PG No. 32 O_{h} $m\bar{3}m$ [cubic]

Table 1 Harmonics for rank 0.

No.	multipole	definition
1	$\mathbb{Q}_0(A_{1g})$	C_0

Table 2 Harmonics for rank 1.

No.	multipole	definition
2	$\mathbb{Q}_{1,1}(T_{1u})$	C_1
3	$\mathbb{Q}_{1,2}(T_{1u})$	S_1
4	$\mathbb{Q}_{1,3}(T_{1u})$	C_0

Table 3 Harmonics for rank 2.

No.	multipole	definition
5	$\mathbb{Q}_{2,1}(E_g)$	C_0
6	$\mathbb{Q}_{2,2}(E_g)$	C_2
7	$\mathbb{Q}_{2,1}(T_{2g})$	S_1
8	$\mathbb{Q}_{2,2}(T_{2g})$	C_1
9	$\mathbb{Q}_{2,3}(T_{2g})$	S_2

Table 4 Harmonics for rank 3.

No.	multipole	definition
10	$\mathbb{Q}_3(A_{2u})$	S_2
11	$\mathbb{Q}_{3,1}(T_{1u})$	$-\frac{\sqrt{6}C_1}{4}+\frac{\sqrt{10}C_3}{4}$
12	$\mathbb{Q}_{3,2}(T_{1u})$	$-\frac{\sqrt{6}S_1}{4}-\frac{\sqrt{10}S_3}{4}$
13	$\mathbb{Q}_{3,3}(T_{1u})$	C_0
14	$\mathbb{Q}_{3,1}(T_{2u})$	$-\frac{\sqrt{10}C_1}{4}-\frac{\sqrt{6}C_3}{4}$
15	$\mathbb{Q}_{3,2}(T_{2u})$	$\frac{\sqrt{10}S_1}{4}-\frac{\sqrt{6}S_3}{4}$
16	$\mathbb{Q}_{3,3}(T_{2u})$	C_2

Table 5 Harmonics for rank 4.

No.	multipole	definition
17	$\mathbb{Q}_4(A_{1g})$	$\frac{\sqrt{21}C_0}{6}+\frac{\sqrt{15}C_4}{6}$
18	$\mathbb{Q}_{4,1}(E_g)$	$\frac{\sqrt{15}C_0}{6}-\frac{\sqrt{21}C_4}{6}$
19	$\mathbb{Q}_{4,2}(E_g)$	$-C_2$
20	$\mathbb{Q}_{4,1}(T_{1g})$	$-\frac{\sqrt{14}S_1}{4}-\frac{\sqrt{2}S_3}{4}$
21	$\mathbb{Q}_{4,2}(T_{1g})$	$\frac{\sqrt{14}C_1}{4}-\frac{\sqrt{2}C_3}{4}$
22	$\mathbb{Q}_{4,3}(T_{1g})$	S_4
23	$\mathbb{Q}_{4,1}(T_{2g})$	$-\frac{\sqrt{2}S_1}{4}+\frac{\sqrt{14}S_3}{4}$
24	$\mathbb{Q}_{4,2}(T_{2g})$	$-\frac{\sqrt{2}C_1}{4}-\frac{\sqrt{14}C_3}{4}$
25	$\mathbb{Q}_{4,3}(T_{2g})$	S_2

Table 6 Harmonics for rank 5.

No.	multipole	definition
26	$\mathbb{Q}_{5,1}(E_u)$	S_4
27	$\mathbb{Q}_{5,2}(E_u)$	$-S_2$
28	$\mathbb{Q}_{5,1}(T_{1u},1)$	$\frac{\sqrt{15}C_1}{8} - \frac{\sqrt{70}C_3}{16} + \frac{3\sqrt{14}C_5}{16}$
29	$\mathbb{Q}_{5,2}(T_{1u},1)$	$\frac{\sqrt{15}S_1}{8} + \frac{\sqrt{70}S_3}{16} + \frac{3\sqrt{14}S_5}{16}$
30	$\mathbb{Q}_{5,3}(T_{1u},1)$	C_0
31	$\mathbb{Q}_{5,1}(T_{1u},2)$	$\frac{\sqrt{21}C_1}{8} + \frac{9\sqrt{2}C_3}{16} + \frac{\sqrt{10}C_5}{16}$
32	$\mathbb{Q}_{5,2}(T_{1u},2)$	$\frac{\sqrt{21}S_1}{8} - \frac{9\sqrt{2}S_3}{16} + \frac{\sqrt{10}S_5}{16}$
33	$\mathbb{Q}_{5,3}(T_{1u},2)$	C_4
34	$\mathbb{Q}_{5,1}(T_{2u})$	$\frac{\sqrt{7}C_1}{4} - \frac{\sqrt{6}C_3}{8} - \frac{\sqrt{30}C_5}{8}$
35	$\mathbb{Q}_{5,2}(T_{2u})$	$-\frac{\sqrt{7}S_1}{4} - \frac{\sqrt{6}S_3}{8} + \frac{\sqrt{30}S_5}{8}$
36	$\mathbb{Q}_{5,3}(T_{2u})$	C_2

Table 7 Harmonics for rank 6.

No.	multipole	definition
37	$\mathbb{Q}_6(A_{1g})$	$\frac{\sqrt{2}C_0}{4} - \frac{\sqrt{14}C_4}{4}$
38	$\mathbb{Q}_6(A_{2g})$	$-\frac{\sqrt{11}C_2}{4} + \frac{\sqrt{5}C_6}{4}$
39	$\mathbb{Q}_{6,1}(E_g)$	$\frac{\sqrt{14}C_0}{4} + \frac{\sqrt{2}C_4}{4}$
40	$\mathbb{Q}_{6,2}(E_g)$	$\frac{\sqrt{5}C_2}{4} + \frac{\sqrt{11}C_6}{4}$
41	$\mathbb{Q}_{6,1}(T_{1g})$	$\frac{\sqrt{3}S_1}{4} - \frac{\sqrt{30}S_3}{8} - \frac{\sqrt{22}S_5}{8}$
42	$\mathbb{Q}_{6,2}(T_{1g})$	$-\frac{\sqrt{3}C_1}{4} - \frac{\sqrt{30}C_3}{8} + \frac{\sqrt{22}C_5}{8}$
43	$\mathbb{Q}_{6,3}(T_{1g})$	S_4
44	$\mathbb{Q}_{6,1}(T_{2g},1)$	$\frac{3\sqrt{22}S_1}{16} + \frac{\sqrt{55}S_3}{16} + \frac{\sqrt{3}S_5}{16}$
45	$\mathbb{Q}_{6,2}(T_{2g},1)$	$\frac{3\sqrt{22}C_1}{16} - \frac{\sqrt{55}C_3}{16} + \frac{\sqrt{3}C_5}{16}$
46	$\mathbb{Q}_{6,3}(T_{2g},1)$	S_6
47	$\mathbb{Q}_{6,1}(T_{2g},2)$	$\frac{\sqrt{10}S_1}{16} - \frac{9S_3}{16} + \frac{\sqrt{165}S_5}{16}$
48	$\mathbb{Q}_{6,2}(T_{2g},2)$	$\frac{\sqrt{10}C_1}{16} + \frac{9C_3}{16} + \frac{\sqrt{165}C_5}{16}$
49	$\mathbb{Q}_{6,3}(T_{2g},2)$	S_2

Table 8 Harmonics for rank 7.

No.	multipole	definition
50	$\mathbb{Q}_7(A_{2u})$	$\frac{\sqrt{78}S_2}{12} + \frac{\sqrt{66}S_6}{12}$
51	$\mathbb{Q}_{7,1}(E_u)$	S_4
52	$\mathbb{Q}_{7,2}(E_u)$	$\frac{\sqrt{66}S_2}{12} - \frac{\sqrt{78}S_6}{12}$
53	$\mathbb{Q}_{7,1}(T_{1u}, 1)$	$-\frac{5\sqrt{7}C_1}{32} + \frac{3\sqrt{21}C_3}{32} - \frac{\sqrt{231}C_5}{32} + \frac{\sqrt{429}C_7}{32}$
54	$\mathbb{Q}_{7,2}(T_{1u}, 1)$	$-\frac{5\sqrt{7}S_1}{32} - \frac{3\sqrt{21}S_3}{32} - \frac{\sqrt{231}S_5}{32} - \frac{\sqrt{429}S_7}{32}$
55	$\mathbb{Q}_{7,3}(T_{1u}, 1)$	C_0
56	$\mathbb{Q}_{7,1}(T_{1u}, 2)$	$-\frac{3\sqrt{33}C_1}{32} - \frac{\sqrt{11}C_3}{32} + \frac{25C_5}{32} + \frac{\sqrt{91}C_7}{32}$
57	$\mathbb{Q}_{7,2}(T_{1u}, 2)$	$-\frac{3\sqrt{33}S_1}{32} + \frac{\sqrt{11}S_3}{32} + \frac{25S_5}{32} - \frac{\sqrt{91}S_7}{32}$
58	$\mathbb{Q}_{7,3}(T_{1u}, 2)$	C_4
59	$\mathbb{Q}_{7,1}(T_{2u}, 1)$	$-\frac{\sqrt{858}C_1}{64} - \frac{3\sqrt{286}C_3}{64} - \frac{5\sqrt{26}C_5}{64} - \frac{\sqrt{14}C_7}{64}$
60	$\mathbb{Q}_{7,2}(T_{2u}, 1)$	$\frac{\sqrt{858}S_1}{64} - \frac{3\sqrt{286}S_3}{64} + \frac{5\sqrt{26}S_5}{64} - \frac{\sqrt{14}S_7}{64}$
61	$\mathbb{Q}_{7,3}(T_{2u}, 1)$	C_6
62	$\mathbb{Q}_{7,1}(T_{2u}, 2)$	$-\frac{15\sqrt{6}C_1}{64} + \frac{19\sqrt{2}C_3}{64} - \frac{\sqrt{22}C_5}{64} - \frac{\sqrt{2002}C_7}{64}$
63	$\mathbb{Q}_{7,2}(T_{2u}, 2)$	$\frac{15\sqrt{6}S_1}{64} + \frac{19\sqrt{2}S_3}{64} + \frac{\sqrt{22}S_5}{64} - \frac{\sqrt{2002}S_7}{64}$
64	$\mathbb{Q}_{7,3}(T_{2u}, 2)$	C_2

Table 9 Harmonics for rank 8.

No.	multipole	definition
65	$\mathbb{Q}_8(A_{1g})$	$\frac{\sqrt{33}C_0}{8} + \frac{\sqrt{21}C_4}{12} + \frac{\sqrt{195}C_8}{24}$
66	$\mathbb{Q}_{8,1}(E_g, 1)$	$-\frac{\sqrt{286}C_0}{32} + \frac{\sqrt{182}C_4}{16} + \frac{\sqrt{10}C_8}{32}$
67	$\mathbb{Q}_{8,2}(E_g, 1)$	C_6
68	$\mathbb{Q}_{8,1}(E_g, 2)$	$-\frac{\sqrt{210}C_0}{32} - \frac{\sqrt{330}C_4}{48} + \frac{\sqrt{6006}C_8}{96}$
69	$\mathbb{Q}_{8,2}(E_g, 2)$	C_2
70	$\mathbb{Q}_{8,1}(T_{1g}, 1)$	$-\frac{\sqrt{715}S_1}{32} - \frac{\sqrt{273}S_3}{32} - \frac{\sqrt{35}S_5}{32} - \frac{S_7}{32}$
71	$\mathbb{Q}_{8,2}(T_{1g}, 1)$	$\frac{\sqrt{715}C_1}{32} - \frac{\sqrt{273}C_3}{32} + \frac{\sqrt{35}C_5}{32} - \frac{C_7}{32}$
72	$\mathbb{Q}_{8,3}(T_{1g}, 1)$	S_8
73	$\mathbb{Q}_{8,1}(T_{1g}, 2)$	$-\frac{\sqrt{77}S_1}{32} + \frac{5\sqrt{15}S_3}{32} - \frac{3\sqrt{13}S_5}{32} - \frac{\sqrt{455}S_7}{32}$
74	$\mathbb{Q}_{8,2}(T_{1g}, 2)$	$\frac{\sqrt{77}C_1}{32} + \frac{5\sqrt{15}C_3}{32} + \frac{3\sqrt{13}C_5}{32} - \frac{\sqrt{455}C_7}{32}$
75	$\mathbb{Q}_{8,3}(T_{1g}, 2)$	S_4
76	$\mathbb{Q}_{8,1}(T_{2g}, 1)$	$-\frac{\sqrt{858}S_1}{64} + \frac{\sqrt{910}S_3}{64} + \frac{7\sqrt{42}S_5}{64} + \frac{3\sqrt{30}S_7}{64}$
77	$\mathbb{Q}_{8,2}(T_{2g}, 1)$	$-\frac{\sqrt{858}C_1}{64} - \frac{\sqrt{910}C_3}{64} + \frac{7\sqrt{42}C_5}{64} - \frac{3\sqrt{30}C_7}{64}$
78	$\mathbb{Q}_{8,3}(T_{2g}, 1)$	S_6
79	$\mathbb{Q}_{8,1}(T_{2g}, 2)$	$-\frac{\sqrt{70}S_1}{64} + \frac{3\sqrt{66}S_3}{64} - \frac{\sqrt{1430}S_5}{64} + \frac{\sqrt{2002}S_7}{64}$
80	$\mathbb{Q}_{8,2}(T_{2g}, 2)$	$-\frac{\sqrt{70}C_1}{64} - \frac{3\sqrt{66}C_3}{64} - \frac{\sqrt{1430}C_5}{64} - \frac{\sqrt{2002}C_7}{64}$
81	$\mathbb{Q}_{8,3}(T_{2g}, 2)$	S_2

Table 10 Harmonics for rank 9.

No.	multipole	definition
82	$\mathbb{Q}_9(A_{1u})$	$-\frac{\sqrt{102}S_4}{12}+\frac{\sqrt{42}S_8}{12}$
83	$\mathbb{Q}_9(A_{2u})$	$\frac{\sqrt{3}S_2}{4}-\frac{\sqrt{13}S_6}{4}$
84	$\mathbb{Q}_{9,1}(E_u)$	$\frac{\sqrt{42}S_4}{12}+\frac{\sqrt{102}S_8}{12}$
85	$\mathbb{Q}_{9,2}(E_u)$	$-\frac{\sqrt{13}S_2}{4}-\frac{\sqrt{3}S_6}{4}$
86	$\mathbb{Q}_{9,1}(T_{1u},1)$	$\frac{21\sqrt{5}C_1}{128}-\frac{\sqrt{2310}C_3}{128}+\frac{3\sqrt{286}C_5}{128}-\frac{3\sqrt{1430}C_7}{256}+\frac{\sqrt{24310}C_9}{256}$
87	$\mathbb{Q}_{9,2}(T_{1u},1)$	$\frac{21\sqrt{5}S_1}{128}+\frac{\sqrt{2310}S_3}{128}+\frac{3\sqrt{286}S_5}{128}+\frac{3\sqrt{1430}S_7}{256}+\frac{\sqrt{24310}S_9}{256}$
88	$\mathbb{Q}_{9,3}(T_{1u},1)$	C_0
89	$\mathbb{Q}_{9,1}(T_{1u},2)$	$\frac{\sqrt{2431}C_1}{128}+\frac{\sqrt{9282}C_3}{128}+\frac{5\sqrt{170}C_5}{128}+\frac{7\sqrt{34}C_7}{256}+\frac{3\sqrt{2}C_9}{256}$
90	$\mathbb{Q}_{9,2}(T_{1u},2)$	$\frac{\sqrt{2431}S_1}{128}-\frac{\sqrt{9282}S_3}{128}+\frac{5\sqrt{170}S_5}{128}-\frac{7\sqrt{34}S_7}{256}+\frac{3\sqrt{2}S_9}{256}$
91	$\mathbb{Q}_{9,3}(T_{1u},2)$	C_8
92	$\mathbb{Q}_{9,1}(T_{1u},3)$	$\frac{\sqrt{1001}C_1}{64}-\frac{\sqrt{78}C_3}{64}-\frac{3\sqrt{70}C_5}{64}+\frac{23\sqrt{14}C_7}{128}+\frac{3\sqrt{238}C_9}{128}$
93	$\mathbb{Q}_{9,2}(T_{1u},3)$	$\frac{\sqrt{1001}S_1}{64}+\frac{\sqrt{78}S_3}{64}-\frac{3\sqrt{70}S_5}{64}-\frac{23\sqrt{14}S_7}{128}+\frac{3\sqrt{238}S_9}{128}$
94	$\mathbb{Q}_{9,3}(T_{1u},3)$	C_4
95	$\mathbb{Q}_{9,1}(T_{2u},1)$	$\frac{\sqrt{858}C_1}{64}+\frac{\sqrt{91}C_3}{32}-\frac{5\sqrt{15}C_5}{32}-\frac{21\sqrt{3}C_7}{64}-\frac{\sqrt{51}C_9}{64}$
96	$\mathbb{Q}_{9,2}(T_{2u},1)$	$-\frac{\sqrt{858}S_1}{64}+\frac{\sqrt{91}S_3}{32}+\frac{5\sqrt{15}S_5}{32}-\frac{21\sqrt{3}S_7}{64}+\frac{\sqrt{51}S_9}{64}$
97	$\mathbb{Q}_{9,3}(T_{2u},1)$	C_6
98	$\mathbb{Q}_{9,1}(T_{2u},2)$	$\frac{7\sqrt{22}C_1}{64}-\frac{3\sqrt{21}C_3}{32}+\frac{\sqrt{65}C_5}{32}+\frac{\sqrt{13}C_7}{64}-\frac{3\sqrt{221}C_9}{64}$
99	$\mathbb{Q}_{9,2}(T_{2u},2)$	$-\frac{7\sqrt{22}S_1}{64}-\frac{3\sqrt{21}S_3}{32}-\frac{\sqrt{65}S_5}{32}+\frac{\sqrt{13}S_7}{64}+\frac{3\sqrt{221}S_9}{64}$
100	$\mathbb{Q}_{9,3}(T_{2u},2)$	C_2

Table 11 Harmonics for rank 10.

No.	multipole	definition
101	$\mathbb{Q}_{10}(A_{1g})$	$\frac{\sqrt{390}C_0}{48}-\frac{\sqrt{22}C_4}{8}-\frac{\sqrt{1122}C_8}{48}$
102	$\mathbb{Q}_{10}(A_{2g})$	$\frac{\sqrt{85}C_{10}}{16}-\frac{\sqrt{1482}C_2}{48}-\frac{\sqrt{57}C_6}{48}$
103	$\mathbb{Q}_{10,1}(E_g,1)$	$\frac{11\sqrt{420189}C_0}{8988}+\frac{\sqrt{827645}C_4}{1498}-\frac{\sqrt{146055}C_8}{8988}$
104	$\mathbb{Q}_{10,2}(E_g,1)$	$\frac{\sqrt{370006}C_{10}}{749}+\frac{\sqrt{190995}C_2}{749}$
105	$\mathbb{Q}_{10,1}(E_g,2)$	$\frac{3\sqrt{3213210}C_0}{11984}-\frac{83\sqrt{1498}C_4}{5992}+\frac{31\sqrt{76398}C_8}{11984}$
106	$\mathbb{Q}_{10,2}(E_g,2)$	$\frac{\sqrt{1209635}C_{10}}{11984}-\frac{19\sqrt{58422}C_2}{35952}+\frac{\sqrt{2247}C_6}{48}$
107	$\mathbb{Q}_{10,1}(T_{1g},1)$	$\frac{\sqrt{221}S_1}{32}-\frac{\sqrt{102}S_3}{32}-\frac{\sqrt{510}S_5}{32}-\frac{11\sqrt{6}S_7}{64}-\frac{\sqrt{38}S_9}{64}$
108	$\mathbb{Q}_{10,2}(T_{1g},1)$	$-\frac{\sqrt{221}C_1}{32}-\frac{\sqrt{102}C_3}{32}+\frac{\sqrt{510}C_5}{32}-\frac{11\sqrt{6}C_7}{64}+\frac{\sqrt{38}C_9}{64}$
109	$\mathbb{Q}_{10,3}(T_{1g},1)$	S_8
110	$\mathbb{Q}_{10,1}(T_{1g},2)$	$\frac{\sqrt{39}S_1}{32}-\frac{11\sqrt{2}S_3}{32}+\frac{5\sqrt{10}S_5}{32}-\frac{\sqrt{34}S_7}{64}-\frac{\sqrt{1938}S_9}{64}$
111	$\mathbb{Q}_{10,2}(T_{1g},2)$	$-\frac{\sqrt{39}C_1}{32}-\frac{11\sqrt{2}C_3}{32}-\frac{5\sqrt{10}C_5}{32}-\frac{\sqrt{34}C_7}{64}+\frac{\sqrt{1938}C_9}{64}$
112	$\mathbb{Q}_{10,3}(T_{1g},2)$	S_4
113	$\mathbb{Q}_{10,1}(T_{2g},1)$	$\frac{\sqrt{41990}S_1}{256}+\frac{\sqrt{4845}S_3}{128}+\frac{\sqrt{969}S_5}{128}+\frac{\sqrt{285}S_7}{256}+\frac{\sqrt{5}S_9}{256}$
114	$\mathbb{Q}_{10,2}(T_{2g},1)$	$\frac{\sqrt{41990}C_1}{256}-\frac{\sqrt{4845}C_3}{128}+\frac{\sqrt{969}C_5}{128}-\frac{\sqrt{285}C_7}{256}+\frac{\sqrt{5}C_9}{256}$
115	$\mathbb{Q}_{10,3}(T_{2g},1)$	S_{10}
116	$\mathbb{Q}_{10,1}(T_{2g},2)$	$\frac{9\sqrt{78}S_1}{256}-\frac{69S_3}{128}-\frac{\sqrt{5}S_5}{128}+\frac{43\sqrt{17}S_7}{256}+\frac{3\sqrt{969}S_9}{256}$
117	$\mathbb{Q}_{10,2}(T_{2g},2)$	$\frac{9\sqrt{78}C_1}{256}+\frac{69C_3}{128}-\frac{\sqrt{5}C_5}{128}-\frac{43\sqrt{17}C_7}{256}+\frac{3\sqrt{969}C_9}{256}$
118	$\mathbb{Q}_{10,3}(T_{2g},2)$	S_6
119	$\mathbb{Q}_{10,1}(T_{2g},3)$	$\frac{7\sqrt{3}S_1}{128}-\frac{7\sqrt{26}S_3}{128}+\frac{5\sqrt{130}S_5}{128}-\frac{7\sqrt{442}S_7}{256}+\frac{\sqrt{25194}S_9}{256}$
120	$\mathbb{Q}_{10,2}(T_{2g},3)$	$\frac{7\sqrt{3}C_1}{128}+\frac{7\sqrt{26}C_3}{128}+\frac{5\sqrt{130}C_5}{128}+\frac{7\sqrt{442}C_7}{256}+\frac{\sqrt{25194}C_9}{256}$
121	$\mathbb{Q}_{10,3}(T_{2g},3)$	S_2

Table 12 Harmonics for rank 11.

No.	multipole	definition
122	$\mathbb{Q}_{11}(A_{2u})$	$\frac{\sqrt{798}S_{10}}{48} + \frac{\sqrt{255}S_2}{24} + \frac{3\sqrt{6}S_6}{16}$
123	$\mathbb{Q}_{11,1}(E_u,1)$	S_8
124	$\mathbb{Q}_{11,2}(E_u,1)$	$-\frac{\sqrt{210}S_{10}}{96} + \frac{\sqrt{969}S_2}{48} - \frac{\sqrt{570}S_6}{32}$
125	$\mathbb{Q}_{11,1}(E_u,2)$	S_4
126	$\mathbb{Q}_{11,2}(E_u,2)$	$-\frac{\sqrt{646}S_{10}}{32} + \frac{\sqrt{35}S_2}{16} + \frac{\sqrt{238}S_6}{32}$
127	$\mathbb{Q}_{11,1}(T_{1u},1)$	$-\frac{21\sqrt{66}C_1}{512} + \frac{\sqrt{88179}C_{11}}{512} + \frac{\sqrt{30030}C_3}{512} - \frac{15\sqrt{143}C_5}{512} + \frac{\sqrt{36465}C_7}{512} - \frac{\sqrt{46189}C_9}{512}$
128	$\mathbb{Q}_{11,2}(T_{1u},1)$	$-\frac{21\sqrt{66}S_1}{512} - \frac{\sqrt{88179}S_{11}}{512} - \frac{\sqrt{30030}S_3}{512} - \frac{15\sqrt{143}S_5}{512} - \frac{\sqrt{36465}S_7}{512} - \frac{\sqrt{46189}S_9}{512}$
129	$\mathbb{Q}_{11,3}(T_{1u},1)$	C_0
130	$\mathbb{Q}_{11,1}(T_{1u},2)$	$-\frac{\sqrt{41990}C_1}{512} + \frac{\sqrt{385}C_{11}}{512} - \frac{3\sqrt{4522}C_3}{512} + \frac{3\sqrt{4845}C_5}{512} + \frac{77\sqrt{19}C_7}{512} + \frac{39\sqrt{15}C_9}{512}$
131	$\mathbb{Q}_{11,2}(T_{1u},2)$	$-\frac{\sqrt{41990}S_1}{512} - \frac{\sqrt{385}S_{11}}{512} + \frac{3\sqrt{4522}S_3}{512} + \frac{3\sqrt{4845}S_5}{512} - \frac{77\sqrt{19}S_7}{512} + \frac{39\sqrt{15}S_9}{512}$
132	$\mathbb{Q}_{11,3}(T_{1u},2)$	C_8
133	$\mathbb{Q}_{11,1}(T_{1u},3)$	$-\frac{5\sqrt{546}C_1}{256} + \frac{\sqrt{10659}C_{11}}{256} + \frac{11\sqrt{30}C_3}{256} + \frac{13\sqrt{7}C_5}{256} - \frac{3\sqrt{1785}C_7}{256} + \frac{3\sqrt{2261}C_9}{256}$
134	$\mathbb{Q}_{11,2}(T_{1u},3)$	$-\frac{5\sqrt{546}S_1}{256} - \frac{\sqrt{10659}S_{11}}{256} - \frac{11\sqrt{30}S_3}{256} + \frac{13\sqrt{7}S_5}{256} + \frac{3\sqrt{1785}S_7}{256} + \frac{3\sqrt{2261}S_9}{256}$
135	$\mathbb{Q}_{11,3}(T_{1u},3)$	C_4
136	$\mathbb{Q}_{11,1}(T_{2u},1)$	$-\frac{\sqrt{29393}C_1}{512} - \frac{\sqrt{22}C_{11}}{1024} - \frac{9\sqrt{1615}C_3}{512} - \frac{5\sqrt{13566}C_5}{1024} - \frac{7\sqrt{1330}C_7}{1024} - \frac{9\sqrt{42}C_9}{1024}$
137	$\mathbb{Q}_{11,2}(T_{2u},1)$	$\frac{\sqrt{29393}S_1}{512} - \frac{\sqrt{22}S_{11}}{1024} - \frac{9\sqrt{1615}S_3}{512} + \frac{5\sqrt{13566}S_5}{1024} - \frac{7\sqrt{1330}S_7}{1024} + \frac{9\sqrt{42}S_9}{1024}$
138	$\mathbb{Q}_{11,3}(T_{2u},1)$	C_{10}
139	$\mathbb{Q}_{11,1}(T_{2u},2)$	$-\frac{15\sqrt{221}C_1}{512} - \frac{3\sqrt{2926}C_{11}}{1024} - \frac{\sqrt{595}C_3}{512} + \frac{53\sqrt{102}C_5}{1024} - \frac{105\sqrt{10}C_7}{1024} - \frac{61\sqrt{114}C_9}{1024}$
140	$\mathbb{Q}_{11,2}(T_{2u},2)$	$\frac{15\sqrt{221}S_1}{512} - \frac{3\sqrt{2926}S_{11}}{1024} - \frac{\sqrt{595}S_3}{512} - \frac{53\sqrt{102}S_5}{1024} - \frac{105\sqrt{10}S_7}{1024} + \frac{61\sqrt{114}S_9}{1024}$
141	$\mathbb{Q}_{11,3}(T_{2u},2)$	C_6
142	$\mathbb{Q}_{11,1}(T_{2u},3)$	$-\frac{21\sqrt{130}C_1}{512} - \frac{\sqrt{124355}C_{11}}{512} + \frac{57\sqrt{14}C_3}{512} - \frac{41\sqrt{15}C_5}{512} + \frac{17\sqrt{17}C_7}{512} + \frac{\sqrt{4845}C_9}{512}$
143	$\mathbb{Q}_{11,2}(T_{2u},3)$	$\frac{21\sqrt{130}S_1}{512} - \frac{\sqrt{124355}S_{11}}{512} + \frac{57\sqrt{14}S_3}{512} + \frac{41\sqrt{15}S_5}{512} + \frac{17\sqrt{17}S_7}{512} - \frac{\sqrt{4845}S_9}{512}$
144	$\mathbb{Q}_{11,3}(T_{2u},3)$	C_2