^{165}Ho(^{32}S,4nγ) 2015He27

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 143, 1 (2017)	31-Mar-2017

2015He27: E(^{32}S)=152 MeV from JYFL K-130 cyclotron facility. Target=350 μg/cm^2 thick foil of ^{165}Ho. Measured Eγ, Iγ, γγ-coin, γγ(θ), γγ(linear pol), ce, γ(ce) coin, isomer half-life using JUROGAM II array with 24 clover and 15 Eurogam Phase-1 or GASP Compton-suppressed HPGe detectors. RITU separator was used to select the nuclei of interest, which were passed through multiwire proportional counters and implanted in GREAT focal plane spectrometer for the identification of fusion products of interest. Double-sided silicon strip detectors (DSSD) were used for the implantation of recoils and for the detection of subsequent α decays. The data were analyzed by recoil-gating, recoil-α tagging and isomer-tagging techniques. Deduced high-spin levels, J, π, multipolarity, bands, SD band, B(M1)/B(E2), and configurations.

2004Ni06,2003NiZZ,2001Ni04 references published by the same research group of 2015He27. The latest publication contains extended data with better statistics. Most of the earlier data are consistent with the data in 2015He27. Evaluator considers 2015He27 data as a superceeding set over earlier data sets.

^{193}Bi Levels

E(level)[†]	Jπ[‡]	T$_{1/2}$	Comments
0.0	9/2−	63.6 s *30*	T$_{1/2}$: From Adopted Levels.
278.44[@] *18*	7/2−		
305[c] *6*	1/2+	3.07 s *13*	%α=84 *16*; %ε+%β$^+$=16 *16* Additional information 1. E(level): Level energy from 2017Au03: NUBASE-2016. 2015He27 list as 307 keV. %α: From Adopted Levels. T$_{1/2}$: Measured by 2015He27 from distribution of time difference between recoil implantations and detection of α particle from the decay of 1/2$^+$ isomer.
464.66[@] *18*	9/2−		
505.1[c] *3*	3/2+		
605.53[#] *18*	13/2+	153 ns *10*	T$_{1/2}$: From 604.7γ(t) (2004Ni06).
619.60[@] *15*	11/2−		
641.8 *5*	7/2−		
662.08[a] *20*	9/2−		
734.2[c] *3*	5/2+		
817.73[@] *17*	13/2−		
915.30[a] *17*	11/2−		
928.93[#] *21*	15/2+		
964.6 *5*			
1013.3[c] *4*	(7/2+)		
1066.35 *17*	13/2−		
1117.06 *22*	13/2+		
1169.67[@] *18*	15/2−		
1203.5[c] *4*	(9/2+)		
1228.13[#] *21*	17/2+		
1249.06[a] *21*	13/2−		
1257.88 *21*	(11/2−)		
1321.0 *8*			
1414.64[@] *22*	17/2−		
1514.34 *21*	17/2+		
1517.4[c] *6*	(11/2+)		
1520.95 *21*	13/2−		
1535.73 *21*	15/2+		

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^{165}Ho(^{32}S,4nγ) 2015He27 (continued)

^{193}Bi Levels (continued)

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$	Comments
1555.30[#] *25*	19/2$^+$		
1562.41[a] *21*	15/2$^-$		
1609.9 *4*	(15/2$^-$)		J$^\pi$: from Figure 2 of 2015He27, listed as (13/2$^-$) in Table I.
1636.5[c] *5*	(13/2$^+$)		
1651.5 *4*	(15/2$^-$)		
1673.49 *19*	17/2$^+$		
1736.96 *24*	17/2$^-$		
1762.3 *4*	(15/2$^-$)		
1794.03[@] *25*	19/2$^-$		
1858.5 *4*	(17/2$^+$)		
1859.1 *4*	15/2$^-$		
1875.1[#] *3*	21/2$^+$		
1910.06[a] *23*	17/2$^-$		
1950.09 *24*	19/2$^+$		
1979.8 *5*			
2045.8 *4*	(19/2$^-$)		
2048.6 *5*	(21/2$^+$)		
2048.7[@] *3*	21/2$^-$		
2057.6 *3*	21/2$^+$		
2090.41 *18*	17/2$^-$		
2109.65 *25*	19/2$^+$		
2128.8 *4*	21/2$^+$		
2139.6[c] *6*	(17/2$^+$)		
2193.75[&] *21*	19/2$^-$		
2220.6[#] *3*	23/2$^+$		
2240.3[a] *6*	19/2$^-$		
2253.6 *4*			J$^\pi$: Assigned as (19/2$^-$) in 2015He27. First author later stated that level should have no J^π assignment due to lack of information on the depopulating transition (private communication by e-mail between first author and X̂UNDL compiler).
2265.8 *5*	25/2$^+$		
2278.6 *5*	25/2$^+$		
2321.7 *4*	(21/2$^+$)		
2336.9[&] *3*	21/2$^-$		
2349.6 *6*	29/2$^+$	85 μs *3*	T$_{1/2}$: measured by 2015He27 from (recoil)(455.4γ)(t). Proposed configuration=$\pi i_{13/2}$ coupled to oblate 8$^+$ state in ^{192}Pb with configuration=$\pi h^2_{9/2}$.
2356.3 *4*	25/2$^-$		
2405.1[b] *7*	(29/2$^-$)	3.02 μs *8*	T$_{1/2}$: Measured by 2015He27 from (recoil)(307.4γ)(t).
2428.3 *4*	23/2$^-$		
2432.9 *3*	23/2$^+$		
2448.1 *5*			
2462.9[@] *3*	23/2$^-$		
2483.9[&] *3*	23/2$^-$		
2509.8 *6*	23/2$^+$		
2525.4 *4*	23/2$^-$		
2535.8[#] *4*	25/2$^+$		
2547.3 *5*	(21/2$^-$)		
2578.0 *4*	23/2$^-$		
2587.2[@] *4*	25/2$^-$		
2591.5 *4*	25/2$^+$		
2669.4[&] *4*	25/2$^-$		
2708.9 *4*	(25/2$^+$)		

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^{165}Ho(^{32}S,4nγ) 2015He27 (continued)

^{193}Bi Levels (continued)

E(level)[†]	J^{π}[‡]	Comments
2710.3 *5*		
2718.0 *6*	$27/2^+$	
2721.7[@] *4*	$27/2^-$	
2723.4 *4*	$25/2^-$	
2756.0[#] *4*	$27/2^+$	
2762.8 *4*	$25/2^+$	
2774.8 *5*		
2804.1[b] *8*	$(31/2^-)$	
2832.3 *5*	$29/2^-$	
2873.2[#] *5*	$29/2^+$	
2893.0 *4*	$(25/2^+)$	
2921.9[&] *5*	$27/2^-$	
2928.0[@] *5*	$(29/2^-)$	
2956.7 *5*	$25/2^{(+)}$	
2958.7 *6*	$31/2^+$	
2963.5[#] *6*	$31/2^+$	
2986.9 *6*	$29/2^+$	
2996.1 *7*	$29/2^+$	
3103.6 *9*		
3117.1[#] *6*	$33/2^+$	
3118.4 *7*	$(23/2^-)$	
3159.2[b] *8*	$(33/2^-)$	
3200.4[&] *5*	$29/2^-$	
3220.5 *8*		
3282.9 *8*	$(33/2^-)$	
3304.2 *6*	$33/2^+$	
3321.0[#] *7*	$35/2^+$	
3349.2 *8*	$33/2^+$	
3448.6[b] *8*	$(35/2^-)$	
3496.3[&] *5*	$31/2^-$	
3560.9[#] *7*	$37/2^+$	
3563.1 *8*	$(31/2^+)$	
3622.7 *7*		
3638.6 *11*		
3669.3 *9*	$(37/2^-)$	
3709.9[b] *8*	$(37/2^-)$	
3749.1 *9*		
3796.0[&] *5*	$33/2^-$	
3816.5 *7*	$35/2^-$	
3837.4[#] *7*	$39/2^+$	
3886.2 *7*	$35/2^+$	
3910.7 *8*		
3969.1 *9*	$37/2^+$	
3976.7 *9*		
4008.8[&] *6*	$35/2^-$	See comment for 4059 level about band assignment.
4028.7[b] *9*	$(39/2^-)$	
4029.7 *11*		
4059.1 *6*	$(35/2^-)$	This level or the 4009 level is $35/2^-$ member of band #3 shown in Figure 2 of 2015He27.
4137.3[#] *8*	$41/2^+$	
4213.2 *6*	$(37/2^-)$	This level or the 4241 level is $37/2^-$ member of band #3 shown in Figure 2 of 2015He27.
4240.7[&] *8*	$(37/2^-)$	See comment for 4213 level about band assignment.

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^{165}Ho(^{32}S,4nγ) 2015He27 (continued)

^{193}Bi Levels (continued)

E(level)[†]	J^{π}[‡]	Comments
4272.2 *7*	(37/2$^+$)	
4284.0 *9*		
4292.3 *8*		
4345.1 *8*	37/2$^-$	
4467.7[#] *8*	43/2$^+$	
4544.1 *9*		
4574.5 *9*		
4586.7 *9*		
4824.4[#] *9*	45/2$^+$	
4898.1 *10*		
4961.2 *12*		
5679.6 *14*		
x[d]	(11/2$^+$)	Additional information 2.
126.6+x[d] *4*	(15/2$^+$)	
294.9+x[d] *5*	(19/2$^+$)	
504.4+x[d] *6*	(23/2$^+$)	
755.3+x[d] *7*	(27/2$^+$)	
1047.0+x[d] *8*	(31/2$^+$)	
1378.7+x[d] *8*	(35/2$^+$)	
1750.9+x[d] *9*	(39/2$^+$)	
2162.7+x[d] *9*	(43/2$^+$)	
2613.1+x[d] *10*	(47/2$^+$)	
3102.3+x[d] *11*	(51/2$^+$)	
3630.1+x[d] *11*	(55/2$^+$)	
4196.1+x?[d] *12*	(59/2$^+$)	
4800.6+x?[d] *12*	(63/2$^+$)	

[†] From least-squares fit to γ-ray energies with 305 keV level holding fixed.

[‡] From 2015He27, based on γ-ray angular distribution distribution, linear polarization asymmetry factor, and band assignments.

[#] Band(A): π13/2[606],$i_{13/2}$ orbital. A sharp band crossing is observed at $\hbar\omega\approx$0.2 MeV, J^{π}=25/2$^+$, interpreted as due to two $i_{13/2}$ neutrons.

[@] Band(B): π7/2[514],($h_{9/2}/f_{7/2}$).

[&] Band(C): 3-qp band based on 19/2$^-$. Possible configuration=$\pi i_{13/2}\otimes\nu(i^{-1}_{13/2}p^{-1}_{3/2})$ mixed with $\pi i_{13/2}\otimes\nu(i^{-1}_{13/2}f^{-1}_{5/2})$.

[a] Band(D): π9/2[505].

[b] Band(E): 3-qp band based on (29/2$^-$). Proposed configuration=$\pi h_{9/2}\otimes\nu i^{-2}_{13/2\ \ 12+}$.

[c] Band(F): Band based on 1/2$^+$. This band is built on 1/2$^+$ proton-intruder state of 2p-1h configuration.

[d] Band(G): SD band built on π1/2[651],$i_{11/2}$. Band was found by tagging on α decays of the 1/2$^+$ intruder state at 308 keV. Population intensity is $\approx$3.9%. The connection of the SD band to the 1/2$^+$ isomer at 308 keV was searched for by 2015He27. An 1836-keV transition, observed in coincidence with SD band transitions is a possible candidate, but confirmatory evidence is lacking due to poor statistics. The two lowest transitions in the SD band, expected to be at 87 and 46 keV were not observed, possibly due to interference from x rays for the former and high conversion coefficient for the latter transition.

^{165}Ho(^{32}S,4nγ) 2015He27 (continued)

γ(^{193}Bi)

E_γ[†]	I_γ[†]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[@]	Comments
(19.1)	0.044 *3*	2128.8	21/2+	2109.65	19/2+		E_γ: 19.1 keV *5* from level-energy difference in 2015He27.
48.8 *6*		2405.1	(29/2−)	2356.3	25/2−	[E2]	Mult.: α_{tot}=185 *20* from intensity-balance I2015He27). Theory: α(E2)=196 *13*.
84.0 *6*		2349.6	29/2+	2265.8	25/2+	E2	
90.0 *6*	2.2 *2*	2963.5	31/2+	2873.2	29/2+		
x97.5	0.9 *1*						Uncertain γ seen in prompt coincidence with 143.0-, 146.8-, 185.5-, 252.5-, and 278.6-keV transitions.
103.4 *3*	0.97 *5*	2193.75	19/2−	2090.41	17/2−	D	DCO=0.41 *3*
117.1 *3*	1.59 *6*	2873.2	29/2+	2756.0	27/2+	D	DCO=0.69 *4*
124.6 *3*	0.79 *4*	2587.2	25/2−	2462.9	23/2−		
126.6 *4*	0.7[#] *2*	126.6+x	(15/2+)	x	(11/2+)		I_γ: from α-tagged γ spectrum. Intensity from recoil-gated $\gamma\gamma\gamma$ spectrum could not be obtained.
134.7 *3*	1.29 *5*	2721.7	27/2−	2587.2	25/2−	D	DCO=0.62 *9*
137.1 *3*	0.86 *5*	2265.8	25/2+	2128.8	21/2+	E2	DCO=1.38 *12* expα(L+M+...)=1.35 *20* for 137.1+137.6 doublet from isomer-gated ce spectrum.
137.6 *3*	1.00 *5*	1673.49	17/2+	1535.73	15/2+	M1	DCO=0.77 *8* expα(L+M+...)=1.35 *20* for 137.1+137.6 doublet from isomer-gated ce spectrum.
143.0 *3*	3.4 *2*	2336.9	21/2−	2193.75	19/2−	M1	DCO=0.95 *5*
x146.0[‡] *6*	0.41 *4*						
146.8 *3*	3.1 *1*	2483.9	23/2−	2336.9	21/2−	D	DCO=0.83 *4*
149.8 *3*	1.11 *6*	2278.6	25/2+	2128.8	21/2+	E2	DCO=1.32 *17*
153.6 *3*	2.9 *1*	3117.1	33/2+	2963.5	31/2+	D	DCO=0.78 *4*
155.2 *3*	0.70 *5*	619.60	11/2−	464.66	9/2−		
158.5 *4*	0.25 *4*	3117.1	33/2+	2958.7	31/2+		
159.3 *3*	0.56 *4*	1673.49	17/2+	1514.34	17/2+	D	DCO=1.08 *15*
164.5 *3*	0.53 *3*	2756.0	27/2+	2591.5	25/2+		
168.3 *3*	0.8[#] *6*	294.9+x	(19/2+)	126.6+x	(15/2+)		I_γ: 1.5 *3* in α-tagged spectrum.
185.5 *3*	3.6 *2*	2669.4	25/2−	2483.9	23/2−	D	DCO=0.71 *6*
186.3 *3*	2.4 *1*	464.66	9/2−	278.44	7/2−	D	DCO=0.52 *14*
188.3 *3*	1.01 *8*	1117.06	13/2+	928.93	15/2+		
190.1 *3*	0.43 *3*	1203.5	(9/2+)	1013.3	(7/2+)		
198.2 *3*	2.9 *2*	817.73	13/2−	619.60	11/2−	D	DCO=0.73 *7*
200.2 *3*	5.0 *2*	505.1	3/2+	305	1/2+	D	DCO=0.78 *7*
203.9 *3*	4.0 *2*	3321.0	35/2+	3117.1	33/2+	M1	DCO=0.63 *3* POL=−0.13 *1*.
204.4 *3*	1.05 *5*	4213.2	(37/2−)	4008.8	35/2−	D	DCO=0.67 *4*
206.3 *3*	1.26 *6*	2928.0	(29/2−)	2721.7	27/2−		
209.5 *3*	1.2[#] *3*	504.4+x	(23/2+)	294.9+x	(19/2+)		I_γ: 2.0 *2* in α-tagged spectrum.
212.3 *4*	0.38 *4*	2432.9	23/2+	2220.6	23/2+		
212.7 *3*	0.51 *4*	4008.8	35/2−	3796.0	33/2−	D	DCO=0.76 *5*
220.4 *3*	4.7 *2*	2756.0	27/2+	2535.8	25/2+	M1	DCO=0.73 *2* POL=−0.073 *4*.
229.3 *3*	1.62 *8*	734.2	5/2+	505.1	3/2+	M1	DCO=0.94 *11* POL=−0.05 *3*.
229.4 *4*	0.14 *3*	4574.5		4345.1	37/2−		
231.9 *5*	0.12 *3*	4240.7	(37/2−)	4008.8	35/2−		
232.1 *4*	0.14 *3*	2090.41	17/2−	1859.1	15/2−		
239.8 *3*	3.0 *1*	3560.9	37/2+	3321.0	35/2+	M1	DCO=0.60 *3* POL=−0.016 *13*.
242.9 *4*	0.55 *4*	2193.75	19/2−	1950.09	19/2+		
245.2 *3*	4.2 *2*	1414.64	17/2−	1169.67	15/2−	M1	DCO=0.67 *5* POL=−0.12 *2*.

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^{165}Ho(^{32}S,4nγ) 2015He27 (continued)

γ(^{193}Bi) (continued)

E_γ[†]	I_γ[†]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[@]	Comments
250.9 3	2.0[#] 4	755.3+x	(27/2$^+$)	504.4+x	(23/2$^+$)		I_γ: 1.9 4 in α-tagged spectrum.
252.5 3	4.3 2	2921.9	27/2$^-$	2669.4	25/2$^-$	M1	DCO=0.61 6 POL=−0.008 1.
253.1 3	0.88 6	915.30	11/2$^-$	662.08	9/2$^-$	M1	POL=−0.14 2.
255.1 3	1.83 8	2048.7	21/2$^-$	1794.03	19/2$^-$	D	DCO=0.66 10
261.3 3	0.76 5	3709.9	(37/2$^-$)	3448.6	(35/2$^-$)	D	DCO=0.81 14
263.1 3	0.62 4	4059.1	(35/2$^-$)	3796.0	33/2$^-$	D	DCO=0.67 5
268.9 3	0.53 3	2986.9	29/2$^+$	2718.0	27/2$^+$	M1	DCO=0.38 6 POL=−0.048 6.
271.9 6	0.09 3	4544.1		4272.2	(37/2$^+$)		
276.0 3	0.87 6	2708.9	(25/2$^+$)	2432.9	23/2$^+$		
276.5 3	2.29 9	3837.4	39/2$^+$	3560.9	37/2$^+$	M1	DCO=0.76 3 POL=−0.06 1.
278.1 4	0.50 5	2996.1	29/2$^+$	2718.0	27/2$^+$	M1	DCO=0.51 6 POL=−0.23 3.
278.5 3	10.3 4	278.44	7/2$^-$	0.0	9/2$^-$	D	DCO=0.9 1
278.6 4	4.1 2	3200.4	29/2$^-$	2921.9	27/2$^-$	M1	DCO=0.92 8 POL=−0.053 4.
278.9 8	0.18 7	1013.3	(7/2$^+$)	734.2	5/2$^+$		
284.0 3	0.59 5	2193.75	19/2$^-$	1910.06	17/2$^-$		
^{x}289.0 6	0.9 3						Seen in prompt coincidence with transitions in band #1 in Figure 2 of 2015He27.
289.5 3	1.65 8	3448.6	(35/2$^-$)	3159.2	(33/2$^-$)	M1	DCO=0.93 9 POL=−0.033 5.
291.7 3	1.8[#] 3	1047.0+x	(31/2$^+$)	755.3+x	(27/2$^+$)		I_γ: 1.8 4 in α-tagged spectrum.
294.4 3	0.59 4	4586.7		4292.3			
295.1 6	0.19 5	2723.4	25/2$^-$	2428.3	23/2$^-$		
295.7 3	2.4 1	3496.3	31/2$^-$	3200.4	29/2$^-$	M1	DCO=0.57 5 POL=−0.096 6.
298.8 4	3.2 2	3796.0	33/2$^-$	3496.3	31/2$^-$	M1	DCO=0.60 5 POL=−0.093 6.
299.2 3	25.8 8	1228.13	17/2$^+$	928.93	15/2$^+$	M1	DCO=0.68 2 POL=−0.032 1.
299.4 5	0.4 1	1117.06	13/2$^+$	817.73	13/2$^-$		
299.8 3	1.70 9	4137.3	41/2$^+$	3837.4	39/2$^+$	D	DCO=0.6 1
307.4 3	2.7 1	2356.3	25/2$^-$	2048.7	21/2$^-$	E2	DCO=1.28 13 Mult.: From EKC/(ELC+EMC+..)=1.37 12 from γ(ce) coin data. Theory: For E2 $\alpha_K/(\alpha_L+\alpha_M+..)$=1.26. POL=−0.002 1. Note: negative POL is inconsistent with E2.
313.3 3	1.15 7	1562.41	15/2$^-$	1249.06	13/2$^-$	M1	DCO=0.61 8 POL=−0.049 9.
315.2 3	6.3 2	2535.8	25/2$^+$	2220.6	23/2$^+$	D	DCO=0.79 4
318.8 3	0.63 5	4028.7	(39/2$^-$)	3709.9	(37/2$^-$)		
319.8 3	12.5 4	1875.1	21/2$^+$	1555.30	19/2$^+$	M1	DCO=0.60 2 POL=−0.039 2.
323.4 3	100.0 57	928.93	15/2$^+$	605.53	13/2$^+$	M1	DCO=0.74 4 POL=−0.012 1.
323.6 4	0.55 6	4898.1		4574.5			
327.4 3	19.6 6	1555.30	19/2$^+$	1228.13	17/2$^+$	M1	DCO=0.68 2 POL=−0.004 1.
328.2 4	0.45 7	2090.41	17/2$^-$	1762.3	(15/2$^-$)		
330.3 4	0.41 4	4467.7	43/2$^+$	4137.3	41/2$^+$	D	DCO=0.82 16
331.7 3	2.3[#] 3	1378.7+x	(35/2$^+$)	1047.0+x	(31/2$^+$)		I_γ: 1.6 4 in α-tagged spectrum.

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^{165}Ho(^{32}S,4nγ) 2015He27 (continued)

γ(^{193}Bi) (continued)

E_γ[†]	I_γ[†]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[@]	Comments
333.7 *3*	2.2 *1*	1249.06	13/2⁻	915.30	11/2⁻	D	DCO=0.66 *10*
334.7[a] *4*	0.28 *4*	2921.9	27/2⁻	2587.2	25/2⁻		
341.1 *4*	0.54 *7*	619.60	11/2⁻	278.44	7/2⁻		
345.4 *3*	1.1 *1*	3304.2	33/2⁺	2958.7	31/2⁺	D	DCO=0.66 *9*
345.7 *3*	8.6 *3*	2220.6	23/2⁺	1875.1	21/2⁺	M1	DCO=0.68 *2* POL=−0.059 *6*.
347.6 *4*	0.45 *6*	1910.06	17/2⁻	1562.41	15/2⁻		
351.1 *3*	0.22 *6*	1520.95	13/2⁻	1169.67	15/2⁻	D	DCO=0.99 *9*
352.1 *3*	15.4 *5*	1169.67	15/2⁻	817.73	13/2⁻	M1	DCO=0.72 *6* POL=−0.036 *4*.
352.3 *3*	1.33 *10*	1609.9	(15/2⁻)	1257.88	(11/2⁻)		DCO=0.73 *16* POL=−0.023 *7*. Mult.: M1 listed in Table I of 2015He27 is consistent with DCO and POL, but inconsistent with (15/2⁻) to (11/2⁻) placement in Figure 2, which implies (E2). First author later opined no multipolarity assignment for this transition (private communication by e-mail between first author and X̂UNDL compiler).
352.4 *4*	0.53 *6*	2090.41	17/2⁻	1736.96	17/2⁻		
353.1 *4*	0.77 *6*	817.73	13/2⁻	464.66	9/2⁻		
355.3 *3*	3.2 *1*	3159.2	(33/2⁻)	2804.1	(31/2⁻)	M1	DCO=0.80 *7* POL=−0.06 *2*.
356.4 *6*	0.11 *3*	1321.0		964.6			
356.7 *4*	0.25 *3*	4824.4	45/2⁺	4467.7	43/2⁺	D	DCO=0.7 *2*
357.0 *4*	0.56 *5*	2893.0	(25/2⁺)	2535.8	25/2⁺	(M1)	DCO=0.82 *7* POL=−0.178 *14*.
363.4 *4*	0.95 *9*	641.8	7/2⁻	278.44	7/2⁻	D	DCO=1.16 *11*
365.1 *4*	0.42 *4*	2721.7	27/2⁻	2356.3	25/2⁻	D	DCO=0.86 *16*
371.0 *3*	0.81 *5*	2591.5	25/2⁺	2220.6	23/2⁺		
371.7 *4*	0.67 *7*	2321.7	(21/2⁺)	1950.09	19/2⁺	M1	DCO=0.61 *9*
372.2 *3*	1.7[#] *2*	1750.9+x	(39/2⁺)	1378.7+x	(35/2⁺)		I_γ: 1.1 *3* in α-tagged spectrum.
375.4 *3*	1.89 *9*	2432.9	23/2⁺	2057.6	21/2⁺	D	DCO=0.84 *12*
379.4 *3*	8.4 *3*	1794.03	19/2⁻	1414.64	17/2⁻	M1	DCO=0.64 *4* POL=−0.050 *1*.
381.0 *4*	1.3 *1*	2509.8	23/2⁺	2128.8	21/2⁺	M1	DCO=0.98 *12* POL=−0.27 *4*.
383.8 *3*	4.3 *2*	662.08	9/2⁻	278.44	7/2⁻	D	DCO=0.91 *5*
386.4 *4*	0.20 *3*	3669.3	(37/2⁻)	3282.9	(33/2⁻)	Q	DCO=1.32 *24*
386.5 *5*	0.18 *4*	4272.2	(37/2⁺)	3886.2	35/2⁺		
388.2[a] *6*	0.12 *3*	3220.5		2832.3	29/2⁻		
390.5 *4*	1.04 *9*	3349.2	33/2⁺	2958.7	31/2⁺	D	DCO=0.92 *14*
393.4 *3*	2.7 *1*	1651.5	(15/2⁻)	1257.88	(11/2⁻)	Q	DCO=1.26 *16* POL=−0.076 *11*. Mult.: DCO and POL for 394.0+393.4 doublet. γ ray placement from (15/2⁻) to (11/2⁻) implies (E2), however, negative POL value not consistent with (E2). E_γ: Ordering of the 394.0 − 393.4 γ cascade is not established.
394.0 *3*	0.83 *5*	2045.8	(19/2⁻)	1651.5	(15/2⁻)	Q	DCO=1.26 *16* POL=−0.076 *11*. Mult.: DCO and POL for 394.0+393.4 doublet. γ ray placement from (19/2⁻) to (15/2⁻) implies (E2), however, negative POL value is inconsistent with

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^{165}Ho(^{32}S,4nγ) 2015He27 (continued)

γ(^{193}Bi) (continued)

E_γ[†]	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[@]	Comments
							(E2). E_γ: ordering of the 394.0 − 393.4 γ cascade is not established.
398.8 3	5.5 2	2804.1	(31/2⁻)	2405.1	(29/2⁻)	M1	DCO=0.61 6 POL=−0.016 5.
411.8 3	1.3[#] 2	2162.7+x	(43/2⁺)	1750.9+x	(39/2⁺)		I_γ: 0.8 2 in α-tagged spectrum.
414.3 3	2.03 9	2462.9	23/2⁻	2048.7	21/2⁻	M1	DCO=0.43 6 POL=(−0.12 2).
429.0 4	1.3 2	734.2	5/2⁺	305	1/2⁺		
433.0 3	1.90 9	1636.5	(13/2⁺)	1203.5	(9/2⁺)		
435.6 3	1.01 7	2483.9	23/2⁻	2048.7	21/2⁻	D	DCO=0.89 16
435.7 3	4.1 2	1950.09	19/2⁺	1514.34	17/2⁺	M1	DCO=0.58 6 POL=−0.005 1.
436.2 3	7.7 3	2109.65	19/2⁺	1673.49	17/2⁺	M1	DCO=0.7 1 α(K)exp=0.133 19 POL=−0.11 2. α(K)exp: from ce spectrum.
436.3 4	0.27 4	2045.8	(19/2⁻)	1609.9	(15/2⁻)	Q	DCO=1.5 5
438.1 5	0.29 6	2921.9	27/2⁻	2483.9	23/2⁻		
443.8 5	0.56 6	3560.9	37/2⁺	3117.1	33/2⁺		
[x]444.0[‡] 6	0.45 3						
445.4 4	1.06 8	1673.49	17/2⁺	1228.13	17/2⁺		
446.8 3	2.6 2	1066.35	13/2⁻	619.60	11/2⁻	M1	DCO=0.85 11 POL=−0.09 1.
450.4 4	1.3[#] 2	2613.1+x	(47/2⁺)	2162.7+x	(43/2⁺)		I_γ: 0.4 1 in α-tagged spectrum.
450.6 3	1.25 8	915.30	11/2⁻	464.66	9/2⁻	M1	POL=−0.035 4.
452.2 3	1.49 7	2718.0	27/2⁺	2265.8	25/2⁺	D	DCO=0.8 1
454.9 4	0.19 4	4292.3		3837.4	39/2⁺		
455.1[a] 6	0.14 6	1520.95	13/2⁻	1066.35	13/2⁻		
455.4 3	6.1 3	2128.8	21/2⁺	1673.49	17/2⁺	E2	DCO=0.98 20 α(K)exp=0.032 6 POL=+0.119 14. α(K)exp: from ce spectrum.
459.2 4	0.77 7	2253.6		1794.03	19/2⁻		
459.5 4	0.52 5	964.6		505.1	3/2⁺		
465.2 7	0.4 1	464.66	9/2⁻	0.0	9/2⁻	D	
466.2 4	0.19 3	3749.1		3282.9	(33/2⁻)		
469.3 3	1.46 8	1203.5	(9/2⁺)	734.2	5/2⁺		
469.5 3	1.6 1	1535.73	15/2⁺	1066.35	13/2⁻	D	DCO=0.80 16
476.0 3	1.05 5	2832.3	29/2⁻	2356.3	25/2⁻	Q	DCO=1.2 2
478.5 3	2.0 1	3282.9	(33/2⁻)	2804.1	(31/2⁻)	D	DCO=0.63 9
488.3 4	0.74 6	2708.9	(25/2⁺)	2220.6	23/2⁺	D+Q	DCO=0.44 5
489.2 4	0.9[#] 2	3102.3+x	(51/2⁺)	2613.1+x	(47/2⁺)		I_γ: 0.4 1 in α-tagged spectrum.
497.5 4	1.3 1	1117.06	13/2⁺	619.60	11/2⁻	(E1)	DCO=0.85 12 POL=−0.053 9. Note: negative POL is inconsistent with E1. Presence of a strong contaminant is a possible reason for the discrepancy (private communication by e-mail between first author and X̂UNDL compiler − dated November 26, 2015).
501.5 3	0.97 5	2547.3	(21/2⁻)	2045.8	(19/2⁻)	M1	DCO=0.9 1 POL=−0.053 8.
502.5 3	4.1 2	2057.6	21/2⁺	1555.30	19/2⁺	D	DCO=0.62 5
503.1 4	0.44 6	2139.6	(17/2⁺)	1636.5	(13/2⁺)		
504.0 3	3.8 2	1673.49	17/2⁺	1169.67	15/2⁻	E1	DCO=0.80 6 POL=+0.15 1.
504.1 4	0.58 8	1517.4	(11/2⁺)	1013.3	(7/2⁺)		

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^{165}Ho(^{32}S,4nγ) 2015He27 (continued)

γ(^{193}Bi) (continued)

E_γ [†]	I_γ [†]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [@]	Comments
508.2 3	3.5 2	1013.3	(7/2$^+$)	505.1	3/2$^+$	Q	DCO=0.95 12
511.3 3	7.6 7	1117.06	13/2$^+$	605.53	13/2$^+$	M1+E2	DCO=0.93 8 POL=−0.16 2.
512.3 3	2.5 2	3816.5	35/2$^-$	3304.2	33/2$^+$	E1	DCO=0.73 12 POL=+0.080 14.
512.7 3	0.84 5	4008.8	35/2$^-$	3496.3	31/2$^-$		
516.4 4	0.63 8	3837.4	39/2$^+$	3321.0	35/2$^+$	Q	DCO=1.6 5
527.8 3	1.4[#] 2	3630.1+x	(55/2$^+$)	3102.3+x	(51/2$^+$)		I_γ: 0.3 1 in α-tagged spectrum.
528.2 4	0.48 5	2090.41	17/2$^-$	1562.41	15/2$^-$	D	DCO=0.74 10
528.6 3	0.86 6	4345.1	37/2$^-$	3816.5	35/2$^-$	D	DCO<1
530.9 4	0.75 6	3200.4	29/2$^-$	2669.4	25/2$^-$	Q	DCO=2.1 3
534.3 4	0.55 9	2048.6	(21/2$^+$)	1514.34	17/2$^+$	Q	DCO=1.10 8
535.0 6	0.15 5	3638.6		3103.6			
535.2 3	1.78 8	2756.0	27/2$^+$	2220.6	23/2$^+$	Q	DCO=1.4 2
538.4 3	2.9 2	2587.2	25/2$^-$	2048.7	21/2$^-$	E2	DCO=1.40 17 POL=+0.07 1.
542.2 4	0.32 6	2762.8	25/2$^+$	2220.6	23/2$^+$	D	DCO=0.74 9
543.2 3	1.50 9	2057.6	21/2$^+$	1514.34	17/2$^+$	Q	DCO=1.28 13
550.0 3	17.3 6	1169.67	15/2$^-$	619.60	11/2$^-$	E2	DCO=1.27 10 POL=+0.06 2.
550.6 4	0.49 7	3709.9	(37/2$^-$)	3159.2	(33/2$^-$)	Q	DCO=1.5 2
556.4 3	5.0 2	1673.49	17/2$^+$	1117.06	13/2$^+$	Q	DCO=1.37 9
557.5 4	0.71 7	2432.9	23/2$^+$	1875.1	21/2$^+$		
566.0[a] 4	1.1[#] 2	4196.1+x?	(59/2$^+$)	3630.1+x	(55/2$^+$)		I_γ: 0.2 1 in α-tagged spectrum.
567.0 3	2.3 2	1736.96	17/2$^-$	1169.67	15/2$^-$	M1	DCO=0.83 8 POL=−0.155 14.
567.5[a] 3	0.84 5	3563.1	(31/2$^+$)	2996.1	29/2$^+$		
569.4 3	3.1 2	2090.41	17/2$^-$	1520.95	13/2$^-$	Q	DCO=1.32 12
571.1 4	0.44 4	3118.4	(23/2$^-$)	2547.3	(21/2$^-$)	D	DCO=0.6 1
574.3 3	1.09 7	3496.3	31/2$^-$	2921.9	27/2$^-$	E2	DCO=2.2 3 POL=+0.105 14.
576.2 4	0.61 5	3563.1	(31/2$^+$)	2986.9	29/2$^+$	D	DCO=0.85 19
576.6 7	0.6 1	4137.3	41/2$^+$	3560.9	37/2$^+$		DCO=0.85 25 Mult.: DCO ratio indicates dipole transition, placement (41/2$^+$ to 37/2$^+$) indicates quadrupole transition.
580.2 4	0.33 5	4028.7	(39/2$^-$)	3448.6	(35/2$^-$)		
582.1 4	0.96 9	3886.2	35/2$^+$	3304.2	33/2$^+$	D	DCO=0.9 2
585.3 3	8.6 3	1514.34	17/2$^+$	928.93	15/2$^+$	M1	DCO=0.66 3 POL=−0.04 1.
587.0 3	1.9 1	1249.06	13/2$^-$	662.08	9/2$^-$		
595.9 3	2.1 1	3796.0	33/2$^-$	3200.4	29/2$^-$		
597.0 3	26.0 9	1414.64	17/2$^-$	817.73	13/2$^-$	E2	DCO=1.05 10 POL=+0.016 1.
604.5[a] 3	2.0[#] 3	4800.6+x?	(63/2$^+$)	4196.1+x?	(59/2$^+$)		I_γ: 0.2 1 in α-tagged spectrum.
604.7 3		605.53	13/2$^+$	0.0	9/2$^-$		Additional information 3.
605.2 4	1.2 1	1520.95	13/2$^-$	915.30	11/2$^-$	D	DCO=0.95 13
606.5 4	0.8 1	3910.7		3304.2	33/2$^+$		
609.1 3	3.9 2	2958.7	31/2$^+$	2349.6	29/2$^+$	M1	DCO=0.88 13 POL=−0.017 4.
614.0 3	4.6 3	2963.5	31/2$^+$	2349.6	29/2$^+$	M1	DCO=0.7 1 POL=−0.07 2.
619.7 3	35.8 29	619.60	11/2$^-$	0.0	9/2$^-$	M1	DCO=0.85 9 POL=−0.059 6.
619.9[&] 4	1.1[&] 2	2710.3		2090.41	17/2$^-$		

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^{165}Ho(^{32}S,4nγ) 2015He27 (continued)

γ(^{193}Bi) (continued)

E_γ[†]	I_γ[†]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[@]	Comments
619.9[&] *4*	0.58[&] *9*	3969.1	37/2+	3349.2	33/2+	E2	DCO=1.18 *12* POL=+0.13 *2*.
622.4 *3*	12.1 *5*	1228.13	17/2+	605.53	13/2+	E2	DCO=1.30 *16* POL=+0.086 *10*.
624.3 *3*	13.6 *5*	1794.03	19/2−	1169.67	15/2−	E2	DCO=1.20 *5* POL=+0.024 *2*.
626.2 *3*	10.2 *4*	1555.30	19/2+	928.93	15/2+	E2	DCO=1.48 *6* POL=+0.094 *9*.
627.5 *5*	0.07 *6*	3976.7		3349.2	33/2+		
630.4 *5*	0.19 *3*	4467.7	43/2+	3837.4	39/2+		
631.4 *3*	1.33 *8*	2193.75	19/2−	1562.41	15/2−		
634.1 *3*	14.8 *5*	2048.7	21/2−	1414.64	17/2−	E2	DCO=1.57 *9* POL=+0.07 *1*.
634.3 *3*	3.4 *2*	2428.3	23/2−	1794.03	19/2−	Q	DCO=1.35 *7*
636.7 *3*	2.2 *2*	915.30	11/2−	278.44	7/2−	Q	DCO=1.15 *7*
638.1 *4*	0.31 *5*	1257.88	(11/2−)	619.60	11/2−		
644.1 *5*	0.30 *7*	3448.6	(35/2−)	2804.1	(31/2−)		
646.9 *3*	10.8 *4*	1875.1	21/2+	1228.13	17/2+	E2	DCO=1.47 *6* POL=+0.091 *4*.
647.3 *3*	4.3 *2*	1562.41	15/2−	915.30	11/2−	Q	DCO=1.53 *16*
651.5 *5*	0.33 *7*	2708.9	(25/2+)	2057.6	21/2+		
654.1 *4*	0.45 *7*	2448.1		1794.03	19/2−		
660.7 *3*	7.4 *3*	2535.8	25/2+	1875.1	21/2+	E2	DCO=1.15 *14* POL=+0.060 *3*.
661.1 *4*	1.02 *9*	1910.06	17/2−	1249.06	13/2−		
661.3 *5*	0.22 *5*	4284.0		3622.7			
661.6 *4*	1.9 *3*	662.08	9/2−	0.0	9/2−	D+Q	DCO=0.60 *11*
664.0 *3*	1.6 *1*	3622.7		2958.7	31/2+		
665.2 *3*	8.0 *3*	2220.6	23/2+	1555.30	19/2+	E2	DCO=1.2 *1* POL=+0.072 *7*.
668.9 *3*	5.0 *2*	2462.9	23/2−	1794.03	19/2−	E2	DCO=1.48 *12* POL=+0.103 *11*.
670.3 *3*	2.5 *2*	1736.96	17/2−	1066.35	13/2−	Q	DCO=1.85 *22*
672.5 *3*	1.39 *8*	2893.0	(25/2+)	2220.6	23/2+	D	DCO=0.86 *6* POL=+0.010 *1*. Mult.: Placement (25/2+) to 23/2+ implies (M1), positive POL value is inconsistent with (M1).
674.6 *3*	2.3 *1*	2723.4	25/2−	2048.7	21/2−	Q	DCO=1.6 *3*
677.2 *8*	0.07 *3*	4961.2		4284.0			
677.9 *5*	1.00 *8*	2240.3	19/2−	1562.41	15/2−	E2	DCO=1.41 *23*
679.2 *3*	2.4 *1*	2193.75	19/2−	1514.34	17/2+	E1	DCO=0.8 *2* POL=+0.15 *2*.
689.6 *3*	1.42 *7*	2483.9	23/2−	1794.03	19/2−	Q	DCO=1.45 *30*
695.1 *3*	1.31 *9*	2109.65	19/2+	1414.64	17/2−	D	DCO=1.47 *21*
716.3 *3*	2.7 *1*	2591.5	25/2+	1875.1	21/2+	E2	DCO=1.33 *8* POL=+0.12 *1*.
717.9 *3*	4.0 *2*	1535.73	15/2+	817.73	13/2−	E1	DCO=1.02 *20* POL=+0.10 *1*.
718.4[a] *7*	0.09 *3*	5679.6		4961.2			
721.1[a] *4*	0.79 *6*	2986.9	29/2+	2265.8	25/2+	(E2)	27/2− to 23/2− transition shown in Table I of 2015He27 should be 29/2+ to 25/2+ as given in level-scheme Figure 2. Confirmed by first author through private communication (e-mail).
721.6 *3*	2.1 *1*	1950.09	19/2+	1228.13	17/2+	D	DCO=0.63 *6*
725.5[a] *9*	0.10 *6*	4029.7		3304.2	33/2+		

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^{165}Ho(^{32}S,4nγ) 2015He27 (continued)

γ(^{193}Bi) (continued)

E_γ †	I_γ †	E_i(level)	J^π_i	E_f	J^π_f	Mult. @	Comments
726.0 *4*	0.79 *6*	2774.8		2048.7	21/2$^-$		
731.4 *3*	1.54 *9*	2525.4	23/2$^-$	1794.03	19/2$^-$	E2	DCO=1.33 *23* POL=+0.08 *1*.
736.1 *3*	1.28 *7*	2956.7	25/2$^{(+)}$	2220.6	23/2$^+$	(D)	DCO=0.74 *9*
744.7 *4*	1.15 *9*	1673.49	17/2$^+$	928.93	15/2$^+$	D	DCO=0.79 *14*
753.9 *4*	1.27 *14*	3159.2	(33/2$^-$)	2405.1	(29/2$^-$)		
754.0 *6*	1.62 *8*	3103.6		2349.6	29/2$^+$		
784.0 *3*	1.42 *8*	2578.0	23/2$^-$	1794.03	19/2$^-$	Q	DCO=1.25 *14*
784.5 *4*	0.88 *7*	1249.06	13/2$^-$	464.66	9/2$^-$	Q	DCO=1.81 *22*
793.1 *3*	0.62 *7*	1257.88	(11/2$^-$)	464.66	9/2$^-$	D+Q	DCO=0.44 *5*
793.5 *4*	0.9 *1*	1859.1	15/2$^-$	1066.35	13/2$^-$	D	DCO=0.64 *10*
807.3 *4*	1.01 *9*	2321.7	(21/2$^+$)	1514.34	17/2$^+$	(E2)	DCO=0.83 *19*
817.9 *3*	37.7 *18*	817.73	13/2$^-$	0.0	9/2$^-$	E2	DCO=1.22 *4* POL=+0.039 *3*.
839.2 *3*	2.96 *14*	2253.6		1414.64	17/2$^-$		Mult.: Assigned as E2 in 2015He27; First author later stated that there is insufficient information to determine multipolarity (private communication between first author and XUNDL compiler, dated November 26, 2015).
844.0 *3*	1.7 *2*	1910.06	17/2$^-$	1066.35	13/2$^-$		
862.4 *3*	1.63 *8*	2090.41	17/2$^-$	1228.13	17/2$^+$	E1	DCO=0.92 *8* POL=+0.040 *5*.
879.0 *6*	0.58 *8*	3282.9	(33/2$^-$)	2405.1	(29/2$^-$)		
881.3 *4*	1.3 *1*	2109.65	19/2$^+$	1228.13	17/2$^+$	D	DCO=0.79 *13*
887.7 *3*	1.08 *7*	2762.8	25/2$^+$	1875.1	21/2$^+$	Q	DCO=1.9 *4*
901.7 *3*	3.3 *2*	1520.95	13/2$^-$	619.60	11/2$^-$	M1+E2	DCO=0.7 *1* POL=+0.127 *14*.
908.7 *3*	7.4 *4*	1514.34	17/2$^+$	605.53	13/2$^+$	E2	DCO=1.30 *12* POL=+0.056 *12*.
913.4 *4*	0.57 *9*	1979.8		1066.35	13/2$^-$		
915.5 *3*	6.1 *4*	915.30	11/2$^-$	0.0	9/2$^-$	M1+E2	DCO=0.45 *8* POL=+0.012 *2*.
920.9 *3*	3.3 *2*	2090.41	17/2$^-$	1169.67	15/2$^-$	M1	DCO=0.77 *8* POL=−0.12 *3*.
927.9 *5*	0.19 *4*	3886.2	35/2$^+$	2958.7	31/2$^+$		
929.6 *3*	2.2 *2*	1858.5	(17/2$^+$)	928.93	15/2$^+$	(M1+E2)	DCO=0.48 *7* POL=+0.13 *2*.
930.0 *3*	5.8 *4*	1535.73	15/2$^+$	605.53	13/2$^+$	M1	DCO=0.89 *9* POL=−0.18 *2*.
954.7 *3*	4.4 *6*	3304.2	33/2$^+$	2349.6	29/2$^+$	E2	DCO=1.31 *18* POL=+0.060 *3*.
967.7 *4*	0.28 *4*	4272.2	(37/2$^+$)	3304.2	33/2$^+$		
1021.2 *3*	1.9 *1*	1950.09	19/2$^+$	928.93	15/2$^+$		
1023.6 *4*	0.95 *6*	2090.41	17/2$^-$	1066.35	13/2$^-$		
1066.6 *3*	10.4 *10*	1066.35	13/2$^-$	0.0	9/2$^-$	Q	DCO=1.37 *20*
1067.8 *3*	4.3 *3*	1673.49	17/2$^+$	605.53	13/2$^+$	E2	DCO=1.08 *15* POL=+0.07 *3*.
1156.8 *4*	0.5 *2*	1762.3	(15/2$^-$)	605.53	13/2$^+$		
1258.1 *3*	1.9 *2*	1257.88	(11/2$^-$)	0.0	9/2$^-$	D	DCO=0.82 *11*
1272.8 *3*	1.53 *8*	2090.41	17/2$^-$	817.73	13/2$^-$	Q	DCO=1.28 *24*
^{x}1836 *5*	0.9# *2*						E_γ: γ seen in coincidence with 168.3- and 331.7-keV transitions in the SD band. I_γ: from α-tagged γ spectrum.

Continued on next page (footnotes at end of table)

^{165}Ho(^{32}S,4nγ) 2015He27 (continued)

γ(^{193}Bi) (continued)

† From 2015He27. γ-ray energies of 2015He27 are more precise compared with the data in 2004Ni06 and within statistical agreement. Unplaced γ rays in 2004Ni06, 355.3 *7*, 432 *1*, 458.5 *7*, 468.8 *7*, seem to have been placed in the level scheme by 2015He27. Statistical uncertainty of 0.3 keV added in quadrature by evaluator. Fitting uncertainty is listed by 2015He27 as 0.1 keV for most Eγ values, and 0.2-0.7 keV for others.

‡ The γ seen in delayed coincidence with transitions in Band #2 in Figure 2 of 2015He27, and the 307-keV transition.

Relative intensity within the SD band. Values are from recoil-gated $\gamma\gamma\gamma$ spectrum, unless otherwise stated. Corresponding values from α-tagged γ spectrum are given in comments.

@ Assigned by the evaluator based on angular distribution and linear polarization data of 2015He27. DCO ratios are angular distribution ratios R_{exp} deduced from two γ-γ matrices obtained from recoil-gated prompt coincidence events, one with events at 157.6° versus all angles and the other with events at 75.5° versus all angles. In this arrangement, expected values are 1.3 for stretched quadrupoles and 0.8 for stretched dipoles Linear polarization values listed as POL are integrated polarization-directional correlations from oriented nuclei (IPDCO). Expected values of POL are $\approx$+0.1 for electric and $\approx$−0.1 for magnetic transitions.

& Multiply placed with intensity suitably divided.

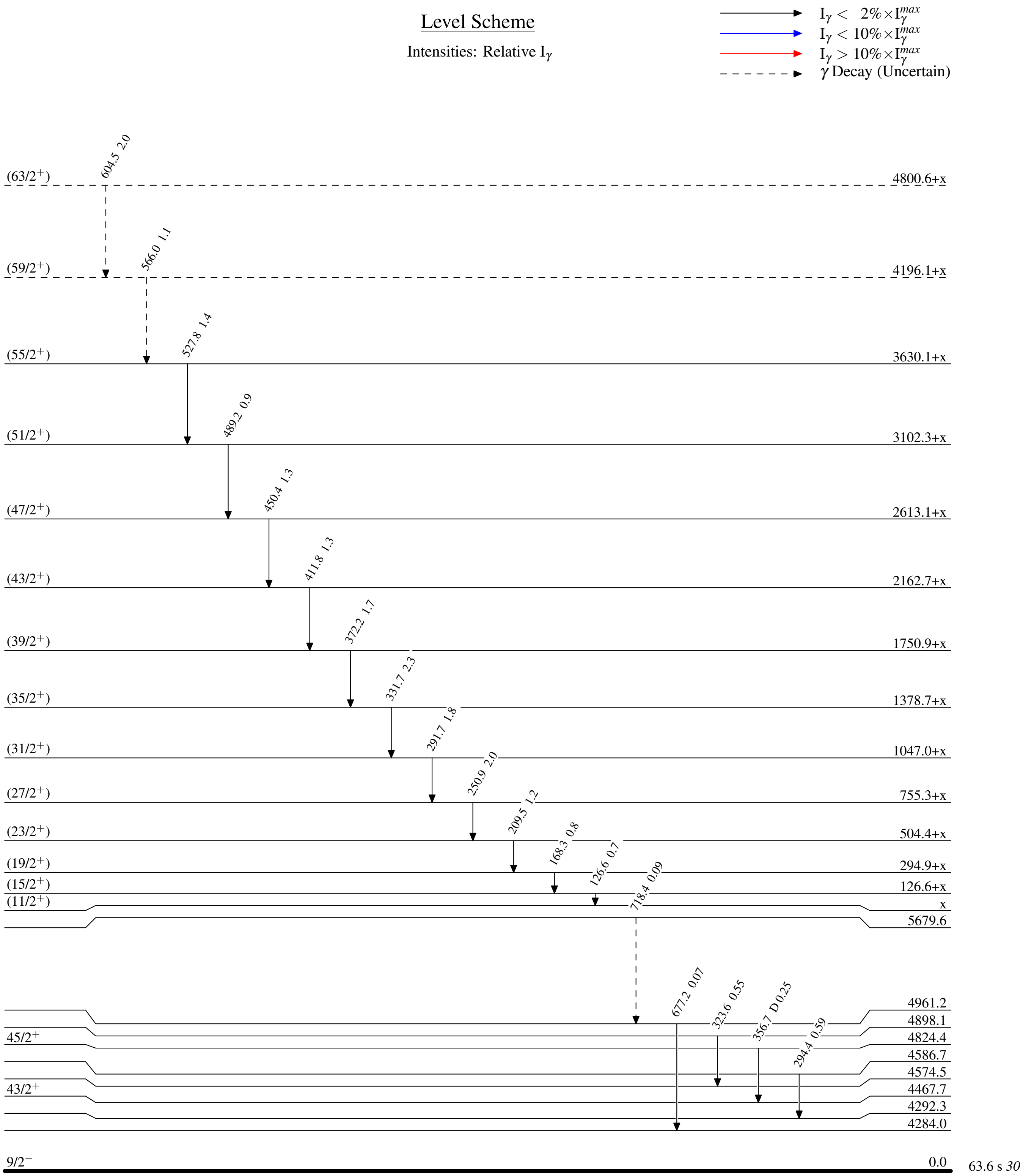
[a] Placement of transition in the level scheme is uncertain.

[x] γ ray not placed in level scheme.

^{165}Ho(^{32}S,4nγ) 2015He27

Level Scheme

Intensities: Relative I_γ



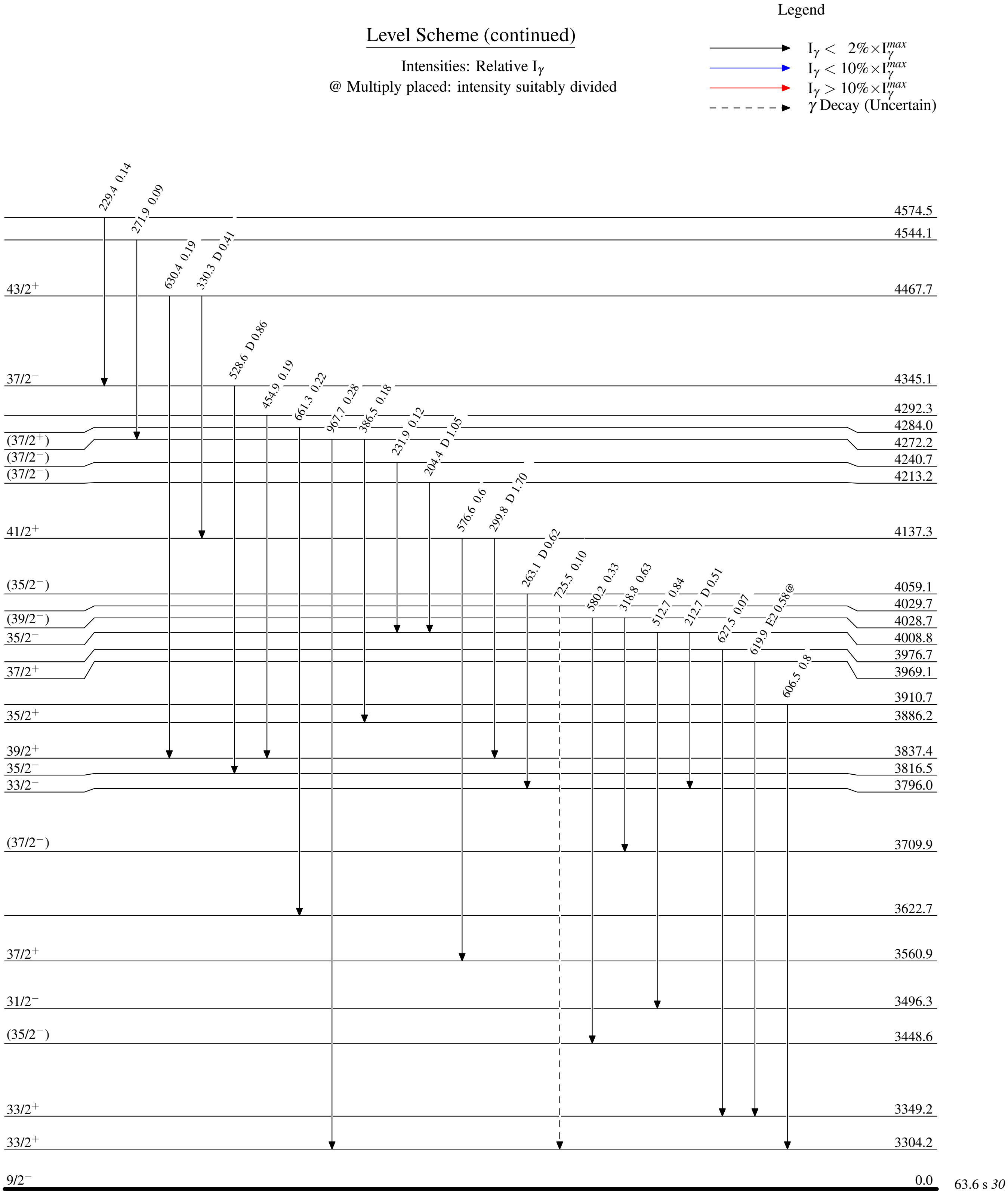
$^{193}_{83}Bi_{110}$

^{165}Ho(^{32}S,4nγ) 2015He27

Level Scheme (continued)

Intensities: Relative I_γ

@ Multiply placed: intensity suitably divided



$^{193}_{83}Bi_{110}$

^{165}Ho(^{32}S,4nγ) 2015He27

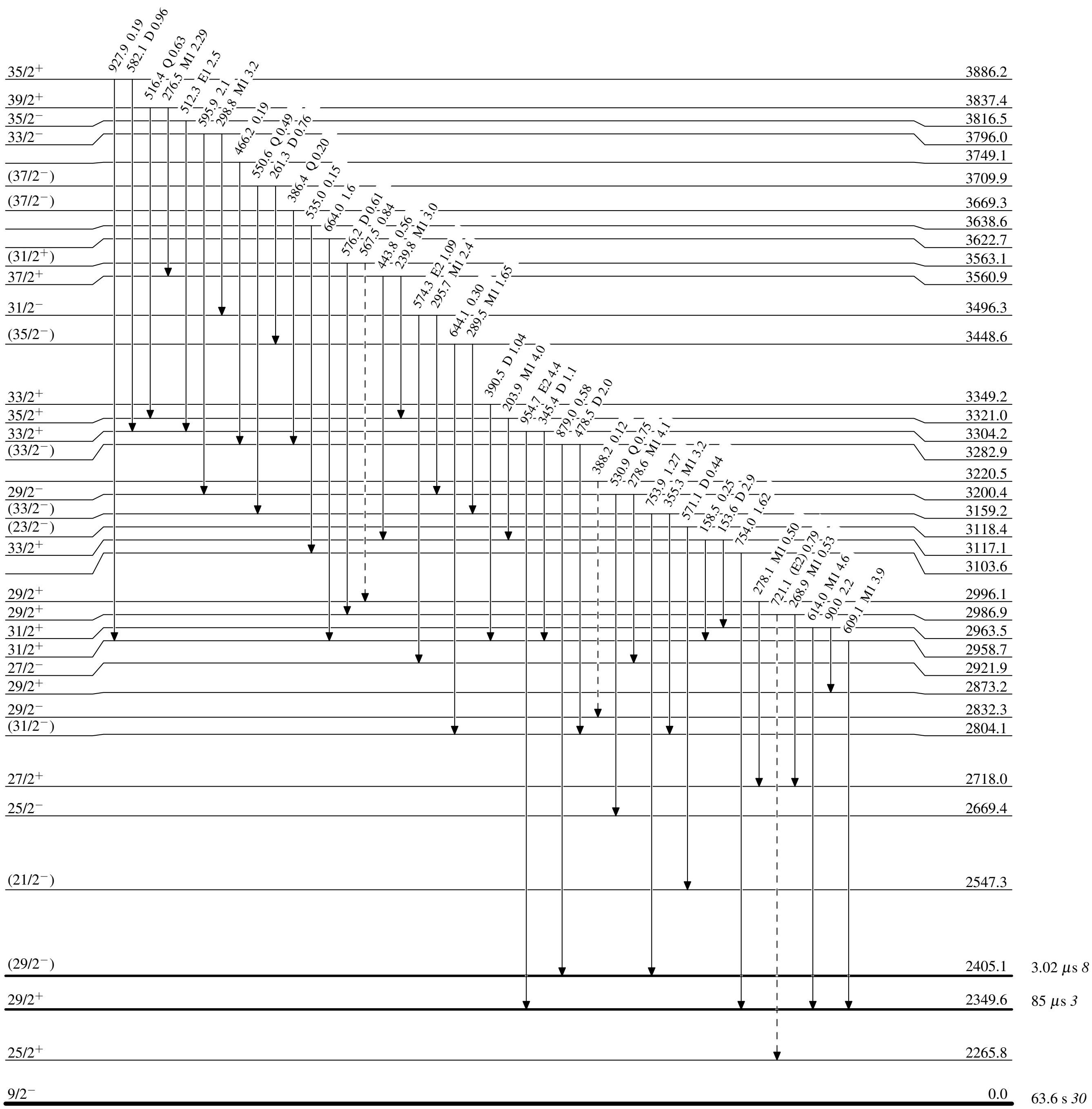
Level Scheme (continued)

Intensities: Relative I_γ

@ Multiply placed: intensity suitably divided

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)



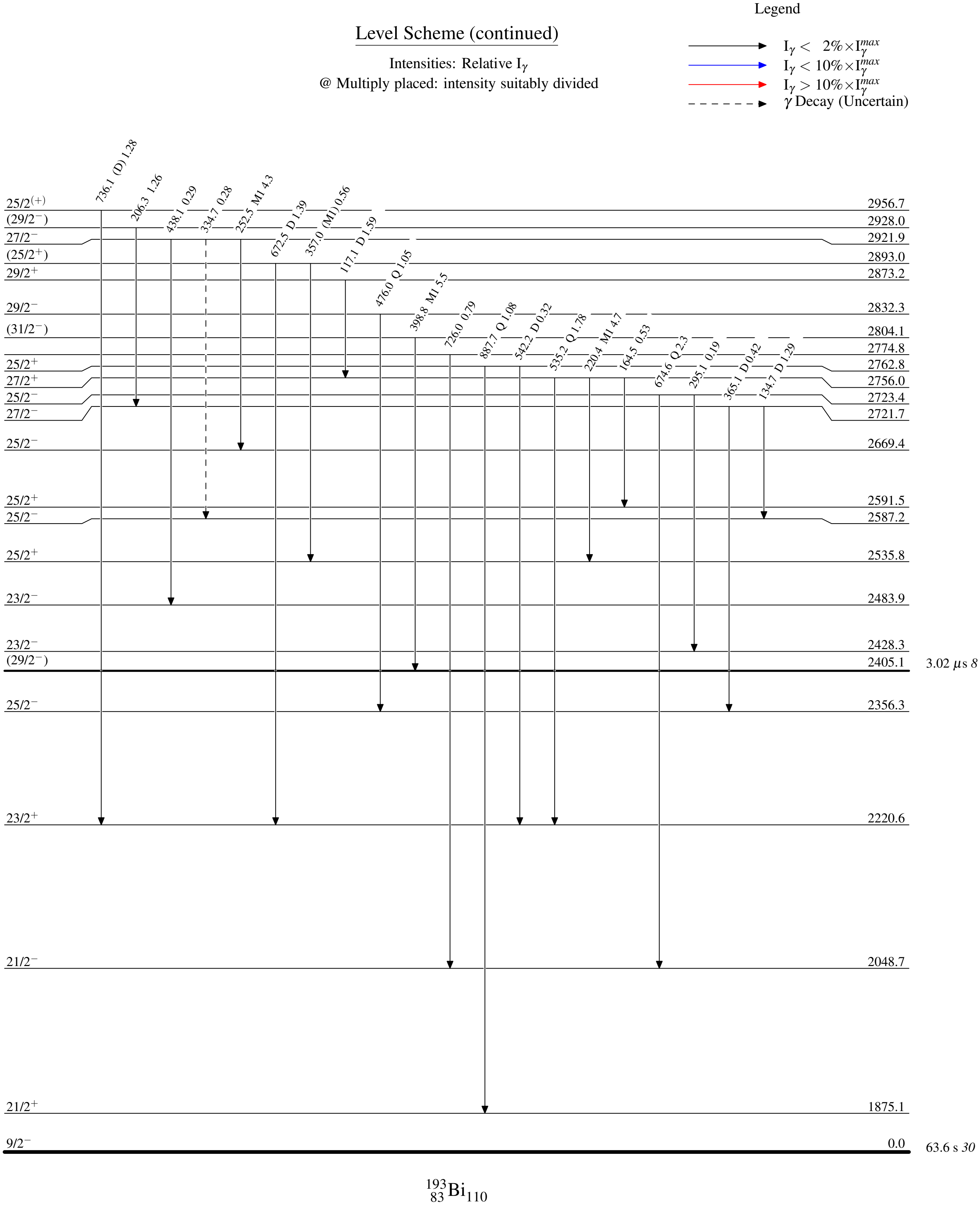
$^{193}_{83}Bi_{110}$

$^{165}Ho(^{32}S,4n\gamma)$ 2015He27

Level Scheme (continued)

Intensities: Relative I_γ

@ Multiply placed: intensity suitably divided

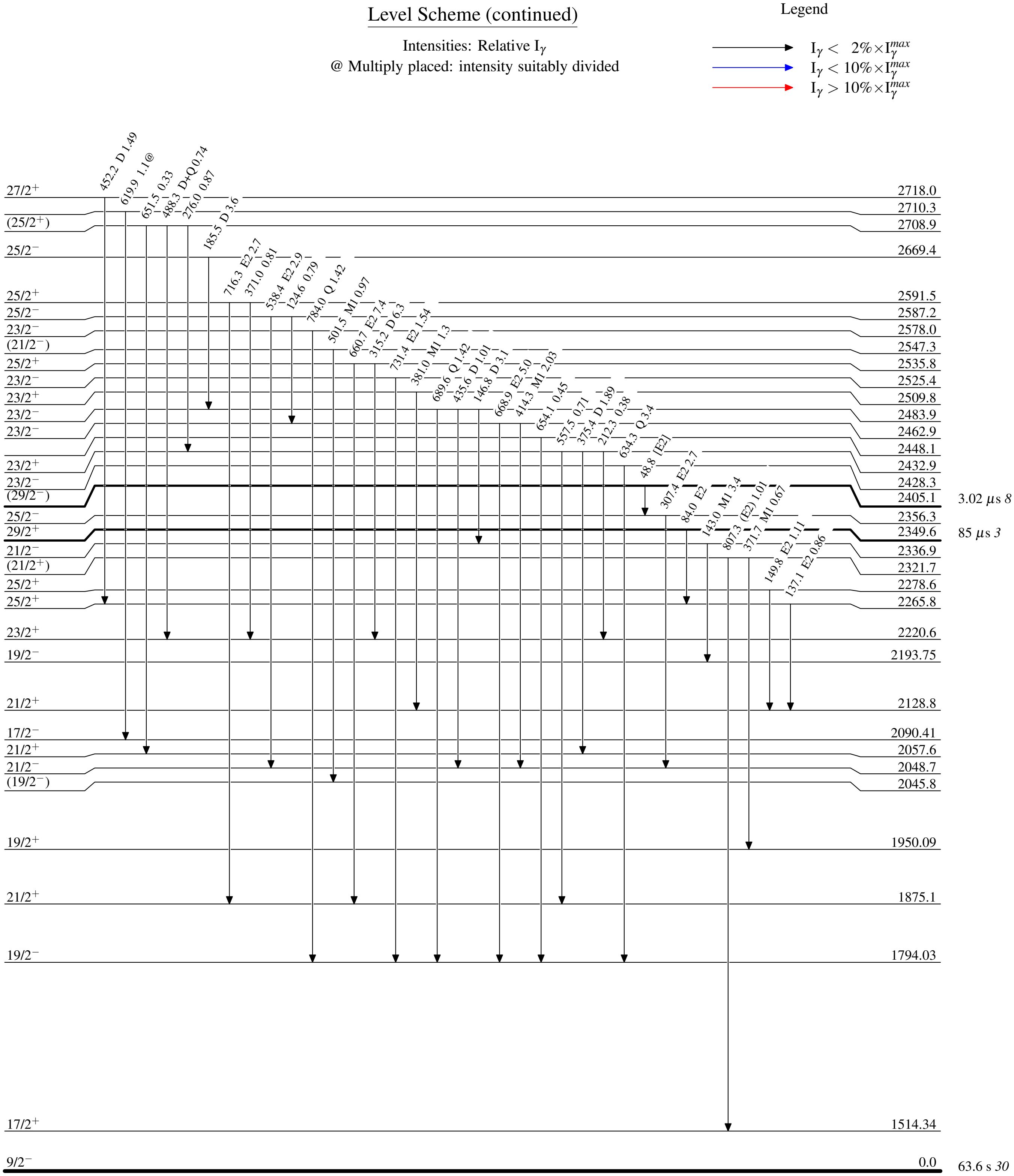


^{165}Ho(^{32}S,4nγ) 2015He27

Level Scheme (continued)

Intensities: Relative I_γ

@ Multiply placed: intensity suitably divided



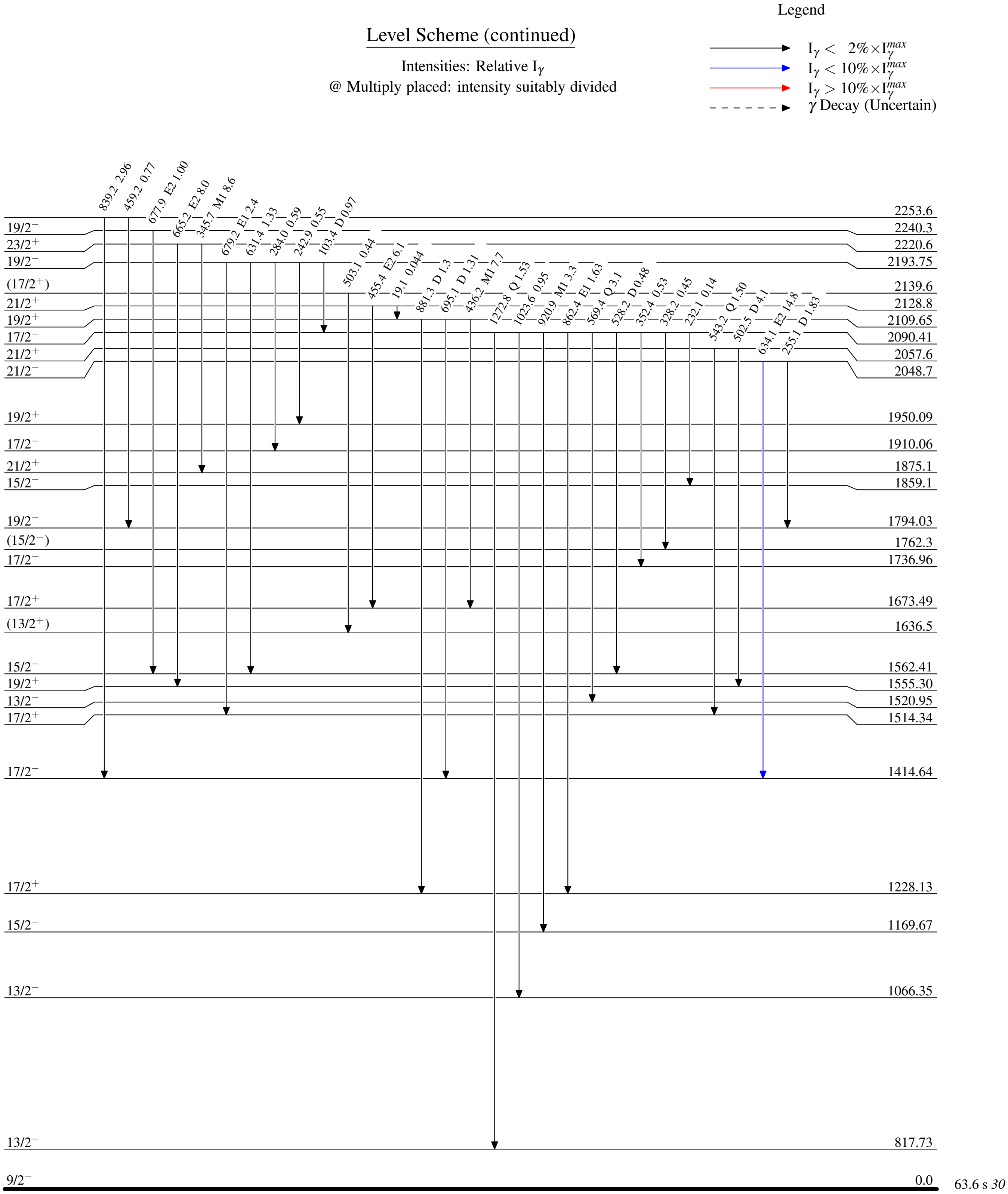
$^{193}_{83}Bi_{110}$

$^{165}Ho(^{32}S,4n\gamma)$ 2015He27

Level Scheme (continued)

Intensities: Relative I_γ

@ Multiply placed: intensity suitably divided



$^{193}_{83}Bi_{110}$

^{165}Ho(^{32}S,4nγ) 2015He27

Level Scheme (continued)

Intensities: Relative I_γ

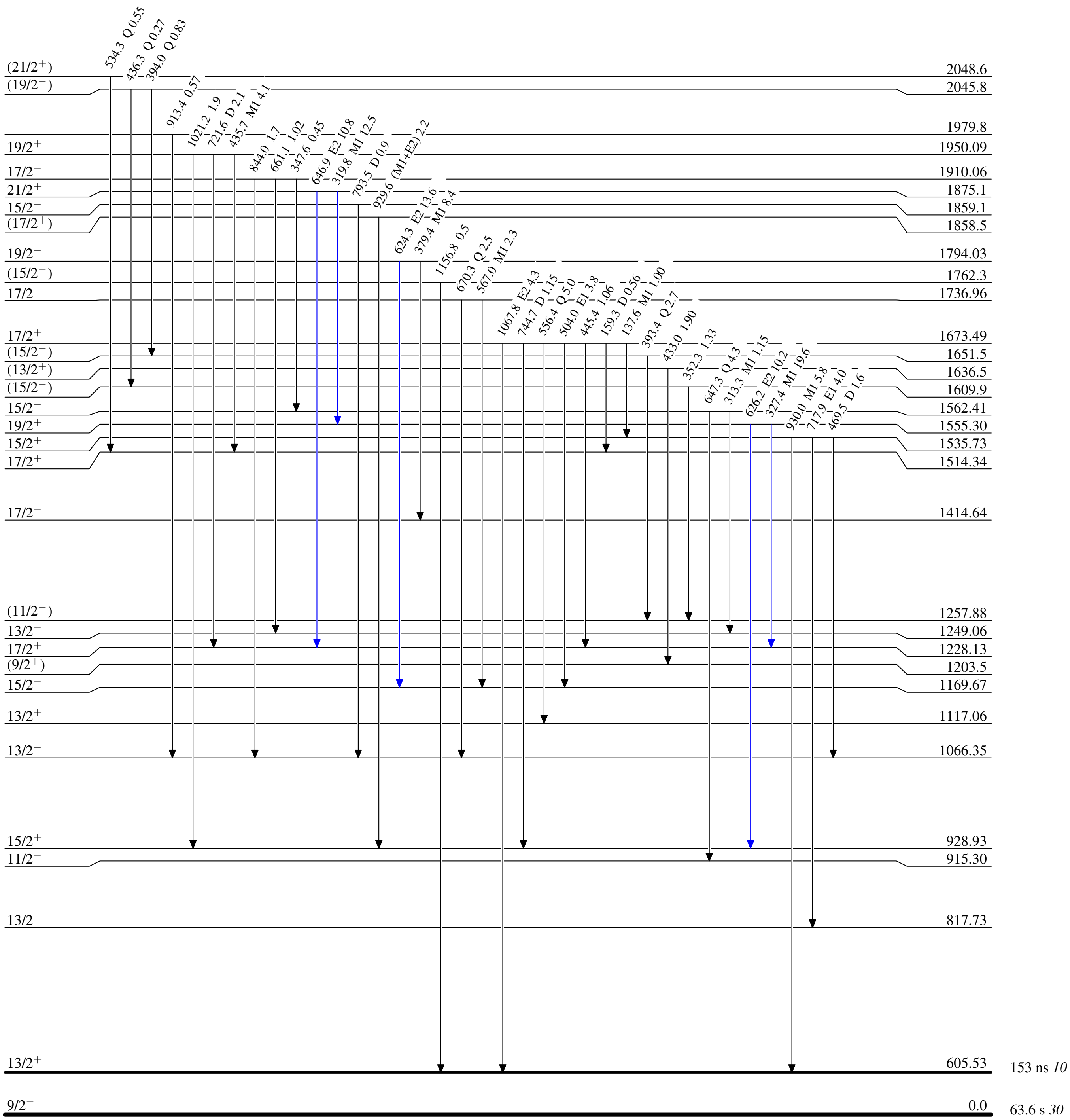
@ Multiply placed: intensity suitably divided

Legend

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

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

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



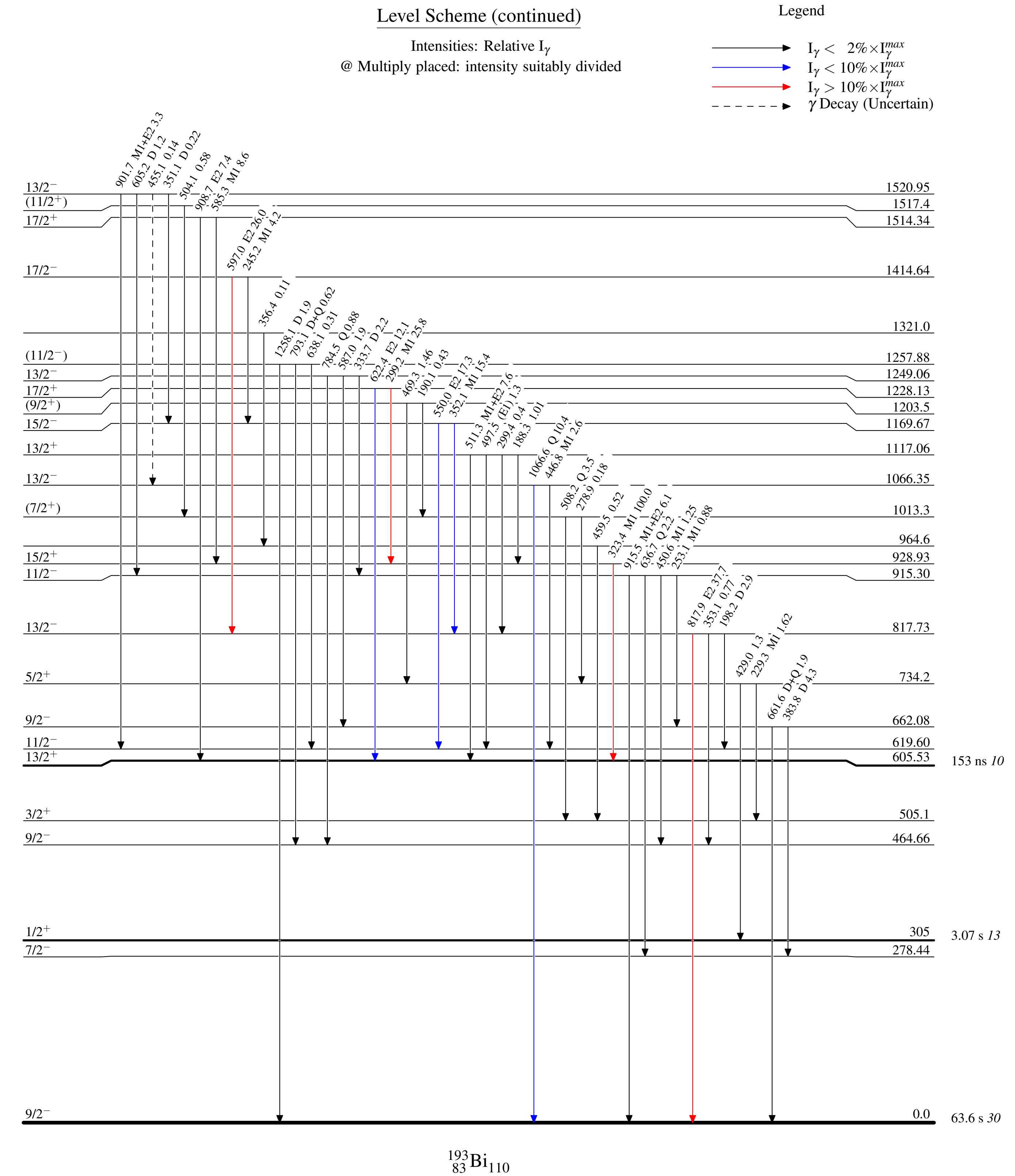
$^{193}_{83}Bi_{110}$

$^{165}Ho(^{32}S,4n\gamma)$ 2015He27

Level Scheme (continued)

Intensities: Relative I_γ

@ Multiply placed: intensity suitably divided

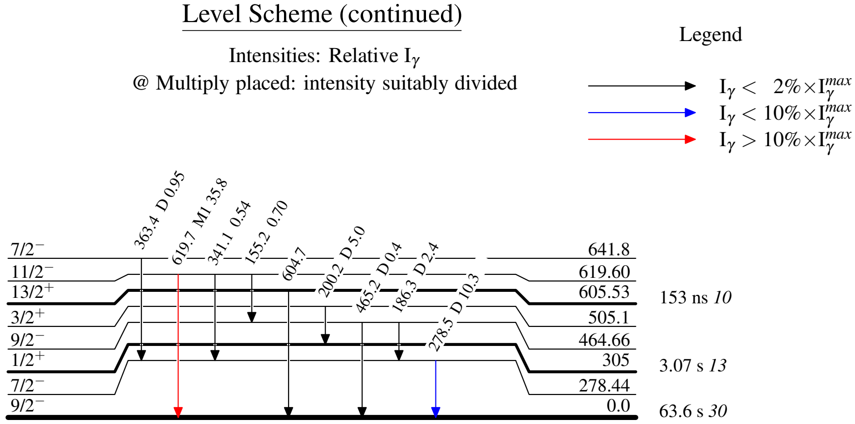


^{165}Ho(^{32}S,4nγ) 2015He27

Level Scheme (continued)

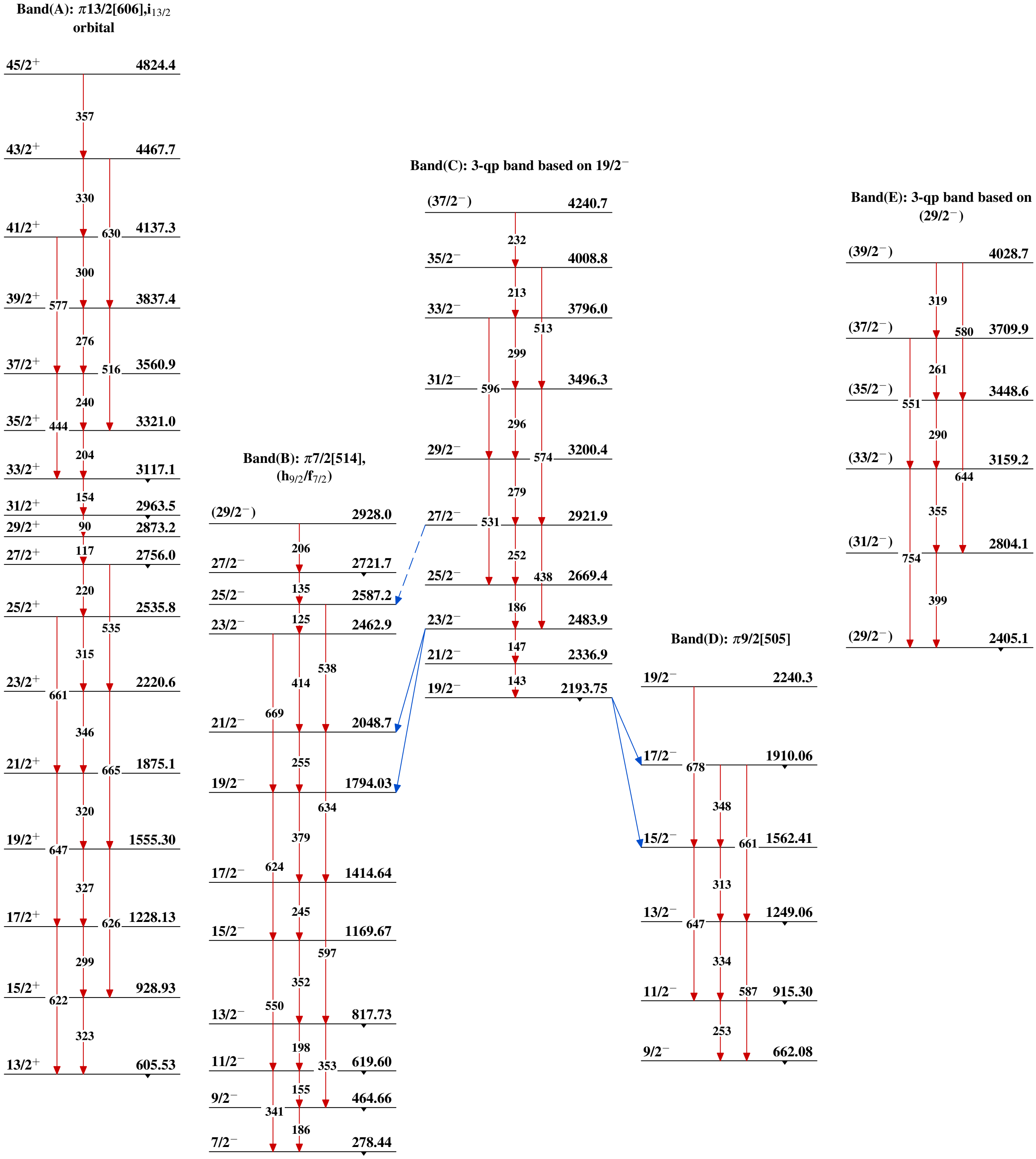
Intensities: Relative I_γ

@ Multiply placed: intensity suitably divided



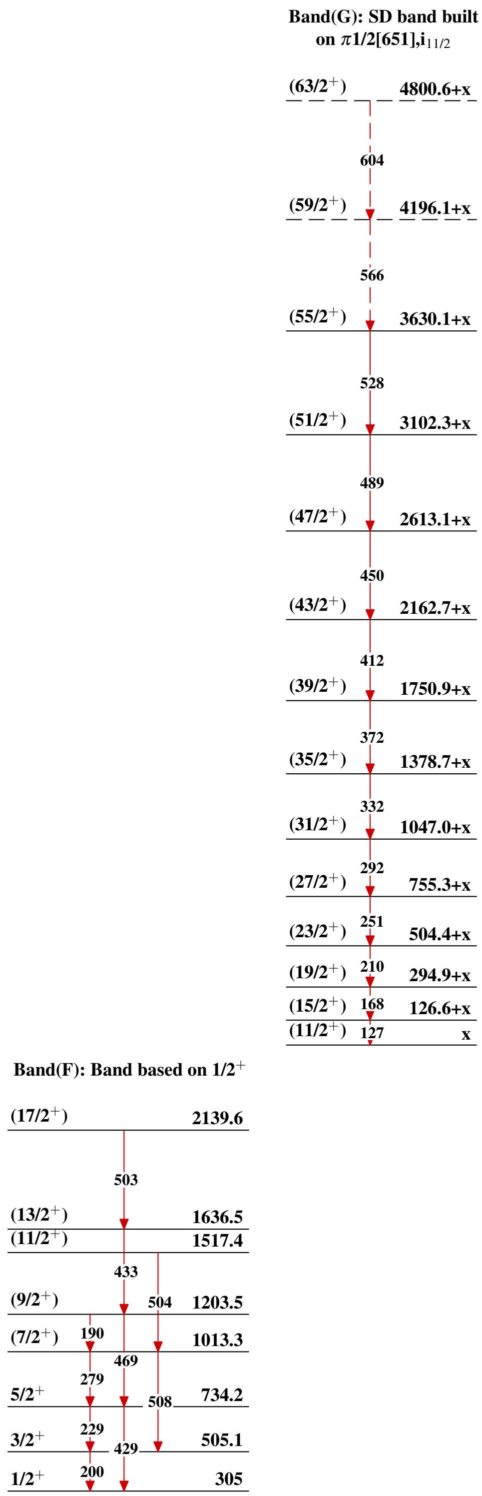
$^{193}_{83}Bi_{110}$

$^{165}Ho(^{32}S,4n\gamma)$ 2015He27



$^{193}_{83}Bi_{110}$

^{165}Ho(^{32}S,4nγ) 2015He27 (continued)



$^{193}_{83}Bi_{110}$