

**CORRIGENDA:
LOW-DIMENSIONAL REPRESENTATIONS
OF QUASI-SIMPLE GROUPS**

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Abstract

This paper contains corrections to the tables of low-dimensional representations of quasi-simple groups published in the paper, ‘Low-dimensional representations of quasi-simple groups’, *LMS Journal of Computation and Mathematics* 4 (2001) 22–63.

In our paper ‘Low-dimensional representations of quasi-simple groups’, we determine all the absolutely irreducible representations of quasi-simple groups of dimension at most 250, excluding those of groups of Lie type in their defining characteristic.

Martin Liebeck has kindly pointed out to us three omissions in our tables: the 12- and 13-dimensional representations of the group $L_3(3)$, and the 248-dimensional representations of $L_4(5)$ in characteristic 2.

When checking our arguments and calculations we realized that in fact all the representations of $L_3(3)$ were missing, as well as the representations of $L_4(5)$ of dimension exceeding 247.

The absolutely irreducible representations of $L_3(3)$ can be found in the modular Atlas [7]. This leads to the first part of Table 1 below.

Table 1: The missing representations

<i>d</i>	<i>G</i>	<i>ℓ</i>	field	ind
11	$L_3(3)$	13		+
12	$L_3(3)$	0, 2		+
13	$L_3(3)$	0, 13		+
16	$L_3(3)$	0, 2	<i>d</i> 13	o
16	$L_3(3)$	13		+
26	$L_3(3)$	0, 13	<i>i</i> 2	o
26	$L_3(3)$	$\neq 3$		+
27	$L_3(3)$	0		+
39	$L_3(3)$	0, 13		+
248	$2.L_4(5)$	$\neq 2, 5$		+
248	$L_4(5)$	2		+

The absolutely irreducible representations of $L_4(5)$ of degree up to 247 were classified by Guralnick and Tiep [3], and are contained in the original table. From the proofs given by Tiep

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and Zalesskii [9, Section 3], for example, it can be seen that the only other representations of degree at most 250 must arise as composition factors of the two ordinary 248-dimensional representations, which are both defined over the rationals [8, Proposition 13.5.6]. Since these characters are parametrized by elements of 2-power order in the dual group, [5, Proposition 1] shows that they remain irreducible for all primes $\ell \neq 2, 5$. This yields the second-last entry in Table 1.

To obtain the last entry of our table, note first that, by Broué–Michel [1], the two ordinary representations of degree 248 lie in the principal 2-block of $L_4(5)$. Using the decomposition numbers in [6], we find that the principal 2-block of $GL_4(5)$ has irreducible Brauer characters of degrees 1, 154, 496, 3224, and 11904. By Clifford theory, the restriction to $SL_4(5)$ of each of these characters has 1, 2, or 4 irreducible constituents of the same degree. By the Seitz–Zalesskii bound, the smallest non-trivial representation of $SL_4(5)$ has degree at least 152. Hence the character of degree 496 splits into two characters of degree 248 which are the reductions modulo 2 of the two ordinary characters of this degree. Jon Thackray has kindly constructed these representations over the field with two elements and computed their Frobenius–Schur indicators.

The existence of this representation had already been shown in [2].

Finally, Jon Thackray has pointed out to us that the Frobenius–Schur indicator for the 132-dimensional representations of the Harada–Norton group HN is $-$, rather than $+$, as given in our earlier table (see [4, Table 3]). This indicator has been known to the Atlas people for a long time.

For the convenience of the reader, we present the complete, corrected list of absolutely irreducible representations of quasi-simple groups in Table 2 below.

Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

d	G	ℓ	field	ind
3	$3.\mathfrak{A}_6$	0, 2	$z3, b5$	\circ
3	$3.\mathfrak{A}_6$	5	$z3$	\circ
3	$3.\mathfrak{A}_7$	5	$z3, b7$	\circ
4	\mathfrak{A}_6	2		$-$
4	$2.\mathfrak{A}_6$	0, 5		$-$
4	\mathfrak{A}_7	2	$b7$	\circ
4	$2.\mathfrak{A}_7$	7		$-$
4	$2.\mathfrak{A}_7$	$\neq 2, 7$	$b7$	\circ
4	$4_2.L_3(4)$	3	$i1, r7$	\circ
4	$2.U_4(2)$	0, 5	$z3$	\circ
5	\mathfrak{A}_6	0, 5		$+$
5	\mathfrak{A}_7	7		$+$
5	$U_4(2)$	0, 5	$z3$	\circ
5	M_{11}	3	$i2, b11$	\circ
6	$3.\mathfrak{A}_6$	0, 5	$z3$	\circ
6	$6.\mathfrak{A}_6$	0, 5	$z3, r2$	\circ

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
6	\mathfrak{A}_7	$\neq 7$		+
6	$2.\mathfrak{A}_7$	3	$r2$	-
6	$3.\mathfrak{A}_7$	$\neq 3$	$z3$	o
6	$6.\mathfrak{A}_7$	$\neq 2, 3$	$z3, r2$	o
6	$2.L_3(4)$	3		+
6	$6.L_3(4)$	$\neq 2, 3$	$z3$	o
6	$U_3(3)$	$\neq 3$		-
6	$U_4(2)$	0, 5		+
6	$3_1.U_4(3)$	2	$z3$	o
6	$6_1.U_4(3)$	$\neq 2, 3$	$z3$	o
6	$2.M_{12}$	3	$i2, i5, b11$	o
6	$3.M_{22}$	2	$z3, b11$	o
6	J_2	2	$b5$	-
6	$2.J_2$	5		-
6	$2.J_2$	$\neq 2, 5$	$b5$	-
7	\mathfrak{A}_8	$\neq 2$		+
7	\mathfrak{A}_9	3		+
7	$U_3(3)$	0, 7		+
7	$U_3(3)$	0, 7	$i1$	o
7	$S_6(2)$	$\neq 2$		+
7	J_1	11	$b5, c19$	+
8	\mathfrak{A}_6	0, 2	$b5$	+
8	\mathfrak{A}_6	5		+
8	$2.\mathfrak{A}_6$	0	$b5$	-
8	\mathfrak{A}_7	5		+
8	$2.\mathfrak{A}_8$	$\neq 2$		+
8	\mathfrak{A}_9	$\neq 3$		+
8	$2.\mathfrak{A}_9$	$\neq 2$		+
8	\mathfrak{A}_{10}	2		-
8	\mathfrak{A}_{10}	5		+
8	$2.\mathfrak{A}_{10}$	5	$r6, r21$	+
8	$4_1.L_3(4)$	5	$i1$	o
8	$4_1.L_3(4)$	$\neq 2, 5$	$i1, b5$	o
8	$2.S_6(2)$	$\neq 2$		+
8	$2.O_8^+(2)$	$\neq 2$		+
8	$2.Sz(8)$	5	$c13$	+
9	\mathfrak{A}_6	0		+
9	$3.\mathfrak{A}_6$	0, 2	$z3$	o
9	$3.\mathfrak{A}_7$	7	$z3$	o
9	\mathfrak{A}_{10}	$\neq 2, 5$		+

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
9	\mathfrak{A}_{11}	11		+
9	M_{11}	11		+
9	$3.J_3$	2	$z3, b17, b19$	o
10	\mathfrak{A}_6	0, 5		+
10	$2.\mathfrak{A}_6$	0, 5	$r2$	-
10	\mathfrak{A}_7	7		+
10	\mathfrak{A}_7	$\neq 2, 7$	$b7$	o
10	\mathfrak{A}_{11}	$\neq 11$		+
10	\mathfrak{A}_{12}	2, 3		+
10	$2.L_3(4)$	7		+
10	$2.L_3(4)$	$\neq 2, 7$	$b7$	o
10	$U_4(2)$	0, 5	$z3$	o
10	$U_5(2)$	$\neq 2$		-
10	M_{11}	$\neq 11$		+
10	M_{11}	$\neq 2$	$i2$	o
10	M_{12}	2, 3		+
10	$2.M_{12}$	$\neq 2$	$i2$	o
10	M_{22}	2	$b7$	o
10	$2.M_{22}$	7		+
10	$2.M_{22}$	$\neq 2, 7$	$b7$	o
11	\mathfrak{A}_{12}	$\neq 2, 3$		+
11	\mathfrak{A}_{13}	13		+
11	$L_3(3)$	13		+
11	$U_5(2)$	$\neq 2, 3$	$z3$	o
11	M_{11}	$\neq 2, 3$		+
11	M_{12}	$\neq 2, 3$		+
11	M_{23}	2	$b7, i15, b23$	o
11	M_{24}	2	$b7, i15, b23$	o
12	$6.\mathfrak{A}_6$	0	$z3, b5$	o
12	$6.\mathfrak{A}_7$	5	$z3, b7$	o
12	\mathfrak{A}_{13}	$\neq 13$		+
12	$L_3(3)$	0, 2		+
12	$12.L_3(4)$	7	$z12, b5$	o
12	$U_3(4)$	$\neq 2$		-
12	$S_4(5)$	2	$b5$	-
12	$2.S_4(5)$	$\neq 2, 5$	$b5$	-
12	$2.G_2(4)$	$\neq 2$		-
12	$2.M_{12}$	$\neq 2, 3$		+
12	$2.Suz$	3		-
12	$3.Suz$	2	$z3$	o

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
12	6.Suz	$\neq 2, 3$	$z3$	\circ
13	\mathfrak{A}_7	3, 5		+
13	\mathfrak{A}_8	3, 5		+
13	$L_3(3)$	0, 13		+
13	$U_3(4)$	$\neq 2, 5$	$z5$	\circ
13	$S_4(5)$	$\neq 2, 5$	$b5$	+
13	$S_6(3)$	$\neq 3$	$z3$	\circ
13	J_2	3	$b5$	+
14	\mathfrak{A}_7	$\neq 3, 5$		+
14	$2.\mathfrak{A}_7$	$\neq 2, 3$	$r2$	-
14	\mathfrak{A}_8	0, 7		+
14	$U_3(3)$	$\neq 3$		+
14	$S_6(2)$	3		+
14	$2.S_6(3)$	$\neq 2, 3$	$z3$	\circ
14	$Sz(8)$	$\neq 2$	$i1$	\circ
14	$G_2(3)$	$\neq 3$		+
14	J_1	11	$b5, c19$	+
14	J_2	5		+
14	J_2	$\neq 3, 5$	$b5$	+
14	$2.J_2$	$\neq 2$		-
15	$3.\mathfrak{A}_6$	0, 5	$z3$	\circ
15	\mathfrak{A}_7	$\neq 2, 7$		+
15	$3.\mathfrak{A}_7$	$\neq 3$	$z3$	\circ
15	$L_3(4)$	3		+
15	$3.L_3(4)$	$\neq 2, 3$	$z3$	\circ
15	$U_4(2)$	0, 5		+
15	$3_1.U_4(3)$	$\neq 3$	$z3$	\circ
15	$S_6(2)$	$\neq 2, 3$		+
15	M_{12}	3	$b11$	\circ
15	$3.M_{22}$	2	$z3, b11$	\circ
16	$2.\mathfrak{A}_7$	7		-
16	$2.\mathfrak{A}_8$	7		-
16	\mathfrak{A}_{10}	2		+
16	$2.\mathfrak{A}_{10}$	$\neq 2, 5$		+
16	\mathfrak{A}_{11}	2	$b11$	\circ
16	$2.\mathfrak{A}_{11}$	11		+
16	$2.\mathfrak{A}_{11}$	$\neq 2, 11$	$b11$	\circ
16	\mathfrak{A}_{12}	2	$z3$	\circ
16	$2.\mathfrak{A}_{12}$	3	$i2, i5, r7, b11$	\circ
16	$L_3(3)$	0, 2	$d13$	\circ

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
16	$L_3(3)$	13		+
16	$4_2.L_3(4)$	3	$i1, r7$	o
16	$2.Sz(8)$	13	$y7$	+
16	M_{11}	11		+
16	M_{11}	$\neq 3, 11$	$b11$	o
16	M_{12}	11		+
16	M_{12}	$\neq 3, 11$	$b11$	o
16	$4.M_{22}$	7	$i1, r11$	o
18	$3.\mathfrak{A}_7$	5	$z3, b7$	o
18	$S_4(4)$	$\neq 2$		+
18	J_3	3	$b5$	+
18	$3.J_3$	5	$z3$	o
18	$3.J_3$	$\neq 3, 5$	$z3, b5$	o
19	\mathfrak{A}_8	7		+
19	\mathfrak{A}_9	7		+
19	$L_3(4)$	3, 7		+
20	\mathfrak{A}_7	2		-
20	$2.\mathfrak{A}_7$	$\neq 2, 3$		-
20	\mathfrak{A}_8	0, 5		+
20	\mathfrak{A}_9	2	$i15$	o
20	$L_3(4)$	0, 5		+
20	$4_2.L_3(4)$	$\neq 2, 3$	$i1$	o
20	$U_3(5)$	$\neq 5$		-
20	$U_4(2)$	0, 5		+
20	$2.U_4(2)$	0, 5		-
20	$2.U_4(2)$	0, 5	$z3$	o
20	$U_4(3)$	2		+
20	$2.U_4(3)$	$\neq 2, 3$		-
20	$4.U_4(3)$	$\neq 2, 3$	$i1$	o
20	M_{22}	11		+
20	J_1	2		+
20	HS	2		-
21	\mathfrak{A}_7	0, 7		+
21	$3.\mathfrak{A}_7$	$\neq 2, 3$	$z3$	o
21	\mathfrak{A}_8	0, 7	$i15$	o
21	\mathfrak{A}_8	$\neq 2$		+
21	\mathfrak{A}_9	0, 7	$i15$	o
21	\mathfrak{A}_9	3, 5		+
21	$3.L_3(4)$	$\neq 2, 3$	$z3$	o
21	$U_3(3)$	0, 7		+

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
21	$U_3(3)$	0, 7	$i1$	o
21	$U_3(5)$	$\neq 2, 5$		+
21	$3.U_3(5)$	$\neq 3, 5$	$z3$	o
21	$U_4(3)$	$\neq 2, 3$		+
21	$3_1.U_4(3)$	$\neq 2, 3$	$z3$	o
21	$U_6(2)$	3		+
21	$3.U_6(2)$	$\neq 2, 3$	$z3$	o
21	$S_6(2)$	$\neq 2$		+
21	M_{22}	$\neq 2, 11$		+
21	$3.M_{22}$	$\neq 2, 3$	$z3$	o
21	M_{23}	23		+
21	J_2	5		+
21	J_2	$\neq 2, 5$	$b5$	+
21	HS	5		+
21	McL	3, 5		+
22	$2.L_3(4)$	3	$b5$	+
22	$U_6(2)$	$\neq 2, 3$		+
22	M_{23}	$\neq 2, 23$		+
22	M_{24}	3		+
22	J_1	19	$b5$	+
22	HS	$\neq 2, 5$		+
22	McL	$\neq 3, 5$		+
22	Co_3	2		-
22	Co_3	3		+
22	Co_2	2		+
23	$U_4(2)$	5		+
23	M_{24}	$\neq 2, 3$		+
23	Co_3	$\neq 2, 3$		+
23	Co_2	$\neq 2$		+
24	$3.\mathfrak{A}_7$	0, 2	$z3, b7$	o
24	$6.\mathfrak{A}_7$	7	$z3$	o
24	$6.\mathfrak{A}_7$	0, 5	$z3, b7$	o
24	$2.\mathfrak{A}_8$	$\neq 2, 7$	$b7$	o
24	$4_1.L_3(4)$	3	$i1, r7$	o
24	$12_1.L_3(4)$	7	$z12$	o
24	$12_1.L_3(4)$	0, 5	$z12, b7$	o
24	$U_4(2)$	0		+
24	$S_4(7)$	2	$b7$	o
24	$2.S_4(7)$	$\neq 2, 7$	$b7$	o
24	$2.Sz(8)$	13	$y7$	+

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
24	M_{11}	3		+
24	$12.M_{22}$	11	$z24, b7$	o
24	Co_1	2		+
24	$2.Co_1$	$\neq 2$		+
25	$S_4(7)$	$\neq 2, 7$	$b7$	o
25	${}^3D_4(2)$	3		+
26	\mathfrak{A}_9	2		+
26	\mathfrak{A}_{10}	2		+
26	$L_3(3)$	0, 13	$i2$	o
26	$L_3(3)$	$\neq 3$		+
26	$2.L_3(4)$	7		+
26	$L_4(3)$	$\neq 3$		+
26	$U_3(3)$	7		+
26	$S_6(2)$	7		+
26	${}^3D_4(2)$	$\neq 2, 3$		+
26	${}^2F_4(2)'$	2		+
26	${}^2F_4(2)'$	$\neq 2$	$i2$	o
27	\mathfrak{A}_9	$\neq 2, 7$		+
27	$L_3(3)$	0		+
27	$U_3(3)$	0		+
27	$S_6(2)$	$\neq 2, 7$		+
27	$3.O_7(3)$	$\neq 3$	$z3$	o
27	$3.G_2(3)$	$\neq 3$	$z3$	o
27	${}^2F_4(2)'$	$\neq 2$	$i1$	o
27	J_1	11	$b5, c19$	+
27	$3.Fi_{22}$	2	$z3, b11$	o
28	\mathfrak{A}_8	$\neq 2, 5$		+
28	\mathfrak{A}_9	$\neq 2, 3$		+
28	\mathfrak{A}_{10}	5		+
28	$2.L_3(4)$	5		+
28	$2.L_3(4)$	0, 7	$b5$	+
28	$4_2.L_3(4)$	5	$i1$	o
28	$4_2.L_3(4)$	$\neq 2, 5$	$i1, b5$	o
28	$U_3(3)$	0, 7	$i1$	o
28	$U_3(5)$	$\neq 5$		+
28	$O_8^+(2)$	$\neq 2$		+
28	$2.M_{22}$	5	$i1, r11$	o
28	$2.HS$	5	$i1, r11$	o
28	Ru	2		+
28	$2.Ru$	$\neq 2$	$i1$	o

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
29	$L_3(5)$	31		+
29	$L_5(2)$	31		+
29	M_{12}	11		+
30	$L_3(5)$	$\neq 5, 31$		+
30	$L_5(2)$	$\neq 2, 31$		+
30	$U_4(2)$	0, 5		+
30	$U_4(2)$	0, 5	$z3$	o
31	$L_3(5)$	$\neq 2, 5$		+
31	$L_3(5)$	$\neq 2, 5$	$i1$	o
31	J_1	7	$c19$	+
32	$2.A_8$	5	$z3, b7$	o
32	$2.A_{12}$	$\neq 2, 3$		-
32	A_{13}	2	$b13$	+
32	$2.A_{13}$	13		-
32	$2.A_{13}$	$\neq 2, 13$	$b13$	-
32	$2.A_{14}$	7	$r3, r6, r10, b5, b13, b33$	-
32	$U_3(3)$	0, 2	$b7$	o
32	$2.U_4(2)$	5	$z3$	o
32	$2.M_{12}$	$\neq 2, 3$		-
33	$S_4(4)$	5		+
33	$O_8^-(2)$	7		+
34	A_9	5		+
34	A_{10}	3, 5		+
34	A_{11}	3		+
34	$U_4(3)$	2		-
34	$S_4(4)$	$\neq 2, 5$		+
34	$S_6(2)$	3		+
34	$O_8^-(2)$	$\neq 2, 7$		+
34	M_{12}	3		+
34	M_{22}	2		-
34	J_1	19	$b5$	+
35	A_7	$\neq 2, 3$		+
35	A_8	$\neq 2$		+
35	A_9	$\neq 2$		+
35	A_{10}	$\neq 2, 3$		+
35	A_{10}	5	$r21$	+
35	$L_3(4)$	$\neq 2, 3$		+
35	$U_4(3)$	$\neq 2, 3$		+
35	$S_6(2)$	$\neq 2$		+
35	$S_8(2)$	$\neq 2$		+

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
35	$O_8^+(2)$	$\neq 2$		+
35	$Sz(8)$	13		+
35	$Sz(8)$	$\neq 2, 13$	$c13$	+
36	$2.A_7$	0, 3		-
36	$6.A_7$	0	$z3$	o
36	A_{10}	$\neq 2, 5$		+
36	A_{11}	11		+
36	$2.L_3(4)$	$\neq 2, 7$		+
36	$4_2.L_3(4)$	$\neq 2$	$i1$	o
36	$6.L_3(4)$	$\neq 2, 3$	$z3$	o
36	$12_2.L_3(4)$	$\neq 2, 3$	$z12$	o
36	$2.U_4(2)$	0	$z3$	o
36	$3_2.U_4(3)$	$\neq 3$	$z3$	o
36	$12_2.U_4(3)$	$\neq 2, 3$	$z12$	o
36	$6.M_{22}$	11	$z12$	o
36	J_2	$\neq 5$		+
36	$2.J_2$	3	$i1$	o
38	$L_4(3)$	2, 5		+
39	$L_3(3)$	0, 13		+
39	$L_4(3)$	0, 13		+
39	$U_3(4)$	5		+
39	$U_3(4)$	$\neq 2, 5$	$b5$	+
40	$2.L_4(3)$	$\neq 2, 3$		+
40	$4_1.L_3(4)$	3	$i1$	o
40	$U_4(2)$	0, 5	$z3$	o
40	$S_4(5)$	$\neq 5$		+
40	$S_4(9)$	2		-
40	$2.S_4(9)$	$\neq 2, 3$		-
40	$2.S_6(2)$	7		+
40	$S_8(3)$	2	$z3$	o
40	$2.S_8(3)$	$\neq 2, 3$	$z3$	o
40	$2.Sz(8)$	7		+
40	$2.Sz(8)$	$\neq 2, 7$	$y7$	+
41	A_9	3		+
41	A_{10}	3		+
41	$S_4(9)$	$\neq 2, 3$		+
41	$S_8(3)$	$\neq 2, 3$	$z3$	o
41	J_2	5		+
42	A_9	0, 7		+
42	A_{10}	0, 7		+

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
42	$6.L_3(4)$	0, 7	$z3, b5$	o
42	$U_3(7)$	$\neq 7$		—
42	$U_7(2)$	$\neq 2$		—
43	\mathfrak{A}_8	5		+
43	\mathfrak{A}_{11}	5		+
43	\mathfrak{A}_{12}	5		+
43	$U_3(7)$	$\neq 2, 7$		+
43	$U_3(7)$	$\neq 2, 7$	$i1$	o
43	$U_3(7)$	$\neq 2, 7$	$z8$	o
43	$U_5(2)$	5		+
43	$U_7(2)$	$\neq 2, 3$	$z3$	o
43	J_1	19	$b5$	+
44	\mathfrak{A}_{11}	$\neq 3, 5$		+
44	\mathfrak{A}_{12}	2		+
44	$4_2.L_3(4)$	7	$i1$	o
44	$U_5(2)$	$\neq 2, 5$		+
44	M_{11}	$\neq 3, 5$		+
44	M_{12}	2		+
44	$2.M_{12}$	$\neq 2, 5$	$i5$	o
44	M_{23}	2	$b7$	o
44	M_{24}	2	$b7$	o
45	\mathfrak{A}_8	7		+
45	\mathfrak{A}_8	$\neq 2, 7$	$b7$	o
45	\mathfrak{A}_{11}	$\neq 2, 11$		+
45	\mathfrak{A}_{12}	3		+
45	$L_3(4)$	7		+
45	$L_3(4)$	$\neq 2, 7$	$b7$	o
45	$3.L_3(4)$	0, 5	$z3, b7$	o
45	$U_4(2)$	0, 5	$z3$	o
45	$3_2.U_4(3)$	7	$z3$	o
45	$3_2.U_4(3)$	$\neq 3, 7$	$z3, b7$	o
45	M_{11}	$\neq 2, 11$		+
45	M_{12}	$\neq 2, 11$		+
45	M_{22}	7		+
45	M_{22}	$\neq 2, 7$	$b7$	o
45	$3.M_{22}$	7	$z3$	o
45	$3.M_{22}$	$\neq 3, 7$	$z3, b7$	o
45	M_{23}	7		+
45	M_{23}	$\neq 2, 7$	$b7$	o
45	M_{24}	7		+

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
45	M_{24}	$\neq 2, 7$	$b7$	\circ
45	J_1	7	$c19$	+
45	3.McL	5	$z3, b7$	\circ
45	3.O'N	7		\circ
47	\mathfrak{A}_9	7		+
48	$2.\mathfrak{A}_8$	$\neq 2$		-
48	\mathfrak{A}_9	0, 2		+
48	$2.\mathfrak{A}_9$	3		+
48	$2.\mathfrak{A}_9$	$\neq 2, 3$	$i6$	\circ
48	\mathfrak{A}_{10}	2		+
48	$2.\mathfrak{A}_{10}$	3		+
48	$2.\mathfrak{A}_{10}$	$\neq 2, 3$	$i6$	\circ
48	$12_1.L_3(4)$	0, 7	$z12, b5$	\circ
48	$12_2.L_3(4)$	0, 7	$z12, b5$	\circ
48	$12_2.L_3(4)$	5	$z12$	\circ
48	$3.U_3(5)$	$\neq 3, 5$	$z3$	\circ
48	$2.S_6(2)$	$\neq 2, 7$		+
48	$O_8^+(2)$	3		+
48	$2.Sz(8)$	5	$c13$	+
48	$12.M_{22}$	5	$z12, b11$	\circ
49	$S_4(4)$	17		+
49	$S_6(2)$	3		+
49	M_{22}	3	$b11$	\circ
49	J_1	11	$b5, c19$	+
49	HS	3	$i5, b11$	\circ
50	$S_4(4)$	$\neq 2, 17$		+
50	$S_8(2)$	3		+
50	$O_8^+(2)$	$\neq 2, 3$		+
50	$O_8^-(2)$	3		+
50	$2.J_2$	3	$b5$	-
50	$2.J_2$	$\neq 2, 3$	$i1$	\circ
50	He	7		+
51	$U_4(4)$	5		+
51	$U_4(4)$	$\neq 2, 5$	$z5$	\circ
51	$S_4(4)$	$\neq 2, 5$	$b5$	+
51	$S_8(2)$	$\neq 2, 3$		+
51	$O_8^-(2)$	$\neq 2, 3$		+
51	He	$\neq 7$	$b7$	\circ
52	$L_4(3)$	$\neq 2, 3$		+
52	$U_3(4)$	$\neq 2, 5$	$z5$	\circ

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
52	$U_4(4)$	$\neq 2, 5$		+
52	$2.S_4(5)$	$\neq 2, 5$	$b5$	-
52	${}^3D_4(2)$	$\neq 2$		+
52	$2.F_4(2)$	$\neq 2$		+
53	\mathfrak{A}_{12}	11		+
53	\mathfrak{A}_{13}	11		+
53	M_{12}	11		+
54	\mathfrak{A}_{12}	0, 3, 7		+
54	$6.L_3(4)$	7	$z3$	o
54	M_{12}	0, 3		+
54	M_{22}	7		+
54	$6.M_{22}$	7	$z3$	o
55	\mathfrak{A}_{10}	5		+
55	\mathfrak{A}_{11}	5		+
55	\mathfrak{A}_{12}	$\neq 2, 3$		+
55	\mathfrak{A}_{13}	13		+
55	$L_3(7)$	3, 19		+
55	$U_5(2)$	$\neq 2$		+
55	$U_5(2)$	$\neq 2, 3$	$z3$	o
55	M_{11}	$\neq 2, 3$		+
55	M_{12}	$\neq 2, 3$		+
55	M_{22}	$\neq 2, 7$		+
55	J_1	19	$b5$	+
55	HS	5		+
56	\mathfrak{A}_8	0, 7		+
56	$2.\mathfrak{A}_8$	0, 7	$z3$	o
56	$2.\mathfrak{A}_8$	0, 7	$i15$	o
56	\mathfrak{A}_9	$\neq 2, 3$		+
56	$2.\mathfrak{A}_9$	$\neq 2, 3$		+
56	\mathfrak{A}_{10}	5		+
56	$2.\mathfrak{A}_{10}$	5	$r6, r21$	+
56	$2.\mathfrak{A}_{11}$	5	$r6, r21$	+
56	$4_1.L_3(4)$	$\neq 2, 3$	$i1$	o
56	$L_3(7)$	0, 2		+
56	$U_3(8)$	$\neq 2$		-
56	$2.U_4(3)$	$\neq 2, 3$		+
56	$2.U_6(2)$	$\neq 2$		+
56	$S_6(2)$	$\neq 2, 3$		+
56	$2.S_6(2)$	3	$i5$	o
56	$2.O_8^+(2)$	$\neq 2$		+

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
56	2.Sz(8)	$\neq 2, 13$	$c13$	+
56	2.M ₂₂	$\neq 2, 5$		+
56	4.M ₂₂	$\neq 2$	$z8$	o
56	J ₁	2	$b5$	-
56	J ₁	5		+
56	J ₁	$\neq 5, 19$	$b5$	+
56	2.J ₂	5		-
56	2.J ₂	0, 7	$b5$	-
56	HS	2		+
56	2.HS	$\neq 2, 5$		+
57	L ₃ (7)	$\neq 2, 7$		+
57	3.L ₃ (7)	$\neq 3, 7$	$z3$	o
57	U ₃ (8)	$\neq 2, 3$	$z3$	o
57	3.U ₃ (8)	$\neq 2, 3$	$z9$	o
57	J ₂	3	$b5$	+
58	U ₄ (2)	5		+
58	2.J ₂	7	$b5$	-
60	4 ₂ .L ₃ (4)	3	$i1, r7$	o
60	6.L ₃ (4)	0, 5	$z3, b7$	o
60	12 ₂ .L ₃ (4)	0, 5	$z12, b7$	o
60	U ₄ (2)	0, 5		+
60	2.U ₄ (2)	0, 5		-
60	2.U ₄ (2)	0, 5	$z3$	o
60	U ₅ (3)	$\neq 3$		-
60	S ₄ (11)	2	$b11$	o
60	2.S ₄ (11)	$\neq 2, 11$	$b11$	o
61	L ₆ (2)	3, 7		+
61	U ₅ (3)	$\neq 2, 3$	$i1$	o
61	S ₄ (11)	$\neq 2, 11$	$b11$	o
62	L ₆ (2)	0, 5, 31		+
62	S ₆ (5)	$\neq 5$	$b5$	-
63	L ₃ (4)	5		+
63	L ₃ (4)	$\neq 2, 5$	$b5$	+
63	3.L ₃ (4)	5	$z3$	o
63	3.L ₃ (4)	0, 7	$z3, b5$	o
63	U ₃ (4)	13		+
63	2.S ₆ (5)	$\neq 2, 5$	$b5$	+
63	Sz(8)	5		+
63	J ₂	$\neq 2, 5$		+
64	\mathfrak{A}_8	0		+

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
64	$2.\mathfrak{A}_8$	0		–
64	\mathfrak{A}_{10}	2		+
64	$2.\mathfrak{A}_{10}$	0, 7		+
64	\mathfrak{A}_{13}	2		–
64	\mathfrak{A}_{13}	3		+
64	\mathfrak{A}_{14}	2, 3		+
64	$2.\mathfrak{A}_{14}$	$\neq 2, 7$		–
64	\mathfrak{A}_{15}	2	$b15$	o
64	$2.\mathfrak{A}_{15}$	3, 5		–
64	$2.\mathfrak{A}_{15}$	$\neq 2, 3, 5$	$b15$	o
64	\mathfrak{A}_{16}	2	$b7, b15, b39, b55$	o
64	$L_3(4)$	0		+
64	$2.L_3(4)$	0, 7		+
64	$4_1.L_3(4)$	0, 7	$i1$	o
64	$4_2.L_3(4)$	0	$i1$	o
64	$U_3(4)$	0, 3		+
64	$U_4(2)$	0		+
64	$2.U_4(2)$	0		–
64	$S_4(5)$	2		–
64	$S_4(5)$	3		+
64	$2.S_6(2)$	5		+
64	$2.S_6(2)$	0, 7	$i5$	o
64	$Sz(8)$	0, 7		+
64	$2.Sz(8)$	0, 7		+
64	$G_2(3)$	$\neq 3$	$z3$	o
64	$G_2(4)$	3		+
64	$2.M_{22}$	11		+
64	$4.M_{22}$	3	$i1$	o
64	J_1	11	$b5, c19$	+
64	J_2	2	$b5$	+
64	$2.J_2$	5		–
64	$2.J_2$	0	$b5$	–
64	Suz	3		+
65	\mathfrak{A}_{13}	$\neq 2, 3, 11$		+
65	$L_4(3)$	$\neq 2, 3$		+
65	$U_3(4)$	0, 13	$z5$	o
65	$U_3(4)$	$\neq 2, 3$		+
65	$S_4(5)$	0, 13		+
65	$Sz(8)$	$\neq 2, 7$	$y7$	+
65	$G_2(4)$	$\neq 2, 3$		+

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
66	\mathfrak{A}_{10}	7		+
66	\mathfrak{A}_{11}	7		+
66	\mathfrak{A}_{13}	$\neq 2, 13$		+
66	\mathfrak{A}_{14}	7		+
66	$U_5(2)$	$\neq 2, 3$	$z3$	\circ
66	M_{12}	$\neq 2, 3$		+
66	6. M_{22}	7	$z3$	\circ
66	6. M_{22}	0, 5, 11	$z3, b7$	\circ
66	3.Suz	$\neq 3$	$z3$	\circ
69	J_1	11	$b5, c19$	+
70	\mathfrak{A}_8	$\neq 2, 3$		+
70	2. $L_3(4)$	$\neq 2, 3$		+
70	$U_4(3)$	2	$z3$	\circ
70	2. $U_4(3)$	$\neq 2, 3$		+
70	2. $U_4(3)$	$\neq 2, 3$	$z3$	\circ
70	$S_6(2)$	$\neq 2, 3$		+
70	M_{22}	2	$b11$	\circ
70	J_2	5		+
70	J_2	0, 7	$b5$	+
71	$L_3(8)$	73		+
72	2. \mathfrak{A}_9	7	$z3, r2$	\circ
72	$L_3(8)$	$\neq 2, 73$		+
72	$U_3(9)$	$\neq 3$		-
73	$L_3(8)$	$\neq 2, 7$	$z7$	\circ
73	$U_3(9)$	$\neq 2, 3$		+
73	$U_3(9)$	$\neq 3, 5$	$z5$	\circ
75	\mathfrak{A}_{10}	0, 5		+
75	$U_3(4)$	$\neq 2, 13$	$d13$	\circ
75	J_1	7		+
76	\mathfrak{A}_{14}	13		+
76	\mathfrak{A}_{15}	13		+
76	J_1	2		-
76	J_1	$\neq 7, 11$		+
77	\mathfrak{A}_{14}	$\neq 2, 3, 13$		+
77	${}^2F_4(2)'$	3		+
77	J_1	$\neq 2, 3, 19$		+
77	J_1	$\neq 2, 5$	$b5$	+
77	HS	$\neq 2, 5$		+
77	Fi_{22}	3		+
78	\mathfrak{A}_9	2		+

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d	G	ℓ	field	ind
78	\mathfrak{A}_{14}	$\neq 2, 7$		+
78	\mathfrak{A}_{15}	3, 5		+
78	$6_1.U_4(3)$	5	$z3$	o
78	$S_4(5)$	$\neq 2, 5$	$b5$	+
78	$S_6(3)$	$\neq 3$		+
78	$O_7(3)$	$\neq 3$		+
78	$G_2(3)$	$\neq 3$		+
78	$G_2(4)$	$\neq 2$		+
78	${}^2F_4(2)'$	$\neq 2, 3$		+
78	M_{12}	5		+
78	$3.M_{22}$	5	$z3$	o
78	J_3	2	$b5, b17$	+
78	Suz	3		+
78	$3.Suz$	$\neq 2, 3$	$z3$	o
78	Fi_{22}	2		+
78	Fi_{22}	$\neq 2, 3$		+
80	$4_1.L_3(4)$	0, 5	$i1, r7$	o
80	$4_2.L_3(4)$	0, 5	$i1, r7$	o
80	$2.U_4(2)$	0, 5		-
80	J_3	2	$b17$	+
81	$U_4(2)$	0		+
83	\mathfrak{A}_9	5		+
83	$L_4(4)$	5, 17		+
83	$S_6(2)$	5		+
83	$O_8^+(2)$	5		+
83	$O_8^-(2)$	17		+
84	\mathfrak{A}_9	0, 7		+
84	\mathfrak{A}_{10}	$\neq 2, 5$		+
84	\mathfrak{A}_{11}	11		+
84	$3.L_3(4)$	0, 7	$z3$	o
84	$12_2.L_3(4)$	0, 7	$z12$	o
84	$L_4(4)$	0, 3, 7		+
84	$U_3(5)$	$\neq 2, 5$		+
84	$3.U_3(5)$	$\neq 3, 5$	$z3$	o
84	$3_1.U_4(3)$	2	$z3$	o
84	$6_1.U_4(3)$	0, 7	$z3$	o
84	$12_1.U_4(3)$	$\neq 2, 3$	$z12$	o
84	$S_4(13)$	2	$b13$	-
84	$2.S_4(13)$	$\neq 2, 13$	$b13$	-
84	$S_6(2)$	0, 7		+

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
84	$O_8^+(2)$	0, 7		+
84	$O_8^-(2)$	0, 5, 7		+
84	2.M ₁₂	3	$i5, b11$	o
84	3.M ₂₂	11	$z3$	o
84	3.M ₂₂	2	$z3, b11$	o
84	J ₂	2		+
84	2.J ₂	0, 7		-
84	J ₃	2, 3	$b19$	o
85	L ₄ (4)	$\neq 2, 3$	$z3$	o
85	U ₈ (2)	3		+
85	U ₈ (2)	$\neq 2, 3$	$z3$	o
85	S ₄ (4)	$\neq 2, 3$		+
85	S ₄ (13)	$\neq 2, 13$	$b13$	+
85	S ₈ (2)	$\neq 2, 3$		+
85	J ₂	5		+
85	J ₃	19		+
85	J ₃	0, 5, 17	$b19$	o
86	U ₈ (2)	$\neq 2, 3$		+
88	4.M ₂₂	5	$z8, b7$	o
89	\mathfrak{A}_{10}	7		+
89	\mathfrak{A}_{11}	5		+
89	\mathfrak{A}_{12}	5		+
89	\mathfrak{A}_{15}	7		+
89	\mathfrak{A}_{16}	7		+
89	L ₃ (9)	7, 13		+
89	L ₄ (3)	13		+
89	U ₄ (3)	7		+
89	S ₄ (5)	13		+
89	J ₁	7	$c19$	+
89	J ₂	7		+
90	\mathfrak{A}_{10}	0, 3		+
90	\mathfrak{A}_{15}	$\neq 7, 13$		+
90	\mathfrak{A}_{16}	2		+
90	2.L ₃ (4)	$\neq 2, 7$		+
90	6.L ₃ (4)	0, 5	$z3$	o
90	L ₃ (9)	0, 2, 5		+
90	L ₄ (3)	0, 5		+
90	U ₄ (3)	0, 5		+
90	3 ₁ .U ₄ (3)	2	$z3$	o
90	6 ₂ .U ₄ (3)	$\neq 2, 3$	$z3$	o

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
90	$S_4(5)$	0, 3		+
90	$O_7(3)$	2		+
90	$G_2(3)$	2		+
90	$6.M_{22}$	11	$z12$	o
90	J_2	$\neq 2, 7$		+
91	\mathfrak{A}_{15}	$\neq 2, 3, 5$		+
91	$L_3(9)$	$\neq 2, 3$		+
91	$L_3(9)$	$\neq 2, 3$	$i1$	o
91	$L_3(9)$	$\neq 2, 3$	$z8$	o
91	$S_6(2)$	3		+
91	$S_6(3)$	$\neq 2, 3$	$z3$	o
91	$O_7(3)$	$\neq 2, 3$		+
91	$Sz(8)$	$\neq 2, 5$		+
91	$G_2(3)$	$\neq 2, 3$		+
91	M_{12}	11		+
92	$2.G_2(4)$	5		-
94	$L_5(2)$	7		+
94	$S_6(2)$	7		+
96	$L_3(5)$	31		+
96	$L_3(5)$	$\neq 5, 31$	$x31$	o
96	$L_3(7)$	3		+
96	$3.L_3(7)$	$\neq 3, 7$	$z3$	o
96	$12.M_{22}$	11	$z12$	o
98	$S_6(2)$	3		+
98	M_{12}	5		+
98	M_{22}	2		-
98	M_{22}	5		+
98	HS	5		+
99	M_{12}	$\neq 2, 5$		+
99	M_{22}	0, 3, 11		+
99	$3.M_{22}$	0, 7, 11	$z3$	o
100	\mathfrak{A}_{11}	2		+
100	\mathfrak{A}_{12}	2		+
100	$U_5(2)$	3		+
101	\mathfrak{A}_9	7		+
101	\mathfrak{A}_{10}	7		+
101	J_2	7		+
101	He	2	$b7$	o
103	\mathfrak{A}_{16}	3, 5		+
103	\mathfrak{A}_{17}	3, 5		+

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d	G	ℓ	field	ind
103	$G_2(3)$	7		+
104	$2.\mathfrak{A}_9$	3		+
104	\mathfrak{A}_{16}	0, 11, 13		+
104	$U_3(5)$	2		-
104	$U_4(5)$	2		-
104	$U_4(5)$	3		+
104	$U_4(5)$	$\neq 3, 5$	$z3$	o
104	$2.U_4(5)$	0, 7, 13	$z3$	o
104	$2.U_4(5)$	$\neq 2, 5$		-
104	$S_4(5)$	$\neq 5$		+
104	$2.S_4(5)$	0, 13		-
104	$2.S_6(2)$	3, 5		+
104	$O_7(3)$	2		+
104	$2.O_8^+(2)$	3, 5		+
104	$2.Sz(8)$	0, 13		+
104	$G_2(3)$	0, 13		+
104	$2.G_2(4)$	$\neq 2, 5$	$b5$	-
104	M_{23}	3	$b11, b23$	o
104	McL	3	$b11$	o
104	He	5	$r21$	+
105	\mathfrak{A}_9	$\neq 2, 3$		+
105	\mathfrak{A}_{16}	$\neq 2$		+
105	\mathfrak{A}_{17}	17		+
105	$U_3(5)$	0, 7		+
105	$3.U_3(5)$	0, 7	$z3$	o
105	$3_1.U_4(3)$	$\neq 2, 3$	$z3$	o
105	$U_4(5)$	0, 7, 13		+
105	$S_6(2)$	$\neq 2, 3$		+
105	$S_6(3)$	$\neq 2, 3$		+
105	$O_7(3)$	$\neq 2, 3$		+
105	$3.M_{22}$	0, 5, 7	$z3, b11$	o
106	J_1	11	$b5, c19$	+
108	$2.M_{12}$	11		+
109	\mathfrak{A}_{11}	3		+
109	${}^2F_4(2)'$	5	$r2, r3, b13$	+
110	\mathfrak{A}_{11}	0, 5, 11		+
110	$U_3(11)$	$\neq 11$		-
110	$U_5(2)$	$\neq 2$		-
110	$U_5(2)$	$\neq 2, 3$	$z3$	o
110	$2.M_{12}$	$\neq 2, 3$	$i2$	o

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
110	J_3	19	$b17, y9$	+
110	Suz	2	$b5, b13, r21$	+
111	$U_3(11)$	$\neq 2, 11$		+
111	$U_3(11)$	$\neq 2, 11$	$i1$	o
111	$3.U_3(11)$	$\neq 3, 11$	$z3$	o
111	$3.U_3(11)$	$0, 5, 37$	$z12$	o
111	Ly	5		+
112	$2.\mathfrak{A}_9$	$0, 7$		+
112	$2.S_6(2)$	$0, 7$		+
112	$2.O_8^+(2)$	$0, 7$		+
112	J_4	2		+
114	$6_1.U_4(3)$	7	$z3$	o
115	\mathfrak{A}_9	7		+
118	\mathfrak{A}_{17}	2		+
118	\mathfrak{A}_{18}	2		+
118	$S_8(2)$	$3, 5$		+
119	\mathfrak{A}_{17}	$\neq 2, 3, 5$		+
119	$L_5(3)$	11		+
119	$U_5(2)$	11		+
119	$S_8(2)$	$0, 7, 17$		+
119	J_1	11	$c19$	+
120	\mathfrak{A}_9	$0, 5$		+
120	$2.\mathfrak{A}_9$	$0, 5$	$z3$	o
120	\mathfrak{A}_{11}	$\neq 2, 11$		+
120	\mathfrak{A}_{12}	3		+
120	\mathfrak{A}_{17}	$\neq 2, 17$		+
120	\mathfrak{A}_{18}	3		+
120	$12_1.L_3(4)$	$0, 5$	$z12$	o
120	$L_5(3)$	$\neq 3, 11$		+
120	$U_4(3)$	2		+
120	$2.U_4(3)$	$\neq 2, 3$		+
120	$4.U_4(3)$	$\neq 2, 3$	$i1$	o
120	$6_1.U_4(3)$	$0, 5$	$z3$	o
120	$12_1.U_4(3)$	$\neq 2, 3$	$z12$	o
120	$U_5(2)$	$0, 5$		+
120	$2.U_6(2)$	3		+
120	$6.U_6(2)$	$\neq 2, 3$	$z3$	o
120	$S_6(2)$	$0, 5$		+
120	$2.S_6(2)$	$\neq 2, 3$		+
120	M_{12}	$0, 5$		+

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
120	2.M ₁₂	0, 5		+
120	2.M ₂₂	$\neq 2, 11$		+
120	6.M ₂₂	0, 5, 11	$z3$	o
120	12.M ₂₂	$\neq 2, 3$	$z24$	o
120	M ₂₃	2		+
120	M ₂₄	2		+
120	J ₁	$\neq 11, 19$	$c19$	+
120	2.HS	5	$i1$	o
121	L ₅ (3)	$\neq 2, 3$		+
121	S ₁₀ (3)	$\neq 3$	$z3$	o
122	2.S ₁₀ (3)	$\neq 2, 3$	$z3$	o
123	L ₅ (2)	5		+
124	\mathfrak{A}_{10}	7		+
124	L ₃ (5)	$\neq 5$		+
124	L ₃ (5)	2		-
124	L ₃ (5)	$\neq 2, 5$	$i1$	o
124	L ₃ (5)	0, 31	$y24'$	o
124	L ₅ (2)	0, 3, 31		+
124	U ₃ (5)	7		+
124	Sz(32)	$\neq 2$	$i1$	o
124	G ₂ (5)	$\neq 5$		+
124	${}^2F_4(2)'$	3	$b13$	+
124	J ₂	7		+
125	L ₃ (5)	0		+
125	L ₇ (2)	127		+
125	U ₃ (5)	0		+
126	\mathfrak{A}_{10}	$\neq 2, 5$		+
126	\mathfrak{A}_{11}	11		+
126	\mathfrak{A}_{11}	$\neq 2, 11$	$b11$	o
126	\mathfrak{A}_{12}	3	$b11, i35$	o
126	L ₇ (2)	$\neq 2, 127$		+
126	U ₃ (5)	$\neq 2, 5$		+
126	U ₃ (5)	$\neq 2, 5$	$i2$	o
126	3.U ₃ (5)	0, 7	$z3$	o
126	3.U ₃ (5)	0, 7	$z3, i2$	o
126	3 ₂ .U ₄ (3)	$\neq 2, 3$	$z3$	o
126	6 ₁ .U ₄ (3)	$\neq 2, 3$	$z3$	o
126	6 ₂ .U ₄ (3)	$\neq 2, 3$	$z3$	o
126	6 ₂ .U ₄ (3)	$\neq 2, 3$	$z12$	o
126	S ₄ (7)	2		+

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
126	$S_4(7)$	$\neq 2, 7$		+
126	$2.M_{22}$	11		+
126	$2.M_{22}$	$\neq 2, 11$	b_{11}	o
126	$6.M_{22}$	$0, 5, 7$	z_3, b_{11}	o
126	J_2	$0, 7$		+
126	$2.J_2$	$\neq 2, 5$	b_5	-
126	$3.J_3$	2	z_3, b_{17}, b_{19}	o
126	$3.McL$	11	z_3	o
126	$3.McL$	$\neq 3, 11$	z_3, b_{11}	o
126	Co_3	3	i_5, b_{11}, b_{23}	o
128	$2.\mathfrak{A}_{11}$	11		+
128	$2.\mathfrak{A}_{12}$	11		+
128	$2.\mathfrak{A}_{16}$	$\neq 2$		+
128	\mathfrak{A}_{17}	2	b_{17}	+
128	$2.\mathfrak{A}_{17}$	17		+
128	$2.\mathfrak{A}_{17}$	$\neq 2, 17$	b_{17}	+
128	$2.\mathfrak{A}_{18}$	3	$r_2, r_5, r_{14}, b_{17}, b_{65}, b_{77}$	+
130	$S_4(5)$	$0, 13$		+
131	\mathfrak{A}_{11}	$3, 7$		+
131	\mathfrak{A}_{12}	$3, 7$		+
131	$L_3(11)$	$7, 19$		+
132	\mathfrak{A}_{11}	$0, 11$		+
132	\mathfrak{A}_{12}	$0, 11$		+
132	$L_3(11)$	$0, 2, 3, 5$		+
132	$12_1.U_4(3)$	5	z_{12}	o
132	HS	2		-
132	HN	2	b_5	-
133	\mathfrak{A}_9	5		+
133	\mathfrak{A}_{10}	5	r_{21}	+
133	\mathfrak{A}_{11}	5	r_{21}	+
133	$L_3(11)$	$\neq 2, 11$		+
133	$L_3(11)$	$\neq 5, 11$	z_5	o
133	$U_3(8)$	$\neq 2$		+
133	$S_6(2)$	5		+
133	M_{22}	5		+
133	J_1	$\neq 2, 11$		+
133	J_1	$0, 7, 19$	b_5	+
133	J_2	3		+
133	HS	5		+
133	Ru	5		+

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
133	HN	5		+
133	HN	$\neq 2, 5$	$b5$	+
134	\mathfrak{A}_9	5		+
134	\mathfrak{A}_{18}	17		+
134	\mathfrak{A}_{19}	17		+
134	$S_8(2)$	17		+
135	\mathfrak{A}_{18}	$\neq 2, 17$		+
135	$S_8(2)$	$\neq 2, 17$		+
136	\mathfrak{A}_{18}	$\neq 2, 3$		+
136	\mathfrak{A}_{19}	19		+
140	$U_4(3)$	$\neq 2, 3$		+
140	$4.U_4(3)$	$\neq 2, 3$	$i1$	\circ
141	$S_6(2)$	5		+
142	Suz	2		+
143	\mathfrak{A}_{12}	3		+
143	\mathfrak{A}_{13}	3		+
143	Suz	$\neq 2, 3$		+
144	\mathfrak{A}_{11}	2		+
144	$2.\mathfrak{A}_{11}$	0, 3, 7		+
144	\mathfrak{A}_{12}	5		+
144	\mathfrak{A}_{12}	2	$i35, z3$	\circ
144	$2.\mathfrak{A}_{12}$	3	$i2, i5, r7$	\circ
144	\mathfrak{A}_{13}	5		+
144	\mathfrak{A}_{13}	2	$i35, z3$	\circ
144	$2.\mathfrak{A}_{13}$	3	$i2, i5, r7$	\circ
144	$U_3(5)$	$\neq 5, 7$	$b7$	\circ
144	$3.U_3(5)$	0, 2	$z3, b7$	\circ
144	$S_4(17)$	2	$b17$	-
144	$2.S_4(17)$	$\neq 2, 17$	$b17$	-
144	M_{12}	0, 2		+
144	$4.M_{22}$	7	$i1$	\circ
144	$4.M_{22}$	0, 3, 11	$i1, r7$	\circ
144	$12.M_{22}$	7	$z12$	\circ
144	$12.M_{22}$	0, 5, 11	$z12, b7$	\circ
145	$S_4(17)$	$\neq 2, 17$	$b17$	+
147	$O_8^+(2)$	3		+
150	$3_1.U_4(3)$	2	$z3, b7$	\circ
150	$S_4(7)$	$\neq 2, 7$	$b7$	\circ
151	\mathfrak{A}_{19}	3		+
151	\mathfrak{A}_{20}	3		+

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
152	$2.\mathfrak{A}_{10}$	7		+
152	\mathfrak{A}_{19}	$\neq 3, 17$		+
152	\mathfrak{A}_{20}	2		+
152	$L_3(7)$	$\neq 3, 7$		+
152	$2.O_8^+(2)$	7		+
153	\mathfrak{A}_{12}	5		+
153	\mathfrak{A}_{19}	$\neq 2, 19$		+
153	\mathfrak{A}_{20}	5		+
153	$3_2.U_4(3)$	5	$z3$	o
153	$S_4(4)$	$\neq 2$		+
153	$O_{10}^-(2)$	3, 5		+
153	$3.M_{22}$	5	$z3$	o
153	J_3	3	$b5$	+
153	$3.J_3$	5	$z3$	o
153	$3.J_3$	$\neq 3, 5$	$z3, b5$	o
153	$3.McL$	5	$z3, b7$	o
153	He	7		+
153	He	$\neq 2, 7$	$b7$	o
153	$3.O'N$	2	$z3$	o
154	\mathfrak{A}_{12}	0, 7, 11		+
154	$L_4(5)$	2, 3, 13		+
154	$O_8^-(2)$	3		+
154	$O_{10}^-(2)$	$\neq 2, 3, 5$		+
154	M_{22}	0, 7, 11		+
154	$2.M_{22}$	$\neq 2, 5$	$i1$	o
154	HS	$\neq 2, 5$		+
154	$O'N$	3	$r7$	+
155	\mathfrak{A}_{10}	5		+
155	\mathfrak{A}_{11}	7		+
155	$L_3(5)$	0, 31		+
155	$L_3(5)$	0, 31	$i1$	o
155	$L_4(5)$	0, 31		+
155	$L_5(2)$	$\neq 2$		+
155	$S_{10}(2)$	$\neq 2$		+
155	$O_{10}^+(2)$	$\neq 2$		+
156	$2.L_4(5)$	$\neq 2, 5$		+
156	$4.L_4(5)$	$\neq 2, 5$	$i1$	o
156	$U_3(13)$	$\neq 13$		-
156	$S_4(5)$	$\neq 2, 5$		+
156	$2.S_4(5)$	$\neq 2, 5$		-

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
157	$U_3(13)$	$\neq 2, 13$		+
157	$U_3(13)$	$\neq 7, 13$	$z7$	o
160	\mathfrak{A}_9	2		+
160	$2.\mathfrak{A}_9$	0, 5		+
160	\mathfrak{A}_{10}	$\neq 3, 7$		+
160	$2.\mathfrak{A}_{10}$	5	$r6, r21$	+
160	$2.\mathfrak{A}_{12}$	0, 5, 7	$b11$	o
160	$2.O_8^+(2)$	0, 5		+
160	$2.M_{12}$	0, 5	$b11$	o
160	$4.M_{22}$	11	$i1$	o
160	$4.M_{22}$	$\neq 2, 11$	$i1, r11$	o
160	J_2	0, 2		+
162	\mathfrak{A}_9	0, 3		+
162	$3.G_2(3)$	2	$z3, b13$	o
164	\mathfrak{A}_{11}	2		-
164	\mathfrak{A}_{12}	2		-
165	\mathfrak{A}_{11}	0, 11		+
165	\mathfrak{A}_{12}	$\neq 2, 3$		+
165	\mathfrak{A}_{13}	13		+
165	$U_5(2)$	$\neq 2, 3$		+
167	$S_6(3)$	13		+
167	$O_7(3)$	13		+
167	$G_2(3)$	13		+
168	\mathfrak{A}_9	0, 7		+
168	$2.\mathfrak{A}_9$	5		+
168	$2.\mathfrak{A}_9$	0, 7	$i15$	o
168	$2.\mathfrak{A}_{10}$	5	$r21$	+
168	$S_6(2)$	$\neq 2, 3$		+
168	$2.S_6(2)$	$\neq 2, 3$		+
168	$S_6(3)$	$\neq 3, 13$		+
168	$O_7(3)$	0, 5, 7		+
168	$2.O_8^+(2)$	5		+
168	$G_2(3)$	0, 7		+
169	\mathfrak{A}_{20}	19		+
169	\mathfrak{A}_{21}	19		+
170	\mathfrak{A}_{20}	$\neq 2, 3, 19$		+
170	$U_9(2)$	$\neq 2$		-
171	\mathfrak{A}_{20}	$\neq 2, 5,$		+
171	\mathfrak{A}_{21}	3, 7		+
171	$3.U_9(2)$	$\neq 2, 3$	$z3$	o

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
171	$S_6(7)$	$\neq 7$	$b7$	\circ
171	$O_8^-(2)$	7		+
171	$3.J_3$	$\neq 2, 3$	$z3$	\circ
171	$3.J_3$	0, 17, 19	$z3, b5$	\circ
172	$2.S_6(7)$	$\neq 2, 7$	$b7$	\circ
174	$S_4(7)$	2		+
174	$6.M_{22}$	11	$z12$	\circ
174	HS	11		+
175	$S_4(7)$	$\neq 2, 7$		+
175	$O_8^+(2)$	$\neq 2, 3$		+
175	J_2	$\neq 2, 3$		+
175	HS	0, 5, 7		+
176	$U_5(2)$	$\neq 2, 3$		+
176	$2.U_6(2)$	$\neq 2, 3$		+
176	M_{12}	0, 11		+
176	$4.M_{22}$	0, 11	$i1$	\circ
176	$2.HS$	$\neq 2, 5$	$i1$	\circ
176	$2.Fi_{22}$	3	$b13$	+
180	$S_4(19)$	2	$b19$	\circ
180	$2.S_4(19)$	$\neq 2, 19$	$b19$	\circ
181	$L_3(13)$	3, 61		+
181	$S_4(19)$	$\neq 2, 19$	$b19$	\circ
182	$L_3(13)$	0, 2, 7		+
182	$U_6(3)$	$\neq 3$		-
182	$2.U_6(3)$	$\neq 2, 3$	$i1$	\circ
182	$2.S_6(3)$	$\neq 2, 3$		-
182	$2.S_6(3)$	$\neq 2, 3$	$z3$	\circ
182	$O_7(3)$	$\neq 2, 3$		+
182	$G_2(3)$	$\neq 2, 3$		+
183	$L_3(13)$	$\neq 2, 13$		+
183	$L_3(13)$	$\neq 2, 13$	$i1$	\circ
183	$3.L_3(13)$	0, 7, 61	$z12$	\circ
183	$3.L_3(13)$	$\neq 3, 13$	$z3$	\circ
183	$U_6(3)$	$\neq 2, 3$		+
185	$O_{10}^+(2)$	3, 17		+
186	\mathcal{A}_{11}	2		+
186	$L_3(5)$	$\neq 2, 5$		+
186	$S_{10}(2)$	3		+
186	$O_{10}^+(2)$	$\neq 2, 3, 17$		+
186	$O_{10}^-(2)$	3		+

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d	G	ℓ	field	ind
187	$S_{10}(2)$	$\neq 2, 3$		+
187	$O_{10}^-(2)$	$\neq 2, 3$		+
188	\mathfrak{A}_{11}	5		+
188	\mathfrak{A}_{21}	2, 5		+
188	\mathfrak{A}_{22}	2, 5		+
188	$U_4(3)$	5		+
189	\mathfrak{A}_9	$\neq 2, 5$		+
189	\mathfrak{A}_{21}	$\neq 2, 5, 19$		+
189	$L_4(4)$	5		+
189	$L_4(4)$	$\neq 2, 5$	$b5$	+
189	$3.U_3(8)$	$\neq 2, 3$	$z3$	o
189	$U_4(3)$	0, 7		+
189	$3_2.U_4(3)$	$\neq 3, 5$	$z3$	o
189	$S_6(2)$	$\neq 2, 5$		+
189	$3.G_2(3)$	13	$z3$	o
189	$3.G_2(3)$	0, 7	$z3, b13$	o
189	J_2	5		+
189	J_2	$\neq 2, 5$	$b5$	+
190	\mathfrak{A}_{21}	$\neq 2, 3, 7$		+
190	\mathfrak{A}_{22}	11		+
190	M_{22}	11		+
190	$2.J_2$	5		-
194	$S_6(3)$	7		+
194	$O_7(3)$	7		+
195	$S_6(3)$	0, 5, 13		+
195	$O_7(3)$	0, 5, 13		+
196	\mathfrak{A}_{13}	5		+
196	\mathfrak{A}_{14}	5		+
196	$S_4(8)$	$\neq 2$		+
196	$S_6(2)$	3		+
196	${}^3D_4(2)$	$\neq 2$		+
198	\mathfrak{A}_{10}	2		+
198	\mathfrak{A}_{11}	2		+
199	\mathfrak{A}_{10}	7		+
199	\mathfrak{A}_{11}	7		+
199	J_2	7		+
200	\mathfrak{A}_{10}	2		+
200	$2.S_4(7)$	$\neq 2, 7$	$b7$	o
201	$S_6(2)$	7		+
202	$2.J_2$	5		-

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d	G	ℓ	field	ind
203	$S_8(2)$	3		+
203	$O_8^-(2)$	3, 5		+
204	$3_1.U_4(3)$	2	$z3$	o
204	$U_5(4)$	$\neq 2$		o
204	$S_4(4)$	$\neq 2, 5$	$b5$	+
204	$O_8^-(2)$	$\neq 2, 3$		+
205	$5.U_5(4)$	$\neq 5$	$z5$	o
207	\mathfrak{A}_{13}	11		+
207	$S_4(4)$	17		+
208	\mathfrak{A}_{13}	$\neq 3, 5, 11$		+
208	\mathfrak{A}_{14}	2		+
208	\mathfrak{A}_{22}	3, 7		+
208	\mathfrak{A}_{23}	3, 7		+
208	$L_4(3)$	2, 5		+
208	$2.L_4(3)$	$\neq 2, 3$	$i2$	o
208	$S_4(5)$	$\neq 5$	$b5$	+
208	$2.S_4(5)$	$\neq 2, 5$	$b5$	-
208	M_{23}	7		+
208	$2.Suz$	3		-
209	\mathfrak{A}_{22}	$\neq 2, 3, 5, 7$		+
209	J_1	0, 11, 19		+
210	\mathfrak{A}_{10}	0, 7		+
210	\mathfrak{A}_{11}	$\neq 2, 11$		+
210	\mathfrak{A}_{12}	3		+
210	\mathfrak{A}_{22}	$\neq 2, 11$		+
210	\mathfrak{A}_{23}	23		+
210	$U_4(3)$	$\neq 2, 3$		+
210	$2.U_4(3)$	$\neq 2, 3$	$i1$	o
210	$3_1.U_4(3)$	$\neq 2, 3$	$z3$	o
210	$6_1.U_4(3)$	$\neq 2, 3$	$z3$	o
210	$U_6(2)$	3		+
210	$3.U_6(2)$	$\neq 2, 3$	$z3$	o
210	$S_6(2)$	$\neq 2, 3$		+
210	$O_8^+(2)$	$\neq 2, 3$		+
210	M_{22}	$\neq 2, 11$		+
210	$2.M_{22}$	$\neq 2, 11$		+
210	$3.M_{22}$	$\neq 2, 3$	$z3$	o
210	$6.M_{22}$	0, 5, 7	$z3$	o
210	$6.M_{22}$	$\neq 2, 3$	$z12$	o
210	M_{23}	23		+

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

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d	G	ℓ	field	ind
210	HS	5		+
210	McL	3, 5		+
214	J_3	19	$b17, y9$	+
216	\mathfrak{A}_9	0		+
216	$2.\mathfrak{A}_{10}$	0, 3		+
216	$12_1.U_4(3)$	0, 7	$z12$	o
216	$12_2.U_4(3)$	$\neq 2, 3$	$z12$	o
216	$S_6(2)$	0		+
216	$2.J_2$	0, 3		-
217	\mathfrak{A}_{10}	5		+
217	$L_5(2)$	$\neq 2$		+
217	$L_6(2)$	$\neq 2$		+
218	${}^3D_4(3)$	2		+
218	${}^3D_4(3)$	73		+
219	${}^3D_4(3)$	$\neq 2, 3, 73$		+
220	\mathfrak{A}_{13}	$\neq 2, 13$		+
220	\mathfrak{A}_{14}	7		+
220	$U_4(4)$	5		+
220	$U_5(2)$	$\neq 2, 3$	$z3$	o
220	M_{23}	2	$b7, b23$	o
220	M_{24}	2	$b7, b23$	o
220	$2.Suz$	$\neq 2, 3$		-
221	\mathfrak{A}_{12}	7		+
221	\mathfrak{A}_{13}	7		+
221	$U_4(4)$	$\neq 2$	$b5$	+
223	$S_4(7)$	5		+
224	$2.\mathfrak{A}_9$	0, 7		+
224	\mathfrak{A}_{10}	$\neq 2, 5$		+
224	$4.U_4(3)$	$\neq 2, 3$	$z12$	o
224	$S_4(7)$	$\neq 2, 5, 7$		+
224	$2.O_8^+(2)$	$\neq 2, 5$		+
224	J_2	0, 7	$b5$	+
225	\mathfrak{A}_{10}	0, 5		+
225	$S_4(4)$	$\neq 2, 17$	$d17$	+
225	J_2	$\neq 2, 7$		+
229	\mathfrak{A}_{23}	11		+
229	\mathfrak{A}_{24}	11		+
229	$U_6(2)$	3		+
229	M_{23}	11		+
229	M_{24}	11		+

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Table 2: Absolutely irreducible representations of quasi-simple groups, corrected

Continued from the previous page

d	G	ℓ	field	ind
230	\mathfrak{A}_{23}	$\neq 3, 7, 11$		+
230	\mathfrak{A}_{24}	2		+
230	M_{23}	0, 5, 23		+
230	McL	2, 5		+
230	Co_3	2, 5		+
230	Co_2	2		+
231	\mathfrak{A}_{11}	0, 7, 11		+
231	\mathfrak{A}_{23}	$\neq 2, 23$		+
231	\mathfrak{A}_{24}	3		+
231	$U_6(2)$	$\neq 2, 3$		+
231	$3.U_6(2)$	$\neq 2, 3$	$z3$	o
231	M_{22}	$\neq 2, 5$		+
231	$3.M_{22}$	$\neq 2, 3$	$z3$	o
231	M_{23}	$\neq 2, 23$		+
231	M_{23}	$\neq 2, 3, 5$	$i15$	o
231	M_{24}	3, 5		+
231	M_{24}	$\neq 2, 3, 5$	$i15$	o
231	HS	$\neq 2, 5$		+
231	McL	0, 7, 11		+
231	Co_3	3		+
233	\mathfrak{A}_{13}	5		+
233	\mathfrak{A}_{14}	5		+
234	$L_4(3)$	0, 13		+
236	$2.J_2$	3		-
238	$S_8(2)$	$\neq 2, 3$		+
240	$U_3(16)$	$\neq 2$		-
241	$U_3(16)$	$\neq 2, 17$	$z17$	o
244	J_3	2	$b17$	+
245	$O_8^-(3)$	13		+
246	$O_8^-(3)$	$\neq 3, 13$		+
246	${}^2F_4(2)'$	2		+
246	He	2	$b17$	+
248	$L_4(5)$	2		+
248	$2.L_4(5)$	$\neq 2, 5$		+
248	$S_4(5)$	2	$b5$	+
248	Th	all		+

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