Selection Rules for Reflection in Cubic Crystals

(*hkl*)	$h^2+k^2+l^2$	SC	BCC	FCC
100	1	✓	✗	✗ ✗✗
110	2	✓	✓	✗✗
111	3	✓	✗	✓ ✓
200	4	✓	✓	✓✓
210	5	✓	✗	✗✗
211	6	✓	✓	✗✗
220	8	✓	✓	✓✓
300	9	✓	✗	✗✗
310	10	✓	✓	✗✗
311	11	✓	✗	✓✓
222	12	✓	✓	✓✓
320	13	✓	✗	✗✗
321	14	✓	✓	✗✗
400	16	✓	✓	✓✓

Cu target, λ_{K_α} = 1.5418 Å

2θ	$\sin^2\theta$	normalized	clear fractions	(hkl)?	$\dfrac{\sin^2\theta}{h^2+k^2+l^2}$
44.48	0.143	1.00	3	111	0.0477
51.83	0.191	1.34	4	200	0.0478
76.35	0.382	2.67	8	220	0.0478
92.90	0.525	3.67	11	311	0.0477
98.40	0.573	4.01	12	222	0.0478
121.87	0.764	5.34	16	400	0.0477
144.54	0.907	6.34	19	331	0.0477
155.51	0.955	6.68	20	420	0.0478