^{24}Mg(d,pγ),(pol d,p) 1991He05

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	R. B. Firestone	NDS 110, 1691 (2009)	1-Feb-2008

1991He05: ^{24}Mg(d,p), E=6.5 MeV. Measured σ(Ep), pγ coincidences, DSA. Surface barrier proton detector and Ge(Li) detector.
1977Be48: ^{24}Mg(pol d,p), E=1.5-2.5 MeV. Measured σ(E,Ep,θ).
1974Ro39: ^{24}Mg(pol d,p), E=6 MeV. Measured DSA, pγ coincidences.
Other references: 1976Bo18, 1975Me12, 1973Ro17, 1971Do04.

^{25}Mg Levels

E(level)[†]	J$^\pi$[†]	$T_{1/2}$	L[#]	Comments
0	5/2$^+$		2	
585.0[‡] *2*	1/2$^+$	3.5 ns *4*	0	$T_{1/2}$: From 1971Do04.
974.6[‡] *4*	3/2$^+$	10.1 ps *17*	3	$T_{1/2}$: From 1972Al28. Other value 11 ps 4 (1971Do04).
1611.8[‡] *5*	7/2$^+$			
1964.4[‡] *3*	5/2$^+$			
2563.6[‡] *4*	1/2$^+$	<7[a] fs	0	
2737.0[‡] *7*	7/2$^+$	290[a] fs *30*		
2801.5[‡] *6*	3/2$^+$	26[a] fs *4*	2	
3405.6[‡] *6*	9/2$^+$	21[a] fs *+12−6*		
3413.3[‡] *8*	3/2$^-$	11[@] fs *4*	1	
3907.6[‡] *9*	5/2$^+$			
3970.4[‡] *6*	7/2$^-$	18[a] fs *8*	3	
4060 *1*	9/2$^+$	34[a] fs *14*		
4277.1[‡] *7*	1/2$^-$	<7[a] fs	1	
4359.3[‡] *9*	3/2$^+$	<7[a] fs	2	
4710.5[‡] *11*	9/2$^+$	29[a] fs *3*	1	
4721.8[‡] *13*	5/2$^+$	<7[a] fs		
5011.9[‡] *7*	7/2$^+$	<7[a] fs		
5116.4[‡] *12*	1/2$^-$	26 fs *6*	1	$T_{1/2}$: From 1974Ro39, value is is inconsistent with limit of <7 fs from (p,p′γ).
5251 *1*	11/2$^+$	<13[a] fs		
5462 *1*	13/2$^+$	0.96[a] ps *+46−34*		
5475 *1*	1/2$^+$	<7[a] fs	0	
5521.1[‡] *6*	5/2$^-$	≈18[@] keV	2	
5533.8[‡] *13*	11/2$^+$	<6[@] fs		
5746.4 *14*	7/2$^+$,9/2$^+$	<7[a] fs		
5748 *2*	1/2$^+$,3/2$^+$,5/2$^+$			
5785 *7*				
5793.0[‡] *5*	11/2$^-$,7/2$^-$	33[@] fs *7*		$T_{1/2}$: Other value: 35 fs *12* (1974Ro39).
5862 *2*	5/2$^+$	<7[a] fs		
5972 *2*	9/2$^+$	<18[a] fs		
5979.3[‡] *21*	7/2$^+$	<7[a] fs		
6041 *2*	11/2$^+$,7/2$^+$	<7[a] fs		
6082 *1*	5/2$^+$	<7[a] fs		
6123 *7*				
6169 *3*	3/2	<7[a] fs		
6362 *2*	3/2	<7[a] fs		
6409 *10*				
6433 *2*	9/2$^+$	<7[a] fs		

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^{24}Mg(d,pγ),(pol d,p) 1991He05 (continued)

^{25}Mg Levels (continued)

E(level)[†]	Jπ[†]	$T_{1/2}$	E(level)[†]	Jπ[†]	$T_{1/2}$
6468 *2*	3/2⁻	<7[a] fs	8143	3/2⁺	13[@&] keV
6517 *7*			8267 *2*	(7/2⁺)	<10 fs
6570 *1*	1/2⁺,3/2	<7[a] fs	8312		1.2 keV *1*
6678 *1*	5/2	10[a] fs *+30−3*	8324	1/2⁺	14[@&] keV *4*
6777 *3*	1/2⁺	<7[a] fs	8360	1/2	18 keV *6*
6832 *2*	3/2⁻,5/2	<28[@] fs	8530 *2*	(7/2⁺)	<10[@] fs
6839 *2*	5/2	<7 fs	8544 *3*	(7/2⁺)	<17[@] fs
6885 *3*	7/2,9/2,11/2	97[@] fs *42*	8551	11/2	<5[@] fs
6914 *2*	5/2⁻		8552	1/2	8[@&] keV *4*
6944 *10*			8559		1.8 keV *1*
6958 *2*	5/2⁻	<7[a] fs	8559		4.2 keV *2*
7038 *2*	5/2	<21[@] fs	8574	(1/2)	7[@&] keV *3*
7088 *4*	3/2⁺,5/2⁺	<7[a] fs	8582	(3/2)	12[@&] keV *5*
7112 *10*			8656 *2*	7/2	<10[@] fs
7181 *2*	3/2,7/2	<28[@] fs	8811 *2*	13/2⁺,9/2⁺	<8[@] fs
7185 *2*		<14[@] fs	8841	1/2	50[@&] keV *10*
7228 *3*	3/2⁺,5/2⁺	<7[a] fs	8869		15 keV *1*
7285 *2*	7/2⁻	<7[a] fs	8888 *3*	11/2,9/2⁺,7/2	<17[@] fs
7378 *5*	5/2⁺		8896 *1*	11/2,15/2⁻	17[@] fs *8*
7412	3/2⁻	9[@&] keV *2*	8900	1/2	32[@&] keV *8*
7493 *3*	11/2	21 fs *8*	8975	1/2	16[@&] keV *4*
7505 *3*	5/2	<10[@] fs	9014 *3*	11/2,7/2⁺,9/2⁺	<5[@] fs
7524 *2*	7/2,5/2⁺	<10[@] fs	9023	(1/2)	<10[@&] keV
7551 *1*	13/2⁺,9/2⁺	<21[@] fs	9074	(1/2)	14[@&] keV
7582 *9*	1/2⁻	85[@&] keV *15*	9154	(3/2)	22[@&] keV
7633 *5*	(7/2⁺)	<49[@] fs	9336	(3/2)	24[@&] keV
7653 *2*	9/2	<21[@] fs	9410 *3*	13/2,9/2	12[@] fs *8*
7749	3/2⁻	30[@&] keV *10*	9652 *2*	11/2,7/2	<5[@] fs
7801 *2*	9/2	<12[@] fs	9686 *3*	11/2⁺,13/2	<5[@] fs
7838 *2*	7/2⁺	<28[@] fs	9830	11/2⁺,15/2	
7866 *2*	7/2⁺,11/2⁺	<12[@] fs	9946 *4*		
7961 *2*	7/2⁺	25[@&] keV *5*	10136		
8012 *3*	13/2⁺,9/2	<28[@] fs	10996		
8076 *3*	5/2,7/2,9/2	<14[@] fs	11200		
8119 *3*	(7/2⁺)	<10[@] fs	11409		

[†] From 1991He05 except as noted.
[‡] From 1976Ch29.
[#] From 1977Be48, 1975Me12, 1976Ch29.
[@] From 1991He05.
[&] From 1976Bo18.
[a] From 1974Ro39.

^{24}Mg(d,pγ),(pol d,p) 1991He05 (continued)

$\gamma(^{25}Mg)$

E_γ ‡	I_γ †	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ	Comments
389.6 *5*	49 *1*	974.6	$3/2^+$	585.0	$1/2^+$			
585.0 *2*	100	585.0	$1/2^+$	0	$5/2^+$			
655 *1*	1.0 *5*	4060	$9/2^+$	3405.6	$9/2^+$			
772.6 *7*	7 *1*	2737.0	$7/2^+$	1964.4	$5/2^+$			
836.9 *6*	39 *1*	2801.5	$3/2^+$	1964.4	$5/2^+$			
863.8 *11*	4 *1*	4277.1	$1/2^-$	3413.3	$3/2^-$			
899 *2*	7 *2*	6433	$9/2^+$	5533.8	$11/2^+$	M1(+E2)	−0.03 *13*	
974.6 *4*	51 *1*	974.6	$3/2^+$	0	$5/2^+$			
989.8 *4*	27 *1*	1964.4	$5/2^+$	974.6	$3/2^+$			
1041.5 *9*	1.0 *5*	5011.9	$7/2^+$	3970.4	$7/2^-$			
1104.3 *11*	2 *1*	5011.9	$7/2^+$	3907.6	$5/2^+$			
1106.1 *11*	13 *1*	3907.6	$5/2^+$	2801.5	$3/2^+$			
1157 *1*	1.0 *5*	6678	5/2	5521.1	$5/2^-$			
1170.6 *12*	10 *1*	3907.6	$5/2^+$	2737.0	$7/2^+$			
1182 *2*	3 *1*	6433	$9/2^+$	5251	$11/2^+$			
1191 *1*	23 *1*	5251	$11/2^+$	4060	$9/2^+$			
1233.4 *6*	2 *1*	3970.4	$7/2^-$	2737.0	$7/2^+$			
1352 *2*	11 *3*	6468	$3/2^-$	5116.4	$1/2^-$			
1379.4 *4*	47 *1*	1964.4	$5/2^+$	585.0	$1/2^+$			
1421 *2*	18 *4*	6433	$9/2^+$	5011.9	$7/2^+$			
1521 *3*	15 *4*	7493	11/2	5972	$9/2^+$	D(+Q)	0.00 *3*	
1550.7 *8*	16 *1*	5521.1	$5/2^-$	3970.4	$7/2^-$			
1589.0 *5*	17 *1*	2563.6	$1/2^+$	974.6	$3/2^+$			
1611.8 *5*	100	1611.8	$7/2^+$	0	$5/2^+$			
1666 *1*	2 *1*	6678	5/2	5011.9	$7/2^+$	Q		
1681 *2*	7 *2*	7653	9/2	5972	$9/2^+$	D+Q	+0.5 *4*	
1686.4 *17*	3 *2*	5746.4	$7/2^+$,$9/2^+$	4060	$9/2^+$	M1+E2	+0.18 *+7−2*	δ: Calculated assuming $J^\pi=7/2^+$.
1703.1 *14*	3 *2*	5116.4	$1/2^-$	3413.3	$3/2^-$			
1712.5 *8*	12 *1*	4277.1	$1/2^-$	2563.6	$1/2^+$			
1722 *2*	9 *2*	6433	$9/2^+$	4710.5	$9/2^+$			
1723 *1*	2 *1*	6082	$5/2^+$	4359.3	$3/2^+$			
1746 *2*	4 *1*	6468	$3/2^-$	4721.8	$5/2^+$			
1762.4 *7*	87 *1*	2737.0	$7/2^+$	974.6	$3/2^+$			
1793.8 *6*	81 *1*	3405.6	$9/2^+$	1611.8	$7/2^+$			
1795.7 *10*	1.0 *5*	4359.3	$3/2^+$	2563.6	$1/2^+$			
1822 *1*	39 *4*	5793.0	$11/2^-$,$7/2^-$	3970.4	$7/2^-$			
1840 *2*	2 *1*	5748	$1/2^+$,$3/2^+$,$5/2^+$	3907.6	$5/2^+$			
1845 *1*	28 *2*	5251	$11/2^+$	3405.6	$9/2^+$			
1892 *3*	3 *1*	6169	3/2	4277.1	$1/2^-$			
1909 *2*	8 *1*	7653	9/2	5746.4	$7/2^+$,$9/2^+$			
1912 *2*	39 *4*	5972	$9/2^+$	4060	$9/2^+$			
1959 *3*	11 *3*	7493	11/2	5533.8	$11/2^+$			
1964.4 *3*	26 *1*	1964.4	$5/2^+$	0	$5/2^+$			
1971 *3*	26 *6*	8012	$13/2^+$,9/2	6041	$11/2^+$,$7/2^+$			δ: Calculated assuming $J^\pi=13/2^+$.
1973.5 *13*	6 *1*	4710.5	$9/2^+$	2737.0	$7/2^+$			
1978.6 *5*	80 *1*	2563.6	$1/2^+$	585.0	$1/2^+$			
1981 *2*	5 *1*	6041	$11/2^+$,$7/2^+$	4060	$9/2^+$			
2003 *2*	2 *1*	6362	3/2	4359.3	$3/2^+$			
2006.0 *6*	15 *1*	3970.4	$7/2^-$	1964.4	$5/2^+$			
2008 *2*	5 *2*	7801	9/2	5793.0	$11/2^-$,$7/2^-$	D+Q	+0.14 *2*	
2017 *1*	20 *7*	7551	$13/2^+$,$9/2^+$	5533.8	$11/2^+$			
2031 *3*	18 *4*	7493	11/2	5462	$13/2^+$	D+Q	+0.07 *6*	
2057 *1*	100	5462	$13/2^+$	3405.6	$9/2^+$			

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^{24}Mg(d,pγ),(pol d,p) 1991He05 (continued)

γ(^{25}Mg) (continued)

E_γ ‡	I_γ †	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ	Comments
2061 *1*	4 *1*	5475	1/2$^+$	3413.3	3/2$^-$			
2089 *1*	10 *5*	7551	13/2$^+$,9/2$^+$	5462	13/2$^+$			
2094 *2*	3 *1*	7838	7/2$^+$	5746.4	7/2$^+$,9/2$^+$			
2107.8 *10*	4 *1*	5521.1	5/2$^-$	3413.3	3/2$^-$			
2111 *1*	4 *1*	6082	5/2$^+$	3970.4	7/2$^-$			
2119 *2*	3 *1*	7653	9/2	5533.8	11/2$^+$			
2128.2 *13*	61 *3*	5533.8	11/2$^+$	3405.6	9/2$^+$			
2191 *2*	6 *1*	6468	3/2$^-$	4277.1	1/2$^-$			
2210.4 *9*	8 *2*	5011.9	7/2$^+$	2801.5	3/2$^+$			
2216.5 *6*	39 *2*	2801.5	3/2$^+$	585.0	1/2$^+$			
2267 *2*	2 *1*	7801	9/2	5533.8	11/2$^+$			
2279	35 *10*	9830	11/2$^+$,15/2	7551	13/2$^+$,9/2$^+$			
2293 *1*	3 *1*	6570	1/2$^+$,3/2	4277.1	1/2$^-$			
2300 *1*	40 *10*	7551	13/2$^+$,9/2$^+$	5251	11/2$^+$	M1+E2	+0.10 *5*	δ: Calculated assuming J^π=9/2$^+$.
2332 *2*	8 *3*	7866	7/2$^+$,11/2$^+$	5533.8	11/2$^+$			
2340.8 *15*	5 *2*	5746.4	7/2$^+$,9/2$^+$	3405.6	9/2$^+$			
2358.6 *6*	2 *1*	3970.4	7/2$^-$	1611.8	7/2$^+$			
2373 *2*	13 *3*	6433	9/2$^+$	4060	9/2$^+$	M1+E2	+0.25 *5*	δ: or δ=−0.5 1.
2388 *1*	61 *4*	5793.0	11/2$^-$,7/2$^-$	3405.6	9/2$^+$			
2438.7 *8*	14 *1*	3413.3	3/2$^-$	974.6	3/2$^+$			
2448 *1*	39 *1*	4060	9/2$^+$	1611.8	7/2$^+$			
2473 *2*	20 *4*	6832	3/2$^-$,5/2	4359.3	3/2$^+$			
2500 *3*	1.0 *5*	6777	1/2$^+$	4277.1	1/2$^-$			
2510	13 *3*	8551	11/2	6041	11/2$^+$,7/2$^+$			
2514 *1*	14 *2*	5251	11/2$^+$	2737.0	7/2$^+$			
2525 *2*	15 *3*	6433	9/2$^+$	3907.6	5/2$^+$	E2		
2550 *2*	3 *1*	7801	9/2	5251	11/2$^+$			
2552.8 *12*	15 *3*	5116.4	1/2$^-$	2563.6	1/2$^+$			
2560 *2*	17 *4*	6468	3/2$^-$	3907.6	5/2$^+$			
2563.6 *4*	3 *1*	2563.6	1/2$^+$	0	5/2$^+$			
2615 *2*	10 *3*	7866	7/2$^+$,11/2$^+$	5251	11/2$^+$			
2636 *2*	75 *7*	6041	11/2$^+$,7/2$^+$	3405.6	9/2$^+$			
2641 *2*	10 *2*	7653	9/2	5011.9	7/2$^+$	D+Q	−0.18 *7*	δ: Other value δ=−2.1 +3-7.
2662 *1*	4 *1*	6570	1/2$^+$,3/2	3907.6	5/2$^+$			
2668 *1*	6 *1*	6082	5/2$^+$	3413.3	3/2$^-$	E1(+M2)	+0.03 +*5*−*35*	δ: or δ=−3.1 6.
2720.6 *8*	12 *2*	5521.1	5/2$^-$	2801.5	3/2$^+$			
2737.0 *7*	6 *1*	2737.0	7/2$^+$	0	5/2$^+$			
2746.1 *11*	94 *1*	4710.5	9/2$^+$	1964.4	5/2$^+$			
2755 *3*	2 *1*	6169	3/2	3413.3	3/2$^-$			
2757.4 *13*	15 *5*	4721.8	5/2$^+$	1964.4	5/2$^+$			
2761 *3*	34 *6*	8012	13/2$^+$,9/2	5251	11/2$^+$	M1+E2	−0.18 *1*	
2770 *1*	5 *1*	6678	5/2	3907.6	5/2$^+$	D+Q	−0.10 *9*	
2770 *2*	34 *5*	8811	13/2$^+$,9/2$^+$	6041	11/2$^+$,7/2$^+$	D(+Q)	−0.03 *4*	δ: Calculated assuming J^π=13/2$^+$.
2801.5 *6*	22 *1*	2801.5	3/2$^+$	0	5/2$^+$			
2828.3 *8*	76 *1*	3413.3	3/2$^-$	585.0	1/2$^+$			
2854 *2*	10 *3*	7866	7/2$^+$,11/2$^+$	5011.9	7/2$^+$	M1(+E2)	>−0.65	δ: Calculated assuming J^π=7/2$^+$.
2861 *2*	22 *4*	6832	3/2$^-$,5/2	3970.4	7/2$^-$			
2911 *1*	3 *1*	5475	1/2$^+$	2563.6	1/2$^+$			
2932.2 *9*	66 *2*	3907.6	5/2$^+$	974.6	3/2$^+$			
2947 *2*	5 *2*	5748	1/2$^+$,3/2$^+$,5/2$^+$	2801.5	3/2$^+$			
3006 *2*	3 *1*	6914	5/2$^-$	3907.6	5/2$^+$			
3009.4 *15*	7 *2*	5746.4	7/2$^+$,9/2$^+$	2737.0	7/2$^+$			
3017	14 *3*	8551	11/2	5533.8	11/2$^+$	M1+E2	+0.97 *40*	δ: Other value δ>=−0.03 25.

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^{24}Mg(d,pγ),(pol d,p) 1991He05 (continued)

γ(^{25}Mg) (continued)

E_γ ‡	I_γ †	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ	Comments
3047.5 *8*	40 *4*	5011.9	7/2$^+$	1964.4	5/2$^+$			
3054 *2*	3 *1*	6468	3/2$^-$	3413.3	3/2$^-$			
3067 *2*	4 *1*	7038	5/2	3970.4	7/2$^-$			
3103 *1*	100	8896	11/2,15/2$^-$	5793.0	11/2$^-$,7/2$^-$	E2		δ: Calculated assuming J^π=15/2$^-$.
3124 *2*	19 *4*	5862	5/2$^+$	2737.0	7/2$^+$			
3239 *2*	4 *2*	7961	7/2$^+$	4721.8	5/2$^+$			
3242.3 *21*	30 *3*	5979.3	7/2$^+$	2737.0	7/2$^+$			
3250 *2*	7 *3*	7961	7/2$^+$	4710.5	9/2$^+$	M1(+E2)	+0.18 *+50−14*	δ: Other value δ>+3.5.
3277 *2*	35 *5*	8811	13/2$^+$,9/2$^+$	5533.8	11/2$^+$	D(+Q)	−0.04 *4*	δ: Calculated assuming J^π=13/2$^+$.
3281 *1*	3 *1*	6082	5/2$^+$	2801.5	3/2$^+$			
3300	12 *3*	8551	11/2	5251	11/2$^+$	M1+E2	−0.14 *9*	
3301 *3*	40 *8*	8012	13/2$^+$,9/2	4710.5	9/2$^+$			
3302.5 *7*	79 *2*	4277.1	1/2$^-$	974.6	3/2$^+$			
3303 *2*	12 *3*	6041	11/2$^+$,7/2$^+$	2737.0	7/2$^+$			
3363 *3*	21 *4*	6777	1/2$^+$	3413.3	3/2$^-$			
3367 *3*	8 *2*	6169	3/2	2801.5	3/2$^+$			
3369 *3*	26 *5*	9410	13/2,9/2	6041	11/2$^+$,7/2$^+$	D(+Q)	−0.07 *8*	δ: Calculated assuming J^π=13/2. δ=−0.14 14 for J^π=9/2.
3383.9 *9*	47 *2*	4359.3	3/2$^+$	974.6	3/2$^+$			
3400.1 *9*	11 *2*	5011.9	7/2$^+$	1611.8	7/2$^+$			
3405.6 *6*	19 *1*	3405.6	9/2$^+$	0	5/2$^+$			
3413.3 *8*	10 *1*	3413.3	3/2$^-$	0	5/2$^+$			
3418 *2*	22 *6*	6832	3/2$^-$,5/2	3413.3	3/2$^-$			
3433 *3*	34 *6*	7493	11/2	4060	9/2$^+$	D+Q	−0.07 *6*	
3480 *3*	16 *4*	6885	7/2,9/2,11/2	3405.6	9/2$^+$	Q		δ: Calculated assuming J^π=7/2.
3544 *2*	3 *1*	6958	5/2$^-$	3413.3	3/2$^-$			
3556.7 *7*	16 *2*	5521.1	5/2$^-$	1964.4	5/2$^+$			
3593 *2*	12 *3*	7653	9/2	4060	9/2$^+$			
3616 *2*	18 *3*	7524	7/2,5/2$^+$	3907.6	5/2$^+$	M1+E2	<−0.45	
3617 *3*	20 *5*	9410	13/2,9/2	5793.0	11/2$^-$,7/2$^-$			
3624 *2*	9 *2*	7038	5/2	3413.3	3/2$^-$	Q		
3639 *1*	35 *3*	5251	11/2$^+$	1611.8	7/2$^+$			
3692.1 *7*	5 *1*	4277.1	1/2$^-$	585.0	1/2$^+$			
3695 *2*	8 *2*	6433	9/2$^+$	2737.0	7/2$^+$			
3747.2 *13*	84 *4*	4721.8	5/2$^+$	974.6	3/2$^+$			
3763 *3*	25 *5*	9014	11/2,7/2$^+$,9/2$^+$	5251	11/2$^+$			
3774.3 *9*	52 *2*	4359.3	3/2$^+$	585.0	1/2$^+$			
3783 *2*	14 *3*	5748	1/2$^+$,3/2$^+$,5/2$^+$	1964.4	5/2$^+$	E2		δ: Calculated assuming J^π=1/2$^+$.
3806 *2*	20 *4*	7866	7/2$^+$,11/2$^+$	4060	9/2$^+$	M1+E2	+0.10 *7*	δ: Calculated assuming J^π=7/2$^+$.
3819 *2*	21 *8*	8530	(7/2$^+$)	4710.5	9/2$^+$	M1+E2	+0.13 *+35−10*	δ: Other value δ=+7.0 +80-35.
3840	14 *3*	8551	11/2	4710.5	9/2$^+$			
3877 *1*	75 *7*	6678	5/2	2801.5	3/2$^+$	D+Q	−0.30 *4*	
3907.6 *9*	11 *1*	3907.6	5/2$^+$	0	5/2$^+$			
3909.3 *8*	30 *2*	5521.1	5/2$^-$	1611.8	7/2$^+$			
3922.0 *13*	39 *3*	5533.8	11/2$^+$	1611.8	7/2$^+$			
3945 *2*	9 *2*	8656	7/2	4710.5	9/2$^+$	D+Q	+0.21 *15*	δ: Other value δ=+4.7 +60-15.
3970.4 *6*	81 *2*	3970.4	7/2$^-$	0	5/2$^+$			
3976 *3*	3 *2*	6777	1/2$^+$	2801.5	3/2$^+$			

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^{24}Mg(d,pγ),(pol d,p) 1991He05 (continued)

$\gamma(^{25}Mg)$ (continued)

E_γ ‡	I_γ †	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ	Comments
4006 *1*	14 *3*	6570	1/2$^+$,3/2	2563.6	1/2$^+$			
4014.9 *21*	62 *6*	5979.3	7/2$^+$	1964.4	5/2$^+$			
4031 *2*	36 *6*	6832	3/2$^-$,5/2	2801.5	3/2$^+$	D(+Q)	−0.36 *+46−22*	δ: Calculated assuming J^π=5/2.
4060 *1*	60 *1*	4060	9/2$^+$	0	5/2$^+$			
4088 *3*	10 *3*	7493	11/2	3405.6	9/2$^+$			
4100 *2*	31 *8*	8811	13/2$^+$,9/2$^+$	4710.5	9/2$^+$			
4101 *2*	41 *10*	6839	5/2	2737.0	7/2$^+$	Q		
4113 *2*	15 *3*	6914	5/2$^-$	2801.5	3/2$^+$			
4117 *1*	25 *4*	6082	5/2$^+$	1964.4	5/2$^+$			
4141.8 *12*	78 *3*	5116.4	1/2$^-$	974.6	3/2$^+$			
4146 *1*	30 *10*	7551	13/2$^+$,9/2$^+$	3405.6	9/2$^+$			
4157 *2*	8 *1*	6958	5/2$^-$	2801.5	3/2$^+$			
4159 *3*	54 *8*	9410	13/2,9/2	5251	11/2$^+$	D(+Q)	−0.03 *4*	δ: Calculated assuming J^π=13/2. δ=−0.10 10 for J^π=9/2.
4176 *2*	11 *2*	6914	5/2$^-$	2737.0	7/2$^+$			
4204 *3*	33 *4*	6169	3/2	1964.4	5/2$^+$			
4211 *3*	13 *5*	8119	(7/2$^+$)	3907.6	5/2$^+$			
4213 *3*	9 *2*	6777	1/2$^+$	2563.6	1/2$^+$			
4220 *2*	14 *2*	6958	5/2$^-$	2737.0	7/2$^+$			
4300 *2*	6 *1*	7038	5/2	2737.0	7/2$^+$			
4303 *3*	40 *8*	9014	11/2,7/2$^+$,9/2$^+$	4710.5	9/2$^+$			
4360 *2*	58 *6*	5972	9/2$^+$	1611.8	7/2$^+$			
4368	55 *15*	9830	11/2$^+$,15/2	5462	13/2$^+$			
4397 *2*	7 *2*	6362	3/2	1964.4	5/2$^+$			
4412 *4*	100	9946		5533.8	11/2$^+$			
4429 *2*	8 *2*	6041	11/2$^+$,7/2$^+$	1611.8	7/2$^+$			
4433 *2*	23 *4*	7838	7/2$^+$	3405.6	9/2$^+$	M1(+E2)	+0.07 *7*	
4447 *2*	8 *2*	7185		2737.0	7/2$^+$			
4461 *2*	22 *4*	7866	7/2$^+$,11/2$^+$	3405.6	9/2$^+$			
4470 *1*	46 *5*	6082	5/2$^+$	1611.8	7/2$^+$	M1(+E2)	+0.14 *+8−20*	δ: or δ=−5.0 +8-20.
4470 *2*	12 *5*	8530	(7/2$^+$)	4060	9/2$^+$			
4491	47 *8*	8551	11/2	4060	9/2$^+$	M1(+E2)	−0.03 *3*	
4500 *1*	29 *3*	5475	1/2$^+$	974.6	3/2$^+$			
4503 *2*	28 *5*	6468	3/2$^-$	1964.4	5/2$^+$			
4531.4 *12*	4 *1*	5116.4	1/2$^-$	585.0	1/2$^+$			
4556 *2*	4 *2*	7961	7/2$^+$	3405.6	9/2$^+$			
4579	10 *5*	9830	11/2$^+$,15/2	5251	11/2$^+$			
4602	100	10136		5533.8	11/2$^+$			
4605 *1*	17 *3*	6570	1/2$^+$,3/2	1964.4	5/2$^+$	E2		δ: Calculated assuming J^π=1/2$^+$.
4713 *1*	4 *1*	6678	5/2	1964.4	5/2$^+$	D(+Q)	+0.4 *+7−4*	
4721.8 *13*	1.0 *5*	4721.8	5/2$^+$	0	5/2$^+$			
4767 *3*	49 *6*	7505	5/2	2737.0	7/2$^+$	Q		
4773 *2*	30 *5*	5748	1/2$^+$,3/2$^+$,5/2$^+$	974.6	3/2$^+$	E2		δ: Calculated assuming J^π=1/2$^+$.
4786 *2*	41 *6*	7524	7/2,5/2$^+$	2737.0	7/2$^+$	E2		
4821 *2*	27 *6*	6433	9/2$^+$	1611.8	7/2$^+$	M1+E2	1.0 *+15−6*	
4828 *3*	100	8888	11/2,9/2$^+$,7/2	4060	9/2$^+$	D(+Q)	0.00 *3*	δ: Calculated assuming J^π=11/2.
4862 *2*	17 *5*	8267	(7/2$^+$)	3405.6	9/2$^+$	M1(+E2)	0.00 *6*	
4887 *2*	16 *4*	5862	5/2$^+$	974.6	3/2$^+$			
4890 *1*	64 *3*	5475	1/2$^+$	585.0	1/2$^+$			
4915 *2*	46 *6*	7653	9/2	2737.0	7/2$^+$	D(+Q)	0.00 *5*	
4949 *2*	8 *2*	6914	5/2$^-$	1964.4	5/2$^+$			
4954 *3*	35 *7*	9014	11/2,7/2$^+$,9/2$^+$	4060	9/2$^+$	D(+Q)	+0.03 *5*	δ: Calculated assuming J^π=11/2.
5011.9 *7*	38 *4*	5011.9	7/2$^+$	0	5/2$^+$			
5063 *2*	12 *3*	7801	9/2	2737.0	7/2$^+$			
5073 *2*	40 *6*	7038	5/2	1964.4	5/2$^+$	D(+Q)	−0.14 *+94−28*	
5100 *2*	7 *2*	7838	7/2$^+$	2737.0	7/2$^+$			

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^{24}Mg(d,pγ),(pol d,p) 1991He05 (continued)

γ(^{25}Mg) (continued)

E_γ ‡	I_γ †	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ	Comments
5107 *1*	4 *1*	6082	5/2+	974.6	3/2+			
5125 *2*	67 *13*	8530	(7/2+)	3405.6	9/2+	M1+E2	+0.10 *6*	
5128 *2*	30 *5*	7866	7/2+,11/2+	2737.0	7/2+			
5139 *3*	20 *10*	8544	(7/2+)	3405.6	9/2+			
5163 *2*	4 *2*	5748	1/2+,3/2+,5/2+	585.0	1/2+			
5194 *3*	40 *5*	6169	3/2	974.6	3/2+			
5216 *2*	80 *4*	7181	3/2,7/2	1964.4	5/2+	Q		
5227 *2*	17 *4*	6839	5/2	1611.8	7/2+			
5251 *2*	15 *3*	8656	7/2	3405.6	9/2+			
5273 *3*	84 *4*	6885	7/2,9/2,11/2	1611.8	7/2+	D(+Q)	−0.1 *+20−2*	δ: Calculated assuming J^π=7/2.
5302 *2*	6 *2*	6914	5/2−	1611.8	7/2+			
5320 *2*	35 *4*	7285	7/2−	1964.4	5/2+			
5387 *2*	12 *3*	6362	3/2	974.6	3/2+			
5426 *2*	25 *5*	7038	5/2	1611.8	7/2+			
5493 *2*	14 *3*	6468	3/2−	974.6	3/2+			
5521.1 *6*	22 *1*	5521.1	5/2−	0	5/2+			
5534	100	10996		5462	13/2+			
5573 *2*	92 *2*	7185		1611.8	7/2+			
5584 *3*	6 *2*	6169	3/2	585.0	1/2+			
5595 *1*	29 *4*	6570	1/2+,3/2	974.6	3/2+			
5673 *2*	10 *2*	7285	7/2−	1611.8	7/2+			
5738	100	11200		5462	13/2+			
5746.4 *14*	85 *15*	5746.4	7/2+,9/2+	0	5/2+			
5748 *2*	45 *15*	5748	1/2+,3/2+,5/2+	0	5/2+			
5777 *2*	10 *2*	6362	3/2	585.0	1/2+			
5802 *3*	19 *4*	6777	1/2+	974.6	3/2+			
5862 *2*	65 *8*	5862	5/2+	0	5/2+			
5864 *2*	26 *6*	6839	5/2	974.6	3/2+	Q		
5881 *3*	12 *3*	7493	11/2	1611.8	7/2+	Q		
5883 *2*	17 *4*	6468	3/2−	585.0	1/2+			
5918 *2*	26 *6*	8656	7/2	2737.0	7/2+			
5939 *2*	9 *2*	6914	5/2−	974.6	3/2+			
5947	100	11409		5462	13/2+			
5970 *9*	100	7582	1/2−	1611.8	7/2+	M1+E2	+2.7 *+50−15*	
5972 *2*	3 *2*	5972	9/2+	0	5/2+			
5979.3 *21*	8 *3*	5979.3	7/2+	0	5/2+			
5983 *2*	14 *2*	6958	5/2−	974.6	3/2+			
5985 *1*	33 *4*	6570	1/2+,3/2	585.0	1/2+			
5996 *2*	8 *3*	7961	7/2+	1964.4	5/2+			
6021 *5*	62 *8*	7633	(7/2+)	1611.8	7/2+			
6041 *2*	14 *3*	7653	9/2	1611.8	7/2+			
6063 *2*	16 *3*	7038	5/2	974.6	3/2+			
6082 *1*	10 *1*	6082	5/2+	0	5/2+	M1+E2	−0.97 *14*	δ: or δ=−4.0 +5-16.
6113 *4*	12 *4*	7088	3/2+,5/2+	974.6	3/2+			
6169 *3*	8 *2*	6169	3/2	0	5/2+			
6189 *2*	78 *7*	7801	9/2	1611.8	7/2+	D(+Q)	−0.10 *15*	
6192 *3*	40 *8*	6777	1/2+	585.0	1/2+			
6247 *2*	100	9652	11/2,7/2	3405.6	9/2+	D+Q	−0.45 *15*	
6253 *3*	18 *4*	7228	3/2+,5/2+	974.6	3/2+	D+Q	+0.36 *+6−2*	δ: Calculated assuming J^π=5/2+.
6281 *3*	100	9686	11/2+,13/2	3405.6	9/2+	M1+E2	−0.14 *7*	
6302 *2*	10 *4*	8267	(7/2+)	1964.4	5/2+			
6349 *2*	17 *4*	7961	7/2+	1611.8	7/2+	M1+(E2)	+0.5 *7*	
6362 *2*	69 *7*	6362	3/2	0	5/2+			
6464 *3*	100	8076	5/2,7/2,9/2	1611.8	7/2+	M1+E2	+0.14 *3*	δ: Calculated assuming J^π=5/2. Other value δ=−4 1.
6530 *3*	36 *6*	7505	5/2	974.6	3/2+	Q		

Continued on next page (footnotes at end of table)

^{24}Mg(d,pγ),(pol d,p) 1991He05 (continued)

$\gamma(^{25}Mg)$ (continued)

E_γ ‡	I_γ †	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ	Comments
6549 *2*	7 *3*	7524	7/2,5/2$^+$	974.6	3/2$^+$			
6655 *2*	49 *10*	8267	(7/2$^+$)	1611.8	7/2$^+$	M1+E2	+1.2 *+2−3*	δ: Other value δ=−0.14 15.
6678 *1*	13 *3*	6678	5/2	0	5/2$^+$	D(+Q)	+0.2 *+12−4*	
6691 *2*	12 *3*	8656	7/2	1964.4	5/2$^+$			
6777 *3*	7 *2*	6777	1/2$^+$	0	5/2$^+$			
6839 *2*	16 *4*	6839	5/2	0	5/2$^+$	D(+Q)	+0.1 *+26−3*	
6914 *2*	48 *7*	6914	5/2$^-$	0	5/2$^+$			
6932 *3*	80 *10*	8544	(7/2$^+$)	1611.8	7/2$^+$	M1+E2	−1.4 *+6−36*	
6958 *2*	61 *6*	6958	5/2$^-$	0	5/2$^+$			
7044 *2*	14 *3*	8656	7/2	1611.8	7/2$^+$			
7088 *4*	88 *4*	7088	3/2$^+$,5/2$^+$	0	5/2$^+$	E2		δ: Calculated assuming J^π=5/2$^+$. δ<0.05 or >3.5 for J^π=3/2.
7181 *2*	20 *4*	7181	3/2,7/2	0	5/2$^+$			
7228 *3*	82 *4*	7228	3/2$^+$,5/2$^+$	0	5/2$^+$	D+Q	−0.53 *+10−22*	δ: Calculated assuming J^π=5/2$^+$. No value calculated for J^π=3/2.
7285 *2*	55 *6*	7285	7/2$^-$	0	5/2$^+$			
7378 *6*	100	7378	5/2$^+$	0	5/2$^+$	M1(+E2)	0.00 *31*	δ: Other possible value +2.5 5.
7505 *3*	15 *4*	7505	5/2	0	5/2$^+$			
7524 *2*	34 *5*	7524	7/2,5/2$^+$	0	5/2$^+$	M1+E2	−1.5 *+6−20*	δ: Calculated assuming J^π=5/2$^+$. δ=0.07 +25-4 for J^π=7/2.
7633 *5*	38 *8*	7633	(7/2$^+$)	0	5/2$^+$	M1+E2	−0.10 *+12−25*	δ: Other value δ=−2.4 40.
7838 *2*	67 *7*	7838	7/2$^+$	0	5/2$^+$	M1(+E2)	−0.04 *8*	
7961 *2*	60 *9*	7961	7/2$^+$	0	5/2$^+$	M1+E2	−0.40 *7*	δ: Other value δ=−1.9 1.
8119 *3*	87 *5*	8119	(7/2$^+$)	0	5/2$^+$	M1(+E2)	+0.04 *+5−17*	
8267 *2*	24 *8*	8267	(7/2$^+$)	0	5/2$^+$			
8656 *2*	24 *6*	8656	7/2	0	5/2$^+$	D(+Q)	+0.04 *9*	

† From 1991He05.
‡ From level energy differences.

^{24}Mg(d,pγ),(pol d,p) 1991He05

Level Scheme

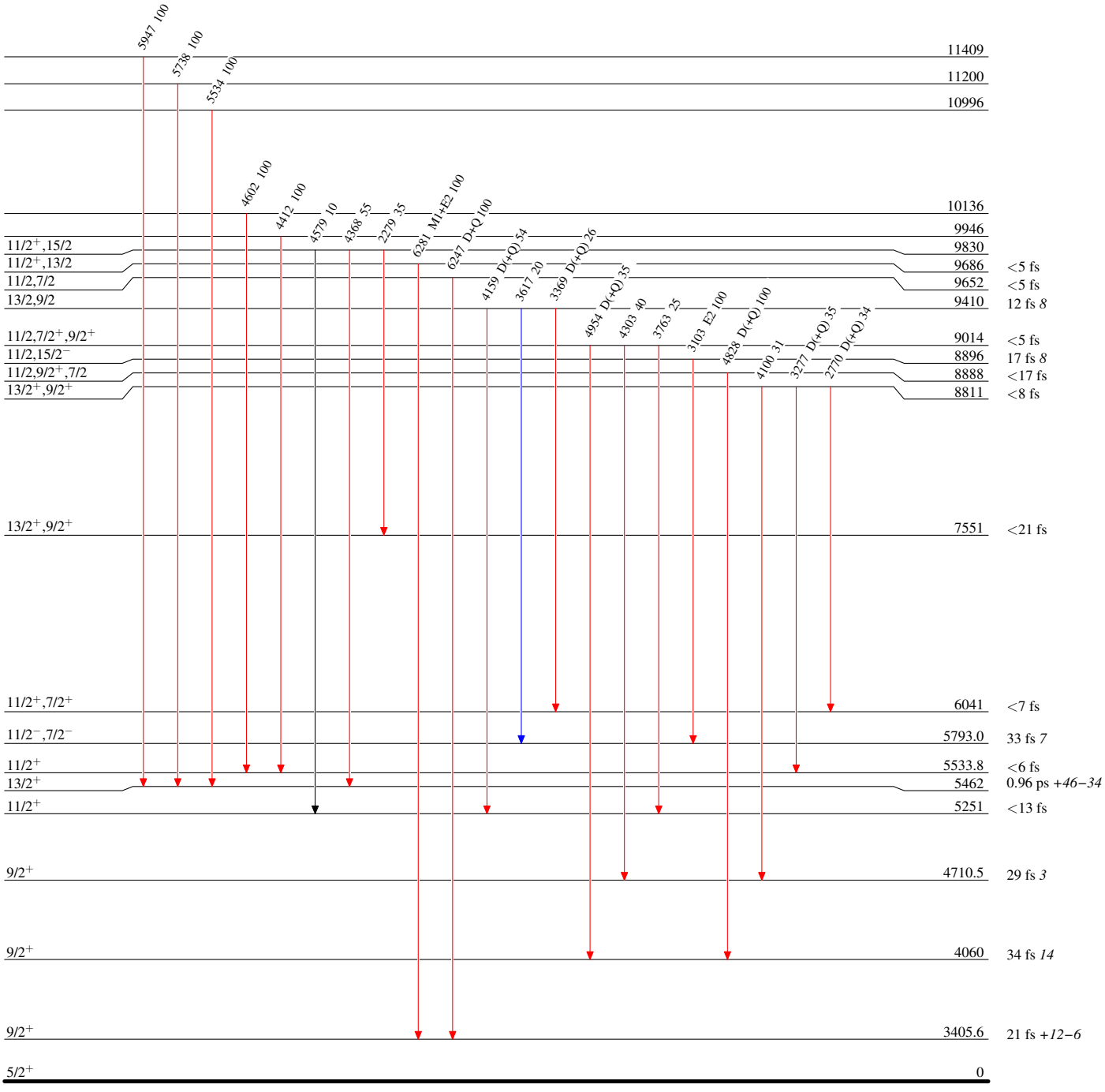
Intensities: Type not specified

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



$^{25}_{12}Mg_{13}$

^{24}Mg(d,pγ),(pol d,p) 1991He05

Level Scheme (continued)

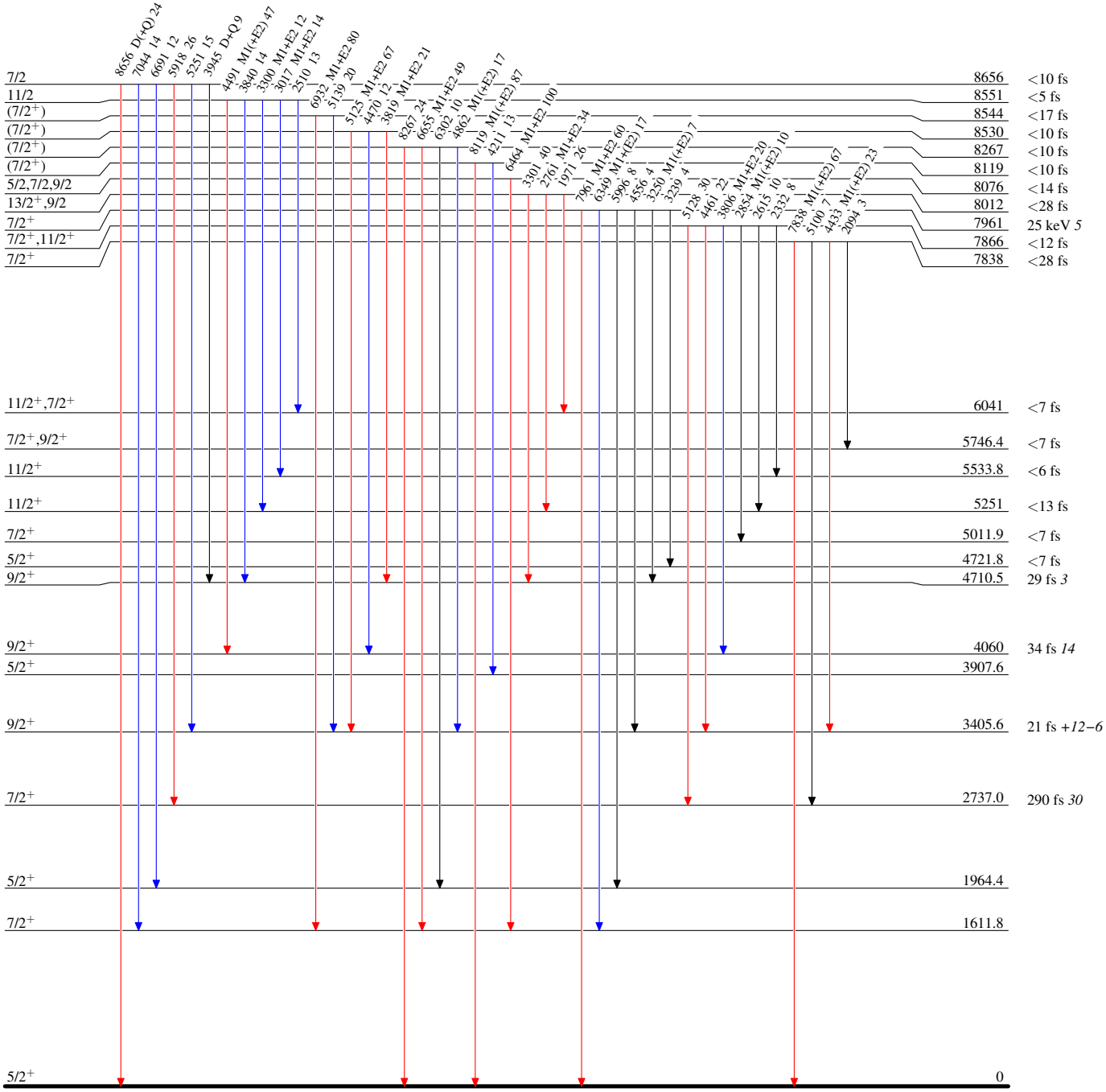
Intensities: Type not specified

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$

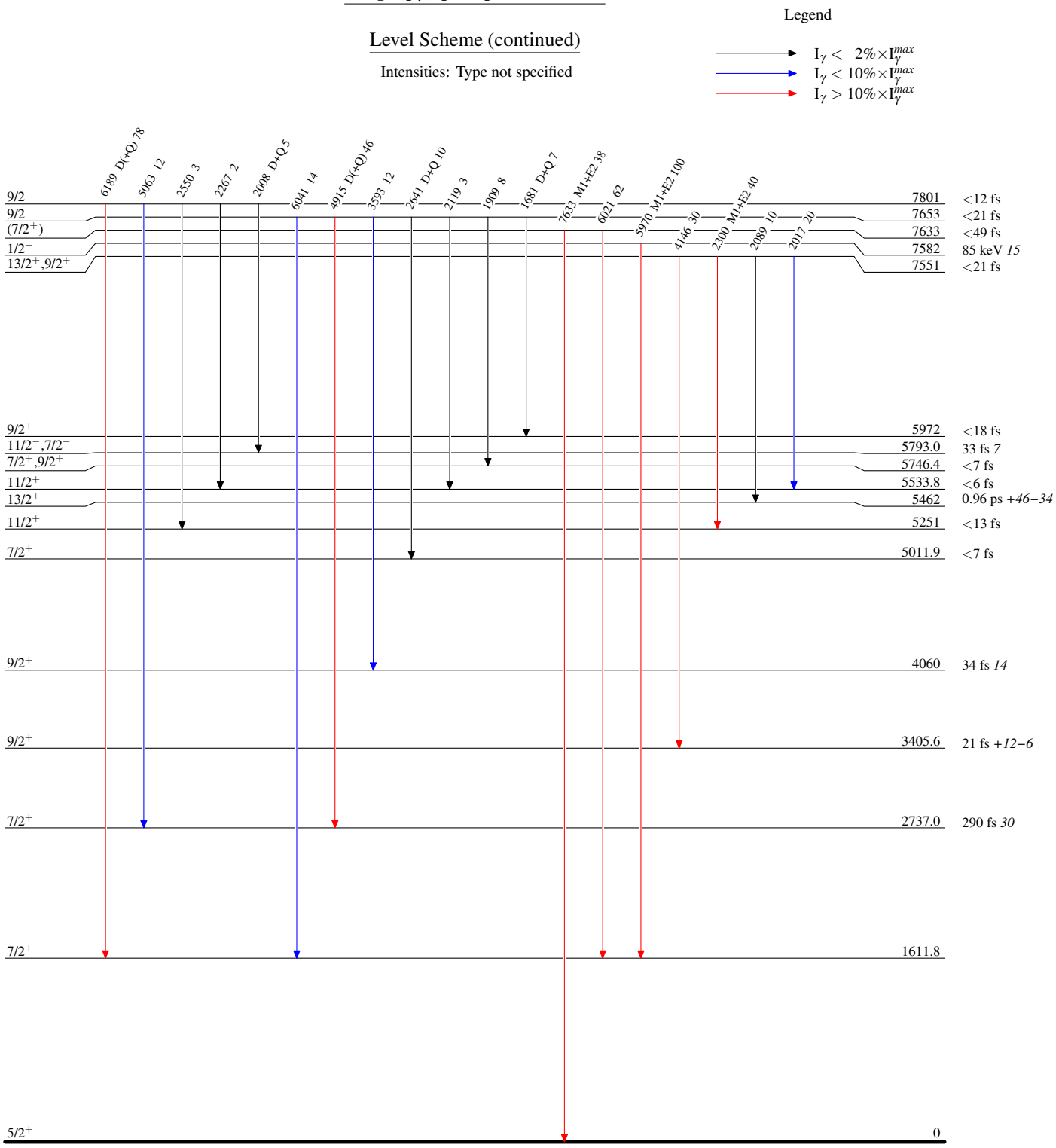


$^{25}_{12}Mg_{13}$

^{24}Mg(d,pγ),(pol d,p) 1991He05

Level Scheme (continued)

Intensities: Type not specified

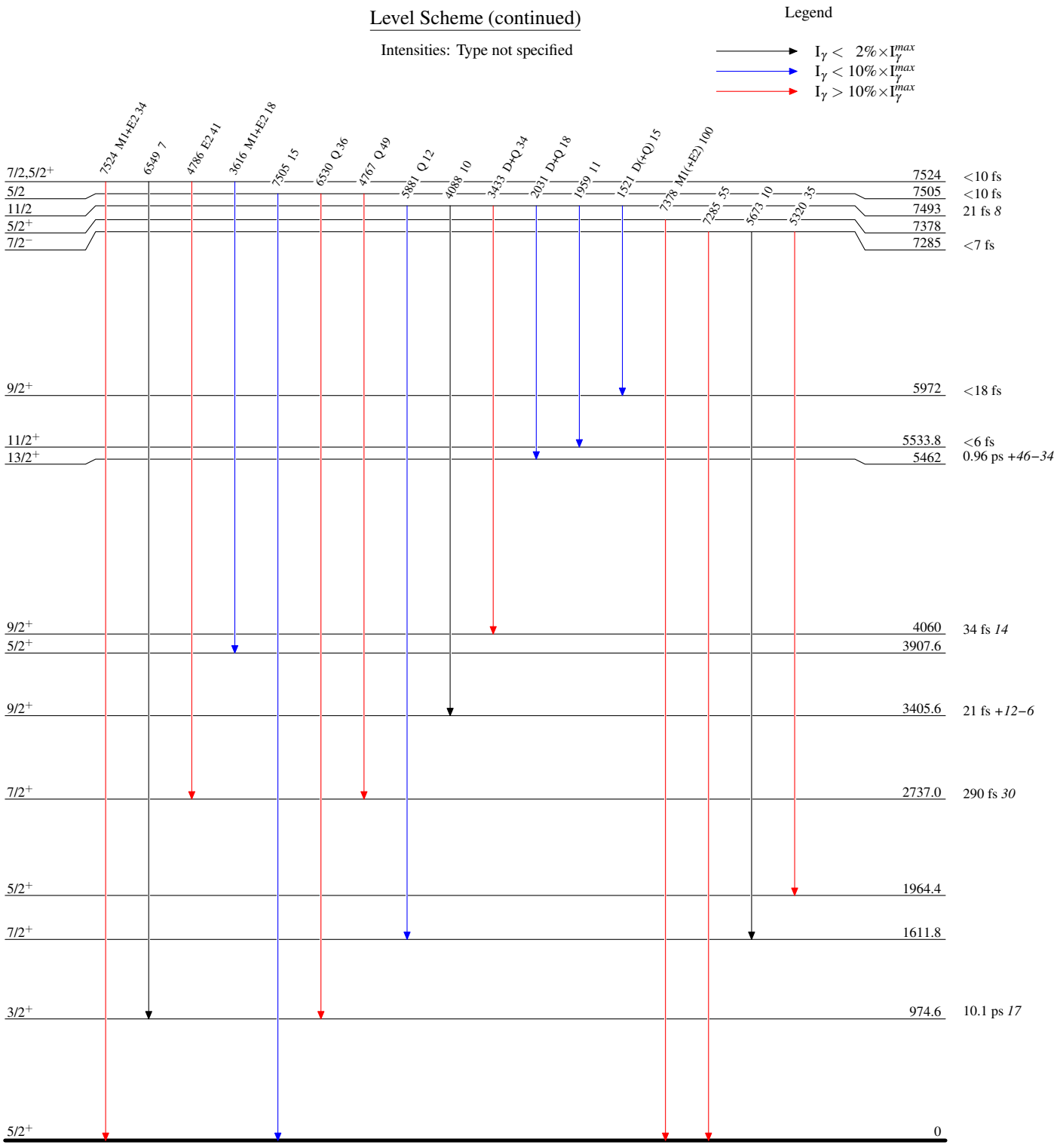


$^{25}_{12}Mg_{13}$

^{24}Mg(d,pγ),(pol d,p) 1991He05

Level Scheme (continued)

Intensities: Type not specified

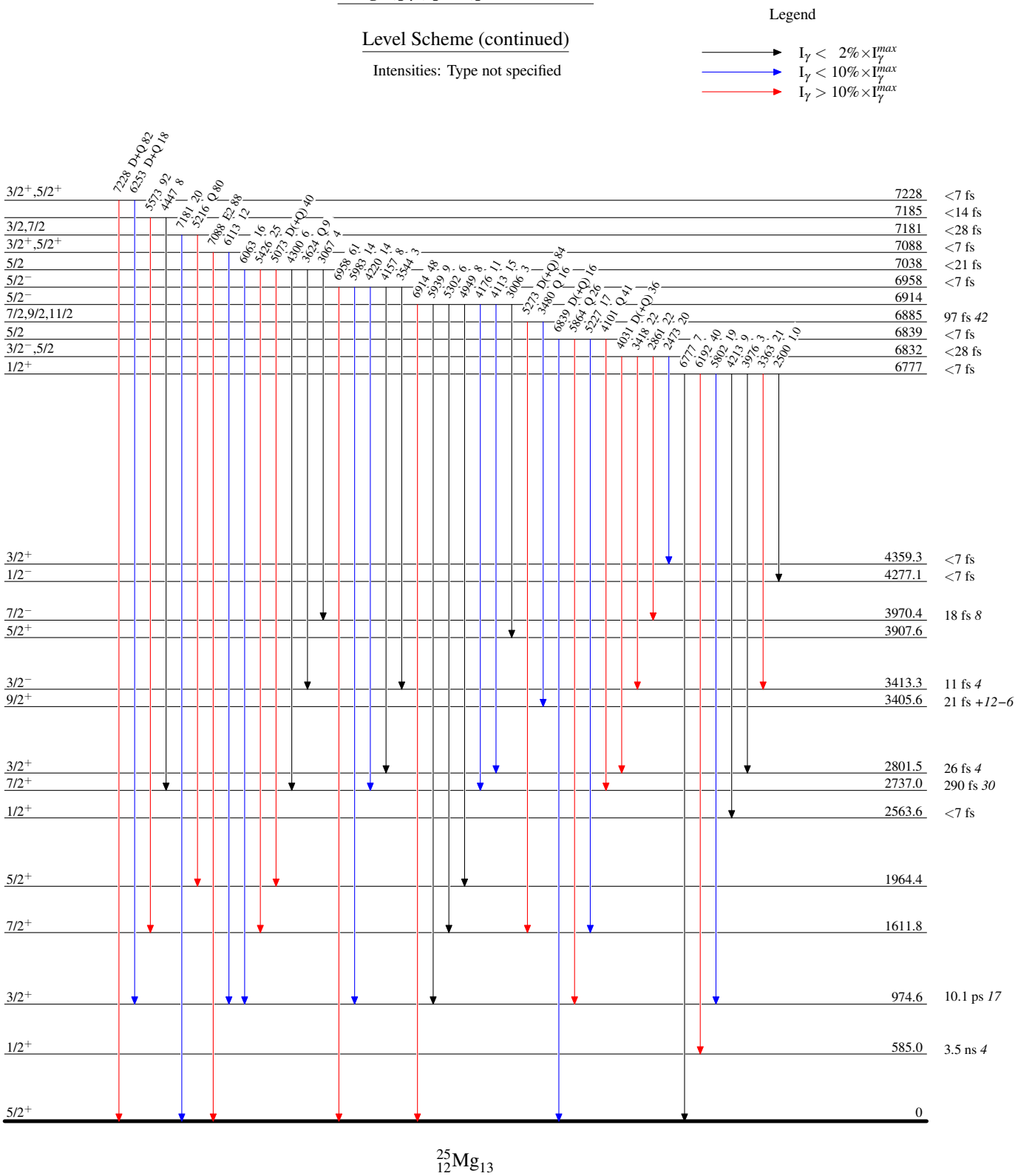


$^{25}_{12}Mg_{13}$

^{24}Mg(d,pγ),(pol d,p) 1991He05

Level Scheme (continued)

Intensities: Type not specified

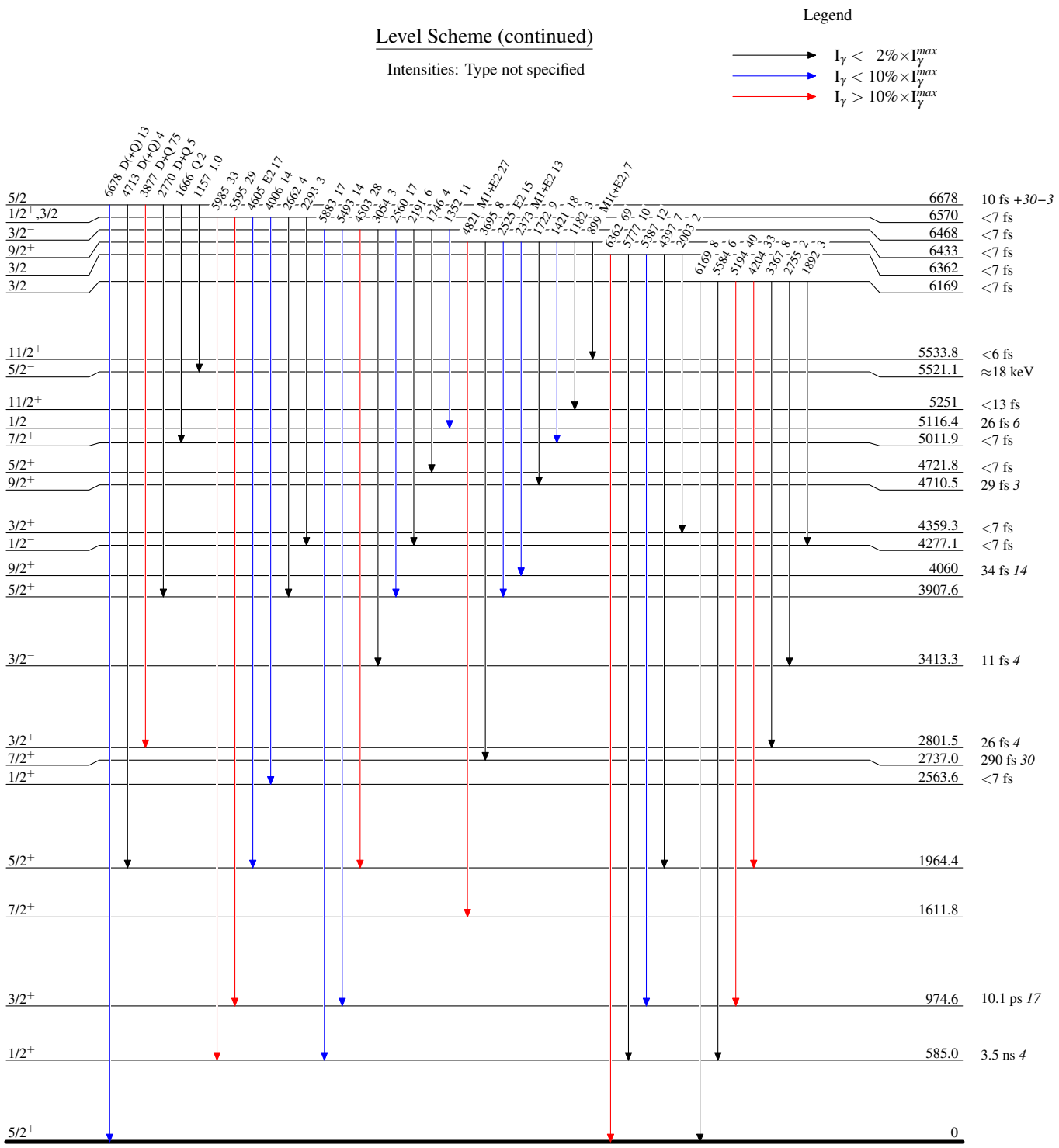


$^{25}_{12}Mg_{13}$

^{24}Mg(d,pγ),(pol d,p) 1991He05

Level Scheme (continued)

Intensities: Type not specified

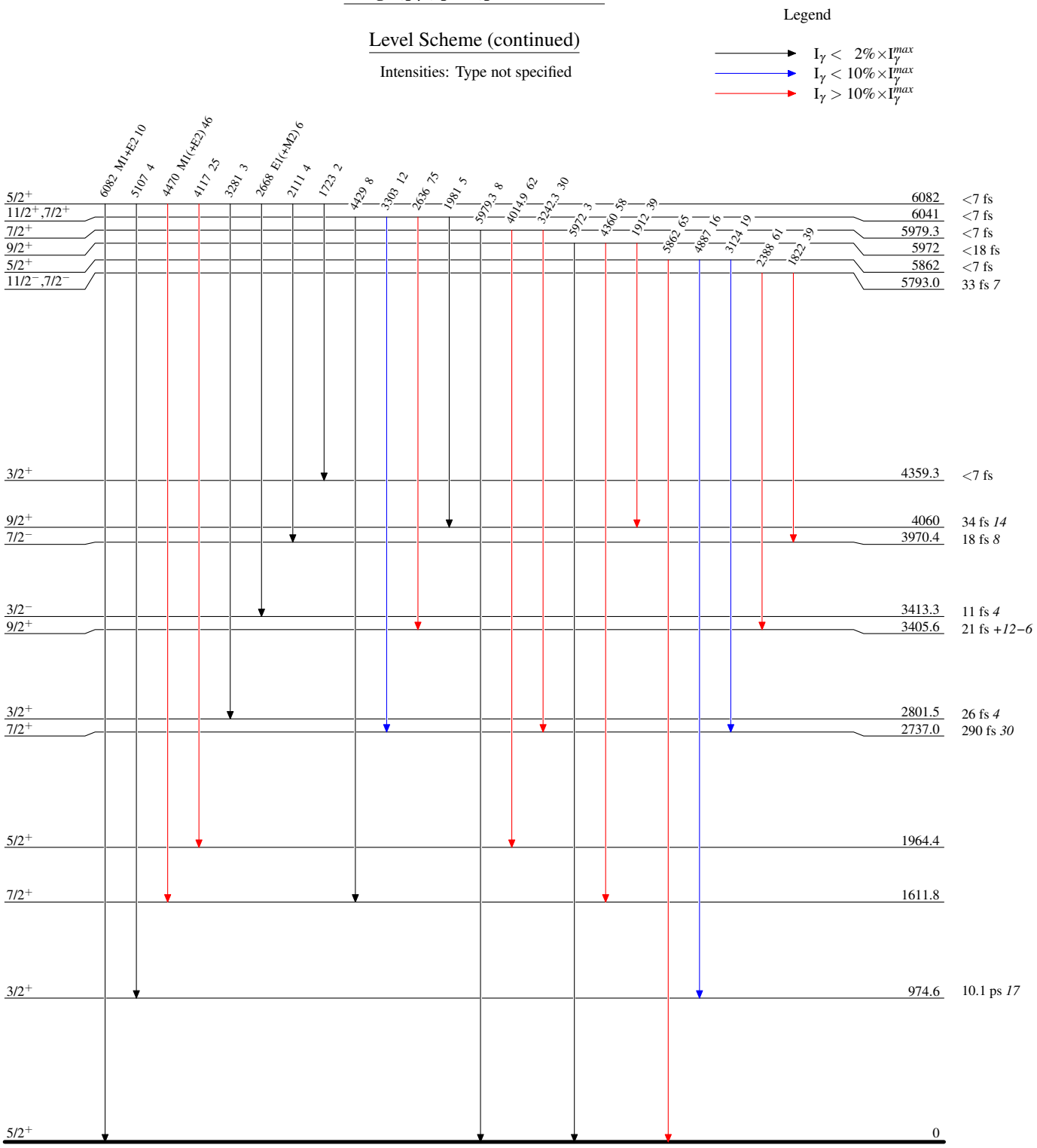


$^{25}_{12}Mg_{13}$

^{24}Mg(d,pγ),(pol d,p) 1991He05

Level Scheme (continued)

Intensities: Type not specified

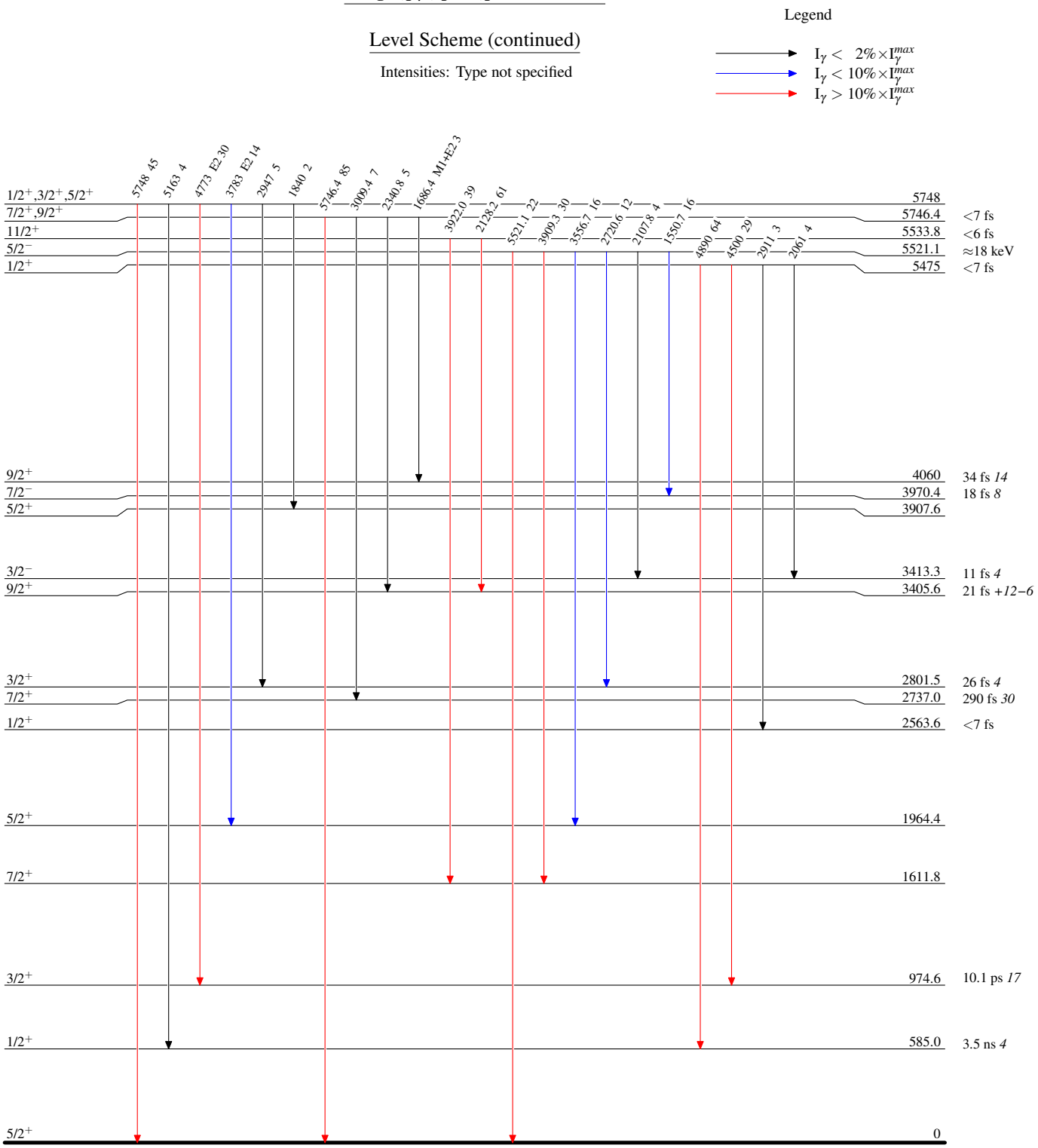


$^{25}_{12}Mg_{13}$

^{24}Mg(d,pγ),(pol d,p) 1991He05

Level Scheme (continued)

Intensities: Type not specified



$^{25}_{12}Mg_{13}$

^{24}Mg(d,pγ),(pol d,p) 1991He05

Level Scheme (continued)

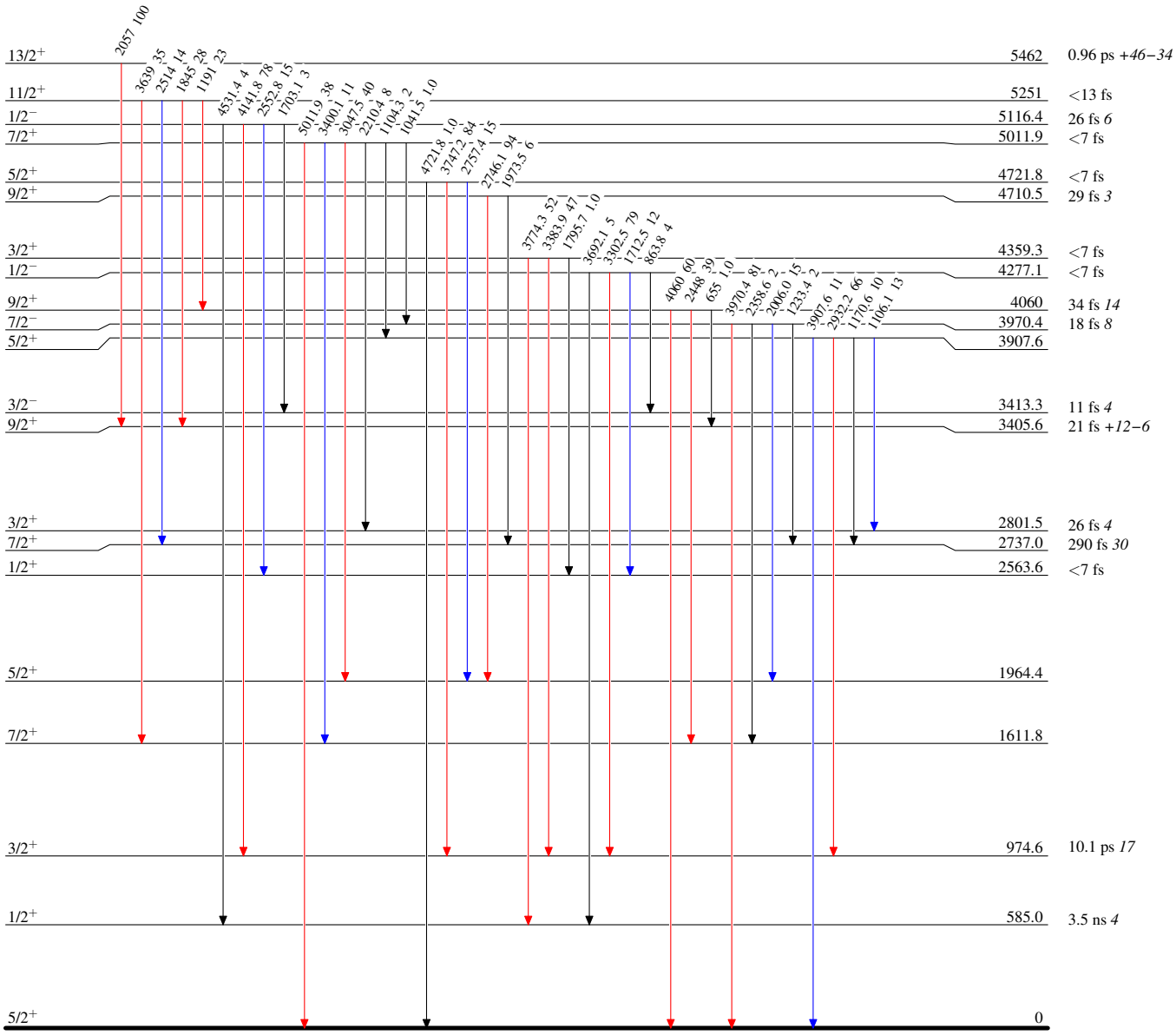
Intensities: Type not specified

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$

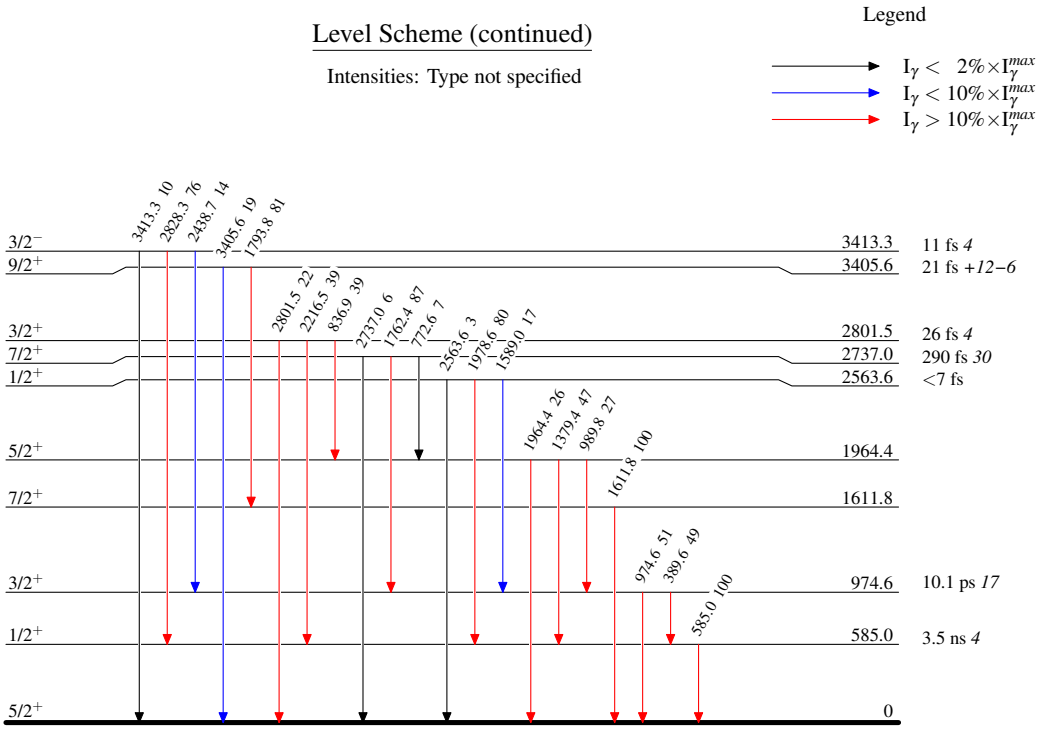


$^{25}_{12}Mg_{13}$

^{24}Mg(d,pγ),(pol d,p) 1991He05

Level Scheme (continued)

Intensities: Type not specified



$^{25}_{12}Mg_{13}$