0288	1.2168
174.8	.93921	.3768	.8185	.95042	1.0286	1.2164
174.9	.93945	.3767	.8182	.95017	1.0283	1.2161
175.0	.92969	.3766	.8180	.94993	1.0281	1.2158
175.1	.93993	.3765	.8178	.94970	1.0278	1.2155
175.2	.94017	.3764	.8176	.94945	1.0275	1.2152
175.3	.94041	.3763	.8174	.94921	1.0273	1.2149
175.4	.94064	.3762	.8172	.94898	1.0270	1.2146
175.5	.94088	.3761	.8170	.94874	1.0268	1.2143
175.6	.94112	.3760	.8168	.94849	1.0265	1.2140
175.7	.94135	.3760	.8166	.94826	1.0262	1.2137
175.8	.94159	.3759	.8164	.94802	1.0260	1.2134
175.9	.04182	.3758	.8162	.94779	1.0257	1.2131
176.0	.94206	.3757	.8160	.94755	1.0255	1.2128
176.1	.94229	.3756	.8158	.94731	1.0252	1.2125
176.2	.94252	.3755	.8156	.94708	1.0250	1.2122
176.3	.94276	.3754	.8154	.94684	1.0247	1.2119
176.4	.94299	.3753	.8152	.94661	1.0245	1.2116
176.5	.94322	.3752	.8150	.94638	1.0242	1.2113
176.6	.94345	.3751	.8148	.94614	1.0240	1.2110
176.7	.94369	.3750	.8146	.94592	1.0237	1.2107
176.8	.94392	.3749	.8144	.94567	1.0234	1.2104
176.9	.94415	.3748	.8142	.94545	1.0232	1.2101
177.0	.94438	.3747	.8140	.94521	1.0229	1.2098
177.1	.94461	.3747	.8138	.94499	1.0227	1.2095
177.2	.94483	.3746	.8136	.94477	1.0225	1.2092
177.3	.94506	.3745	.8134	.94454	1.0222	1.2089
177.4	.94529	.3744	.8132	.94431	1.0220	1.2086
177.5	.94552	.3743	.8130	.94408	1.0217	1.2083
177.6	.94575	.3742	.8128	.94385	1.0215	1.2080
177.7	.94597	.3741	.8126	.94363	1.0212	1.2078
177.8	.94620	.3740	.8124	.94340	1.0210	1.2075
177.9	.94642	.3739	.8122	.94318	1.0207	1.2072

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
178.0	.94665	.3738	.8120	.94295	1.0205	1.2069
178.1	.94687	.3738	.8118	.94272	1.0203	1.2066
178.2	.94710	.3737	.8116	.94250	1.0200	1.2063
178.3	.94732	.3736	.8114	.94228	1.0198	1.2060
178.4	.94755	.3735	.8112	.94206	1.0195	1.2057
178.5	.94777	.3734	.8111	.94183	1.0193	1.2055
178.6	.94799	.3733	.8109	.94162	1.0190	1.2052
178.7	.94821	.3732	.8107	.94140	1.0188	1.2049
178.8	.94843	.3731	.8105	.94118	1.0186	1.2046
178.9	.94866	.3731	.8103	.94096	1.0183	1.2043
179.0	.94888	.3730	.8101	.94073	1.0181	1.2041
179.1	.94910	.3729	.8099	.94052	1.0179	1.2038
179.2	.94932	.3728	.8097	.94030	1.0176	1.2035
179.3	.94954	.3727	.8095	.94009	1.0174	1.2032
179.4	.94975	.3726	.8094	.93988	1.0172	1.2029
179.5	.94997	.3725	.8092	.93966	1.0169	1.2027
179.6	.95019	.3725	.8090	.93944	1.0167	1.2024
179.7	.95041	.3724	.8088	.93922	1.0165	1.2021
179.8	.95062	.3723	.8086	.93900	1.0162	1.2018
179.9	.95084	.3722	.8084	.93880	1.0160	1.2016
180.0	.95106	.3721	.8083	.93858	1.0158	1.2013
180.1	.95127	.3720	.8081	.93836	1.0155	1.2010
180.2	.95149	.3719	.8079	.93815	1.0153	1.2007
180.3	.95170	.3719	.8077	.93795	1.0151	1.2005
180.4	.95192	.3718	.8075	.93774	1.0148	1.2002
180.5	.95213	.3717	.8073	.93752	1.0146	1.1999
180.6	.95234	.3716	.8072	.93732	1.0144	1.1997
180.7	.95256	.3715	.8070	.93711	1.0142	1.1994
180.8	.95277	.3714	.8068	.93689	1.0139	1.1991
180.9	.95298	.3714	.8066	.93668	1.0137	1.1989
181.0	.95319	.3713	.8064	.93648	1.0135	1.1986
181.1	.95340	.3712	.8063	.93627	1.0133	1.1983
181.2	.95361	.3711	.8061	.93606	1.0130	1.1981
181.3	.95382	.3710	.8059	.93587	1.0128	1.1978
181.4	.95403	.3710	.8057	.93566	1.0126	1.1976
181.5	.95424	.3709	.8056	.93545	1.0124	1.1973
181.6	.95445	.3708	.8054	.93525	1.0122	1.1970
181.7	.95466	.3707	.8052	.93505	1.0119	1.1968
181.8	.95486	.3706	.8050	.93485	1.0117	1.1965
181.9	.95507	.3706	.8049	.93464	1.0115	1.1962

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
182.0	.95528	.3705	.8047	.93443	1.0113	1.1960
182.1	.95548	.3704	.8045	.93423	1.0111	1.1957
182.2	.95569	.3703	.8043	.93403	1.0108	1.1955
182.3	.95590	.3702	.8042	.93383	1.0106	1.1952
182.4	.95610	.3702	.8040	.93363	1.0104	1.1950
182.5	.95630	.3701	.8038	.93341	1.0102	1.1947
182.6	.95651	.3700	.8036	.93323	1.0100	1.1944
182.7	.95671	.3699	.8035	.93303	1.0098	1.1942
182.8	.95692	.3698	.8033	.93283	1.0095	1.1939
182.9	.95712	.3698	.8031	.93263	1.0093	1.1937
183.0	.95732	.3697	.8030	.93244	1.0091	1.1934
183.1	.95752	.3696	.8028	.93224	1.0089	1.1932
183.2	.95772	.3695	.8026	.93205	1.0087	1.1929
183.3	.95792	.3695	.8025	.93185	1.0085	1.1927
183.4	.95812	.3694	.8023	.93166	1.0083	1.1924
183.5	.95832	.3693	.8021	.93146	1.0081	1.1922
183.6	.95852	.3692	.8020	.93128	1.0079	1.1919
183.7	.95872	.3691	.8018	.93108	1.0076	1.1917
183.8	.95892	.3691	.8016	.93089	1.0074	1.1914
183.9	.95912	.3690	.8015	.93069	1.0072	1.1912
184.0	.95931	.3689	.8013	.93051	1.0070	1.1910
184.1	.95951	.3688	.8011	.93032	1.0068	1.1907
184.2	.95971	.3688	.8010	.93013	1.0066	1.1905
184.3	.95990	.3687	.8008	.92994	1.0064	1.1902
184.4	.96010	.3686	.8006	.92974	1.0062	1.1900
184.5	.96029	.3685	.8005	.92956	1.0060	1.1897
184.6	.96049	.3685	.8003	.92936	1.0058	1.1895
184.7	.96068	.3684	.8002	.92918	1.0056	1.1893
184.8	.96088	.3683	.8000	.92899	1.0054	1.1890
184.9	.96107	.3682	.7998	.92880	1.0052	1.1888
185.0	.96126	.3682	.7997	.92862	1.0050	1.1885
185.1	.96145	.3681	.7995	.92843	1.0048	1.1883
185.2	.96165	.3680	.7994	.92825	1.0046	1.1881
185.3	.96184	.3679	.7992	.92806	1.0044	1.1878
185.4	.96203	.3679	.7990	.92787	1.0042	1.1876
185.5	.96222	.3678	.7989	.92769	1.0040	1.1874
185.6	.96241	.3677	.7987	.92751	1.0038	1.1871
185.7	.96260	.3676	.7986	.92732	1.0036	1.1869
185.8	.96279	.3676	.7984	.92714	1.0034	1.1867
185.9	.96297	.3675	.7983	.92696	1.0032	1.1864

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
186.0	.96316	.3674	.7981	.92679	1.0030	1.1862
186.1	.96335	.3674	.7979	.92661	1.0028	1.1860
186.2	.96354	.3673	.7978	.92644	1.0026	1.1857
186.3	.96372	.3672	.7976	.92625	1.0024	1.1855
186.4	.96391	.3672	.7975	.92607	1.0022	1.1853
186.5	.96410	.3671	.7973	.92589	1.0020	1.1850
186.6	.96428	.3670	.7972	.92571	1.0018	1.1848
186.7	.96447	.3669	.7970	.92554	1.0016	1.1846
186.8	.96465	.3669	.7969	.92536	1.0015	1.1844
186.9	.96483	.3668	.7967	.92518	1.0013	1.1841
187.0	.96502	.3667	.7966	.92500	1.0011	1.1839
187.1	.96520	.3667	.7964	.92483	1.0009	1.1837
187.2	.96538	.3666	.7963	.92466	1.0007	1.1835
187.3	.96556	.3665	.7961	.92448	1.0005	1.1833
187.4	.96574	.3665	.7960	.92430	1.0003	1.1830
187.5	.96593	.3664	.7958	.92413	1.0001	1.1828
187.6	.96611	.3663	.7957	.92396	.9999	1.1826
187.7	.96629	.3662	.7955	.92378	.9998	1.1824
187.8	.96647	.3662	.7954	.92361	.9996	1.1821
187.9	.96664	.3661	.7952	.92345	.9994	1.1819
188.0	.96682	.3660	.7951	.92328	.9992	1.1817
188.1	.96700	.3660	.7949	.92310	.9990	1.1815
188.2	.96718	.3659	.7948	.92293	.9988	1.1813
188.3	.96736	.3658	.7946	.92276	.9986	1.1810
188.4	.96753	.3658	.7945	.92260	.9985	1.1808
188.5	.96771	.3657	.7943	.92243	.9983	1.1806
188.6	.96788	.3656	.7942	.92226	.9981	1.1804
188.7	.96806	.3656	.7941	.92210	.9979	1.1802
188.8	.96823	.3655	.7939	.92194	.9977	1.1800
188.9	.96841	.3654	.7938	.92177	.9976	1.1798
189.0	.96858	.3654	.7936	.92160	.9974	1.1796
189.1	.96876	.3653	.7935	.92143	.9972	1.1793
189.2	.96893	.3652	.7933	.92127	.9970	1.1791
189.3	.96910	.3652	.7932	.92111	.9969	1.1789
189.4	.96927	.3651	.7931	.92095	.9967	1.1787
189.5	.96945	.3650	.7929	.92078	.9965	1.1785
189.6	.96962	.3650	.7928	.92061	.9963	1.1783
189.7	.96979	.3649	.7926	.92045	.9961	1.1781
189.8	.96996	.3649	.7925	.92030	.9960	1.1779
189.9	.97013	.3648	.7924	.92014	.9958	1.1777

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
190.0	.97030	.3647	.7922	.91998	.9956	1.1775
190.1	.97046	.3647	.7921	.91982	.9955	1.1773
190.2	.97063	.3646	.7920	.91965	.9953	1.1771
190.3	.97080	.3645	.7918	.91949	.9951	1.1769
190.4	.97097	.3645	.7917	.91933	.9949	1.1767
190.5	.97113	.3644	.7916	.91918	.9948	1.1765
190.6	.97130	.3644	.7914	.91902	.9946	1.1763
190.7	.97147	.3643	.7913	.91886	.9944	1.1761
190.8	.97163	.3642	.7911	.91871	.9943	1.1759
190.9	.97180	.3642	.7910	.91854	.9941	1.1757
191.0	.97196	.3641	.7909	.91839	.9939	1.1755
191.1	.97212	.3640	.7907	.91823	.9938	1.1753
191.2	.97229	.3640	.7906	.91808	.9936	1.1751
191.3	.97245	.3639	.7905	.91793	.9934	1.1749
191.4	.97261	.3639	.7903	.91778	.9933	1.1747
191.5	.97278	.3638	.7902	.91763	.9931	1.1745
191.6	.97294	.3637	.7901	.91748	.9929	1.1743
191.7	.97310	.3637	.7899	.91732	.9928	1.1741
191.8	.97326	.3636	.7898	.91717	.9926	1.1739
191.9	.97342	.3636	.7897	.91702	.9924	1.1737
192.0	.97358	.3635	.7896	.91687	.9923	1.1735
192.1	.97374	.3634	.7894	.91672	.9921	1.1733
192.2	.97390	.3634	.7893	.91657	.9919	1.1731
192.3	.97406	.3633	.7892	.91643	.9918	1.1729
192.4	.97421	.3633	.7890	.91628	.9916	1.1727
192.5	.97437	.3632	.7889	.91613	.9915	1.1726
192.6	.97453	.3631	.7888	.91598	.9913	1.1724
192.7	.97468	.3631	.7887	.91583	.9911	1.1722
192.8	.97484	.3630	.7885	.91568	.9910	1.1720
192.9	.97499	.3630	.7884	.91553	.9908	1.1718
193.0	.97515	.3629	.7883	.91539	.9907	1.1716
193.1	.97530	.3629	.7882	.91525	.9905	1.1714
193.2	.97546	.3628	.7880	.91510	.9904	1.1712
193.3	.97561	.3627	.7879	.91496	.9902	1.1711
193.4	.97576	.3627	.7878	.91481	.9900	1.1709
193.5	.97592	.3626	.7877	.91467	.9899	1.1707
193.6	.97607	.3626	.7875	.91453	.9897	1.1705
193.7	.97622	.3625	.7874	.91439	.9896	1.1703
193.8	.97637	.3625	.7873	.91425	.9894	1.1702
193.9	.97652	.3624	.7872	.91411	.9893	1.1700

R (mm)	Sin θ	d (Å) Mo $K_{\alpha 1}$ =0.7078	Cu $K_{\alpha 1}$ =1.5374	Co $K_{\alpha 1}$ =1.7853	Fe $K_{\alpha 1}$ =1.9321	Cr $K_{\alpha 1}$ =2.2850
194.0	.97667	.3624	.7871	.91396	.9891	1.1698
194.1	.97682	.3623	.7869	.91382	.9890	1.1696
194.2	.97697	.3622	.7868	.91368	.9888	1.1694
194.3	.97712	.3622	.8767	.91354	.9887	1.1693
194.4	.97727	.3621	.7866	.91340	.9885	1.1691
194.5	.97742	.3621	.7865	.91326	.9884	1.1689
194.6	.97756	.3620	.7863	.91314	.9882	1.1687
194.7	.97771	.3620	.7862	.91300	.9881	1.1685
194.8	.97786	.3619	.7861	.91287	.9879	1.1684
194.9	.97800	.3619	.7860	.91273	.9878	1.1682
195.0	.97815	.3618	.7859	.91259	.9876	1.1680
195.1	.97829	.3618	.7858	.91246	.9875	1.1679
195.2	.97844	.3617	.7856	.91232	.9873	1.1677
195.3	.97858	.3616	.7855	.91219	.9872	1.1675
195.4	.97872	.3616	.7854	.91205	.9871	1.1673
195.5	.97887	.3615	.7853	.91192	.9869	1.1672
195.6	.97901	.3615	.7852	.91179	.9868	1.1670
195.7	.97915	.3614	.7851	.91165	.9866	1.1668
195.8	.97929	.3614	.7850	.91152	.9865	1.1667
195.9	.97943	.3613	.7848	.91138	.9863	1.1665
196.0	.97958	.3613	.7847	.91125	.9862	1.1663
196.1	.97972	.3612	.7846	.91113	.9860	1.1661
196.2	.97986	.3612	.7845	.91100	.9859	1.1660
196.3	.97999	.3611	.7844	.91087	.9858	1.1658
196.4	.98013	.3611	.7843	.91074	.9856	1.1657
196.5	.98027	.3610	.7842	.91061	.9855	1.1655
196.6	.98041	.3610	.7841	.91048	.9854	1.1653
196.7	.98055	.3609	.7839	.91035	.9852	1.1652
196.8	.98068	.3609	.7838	.91023	.9851	1.1650
196.9	.98082	.3608	.7837	.91010	.9849	1.1648
197.0	.98096	.3608	.7836	.90997	.9848	1.1647
197.1	.98109	.3607	.7835	.90985	.9847	1.1645
197.2	.98123	.3607	.7834	.90972	.9845	1.1644
197.3	.98136	.3606	.7833	.90960	.9844	1.1642
197.4	.98149	.3606	.7832	.90947	.9843	1.1640
197.5	.98163	.3605	.7831	.90935	.9841	1.1639
197.6	.98176	.3605	.7830	.90923	.9840	1.1637
197.7	.98189	.3604	.7829	.90910	.9839	1.1636
197.8	.98202	.3604	.7828	.90898	.9837	1.1634
197.9	.98216	.3603	.7827	.90885	.9836	1.1633

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
198.0	.98229	.3603	.7826	.90873	.9835	1.1631
198.1	.98242	.3602	.7825	.90861	.9833	1.1629
198.2	.98255	.3602	.7824	.90850	.9832	1.1628
198.3	.98268	.3601	.7822	.90838	.9831	1.1626
198.4	.98281	.3601	.7821	.90826	.9829	1.1625
198.5	.98294	.3600	.7820	.90814	.9828	1.1623
198.6	.98306	.3600	.7819	.90803	.9827	1.1622
198.7	.98319	.3600	.7818	.90791	.9826	1.1620
198.8	.98332	.3599	.7817	.90779	.9824	1.1619
198.9	.98345	.3599	.7816	.90767	.9823	1.1617
199.0	.98357	.3598	.7815	.90756	.9822	1.1616
199.1	.98370	.3598	.7814	.90744	.9821	1.1614
199.2	.98382	.3597	.7813	.90733	.9819	1.1613
199.3	.98395	.3597	.7812	.90721	.9818	1.1611
199.4	.98407	.3596	.7811	.90710	.9817	1.1610
199.5	.98420	.3596	.7810	.90698	.9816	1.1608
199.6	.98432	.3595	.7809	.90687	.9814	1.1607
199.7	.98444	.3595	.7808	.90675	.9813	1.1606
199.8	.98456	.3594	.7808	.90663	.9812	1.1604
199.9	.98469	.3594	.7807	.90652	.9811	1.1603
200.0	.98481	.3594	.7806	.90641	.9810	1.1601
200.1	.98493	.3593	.7805	.90630	.9808	1.1600
200.2	.98505	.3593	.7804	.90619	.9807	1.1598
200.3	.98517	.3592	.7903	.90608	.9806	1.1597
200.4	.98529	.3592	.7802	.90597	.9805	1.1596
200.5	.98541	.3591	.7801	.90586	.9804	1.1594
200.6	.98553	.3591	.7800	.90575	.9802	1.1593
200.7	.98564	.3591	.7799	.90565	.9801	1.1591
200.8	.98576	.3590	.7798	.90554	.9800	1.1590
200.9	.98588	.3590	.7797	.90543	.9799	1.1589
201.0	.98600	.3589	.7796	.90532	.9798	1.1587
201.1	.98611	.3589	.7795	.90522	.9797	1.1586
201.2	.98623	.3588	.7794	.90511	.9795	1.1585
201.3	.98634	.3588	.7793	.90500	.9794	1.1583
201.4	.98646	.3588	.7793	.90489	.9793	1.1582
201.5	.98657	.3587	.7792	.90479	.9792	1.1581
201.6	.98669	.3587	.7791	.90468	.9791	1.1579
201.7	.98680	.3586	.7790	.90458	.9790	1.1578
201.8	.98691	.3586	.7789	.90448	.9789	1.1577
201.9	.98702	.3586	.7788	.90438	.9788	1.1575

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
202.0	.98714	.3585	.7787	.90427	.9786	1.1574
202.1	.98725	.3585	.7786	.90417	.9785	1.1573
202.2	.98736	.3584	.7785	.90407	.9784	1.1571
202.3	.98747	.3584	.7785	.90398	.9783	1.1570
202.4	.98758	.3584	.7784	.90388	.9782	1.1569
202.5	.98769	.3583	.7783	.90377	.9781	1.1567
202.6	.98780	.3583	.7782	.90367	.9780	1.1566
202.7	.98791	.3582	.7781	.90358	.9779	1.1565
202.8	.98801	.3582	.7780	.90348	.9778	1.1564
202.9	.98812	.3582	.7779	.90338	.9777	1.1562
203.0	.98823	.3581	.7779	.90328	.9776	1.1561
203.1	.98833	.3581	.7778	.90318	.9775	1.1560
203.2	.98844	.3580	.7777	.90309	.9773	1.1559
203.3	.98855	.3580	.7776	.90299	.9772	1.1557
203.4	.98865	.3580	.7775	.90290	.9771	1.1556
203.5	.98876	.3579	.7774	.90279	.9770	1.1555
203.6	.98886	.3579	.7774	.90270	.9769	1.1554
203.7	.98896	.3578	.7773	.90261	.9768	1.1553
203.8	.98907	.3578	.7772	.90251	.9767	1.1551
203.9	.98917	.3578	.7771	.90242	.9766	1.1550
204.0	.98927	.3577	.7770	.90233	.9765	1.1549
204.1	.98937	.3577	.7770	.90223	.9764	1.1548
204.2	.98948	.3577	.7769	.90214	.9763	1.1546
204.3	.98958	.3576	.7768	.90204	.9762	1.1545
204.4	.98968	.3576	.7767	.90195	.9761	1.1544
204.5	.98978	.3576	.7766	.90186	.9760	1.1543
204.6	.98988	.3575	.7766	.90177	.9759	1.1542
204.7	.98997	.3575	.7765	.90169	.9758	1.1541
204.8	.99007	.3574	.7764	.90160	.9757	1.1540
204.9	.99017	.3574	.7763	.90151	.9756	1.1538
205.0	.99027	.3574	.7763	.90141	.9755	1.1537
205.1	.99036	.3573	.7762	.90132	.9755	1.1536
205.2	.99046	.3573	.7761	.90124	.9754	1.1535
205.3	.99056	.3573	.7760	.90115	.9753	1.1534
205.4	.99065	.3572	.7760	.90107	.9752	1.1533
205.5	.99075	.3572	.7759	.99098	.9751	1.1532
205.6	.99084	.3572	.7758	.90089	.9750	1.1531
205.7	.99094	.3571	.7757	.90080	.9749	1.1529
205.8	.99103	.3571	.7757	.90072	.9748	1.1528
205.9	.99112	.3571	.7756	.90064	.9747	1.1527

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
206.0	.99122	.3570	.7755	.90055	.9746	1.1526
206.1	.99131	.3570	.7754	.90047	.9745	1.1525
206.2	.99140	.3570	.7754	.90039	.9744	1.1524
206.3	.99149	.3569	.7753	.90030	.9743	1.1523
206.4	.99158	.3569	.7752	.90022	.9743	1.1522
206.5	.99167	.3569	.7752	.90014	.9742	1.1521
206.6	.99176	.3568	.7751	.90006	.9741	1.1520
206.7	.99185	.3568	.7750	.89998	.9740	1.1519
206.8	.99194	.3568	.7749	.89989	.9739	1.1518
206.9	.99203	.3567	.7749	.89982	.9738	1.1517
207.0	.99211	.3567	.7748	.89974	.9737	1.1516
207.1	.99220	.3567	.7747	.89966	.9736	1.1515
207.2	.99229	.3566	.7747	.89958	.9736	1.1514
207.3	.99238	.3566	.7746	.89949	.9735	1.1513
207.4	.99246	.3566	.7745	.89942	.9734	1.1512
207.5	.99255	.3566	.7745	.89935	.9733	1.1511
207.6	.99263	.3565	.7744	.89928	.9732	1.1510
207.7	.99272	.3565	.7743	.89920	.9731	1.1509
207.8	.99280	.3565	.7743	.89912	.9731	1.1508
207.9	.99288	.3564	.7742	.89905	.9730	1.1507
208.0	.99297	.3564	.7741	.89897	.9729	1.1506
208.1	.99305	.3564	.7741	.89890	.9728	1.1505
208.2	.99313	.3563	.7740	.89882	.9727	1.1504
208.3	.99321	.3563	.7740	.89875	.9727	1.1503
208.4	.99329	.3563	.7739	.89868	.9726	1.1502
208.5	.99337	.3563	.7738	.89861	.9725	1.1501
208.6	.99345	.3562	.7738	.89853	.9724	1.1500
208.7	.99353	.3562	.7737	.89846	.9723	1.1499
208.8	.99361	.3562	.7736	.89839	.9723	1.1498
208.9	.99369	.3561	.7736	.89832	.9722	1.1498
209.0	.99377	.3561	.7735	.89824	.9721	1.1497
209.1	.99385	.3561	.7735	.89818	.9720	1.1496
209.2	.99392	.3561	.7734	.89811	.9720	1.1495
209.3	.99400	.3560	.7733	.89803	.9719	1.1494
209.4	.99408	.3560	.7733	.89796	.9718	1.1493
209.5	.99415	.3560	.7732	.89790	.9717	1.1492
209.6	.99423	.3560	.7732	.89784	.9717	1.1491
209.7	.99430	.3559	.7731	.89776	.9716	1.1490
209.8	.99437	.3559	.7731	.89769	.9715	1.1490
209.9	.99445	.3559	.7730	.89763	.9714	1.1489

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ =0.7078	Cu $K\alpha_1$ =1.5374	Co $K\alpha_1$ =1.7853	Fe $K\alpha_1$ =1.9321	Cr $K\alpha_1$ =2.2850
210.0	.99452	.3558	.7729	.89756	.9714	1.1488
210.1	.99459	.3558	.7729	.89750	.9713	1.1487
210.2	.99467	.3558	.7728	.89744	.9712	1.1486
210.3	.99474	.3558	.7728	.89737	.9712	1.1485
210.4	.99481	.3557	.7727	.89730	.9711	1.1485
210.5	.99488	.3557	.7727	.89724	.9710	1.1484
210.6	.99495	.3557	.7726	.89718	.9710	1.1483
210.7	.99502	.3557	.7725	.89711	.9709	1.1482
210.8	.99509	.3556	.7725	.89705	.9708	1.1481
210.9	.99516	.3556	.7724	.89699	.9707	1.1481
211.0	.99523	.3556	.7724	.89692	.9707	1.1480
211.1	.99530	.3556	.7723	.89687	.9706	1.1479
211.2	.99536	.3555	.7723	.89681	.9706	1.1478
211.3	.99543	.3555	.7722	.89674	.9705	1.1477
211.4	.99550	.3555	.7722	.89668	.9704	1.1477
211.5	.99556	.3555	.7721	.89662	.9704	1.1476
211.6	.99563	.3555	.7721	.89656	.9703	1.1475
211.7	.99569	.3554	.7720	.89651	.9702	1.1474
211.8	.99576	.3554	.7720	.89644	.9702	1.1474
211.9	.99582	.3554	.7719	.89639	.9701	1.1473
212.0	.99588	.3554	.7719	.89634	.9700	1.1472
212.1	.99595	.3553	.7718	.89627	.9700	1.1471
212.2	.99601	.3553	.7718	.89622	.9699	1.1471
212.3	.99607	.3553	.7717	.89616	.9699	1.1470
212.4	.99613	.3553	.7717	.89611	.9698	1.1469
212.5	.99619	.3553	.7716	.89606	.9697	1.1469
212.6	.99626	.3552	.7716	.89600	.9697	1.1468
212.7	.99632	.3552	.7715	.89595	.9696	1.1467
212.8	.99638	.3552	.7715	.89589	.9696	1.1466
212.9	.99643	.3552	.7715	.89585	.9695	1.1466
213.0	.99649	.3551	.7714	.89579	.9695	1.1465
213.1	.99655	.3551	.7714	.89574	.9694	1.1465
213.2	.99661	.3551	.7713	.89569	.9693	1.1464
213.3	.99667	.3551	.7713	.89563	.9693	1.1463
213.4	.99672	.3551	.7712	.89559	.9692	1.1463
213.5	.99678	.3550	.7712	.89553	.9692	1.1462
213.6	.99683	.3550	.7711	.89549	.9691	1.1461
213.7	.99689	.3550	.7711	.89543	.9691	1.1461
213.8	.99694	.3550	.7711	.89539	.9690	1.1460
213.9	.99700	.3550	.7710	.89534	.9690	1.1459

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ = 0.7078	Cu $K\alpha_1$ = 1.5374	Co $K\alpha_1$ = 1.7853	Fe $K\alpha_1$ = 1.9321	Cr $K\alpha_1$ = 2.2850
214.0	.99705	.3549	.7710	.89529	.9689	1.1459
214.1	.99711	.3549	.7709	.89524	.9688	1.1458
214.2	.99716	.3549	.7709	.89519	.9688	1.1458
214.3	.99721	.3549	.7708	.89515	.9688	1.1457
214.4	.99726	.3549	.7708	.89510	.9687	1.1456
214.5	.99731	.3549	.7708	.89506	.9687	1.1456
214.6	.99737	.3548	.7707	.89500	.9686	1.1455
214.7	.99742	.3548	.7707	.89496	.9685	1.1455
214.8	.99747	.3548	.7706	.89491	.9685	1.1454
214.9	.99752	.3548	.7706	.89487	.9685	1.1453
215.0	.99756	.3548	.7706	.89483	.9684	1.1453
215.1	.99761	.3547	.7705	.89479	.9684	1.1452
215.2	.99766	.3547	.7705	.89474	.9683	1.1452
215.3	.99771	.3547	.7705	.89470	.9683	1.1451
215.4	.99775	.3547	.7704	.89466	.9682	1.1451
215.5	.99780	.3547	.7704	.89462	.9682	1.1450
215.6	.99785	.3547	.7704	.89457	.9681	1.1450
215.7	.99789	.3546	.7703	.89454	.9681	1.1449
215.8	.99794	.3546	.7703	.89449	.9680	1.1449
215.9	.99798	.3546	.7703	.89446	.9680	1.1448
216.0	.99803	.3546	.7702	.89441	.9680	1.1448
216.1	.99807	.3546	.7702	.89438	.9679	1.1447
216.2	.99811	.3546	.7702	.89434	.9679	1.1447
216.3	.99816	.3546	.7701	.89430	.9678	1.1446
216.4	.99820	.3545	.7701	.89426	.9678	1.1446
216.5	.99824	.3545	.7701	.89422	.9678	1.1445
216.6	.99828	.3545	.7700	.89419	.9677	1.1445
216.7	.99832	.3545	.7700	.89415	.9677	1.1444
216.8	.99836	.3545	.7700	.89412	.9676	1.1444
216.9	.99840	.3545	.7699	.89408	.9676	1.1443
217.0	.99844	.3545	.7699	.89404	.9676	1.1443
217.1	.99848	.3544	.7699	.89401	.9675	1.1442
217.2	.99852	.3544	.7698	.89397	.9675	1.1442
217.3	.99856	.3544	.7698	.89394	.9674	1.1441
217.4	.99859	.3544	.7698	.89391	.9674	1.1441
217.5	.99863	.3544	.7698	.89387	.9674	1.1441
217.6	.99867	.3544	.7697	.89384	.9673	1.1440
217.7	.99870	.3544	.7697	.89381	.9673	1.1440
217.8	.99874	.3543	.7697	.89378	.9673	1.1439
217.9	.99877	.3543	.7696	.89374	.9672	1.1439

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ = 0.7078	Cu $K\alpha_1$ = 1.5374	Co $K\alpha_1$ = 1.7853	Fe $K\alpha_1$ = 1.9321	Cr $K\alpha_1$ = 2.2850
218.0	.99881	.3543	.7696	.89371	.9672	1.1439
218.1	.99884	.3543	.7696	.89369	.9672	1.1438
218.2	.99887	.3543	.7696	.89366	.9671	1.1438
218.3	.99891	.3543	.7695	.89362	.9671	1.1437
218.4	.99894	.3543	.7695	.89360	.9671	1.1437
218.5	.99897	.3543	.7695	.89357	.9670	1.1437
218.6	.99900	.3543	.7695	.89354	.9670	1.1436
218.7	.99903	.3542	.7694	.89352	.9670	1.1436
218.8	.99906	.3542	.7694	.89349	.9670	1.1436
218.9	.99909	.3542	.7694	.89346	.9669	1.1435
219.0	.99912	.3542	.7694	.89344	.9669	1.1435
219.1	.99915	.3542	.7694	.89341	.9669	1.1435
219.2	.99918	.3542	.7693	.89338	.9668	1.1434
219.3	.99921	.3542	.7693	.89336	.9668	1.1434
219.4	.99924	.3542	.7693	.89333	.9668	1.1434
219.5	.99926	.3542	.7693	.89331	.9668	1.1433
219.6	.99929	.3542	.7692	.89328	.9667	1.1433
219.7	.99932	.3541	.7692	.89326	.9667	1.1433
219.8	.99934	.3541	.7692	.89324	.9667	1.1433
219.9	.99937	.3541	.7692	.89321	.9667	1.1432
220.0	.99939	.3541	.7692	.89319	.9666	1.1432
220.1	.99941	.3541	.7692	.89318	.9666	1.1432
220.2	.99944	.3541	.7691	.89315	.9666	1.1431
220.3	.99946	.3541	.7691	.89313	.9666	1.1431
220.4	.99948	.3541	.7691	.89311	.9666	1.1431
220.5	.99951	.3541	.7691	.89309	.9665	1.1431
220.6	.99953	.3541	.7691	.89307	.9665	1.1430
220.7	.99955	.3541	.7690	.89305	.9665	1.1430
220.8	.99957	.3541	.7690	.89303	.9665	1.1430
220.9	.99959	.3540	.7690	.89302	.9664	1.1430
221.0	.99961	.3540	.7690	.89300	.9664	1.1429
221.1	.99963	.3540	.7690	.89298	.9664	1.1429
221.2	.99965	.3540	.7690	.89296	.9664	1.1429
221.3	.99967	.3540	.7690	.89294	.9664	1.1429
221.4	.99968	.3540	.7689	.89294	.9664	1.1429
221.5	.99970	.3540	.7689	.89292	.9663	1.1428
221.6	.99972	.3540	.7689	.89290	.9663	1.1428
221.7	.99973	.3540	.7689	.89289	.9663	1.1428
221.8	.99975	.3540	.7689	.89287	.9663	1.1428
221.9	.99977	.3540	.7689	.89286	.9663	1.1428

R (mm)	Sin θ	d (Å) Mo $K\alpha_1$ = 0.7078	Cu $K\alpha_1$ = 1.5374	Co $K\alpha_1$ = 1.7853	Fe $K\alpha_1$ = 1.9321	Cr $K\alpha_1$ = 2.2850
222.0	.99978	.3540	.7689	.89285	.9663	1.1428
222.1	.99980	.3540	.7689	.89283	.9662	1.1427
222.2	.99981	.3540	.7688	.89282	.9662	1.1427
222.3	.99982	.3540	.7688	.89281	.9662	1.1427
222.4	.99984	.3540	.7688	.89279	.9662	1.1427
222.5	.99985	.3540	.7688	.89278	.9662	1.1427
222.6	.99986	.3539	.7688	.89277	.9662	1.1427
222.7	.99987	.3539	.7688	.89277	.9662	1.1426
222.8	.99988	.3539	.7688	.89276	.9662	1.1426
222.9	.99989	.3539	.7688	.89275	.9662	1.1426
223.0	.99990	.3539	.7688	.89274	.9661	1.1426
223.1	.99991	.3539	.7688	.89273	.9661	1.1426
223.2	.99992	.3539	.7688	.89272	.9661	1.1426
223.3	.99993	.3539	.7688	.89271	.9661	1.1426
223.4	.99994	.3539	.7687	.89270	.9661	1.1426
223.5	.99995	.3539	.7687	.89269	.9661	1.1426
223.6	.99995	.3539	.7687	.89269	.9661	1.1426
223.7	.99996	.3539	.7687	.89269	.9661	1.1425
223.8	.99996	.3539	.7687	.89269	.9661	1.1425
223.9	.99997	.3539	.7687	.89268	.9661	1.1425
224.0	.99998	.3539	.7687	.89267	.9661	1.1425
224.1	.99998	.3539	.7687	.89267	.9661	1.1425
224.2	.99998	.3539	.7687	.89267	.9661	1.1425
224.3	.99999	.3539	.7687	.89266	.9661	1.1425
224.4	.99999	.3539	.7687	.89266	.9661	1.1425
224.5	.99999	.3539	.7687	.89266	.9661	1.1425
224.6	1.00000	.3539	.7687	.89265	.9660	1.1425
224.7	1.00000	.3539	.7687	.89265	.9660	1.1425
224.8	1.00000	.3539	.7687	.89265	.9660	1.1425
224.9	1.00000	.3539	.7687	.89265	.9660	1.1425
225.0	1.00000	.3539	.7687	.89265	.9660	1.1425

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ABSTRACT

This table was constructed to permit a time saving in the analysis of complex diffraction patterns obtained with a Debye-Scherrer camera on powdered or small polycrystalline specimen. The table shows the interplanar spacing in Angstrom units of molybdenum, copper, cobalt, iron, and chromium obtained with $K\alpha_1$ radiation for angles of incidence, whose sines range from 0 to 1.0000.

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