^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 170, 1 (2020)	16-Aug-2020

This dataset contains (n,γ) data for E=th measured at the Nuclear Research Reactor, Dalat Nuclear Research Institute, Vietnam, with thermal flux of 1.7×10^5 n/cm^{2}s. Coincidence $\gamma\gamma$ spectra were collected with two HPGe detectors (of 35% efficiency relative to the standard NaI(Tl) crystal) from 583 mg Sm_2O_3 target of 98.7%-enriched ^{152}Sm with σ_{th}=206 *3* barn. Main impurity: 0.13% ^{149}Sm with σ_{th}=40140 *600* barn.

Measured spectra covered the interval 5.2-5.9 MeV of $E_{\gamma1}+E_{\gamma2}$ for $\gamma\gamma$ cascades populating the g.s. and 15 final states of excitation energies of 7.536, 35.844, 90.875, 126.412, 127.298, 182.902, 276.713, 321.113, 356.686, 362.286, 404.134, 405.468, 414.928, 450.051, and 481.092 MeV respectively. Because of low statistics, the $\gamma\gamma$ cascades spectra corresponding to the final levels 276.713, 356.686, 362.286, and 450.051 keV have not been analyzed by 2019Ng02. All collected intensities are $\gamma\gamma$ coincidecence intensities, $I_{\gamma\gamma}$. A total number of 386 cascades corresponding to 576 γ transitions have been detected.

^{153}Sm Levels

E(level)[†‡]	J$^\pi$[#]	Comments
0.0	3/2$^+$	
7.536	5/2$^+$	Additional information 1.
35.844	3/2$^-$	Additional information 2.
90.875	5/2$^-$	Additional information 3.
126.412[@]	1/2$^-$	Additional information 4.
182.902	5/2$^-$	Additional information 5.
321.113	3/2$^+$	Additional information 6.
404.134[&]	1/2$^-$	Additional information 7.
414.928	1/2$^+$	Additional information 8.
481.092	3/2$^+$	Additional information 9.
630.38 *14*	3/2	
695.31 *16*	3/2[a]	
735.14 *22*	1/2,3/2	
749.96 *15*	3/2	
788.5 *3*	3/2	
916.87 *18*	3/2	
984.02 *16*	3/2	
1098.8 *3*	1/2,3/2	
1110.75 *25*	3/2	
1163.3 *4*	1/2,3/2	
1170.72 *11*	3/2	
1223.16 *22*	1/2,3/2	
1321.83 *17*	1/2,3/2	
1342.52 *17*	3/2	
1360.96 *22*	1/2,3/2	
1364.61 *23*	3/2	
1392.0 *4*	1/2,3/2	
1396.9 *4*	1/2,3/2	
1400.25 *21*	1/2,3/2	
1422.36 *23*	3/2	
1435.90 *24*	1/2,3/2	
1448.3 *5*	1/2,3/2	
1486.15 *20*	3/2	
1513.73 *18*	3/2	
1527.09 *15*	1/2,3/2	
1539.25 *22*	3/2	
1557.29 *16*	1/2,3/2	
1625.44 *22*	1/2,3/2	
1660.6 *4*	3/2	

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^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02 (continued)

^{153}Sm Levels (continued)

E(level)[†‡]	J$^{\pi}$[#]
1739.29 *14*	3/2
1752.54 *18*	3/2
1768.15 *21*	1/2,3/2
1789.64 *20*	3/2
1832.41 *22*	3/2
1841.4 *3*	3/2
1875.7 *3*	3/2
1884.64 *24*	1/2,3/2
1925.1 *3*	1/2,3/2
1933.33 *19*	1/2,3/2
1936.12 *22*	3/2
2037.37 *23*	1/2,3/2
2090.30 *22*	1/2,3/2
2111.16 *21*	3/2
2135.3 *4*	1/2,3/2
2158.3 *3*	3/2
2174.3 *3*	1/2,3/2
2191.98 *24*	1/2,3/2
2223.2 *4*	1/2,3/2
2237.4 *3*	3/2
2293.2 *4*	1/2,3/2
2334.9 *3*	3/2
2342.03 *19*	3/2
2414.8 *4*	1/2,3/2
2419.5 *3*	3/2
2427.4 *4*	3/2
2446.9 *3*	1/2,3/2
2461.07 *25*	3/2
2483.0 *4*	1/2,3/2
2495.0 *4*	3/2
2497.02 *22*	3/2
2513.35 *24*	3/2
2542.72 *23*	3/2
2545.5 *3*	3/2
2643.5 *3*	1/2,3/2
2671.94 *19*	3/2
2677.5 *4*	1/2,3/2
2681.14 *22*	3/2
2691.51 *18*	3/2
2699.55 *17*	3/2
2709.6 *3*	3/2
2714.25 *24*	1/2,3/2
2722.71 *24*	3/2
2756.11 *23*	1/2,3/2
2788.74 *19*	3/2
2811.8 *4*	1/2,3/2
2850.9 *5*	1/2,3/2
2858.8 *4*	1/2,3/2
2921.3 *4*	3/2
2930.6 *3*	1/2,3/2
2940.3 *4*	3/2
2977.0 *3*	3/2
2986.9 *4*	1/2,3/2
2997.7 *4*	1/2,3/2
3015.25 *24*	1/2,3/2
3021.2 *3*	1/2,3/2
3032.7 *4*	3/2

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^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02 (continued)

^{153}Sm Levels (continued)

E(level)[†‡]	J$^\pi$[#]	Comments
3038.85 *21*	3/2	
3052.88 *22*	3/2	
3076.80 *24*	1/2,3/2	
3127.92 *23*	1/2,3/2	
3171.59 *22*	1/2,3/2	
3245.7 *3*	1/2,3/2	
3281.1 *3*	3/2	
3288.6 *3*	1/2,3/2	
3305.3 *3*	3/2	
3313.69 *23*	1/2,3/2	
3319.0 *4*	3/2	
3341.2 *3*	3/2	
3353.2 *4*	1/2,3/2	
3360.0 *4*	3/2	
3421.5 *3*	1/2,3/2	
3534.71 *24*	1/2,3/2	
3763.6 *4*	1/2,3/2	
(5868.38 *5*)	1/2$^+$	Additional information 10. E(level): From Adopted Levels, Gammas dataset. J$^\pi$: From s-wave capture in J$^\pi$=0$^+$ state.

† Additional information 11.
‡ From least-squares fit to γ energies with levels 7.536, 35.844, 90.875, 126.412, 182.902, 321.113, 404.134, 414.928, 481.092, and 5868.38 held fixed. For final levels of cascades (with energies below 630), from Adopted Levels, Gammas dataset.
# Tentatively assigned by 2019Ng02 based on the assumption (as they justified for this nucleus) that all observed transitions are of dipole L=1 type, with final level's J^π values from Adopted Levels, Gammas dataset. J=3/2 was adopted for all intermediary levels that decay to J=5/2 levels. For all the other intermediary levels J=1/2,3/2 was adopted.
@ Unresolved from 127.298.
& Unresolved from 405.468.
a If 604γ is L=1, dipole transition to 5/2, 91 level; 1/2 if 604γ is L=2, quadrupole transition to 5/2, 91 level.

γ(^{153}Sm)

Unplaced γ's from $\gamma\gamma$ cascades with none of the transitions identified as the primary γ within the present work. Given in comments is the coincidence partner of each unplaced γ.

E$_\gamma$	I$_{\gamma\gamma}$[†‡]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Comments
539.5 *3*	0.487 *95*	630.38	3/2	90.875	5/2$^-$	
567.2 *3*	0.69 *13*	749.96	3/2	182.902	5/2$^-$	
568.2 *3*	1.12 *14*	695.31	3/2	126.412	1/2$^-$	
568.6 *7*	0.234 *96*	984.02	3/2	414.928	1/2$^+$	
x581.2 *8*	0.194 *92*					4801.6γ.
594.6 *4*	0.462 *98*	630.38	3/2	35.844	3/2$^-$	
604.8 *5*	0.175 *54*	695.31	3/2	90.875	5/2$^-$	
622.6 *4*	0.306 *71*	749.96	3/2	126.412	1/2$^-$	
622.9 *3*	3.70 *32*	630.38	3/2	7.536	5/2$^+$	
x629.7 *4*	0.49 *11*					5231.2γ.
630.4 *3*	5.04 *33*	630.38	3/2	0.0	3/2$^+$	
x659.3 *6*	0.159 *76*					4794.2γ.
659.3 *3*	1.81 *19*	749.96	3/2	90.875	5/2$^-$	

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^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02 (continued)

$\gamma(^{153}Sm)$ (continued)

E_γ	$I_{\gamma\gamma}$ †‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
659.5 *3*	4.56 *32*	695.31	3/2	35.844	$3/2^-$	
662.0 *5*	0.169 *60*	984.02	3/2	321.113	$3/2^+$	
691.0 *8*	0.188 *89*	1170.72	3/2	481.092	$3/2^+$	
696.0 *4*	0.312 *77*	695.31	3/2	0.0	$3/2^+$	
x713.1 *6*	0.117 *56*					4674.2γ.
714.1 *3*	0.81 *13*	749.96	3/2	35.844	$3/2^-$	
735.2 *3*	0.55 *10*	735.14	1/2,3/2	0.0	$3/2^+$	
x737.2 *5*	0.109 *43*					4810.2γ.
x738.7 *4*	0.128 *40*					4724.2γ.
750.4 *5*	0.267 *70*	749.96	3/2	0.0	$3/2^+$	
755.4 *4*	0.70 *17*	1170.72	3/2	414.928	$1/2^+$	
766.1 *4*	0.430 *88*	1170.72	3/2	404.134	$1/2^-$	
x768.2 *6*	0.124 *51*					5100.2γ.
780.5 *6*	0.186 *63*	788.5	3/2	7.536	$5/2^+$	
788.9 *5*	0.250 *68*	788.5	3/2	0.0	$3/2^+$	
801.6 *5*	0.143 *47*	984.02	3/2	182.902	$5/2^-$	
826.0 *3*	0.324 *77*	916.87	3/2	90.875	$5/2^-$	
x827.9 *7*	0.045 *23*					4719.4γ.
840.8 *3*	4.05 *38*	1321.83	1/2,3/2	481.092	$3/2^+$	
849.4 *3*	0.70 *11*	1170.72	3/2	321.113	$3/2^+$	
x870.7 *9*	0.051 *24*					4676.6γ.
880.3 *5*	0.38 *11*	1360.96	1/2,3/2	481.092	$3/2^+$	
881.1 *3*	0.65 *12*	916.87	3/2	35.844	$3/2^-$	
902.0 *3*	0.505 *94*	1223.16	1/2,3/2	321.113	$3/2^+$	
906.9 *3*	2.17 *32*	1321.83	1/2,3/2	414.928	$1/2^+$	
915.7 *5*	0.37 *11*	1396.9	1/2,3/2	481.092	$3/2^+$	
917.2 *6*	0.170 *57*	1321.83	1/2,3/2	404.134	$1/2^-$	
927.3 *6*	0.097 *36*	1110.75	3/2	182.902	$5/2^-$	
937.3 *4*	0.075 *22*	1342.52	3/2	404.134	$1/2^-$	
x945.0 *5*	0.063 *24*					4518.0γ.
945.9 *3*	1.71 *22*	1360.96	1/2,3/2	414.928	$1/2^+$	
947.2 *6*	0.154 *49*	984.02	3/2	35.844	$3/2^-$	
954.8 *4*	0.37 *10*	1435.90	1/2,3/2	481.092	$3/2^+$	
960.1 *3*	0.368 *64*	1364.61	3/2	404.134	$1/2^-$	
x964.6 *9*	0.152 *65*					4422.7γ.
976.8 *3*	1.30 *15*	984.02	3/2	7.536	$5/2^+$	
977.4 *9*	0.087 *49*	1392.0	1/2,3/2	414.928	$1/2^+$	
982.3 *8*	0.118 *57*	1396.9	1/2,3/2	414.928	$1/2^+$	
984.3 *3*	1.58 *13*	984.02	3/2	0.0	$3/2^+$	
984.5 *5*	0.097 *37*	1110.75	3/2	126.412	$1/2^-$	
987.5 *5*	0.090 *29*	1392.0	1/2,3/2	404.134	$1/2^-$	
988.3 *3*	0.537 *89*	1170.72	3/2	182.902	$5/2^-$	
995.7 *3*	0.296 *58*	1400.25	1/2,3/2	404.134	$1/2^-$	
1000.7 *5*	0.167 *52*	1321.83	1/2,3/2	321.113	$3/2^+$	
1018.1 *4*	0.132 *37*	1422.36	3/2	404.134	$1/2^-$	
1020.6 *6*	0.098 *39*	1110.75	3/2	90.875	$5/2^-$	
x1030.1 *8*	0.070 *30*					4711.0γ.
1033.4 *7*	0.160 *61*	1448.3	1/2,3/2	414.928	$1/2^+$	
1036.4 *7*	0.066 *30*	1163.3	1/2,3/2	126.412	$1/2^-$	
x1038.6 *6*	0.069 *39*					4424.4γ.
1044.2 *4*	0.345 *72*	1170.72	3/2	126.412	$1/2^-$	
1046.3 *5*	2.82 *30*	1527.09	1/2,3/2	481.092	$3/2^+$	
1071.5 *8*	0.078 *39*	1486.15	3/2	414.928	$1/2^+$	
1074.5 *5*	0.202 *57*	1110.75	3/2	35.844	$3/2^-$	
1076.2 *3*	1.27 *20*	1557.29	1/2,3/2	481.092	$3/2^+$	
1079.9 *3*	0.84 *11*	1170.72	3/2	90.875	$5/2^-$	

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^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02 (continued)

$\gamma(^{153}Sm)$ (continued)

E_γ	$I_{\gamma\gamma}$ †‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
1098.3 *5*	0.201 *68*	1513.73	3/2	414.928	$1/2^+$	
1098.8 *4*	0.216 *50*	1098.8	1/2,3/2	0.0	$3/2^+$	
1114.5 *7*	0.090 *40*	1435.90	1/2,3/2	321.113	$3/2^+$	
1122.3 *4*	0.215 *58*	1527.09	1/2,3/2	404.134	$1/2^-$	
1134.5 *4*	0.377 *81*	1170.72	3/2	35.844	$3/2^-$	
1160.2 *3*	0.76 *11*	1342.52	3/2	182.902	$5/2^-$	
1163.0 *3*	1.13 *17*	1170.72	3/2	7.536	$5/2^+$	
1163.5 *5*	0.144 *45*	1163.3	1/2,3/2	0.0	$3/2^+$	
1164.4 *4*	0.344 *83*	1486.15	3/2	321.113	$3/2^+$	
[x]1170.4 *8*	0.066 *32*					4376.9γ.
1171.3 *4*	0.190 *58*	1170.72	3/2	0.0	$3/2^+$	
1193.1 *6*	0.114 *43*	1513.73	3/2	321.113	$3/2^+$	
1195.3 *6*	0.064 *28*	1321.83	1/2,3/2	126.412	$1/2^-$	
1206.1 *5*	0.149 *50*	1527.09	1/2,3/2	321.113	$3/2^+$	
1215.9 *3*	1.06 *12*	1342.52	3/2	126.412	$1/2^-$	
1220.4 *3*	0.551 *93*	1625.44	1/2,3/2	404.134	$1/2^-$	
1223.2 *5*	0.191 *54*	1223.16	1/2,3/2	0.0	$3/2^+$	
[x]1229.1 *8*	0.092 *38*					4233.8γ.
1236.2 *3*	0.54 *10*	1557.29	1/2,3/2	321.113	$3/2^+$	
1258.9 *8*	0.087 *45*	1739.29	3/2	481.092	$3/2^+$	
[x]1273.2 *5*	0.136 *53*					4114.1γ.
1274.1 *6*	0.180 *52*	1364.61	3/2	90.875	$5/2^-$	
1303.0 *6*	0.168 *51*	1486.15	3/2	182.902	$5/2^-$	
[x]1307.2 *6*	0.098 *39*					4240.1γ.
1333.8 *3*	0.280 *62*	1739.29	3/2	404.134	$1/2^-$	
[x]1340.1 *7*	0.085 *32*					4401.0γ.
1359.3 *6*	0.077 *33*	1486.15	3/2	126.412	$1/2^-$	
1363.7 *3*	0.408 *75*	1768.15	1/2,3/2	404.134	$1/2^-$	
1384.8 *4*	0.236 *56*	1789.64	3/2	404.134	$1/2^-$	
1400.2 *3*	0.688 *93*	1527.09	1/2,3/2	126.412	$1/2^-$	
1400.5 *4*	0.220 *62*	1400.25	1/2,3/2	0.0	$3/2^+$	
[x]1412.1 *5*	0.141 *49*					4456.3γ.
1414.6 *4*	0.314 *76*	1422.36	3/2	7.536	$5/2^+$	
[x]1414.8 *5*	0.284 *67*					4417.8γ.
1418.0 *8*	0.116 *50*	1739.29	3/2	321.113	$3/2^+$	
1423.0 *3*	0.534 *96*	1513.73	3/2	90.875	$5/2^-$	
1427.4 *3*	0.418 *75*	1832.41	3/2	404.134	$1/2^-$	
1430.5 *5*	0.112 *37*	1557.29	1/2,3/2	126.412	$1/2^-$	
1431.9 *8*	0.138 *55*	1752.54	3/2	321.113	$3/2^+$	
1436.1 *4*	0.385 *82*	1435.90	1/2,3/2	0.0	$3/2^+$	
1448.4 *3*	0.348 *79*	1539.25	3/2	90.875	$5/2^-$	
1450.7 *6*	0.144 *46*	1486.15	3/2	35.844	$3/2^-$	
1451.5 *4*	0.300 *90*	1933.33	1/2,3/2	481.092	$3/2^+$	
1471.0 *5*	0.112 *37*	1875.7	3/2	404.134	$1/2^-$	
[x]1472.5 *8*	0.084 *40*					4074.8γ.
1477.6 *6*	0.083 *33*	1660.6	3/2	182.902	$5/2^-$	
1477.7 *5*	0.186 *53*	1513.73	3/2	35.844	$3/2^-$	
1480.0 *6*	0.143 *43*	1884.64	1/2,3/2	404.134	$1/2^-$	
1486.8 *4*	0.398 *93*	1486.15	3/2	0.0	$3/2^+$	
1491.6 *3*	0.491 *88*	1527.09	1/2,3/2	35.844	$3/2^-$	
[x]1492.2 *4*	0.186 *50*					3970.8γ.
1506.2 *4*	0.355 *81*	1513.73	3/2	7.536	$5/2^+$	
[x]1506.7 *4*	0.146 *42*					3956.3γ.
1520.7 *5*	0.139 *44*	1925.1	1/2,3/2	404.134	$1/2^-$	
1521.6 *4*	0.234 *59*	1557.29	1/2,3/2	35.844	$3/2^-$	
1556.5 *3*	0.411 *81*	1739.29	3/2	182.902	$5/2^-$	

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^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02 (continued)

$\gamma(^{153}Sm)$ (continued)

E_γ	$I_{\gamma\gamma}$ †‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
1556.7 *5*	0.229 *81*	2037.37	1/2,3/2	481.092	$3/2^+$	
x1585.8 *4*	0.184 *51*					4191.8γ.
x1597.8 *6*	0.076 *31*					4143.3γ.
x1601.8 *7*	0.100 *40*					3945.4γ.
1607.0 *6*	0.104 *39*	1789.64	3/2	182.902	$5/2^-$	
1610.0 *7*	0.222 *82*	2090.30	1/2,3/2	481.092	$3/2^+$	
1612.2 *5*	0.162 *47*	1739.29	3/2	126.412	$1/2^-$	
1613.4 *6*	0.200 *63*	1933.33	1/2,3/2	321.113	$3/2^+$	
1624.1 *6*	0.092 *33*	1752.54	3/2	126.412	$1/2^-$	
1624.9 *6*	0.163 *51*	1660.6	3/2	35.844	$3/2^-$	
1626.7 *5*	0.326 *73*	1625.44	1/2,3/2	0.0	$3/2^+$	
1648.5 *6*	0.131 *45*	1739.29	3/2	90.875	$5/2^-$	
x1659.5 *6*	0.145 *51*					3887.8γ.
x1661.2 *7*	0.141 *47*					4024.3γ.
1685.5 *3*	0.483 *91*	2090.30	1/2,3/2	404.134	$1/2^-$	
1711.5 *7*	0.157 *75*	2191.98	1/2,3/2	481.092	$3/2^+$	
x1721.6 *5*	0.103 *36*					4019.5γ.
1730.3 *6*	0.138 *54*	2135.3	1/2,3/2	404.134	$1/2^-$	
1732.7 *5*	0.181 *57*	1768.15	1/2,3/2	35.844	$3/2^-$	
1740.3 *3*	0.324 *75*	1739.29	3/2	0.0	$3/2^+$	
1743.2 *6*	0.153 *53*	1832.41	3/2	90.875	$5/2^-$	
1745.3 *3*	1.04 *15*	1752.54	3/2	7.536	$5/2^+$	
1750.6 *5*	0.212 *58*	1841.4	3/2	90.875	$5/2^-$	
1752.2 *5*	0.105 *41*	1936.12	3/2	182.902	$5/2^-$	
1752.7 *3*	1.38 *16*	1752.54	3/2	0.0	$3/2^+$	
1754.1 *6*	0.174 *56*	2158.3	3/2	404.134	$1/2^-$	
1758.1 *3*	0.336 *61*	1884.64	1/2,3/2	126.412	$1/2^-$	
1768.2 *5*	0.238 *71*	1768.15	1/2,3/2	0.0	$3/2^+$	
1769.3 *5*	0.156 *54*	2174.3	1/2,3/2	404.134	$1/2^-$	
x1773.1 *8*	0.136 *56*					4095.3γ.
x1779.5 *6*	0.177 *77*					3607.8γ.
1785.1 *6*	0.152 *48*	1875.7	3/2	90.875	$5/2^-$	
1789.7 *4*	0.257 *67*	1789.64	3/2	0.0	$3/2^+$	
x1796.3 *6*	0.134 *45*					3981.2γ.
1797.0 *5*	0.172 *56*	1832.41	3/2	35.844	$3/2^-$	
1798.3 *6*	0.129 *38*	1925.1	1/2,3/2	126.412	$1/2^-$	
x1800.3 *4*	0.219 *62*					3885.2γ.
1805.5 *4*	0.259 *68*	1841.4	3/2	35.844	$3/2^-$	
1806.8 *4*	0.164 *42*	1933.33	1/2,3/2	126.412	$1/2^-$	
x1807.3 *6*	0.164 *56*					3655.6γ.
1814.9 *6*	0.189 *64*	2135.3	1/2,3/2	321.113	$3/2^+$	
1817.8 *7*	0.161 *55*	2223.2	1/2,3/2	404.134	$1/2^-$	
x1840.3 *3*	0.530 *76*					3900.7γ.
1844.9 *5*	0.183 *55*	1936.12	3/2	90.875	$5/2^-$	
1888.7 *6*	0.160 *56*	2293.2	1/2,3/2	404.134	$1/2^-$	
1897.6 *3*	0.71 *11*	1933.33	1/2,3/2	35.844	$3/2^-$	
1910.3 *5*	0.183 *54*	2037.37	1/2,3/2	126.412	$1/2^-$	
1917.3 *7*	0.127 *53*	2237.4	3/2	321.113	$3/2^+$	
1929.4 *5*	0.317 *80*	1936.12	3/2	7.536	$5/2^+$	
x1931.0 *7*	0.101 *45*					3754.5γ.
x1936.1 *7*	0.091 *43*					3611.2γ.
1936.5 *4*	0.415 *91*	1936.12	3/2	0.0	$3/2^+$	
x1948.3 *6*	0.155 *54*					3829.3γ.
x1949.0 *8*	0.094 *42*					3736.4γ.
1967.0 *8*	0.186 *81*	2446.9	1/2,3/2	481.092	$3/2^+$	
1972.0 *6*	0.177 *68*	2293.2	1/2,3/2	321.113	$3/2^+$	

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^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02 (continued)

$\gamma(^{153}Sm)$ (continued)

E_γ	$I_{\gamma\gamma}$ †‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
1974.9 *7*	0.122 *54*	2158.3	3/2	182.902	$5/2^-$	
1980.1 *5*	0.29 *10*	2461.07	3/2	481.092	$3/2^+$	
x1987.5 *5*	0.251 *70*					3475.5γ.
2001.7 *5*	0.305 *72*	2037.37	1/2,3/2	35.844	$3/2^-$	
2002.6 *8*	0.240 *96*	2483.0	1/2,3/2	481.092	$3/2^+$	
2009.7 *6*	0.209 *64*	2414.8	1/2,3/2	404.134	$1/2^-$	
2020.4 *3*	0.57 *11*	2111.16	3/2	90.875	$5/2^-$	
2021.3 *7*	0.178 *61*	2342.03	3/2	321.113	$3/2^+$	
2023.0 *6*	0.233 *68*	2427.4	3/2	404.134	$1/2^-$	
2037.3 *5*	0.218 *65*	2037.37	1/2,3/2	0.0	$3/2^+$	
2054.9 *7*	0.152 *56*	2237.4	3/2	182.902	$5/2^-$	
2055.2 *5*	0.226 *62*	2090.30	1/2,3/2	35.844	$3/2^-$	
2065.1 *4*	0.261 *62*	2191.98	1/2,3/2	126.412	$1/2^-$	
x2067.4 *6*	0.128 *50*					3479.9γ.
2075.2 *4*	0.406 *86*	2111.16	3/2	35.844	$3/2^-$	
2078.3 *6*	0.191 *63*	2483.0	1/2,3/2	404.134	$1/2^-$	
x2080.5 *10*	0.127 *51*					3752.1γ.
x2086.9 *6*	0.266 *77*					3781.5γ.
2094.2 *6*	0.153 *57*	2414.8	1/2,3/2	321.113	$3/2^+$	
2097.0 *5*	0.223 *80*	2223.2	1/2,3/2	126.412	$1/2^-$	
x2103.3 *5*	0.236 *69*					3582.2γ.
2104.7 *6*		(5868.38)	$1/2^+$	3763.6	1/2,3/2	
2122.6 *5*	0.299 *77*	2158.3	3/2	35.844	$3/2^-$	
2139.4 *7*	0.169 *59*	2174.3	1/2,3/2	35.844	$3/2^-$	
x2145.6 *7*	0.154 *59*					3539.9γ.
2152.1 *7*	0.119 *49*	2334.9	3/2	182.902	$5/2^-$	
2156.2 *4*	0.276 *74*	2191.98	1/2,3/2	35.844	$3/2^-$	
x2158.4 *7*	0.092 *46*					3388.9γ.
2159.6 *4*	0.417 *96*	2342.03	3/2	182.902	$5/2^-$	
x2171.9 *8*	0.164 *63*					3569.2γ.
2174.5 *5*	0.369 *97*	2174.3	1/2,3/2	0.0	$3/2^+$	
2176.4 *5*	0.370 *96*	2497.02	3/2	321.113	$3/2^+$	
x2203.5 *6*	0.231 *70*					3482.0γ.
x2212.4 *7*	0.167 *59*					3250.6γ.
2215.7 *4*	0.51 *11*	2342.03	3/2	126.412	$1/2^-$	
2222.2 *4*	0.164 *61*	2542.72	3/2	321.113	$3/2^+$	
2229.3 *4*	0.186 *58*	2237.4	3/2	7.536	$5/2^+$	
x2234.7 *7*	0.235 *78*					3506.4γ.
x2239.7 *8*	0.119 *56*					3223.2γ.
2250.8 *4*	0.262 *83*	2342.03	3/2	90.875	$5/2^-$	
2266.8 *5*	0.271 *79*	2671.94	3/2	404.134	$1/2^-$	
2272.4 *9*	0.121 *59*	2677.5	1/2,3/2	404.134	$1/2^-$	
x2275.0 *7*	0.127 *45*					3272.3γ.
2278.1 *4*	0.357 *89*	2461.07	3/2	182.902	$5/2^-$	
x2283.2 *7*	0.077 *37*					3264.1γ.
2286.6 *5*	0.236 *73*	2691.51	3/2	404.134	$1/2^-$	
x2288.3 *5*	0.212 *62*					3544.3γ.
x2293.0 *7*	0.197 *66*					3169.9γ.
x2294.8 *4*	0.120 *39*					3252.5γ.
2305.5 *5*	0.225 *66*	2342.03	3/2	35.844	$3/2^-$	
2309.4 *4*	0.244 *64*	2714.25	1/2,3/2	404.134	$1/2^-$	
2313.8 *5*	0.311 *83*	2497.02	3/2	182.902	$5/2^-$	
2319.9 *4*	0.267 *60*	2446.9	1/2,3/2	126.412	$1/2^-$	
2322.3 *4*	0.227 *63*	2643.5	1/2,3/2	321.113	$3/2^+$	
2328.0 *5*	0.196 *75*	2419.5	3/2	90.875	$5/2^-$	
2329.9 *6*	0.152 *53*	2513.35	3/2	182.902	$5/2^-$	

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^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02 (continued)

$\gamma(^{153}Sm)$ (continued)

E_γ	$I_{\gamma\gamma}$ †‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
2333.0 *5*		(5868.38)	$1/2^+$	3534.71	1/2,3/2	
2334.8 *4*	0.44 *11*	2334.9	3/2	0.0	$3/2^+$	
2336.4 *9*	0.114 *51*	2427.4	3/2	90.875	$5/2^-$	
x2341.6 *5*	0.266 *67*					3121.3γ.
x2344.3 *5*	0.131 *43*					3396.8γ.
2351.9 *3*	0.415 *88*	2756.11	1/2,3/2	404.134	$1/2^-$	
2356.4 *6*	0.121 *40*	2483.0	1/2,3/2	126.412	$1/2^-$	
2363.7 *5*	0.298 *77*	2545.5	3/2	182.902	$5/2^-$	
2369.7 *5*	0.234 *56*	2497.02	3/2	126.412	$1/2^-$	
2369.8 *7*	0.199 *91*	2850.9	1/2,3/2	481.092	$3/2^+$	
x2371.6 *6*	0.168 *54*					3091.3γ.
2378.1 *7*	0.149 *53*	2699.55	3/2	321.113	$3/2^+$	
2392.9 *5*	0.220 *67*	2714.25	1/2,3/2	321.113	$3/2^+$	
x2402.9 *6*	0.117 *39*					3338.2γ.
2405.8 *7*	0.288 *85*	2497.02	3/2	90.875	$5/2^-$	
2407.2 *7*	0.143 *50*	2811.8	1/2,3/2	404.134	$1/2^-$	
x2411.2 *7*	0.160 *63*					3366.4γ.
2412.5 *5*	0.339 *84*	2419.5	3/2	7.536	$5/2^+$	
x2416.5 *6*	0.159 *54*					3046.5γ.
2418.0 *5*	0.237 *56*	2545.5	3/2	126.412	$1/2^-$	
x2421.4 *5*	0.315 *82*					3125.9γ.
x2423.0 *7*	0.091 *45*					3040.0γ.
x2428.1 *8*	0.161 *60*					3119.7γ.
2441.0 *8*	0.155 *78*	2921.3	3/2	481.092	$3/2^+$	
2446.3 *6*		(5868.38)	$1/2^+$	3421.5	1/2,3/2	
2451.2 *6*	0.277 *87*	2542.72	3/2	90.875	$5/2^-$	
2458.7 *6*	0.263 *73*	2495.0	3/2	35.844	$3/2^-$	
x2464.5 *9*	0.121 *67*					3082.8γ.
2477.7 *3*	0.520 *87*	2513.35	3/2	35.844	$3/2^-$	
2487.9 *5*	0.339 *83*	2495.0	3/2	7.536	$5/2^+$	
2495.7 *7*	0.32 *12*	2977.0	3/2	481.092	$3/2^+$	
2497.8 *5*	0.40 *10*	2497.02	3/2	0.0	$3/2^+$	
2506.6 *5*	0.196 *54*	2542.72	3/2	35.844	$3/2^-$	
2508.0 *7*		(5868.38)	$1/2^+$	3360.0	3/2	
2509.1 *3*	0.463 *91*	2691.51	3/2	182.902	$5/2^-$	
x2510.3 *5*	0.37 *10*					3037.0γ.
2514.3 *7*		(5868.38)	$1/2^+$	3353.2	1/2,3/2	
2516.7 *3*	0.66 *11*	2699.55	3/2	182.902	$5/2^-$	
2527.2 *5*		(5868.38)	$1/2^+$	3341.2	3/2	
2529.9 *9*	0.119 *55*	2850.9	1/2,3/2	321.113	$3/2^+$	
2535.0 *7*	0.142 *54*	2542.72	3/2	7.536	$5/2^+$	
x2537.7 *7*	0.218 *78*					2925.2γ.
2537.9 *7*	0.157 *63*	2858.8	1/2,3/2	321.113	$3/2^+$	
x2542.4 *5*	0.238 *66*					3318.5γ.
2545.2 *6*	0.177 *54*	2671.94	3/2	126.412	$1/2^-$	
2549.2 *7*		(5868.38)	$1/2^+$	3319.0	3/2	
2554.5 *4*		(5868.38)	$1/2^+$	3313.69	1/2,3/2	
2563.2 *5*		(5868.38)	$1/2^+$	3305.3	3/2	
2565.5 *5*	0.314 *78*	2691.51	3/2	126.412	$1/2^-$	
x2571.1 *6*	0.186 *63*					2976.2γ.
2571.9 *8*	0.222 *78*	2977.0	3/2	404.134	$1/2^-$	
2572.8 *3*	0.62 *10*	2699.55	3/2	126.412	$1/2^-$	
x2573.5 *6*	0.189 *55*					3259.1γ.
2579.8 *5*		(5868.38)	$1/2^+$	3288.6	1/2,3/2	
2581.5 *7*	0.191 *74*	2986.9	1/2,3/2	404.134	$1/2^-$	
2582.6 *4*	0.397 *92*	2709.6	3/2	126.412	$1/2^-$	

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^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02 (continued)

$\gamma(^{153}Sm)$ (continued)

E_γ	$I_{\gamma\gamma}$ †‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
2587.0 *5*		(5868.38)	$1/2^+$	3281.1	3/2	
2589.9 *4*	0.46 *11*	2681.14	3/2	90.875	$5/2^-$	
2593.4 *6*	0.197 *78*	2997.7	1/2,3/2	404.134	$1/2^-$	
2596.2 *6*	0.177 *55*	2722.71	3/2	126.412	$1/2^-$	
2599.6 *6*	0.261 *91*	2691.51	3/2	90.875	$5/2^-$	
x2601.8 *4*	0.286 *65*					3230.8γ.
x2604.3 *7*	0.270 *84*					2943.0γ.
2605.0 *8*	0.226 *62*	2788.74	3/2	182.902	$5/2^-$	
x2607.4 *4*	0.61 *12*					3261.0γ.
2609.5 *6*	0.223 *75*	2930.6	1/2,3/2	321.113	$3/2^+$	
x2618.3 *6*	0.108 *44*					3067.2γ.
2619.3 *7*	0.185 *70*	2709.6	3/2	90.875	$5/2^-$	
2622.4 *6*		(5868.38)	$1/2^+$	3245.7	1/2,3/2	
2629.1 *5*	0.285 *71*	2756.11	1/2,3/2	126.412	$1/2^-$	
2632.6 *6*	0.208 *74*	2722.71	3/2	90.875	$5/2^-$	
x2633.4 *4*	0.111 *42*					2913.9γ.
2636.4 *3*	0.482 *84*	2671.94	3/2	35.844	$3/2^-$	
2643.6 *5*	0.302 *84*	2643.5	1/2,3/2	0.0	$3/2^+$	
2645.5 *3*	0.508 *87*	2681.14	3/2	35.844	$3/2^-$	
2654.8 *6*	0.176 *77*	2691.51	3/2	35.844	$3/2^-$	
2655.7 *7*	0.228 *89*	2977.0	3/2	321.113	$3/2^+$	
x2660.2 *7*	0.230 *89*					2887.1γ.
2661.8 *5*	0.296 *72*	2788.74	3/2	126.412	$1/2^-$	
2664.2 *5*	0.242 *70*	2671.94	3/2	7.536	$5/2^+$	
2666.7 *7*	0.174 *65*	2986.9	1/2,3/2	321.113	$3/2^+$	
2672.3 *6*	0.285 *94*	2671.94	3/2	0.0	$3/2^+$	
2677.7 *6*	0.39 *11*	2677.5	1/2,3/2	0.0	$3/2^+$	
2679.3 *5*	0.210 *63*	2714.25	1/2,3/2	35.844	$3/2^-$	
2684.1 *5*	0.346 *83*	2691.51	3/2	7.536	$5/2^+$	
x2684.6 *3*	0.203 *45*					2778.3γ.
2692.4 *4*	0.367 *86*	2699.55	3/2	7.536	$5/2^+$	
2696.4 *5*		(5868.38)	$1/2^+$	3171.59	1/2,3/2	
2699.0 *6*	0.257 *81*	2788.74	3/2	90.875	$5/2^-$	
x2704.7 *7*	0.119 *41*					2758.2γ.
x2708.2 *4*	0.390 *82*					3124.4γ.
2712.0 *7*	0.136 *58*	3032.7	3/2	321.113	$3/2^+$	
2714.8 *5*	0.344 *84*	2722.71	3/2	7.536	$5/2^+$	
x2716.4 *8*	0.150 *62*					3061.1γ.
2722.4 *5*	0.47 *12*	2722.71	3/2	0.0	$3/2^+$	
2737.8 *6*	0.235 *75*	2921.3	3/2	182.902	$5/2^-$	
2740.5 *4*		(5868.38)	$1/2^+$	3127.92	1/2,3/2	
2752.9 *4*	0.443 *88*	2788.74	3/2	35.844	$3/2^-$	
2757.3 *6*	0.270 *80*	2940.3	3/2	182.902	$5/2^-$	
x2758.2 *7*	0.119 *41*					2704.7γ.
2766.8 *4*	0.218 *51*	3171.59	1/2,3/2	404.134	$1/2^-$	
x2766.9 *6*	0.190 *68*					2918.6γ.
x2770.4 *4*	0.409 *99*					3007.2γ.
2776.0 *5*	0.175 *58*	2811.8	1/2,3/2	35.844	$3/2^-$	
x2778.3 *3*	0.203 *45*					2684.6γ.
2780.7 *4*	0.418 *90*	2788.74	3/2	7.536	$5/2^+$	
x2782.4 *6*	0.32 *11*					3086.0γ.
2789.3 *5*	0.54 *13*	2788.74	3/2	0.0	$3/2^+$	
2791.3 *5*		(5868.38)	$1/2^+$	3076.80	1/2,3/2	
x2797.4 *7*	0.188 *62*					3063.0γ.
2803.8 *5*	0.306 *72*	2930.6	1/2,3/2	126.412	$1/2^-$	
x2809.5 *9*	0.109 *61*					2876.0γ.

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^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02 (continued)

$\gamma(^{153}Sm)$ (continued)

E_γ	$I_{\gamma\gamma}$ †‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
2815.5 *5*		(5868.38)	1/2$^+$	3052.88	3/2	
2829.4 *5*		(5868.38)	1/2$^+$	3038.85	3/2	
2835.7 *7*		(5868.38)	1/2$^+$	3032.7	3/2	
x2838.0 *5*	0.294 *75*					2994.6γ.
2847.1 *5*		(5868.38)	1/2$^+$	3021.2	1/2,3/2	
2850.0 *8*	0.186 *70*	3032.7	3/2	182.902	5/2$^-$	
2851.2 *7*	0.237 *78*	3171.59	1/2,3/2	321.113	3/2$^+$	
2852.8 *5*		(5868.38)	1/2$^+$	3015.25	1/2,3/2	
2855.8 *7*	0.168 *67*	3038.85	3/2	182.902	5/2$^-$	
2858.6 *7*	0.27 *10*	2858.8	1/2,3/2	0.0	3/2$^+$	
2870.1 *5*		(5868.38)	1/2$^+$	2997.7	1/2,3/2	
2870.6 *6*	0.192 *40*	2997.7	1/2,3/2	126.412	1/2$^-$	
2870.8 *6*	0.245 *83*	3052.88	3/2	182.902	5/2$^-$	
x2876.0 *9*	0.109 *61*					2809.5γ.
2881.0 *7*		(5868.38)	1/2$^+$	2986.9	1/2,3/2	
x2887.1 *7*	0.230 *89*					2660.2γ.
2888.7 *6*	0.237 *69*	3015.25	1/2,3/2	126.412	1/2$^-$	
2891.3 *7*		(5868.38)	1/2$^+$	2977.0	3/2	
2893.7 *6*	0.254 *72*	3021.2	1/2,3/2	126.412	1/2$^-$	
2911.8 *4*	0.296 *71*	3038.85	3/2	126.412	1/2$^-$	
2912.8 *7*	0.189 *73*	3319.0	3/2	404.134	1/2$^-$	
x2913.9 *4*	0.111 *42*					2633.4γ.
x2918.6 *6*	0.190 *68*					2766.9γ.
x2925.2 *7*	0.218 *78*					2537.7γ.
2925.2 *7*	0.187 *63*	3245.7	1/2,3/2	321.113	3/2$^+$	
2928.1 *6*		(5868.38)	1/2$^+$	2940.3	3/2	
2932.9 *6*	0.256 *70*	2940.3	3/2	7.536	5/2$^+$	
2937.5 *5*		(5868.38)	1/2$^+$	2930.6	1/2,3/2	
2940.3 *8*	0.146 *74*	3421.5	1/2,3/2	481.092	3/2$^+$	
2941.3 *6*	0.270 *83*	3032.7	3/2	90.875	5/2$^-$	
x2943.0 *7*	0.270 *84*					2604.3γ.
2947.0 *7*		(5868.38)	1/2$^+$	2921.3	3/2	
2948.6 *9*	0.134 *64*	3353.2	1/2,3/2	404.134	1/2$^-$	
2950.1 *6*	0.139 *50*	3076.80	1/2,3/2	126.412	1/2$^-$	
2954.4 *7*	0.197 *76*	3360.0	3/2	404.134	1/2$^-$	
2967.5 *6*	0.194 *66*	3288.6	1/2,3/2	321.113	3/2$^+$	
2970.0 *5*	0.353 *82*	2977.0	3/2	7.536	5/2$^+$	
x2976.2 *6*	0.186 *63*					2571.1γ.
2979.3 *3*	1.19 *14*	3015.25	1/2,3/2	35.844	3/2$^-$	
2993.4 *6*	0.269 *85*	3313.69	1/2,3/2	321.113	3/2$^+$	
x2994.6 *5*	0.294 *75*					2838.0γ.
3003.3 *3*	0.60 *10*	3038.85	3/2	35.844	3/2$^-$	
x3007.2 *4*	0.409 *99*					2770.4γ.
3009.6 *7*		(5868.38)	1/2$^+$	2858.8	1/2,3/2	
3017.0 *3*	0.465 *92*	3052.88	3/2	35.844	3/2$^-$	
3017.5 *8*		(5868.38)	1/2$^+$	2850.9	1/2,3/2	
3017.6 *6*	0.187 *58*	3421.5	1/2,3/2	404.134	1/2$^-$	
3021.7 *4*	0.65 *14*	3021.2	1/2,3/2	0.0	3/2$^+$	
x3037.0 *5*	0.37 *10*					2510.3γ.
x3040.0 *7*	0.091 *45*					2423.0γ.
3040.9 *3*	0.392 *85*	3076.80	1/2,3/2	35.844	3/2$^-$	
x3046.5 *6*	0.159 *54*					2416.5γ.
3052.3 *5*	0.45 *12*	3052.88	3/2	0.0	3/2$^+$	
3056.2 *6*		(5868.38)	1/2$^+$	2811.8	1/2,3/2	
x3061.1 *8*	0.150 *62*					2716.4γ.
x3063.0 *8*	0.188 *62*					2797.4γ.

Continued on next page (footnotes at end of table)

^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02 (continued)

$\gamma(^{153}Sm)$ (continued)

E_γ	$I_{\gamma\gamma}$ †‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
x3067.2 *6*	0.108 *44*					2618.3γ.
3079.5 *5*		(5868.38)	1/2+	2788.74	3/2	
x3082.8 *9*	0.121 *67*					2464.5γ.
x3086.0 *6*	0.32 *11*					2782.4γ.
x3091.3 *6*	0.168 *54*					2371.6γ.
3092.6 *4*	0.338 *77*	3127.92	1/2,3/2	35.844	3/2−	
3111.5 *5*		(5868.38)	1/2+	2756.11	1/2,3/2	
3118.5 *5*	0.341 *77*	3245.7	1/2,3/2	126.412	1/2−	
x3119.7 *8*	0.161 *60*					2428.1γ.
x3121.3 *5*	0.266 *67*					2341.6γ.
3122.4 *6*	0.120 *46*	3305.3	3/2	182.902	5/2−	
x3124.4 *4*	0.390 *82*					2708.2γ.
x3125.9 *5*	0.315 *82*					2421.4γ.
3127.4 *4*	0.69 *14*	3127.92	1/2,3/2	0.0	3/2+	
3136.3 *7*	0.135 *51*	3171.59	1/2,3/2	35.844	3/2−	
3145.5 *5*		(5868.38)	1/2+	2722.71	3/2	
3153.5 *5*	0.329 *85*	3281.1	3/2	126.412	1/2−	
3153.7 *5*		(5868.38)	1/2+	2714.25	1/2,3/2	
3157.4 *5*	0.204 *63*	3341.2	3/2	182.902	5/2−	
3158.3 *5*		(5868.38)	1/2+	2709.6	3/2	
3168.7 *4*		(5868.38)	1/2+	2699.55	3/2	
x3169.9 *7*	0.197 *66*					2293.0γ.
3171.5 *4*	0.55 *12*	3171.59	1/2,3/2	0.0	3/2+	
3176.8 *5*		(5868.38)	1/2+	2691.51	3/2	
3187.3 *5*		(5868.38)	1/2+	2681.14	3/2	
3190.6 *7*		(5868.38)	1/2+	2677.5	1/2,3/2	
3196.2 *5*		(5868.38)	1/2+	2671.94	3/2	
3210.2 *6*	0.168 *51*	3245.7	1/2,3/2	35.844	3/2−	
x3223.2 *8*	0.119 *56*					2239.7γ.
3224.9 *5*		(5868.38)	1/2+	2643.5	1/2,3/2	
3225.9 *6*	0.227 *62*	3353.2	1/2,3/2	126.412	1/2−	
x3230.8 *4*	0.286 *65*					2601.8γ.
3245.5 *5*	0.206 *56*	3281.1	3/2	35.844	3/2−	
x3250.6 *7*	0.167 *59*					2212.4γ.
x3252.5 *4*	0.120 *39*					2294.8γ.
3252.8 *4*	0.317 *70*	3288.6	1/2,3/2	35.844	3/2−	
x3259.1 *6*	0.189 *55*					2573.5γ.
x3261.0 *4*	0.61 *12*					2607.4γ.
x3264.1 *7*	0.077 *37*					2283.2γ.
3269.4 *4*	0.297 *66*	3305.3	3/2	35.844	3/2−	
3270.0 *6*	0.255 *85*	3360.0	3/2	90.875	5/2−	
x3272.3 *7*	0.127 *45*					2275.0γ.
3274.5 *6*	0.195 *62*	3281.1	3/2	7.536	5/2+	
3277.5 *3*	0.515 *86*	3313.69	1/2,3/2	35.844	3/2−	
3294.5 *5*	0.187 *50*	3421.5	1/2,3/2	126.412	1/2−	
3305.6 *5*	0.269 *63*	3341.2	3/2	35.844	3/2−	
3312.2 *7*	0.142 *50*	3319.0	3/2	7.536	5/2+	
x3318.5 *5*	0.238 *66*					2542.4γ.
3319.7 *6*	0.284 *85*	3319.0	3/2	0.0	3/2+	
3322.9 *6*		(5868.38)	1/2+	2545.5	3/2	
3325.8 *5*		(5868.38)	1/2+	2542.72	3/2	
3334.3 *6*	0.115 *43*	3341.2	3/2	7.536	5/2+	
x3338.2 *6*	0.117 *39*					2402.9γ.
3354.0 *8*	0.161 *70*	3353.2	1/2,3/2	0.0	3/2+	
3355.2 *5*		(5868.38)	1/2+	2513.35	3/2	
x3366.4 *7*	0.160 *63*					2411.2γ.

Continued on next page (footnotes at end of table)

^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02 (continued)

$\gamma(^{153}Sm)$ (continued)

E_γ	$I_{\gamma\gamma}$ †‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
3371.3 *5*		(5868.38)	$1/2^+$	2497.02	3/2	
3373.7 *6*		(5868.38)	$1/2^+$	2495.0	3/2	
3384.7 *7*		(5868.38)	$1/2^+$	2483.0	1/2,3/2	
x3388.9 *7*	0.092 *46*					2158.4γ.
x3396.8 *5*	0.131 *43*					2344.3γ.
3407.3 *4*		(5868.38)	$1/2^+$	2461.07	3/2	
3407.7 *3*	0.337 *67*	3534.71	1/2,3/2	126.412	$1/2^-$	
3420.8 *6*		(5868.38)	$1/2^+$	2446.9	1/2,3/2	
3440.5 *7*		(5868.38)	$1/2^+$	2427.4	3/2	
3443.0 *7*	0.103 *46*	3763.6	1/2,3/2	321.113	$3/2^+$	
3448.9 *5*		(5868.38)	$1/2^+$	2419.5	3/2	
3453.1 *6*		(5868.38)	$1/2^+$	2414.8	1/2,3/2	
x3475.5 *5*	0.251 *70*					1987.5γ.
x3479.9 *6*	0.128 *50*					2067.4γ.
x3482.0 *6*	0.231 *70*					2203.5γ.
3500.1 *6*	0.237 *66*	3534.71	1/2,3/2	35.844	$3/2^-$	
x3506.4 *7*	0.235 *78*					2234.7γ.
3526.2 *5*		(5868.38)	$1/2^+$	2342.03	3/2	
3533.5 *6*		(5868.38)	$1/2^+$	2334.9	3/2	
x3539.9 *7*	0.154 *59*					2145.6γ.
x3544.3 *5*	0.212 *62*					2288.3γ.
x3569.2 *8*	0.164 *63*					2171.9γ.
3574.8 *6*		(5868.38)	$1/2^+$	2293.2	1/2,3/2	
x3582.2 *5*	0.236 *69*					2103.3γ.
x3607.8 *6*	0.177 *77*					1779.5γ.
x3611.2 *7*	0.091 *43*					1936.1γ.
3630.7 *7*		(5868.38)	$1/2^+$	2237.4	3/2	
3644.6 *6*		(5868.38)	$1/2^+$	2223.2	1/2,3/2	
x3655.6 *6*	0.164 *56*					1807.3γ.
3676.1 *5*		(5868.38)	$1/2^+$	2191.98	1/2,3/2	
3693.6 *6*		(5868.38)	$1/2^+$	2174.3	1/2,3/2	
3709.8 *6*		(5868.38)	$1/2^+$	2158.3	3/2	
3733.0 *6*		(5868.38)	$1/2^+$	2135.3	1/2,3/2	
x3736.4 *8*	0.092 *42*					1949.0γ.
x3752.1 *10*	0.127 *51*					2080.5γ.
x3754.5 *7*	0.191 *45*					1931.0γ.
3757.3 *4*		(5868.38)	$1/2^+$	2111.16	3/2	
3763.3 *5*	0.232 *78*	3763.6	1/2,3/2	0.0	$3/2^+$	
3777.4 *5*		(5868.38)	$1/2^+$	2090.30	1/2,3/2	
x3781.5 *6*	0.226 *77*					2086.9γ.
x3829.3 *6*	0.155 *54*					1948.3γ.
3830.9 *5*		(5868.38)	$1/2^+$	2037.37	1/2,3/2	
x3885.2 *4*	0.219 *62*					1800.3γ.
x3887.8 *6*	0.145 *51*					1659.5γ.
x3900.7 *3*	0.530 *76*					1840.3γ.
3932.3 *5*		(5868.38)	$1/2^+$	1936.12	3/2	
3934.9 *5*		(5868.38)	$1/2^+$	1933.33	1/2,3/2	
3942.6 *5*		(5868.38)	$1/2^+$	1925.1	1/2,3/2	
x3945.4 *7*	0.100 *40*					1601.8γ.
x3956.3 *4*	0.146 *42*					1506.7γ.
x3970.8 *4*	0.186 *50*					1492.2γ.
x3981.2 *6*	0.133 *45*					1796.3γ.
3983.0 *5*		(5868.38)	$1/2^+$	1884.64	1/2,3/2	
3992.2 *5*		(5868.38)	$1/2^+$	1875.7	3/2	
x4019.5 *5*	0.103 *36*					1721.6γ.
x4024.3 *7*	0.141 *47*					1661.2γ.

Continued on next page (footnotes at end of table)

^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02 (continued)

$\gamma(^{153}Sm)$ (continued)

E_γ	$I_{\gamma\gamma}$ †‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
4027.0 *5*		(5868.38)	1/2$^+$	1841.4	3/2	
4035.1 *5*		(5868.38)	1/2$^+$	1832.41	3/2	
x4074.8 *8*	0.084 *40*					1472.5γ.
4078.4 *3*		(5868.38)	1/2$^+$	1789.64	3/2	
x4095.3 *8*	0.136 *56*					1773.1γ.
4099.8 *5*		(5868.38)	1/2$^+$	1768.15	1/2,3/2	
x4114.1 *5*	0.136 *53*					1273.2γ.
4115.9 *5*		(5868.38)	1/2$^+$	1752.54	3/2	
4128.7 *3*		(5868.38)	1/2$^+$	1739.29	3/2	
x4143.3 *6*	0.076 *31*					1597.8γ.
x4191.8 *4*	0.184 *51*					1585.8γ.
4207.8 *6*		(5868.38)	1/2$^+$	1660.6	3/2	
x4233.8 *8*	0.092 *38*					1229.1γ.
x4240.1 *6*	0.098 *39*					1307.2γ.
4242.1 *4*		(5868.38)	1/2$^+$	1625.44	1/2,3/2	
4311.0 *4*		(5868.38)	1/2$^+$	1557.29	1/2,3/2	
4329.1 *3*		(5868.38)	1/2$^+$	1539.25	3/2	
4340.9 *3*		(5868.38)	1/2$^+$	1527.09	1/2,3/2	
4354.7 *5*		(5868.38)	1/2$^+$	1513.73	3/2	
x4376.9 *8*	0.066 *32*					1170.4γ.
4382.1 *5*		(5868.38)	1/2$^+$	1486.15	3/2	
x4401.0 *7*	0.085 *32*					1340.1γ.
x4417.8 *5*	0.284 *67*					1414.8γ.
4420.1 *7*		(5868.38)	1/2$^+$	1448.3	1/2,3/2	
x4422.4 *6*	0.156 *65*					964.6g.
x4424.4 *6*	0.069 *29*					1038.6g.
4432.6 *5*		(5868.38)	1/2$^+$	1435.90	1/2,3/2	
4445.6 *4*		(5868.38)	1/2$^+$	1422.36	3/2	
x4456.3 *5*	0.141 *49*					1412.1γ.
4467.6 *4*		(5868.38)	1/2$^+$	1400.25	1/2,3/2	
4471.4 *6*		(5868.38)	1/2$^+$	1396.9	1/2,3/2	
4475.7 *7*		(5868.38)	1/2$^+$	1392.0	1/2,3/2	
4503.2 *4*		(5868.38)	1/2$^+$	1364.61	3/2	
4507.4 *4*		(5868.38)	1/2$^+$	1360.96	1/2,3/2	
x4518.0 *5*	0.063 *24*					945.0γ.
4525.4 *4*		(5868.38)	1/2$^+$	1342.52	3/2	
4546.2 *5*		(5868.38)	1/2$^+$	1321.83	1/2,3/2	
4645.1 *4*		(5868.38)	1/2$^+$	1223.16	1/2,3/2	
x4674.2 *6*	0.117 *56*					713.1γ.
x4676.6 *9*	0.051 *24*					870.7γ.
4697.4 *4*		(5868.38)	1/2$^+$	1170.72	3/2	
4704.8 *6*		(5868.38)	1/2$^+$	1163.3	1/2,3/2	
x4711.0 *8*	0.070 *30*					1030.1γ.
x4719.4 *7*	0.045 *23*					827.9γ.
x4724.2 *4*	0.128 *40*					738.7γ.
4757.4 *6*		(5868.38)	1/2$^+$	1110.75	3/2	
4769.6 *4*		(5868.38)	1/2$^+$	1098.8	1/2,3/2	
x4794.2 *6*	0.159 *76*					659.3γ.
x4801.6 *8*	0.194 *92*					581.2γ.
x4810.2 *5*	0.109 *43*					737.2γ.
4884.6 *5*		(5868.38)	1/2$^+$	984.02	3/2	
4951.5 *3*		(5868.38)	1/2$^+$	916.87	3/2	
5079.9 *5*		(5868.38)	1/2$^+$	788.5	3/2	
x5100.2 *6*	0.124 *51*					768.2γ.
5118.3 *4*		(5868.38)	1/2$^+$	749.96	3/2	
5133.2 *3*		(5868.38)	1/2$^+$	735.14	1/2,3/2	

Continued on next page (footnotes at end of table)

^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02 (continued)

$\gamma(^{153}Sm)$ (continued)

E_γ	$I_{\gamma\gamma}$[†‡]	E_i(level)	J_i^π	E_f	J_f^π	Comments
5172.7 *4*		(5868.38)	$1/2^+$	695.31	3/2	
[x]5231.2 *4*	0.49 *11*					629.7γ.
5238.0 *3*		(5868.38)	$1/2^+$	630.38	3/2	

[†] For placed secondary γ's, absolute coincidence intensity of the primary γ − secondary γ cascade, per 1000 thermal neutron captures. No intensity is given for primary γ's (lower limits can be obtained by summing up the coincidence intensities of all secondary γ's in cascade with each primary γ).

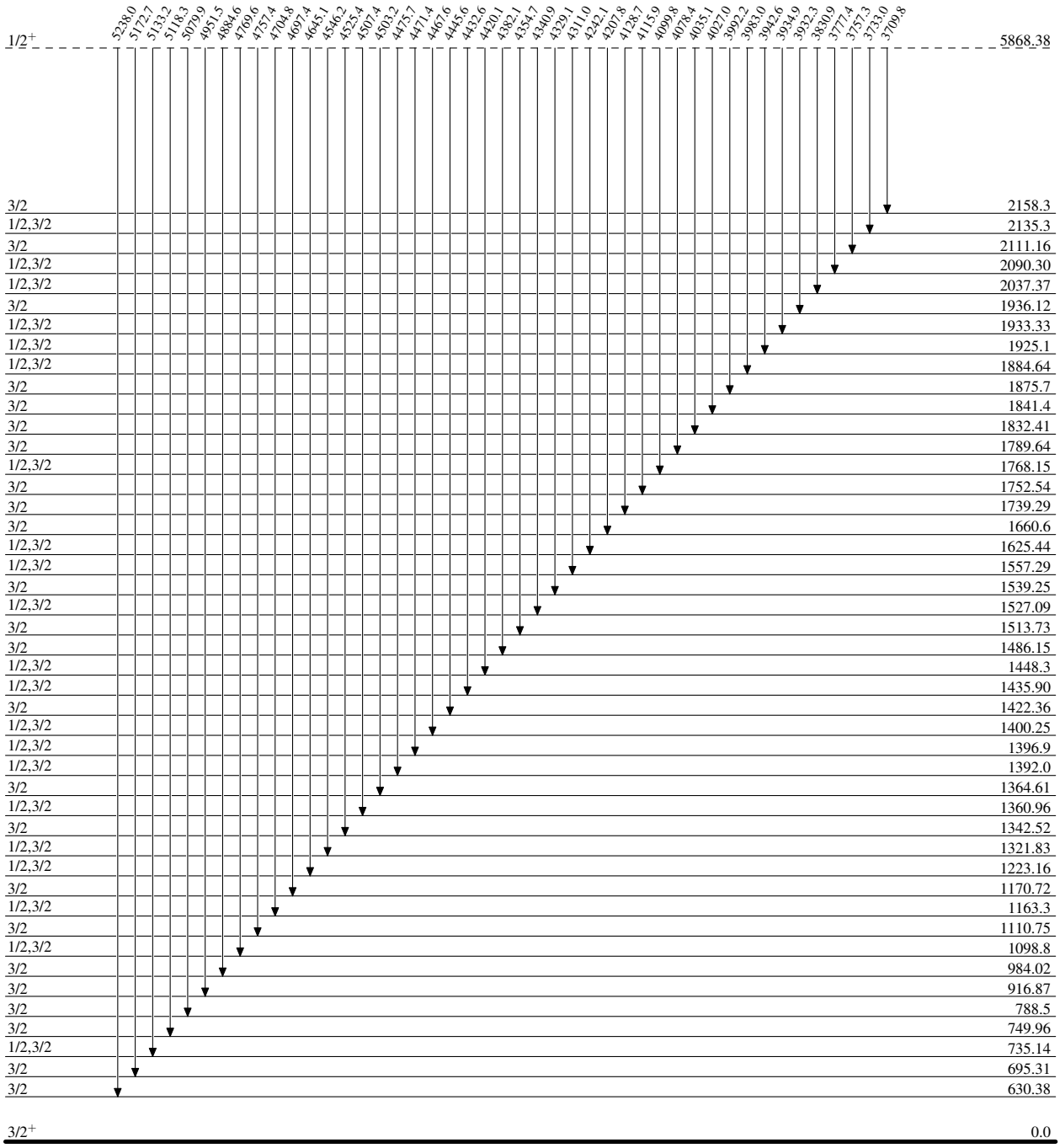
[‡] For unplaced γ's, absolute coincidence intensity of the $\gamma\gamma$ cascade, per 1000 thermal neutron captures.

[x] γ ray not placed in level scheme.

^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02

Level Scheme

Intensities: Relative I_γ

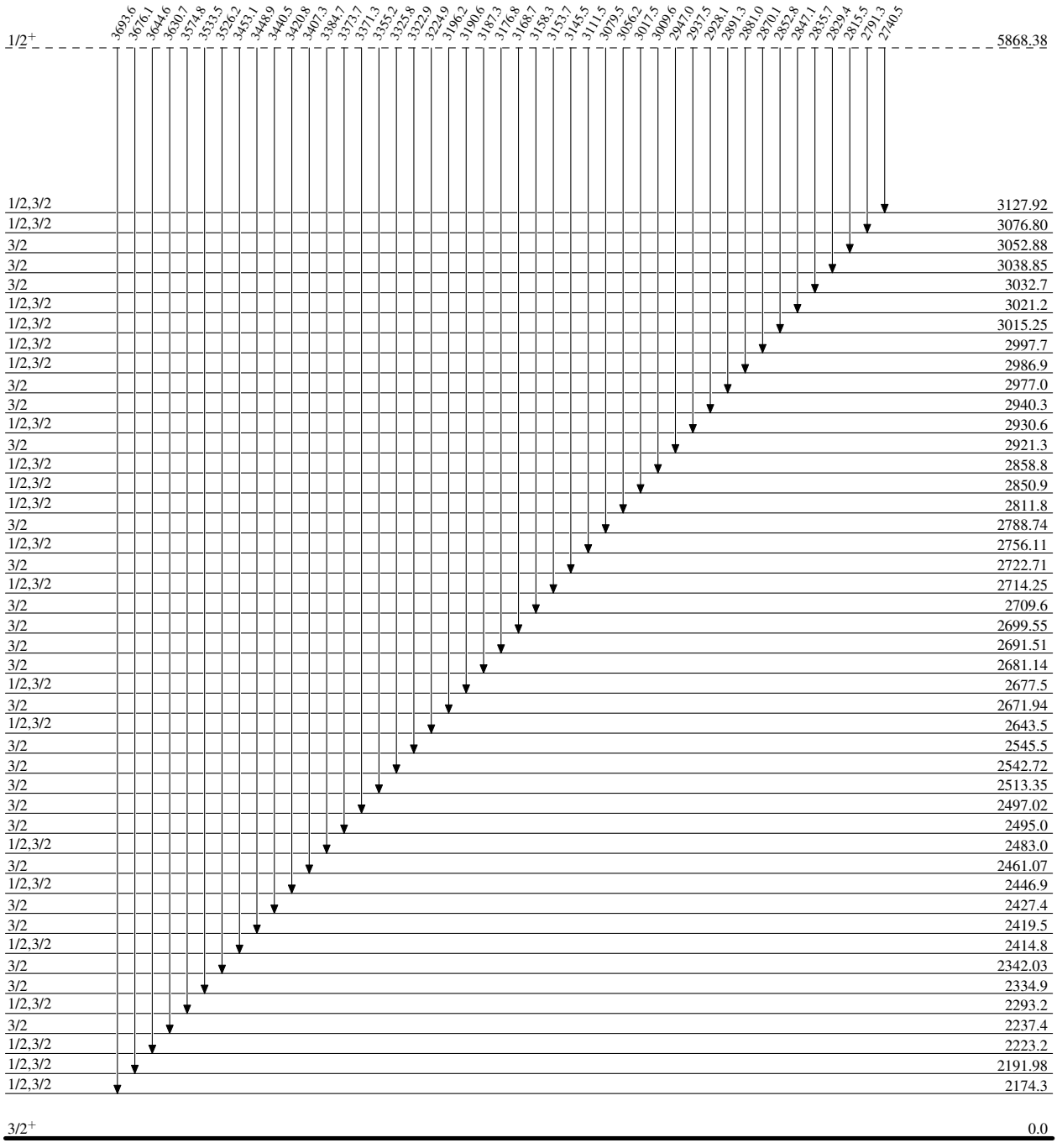


$^{153}_{62}Sm_{91}$

^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02

Level Scheme (continued)

Intensities: Relative I_γ



$^{153}_{62}Sm_{91}$

^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02

Level Scheme (continued)

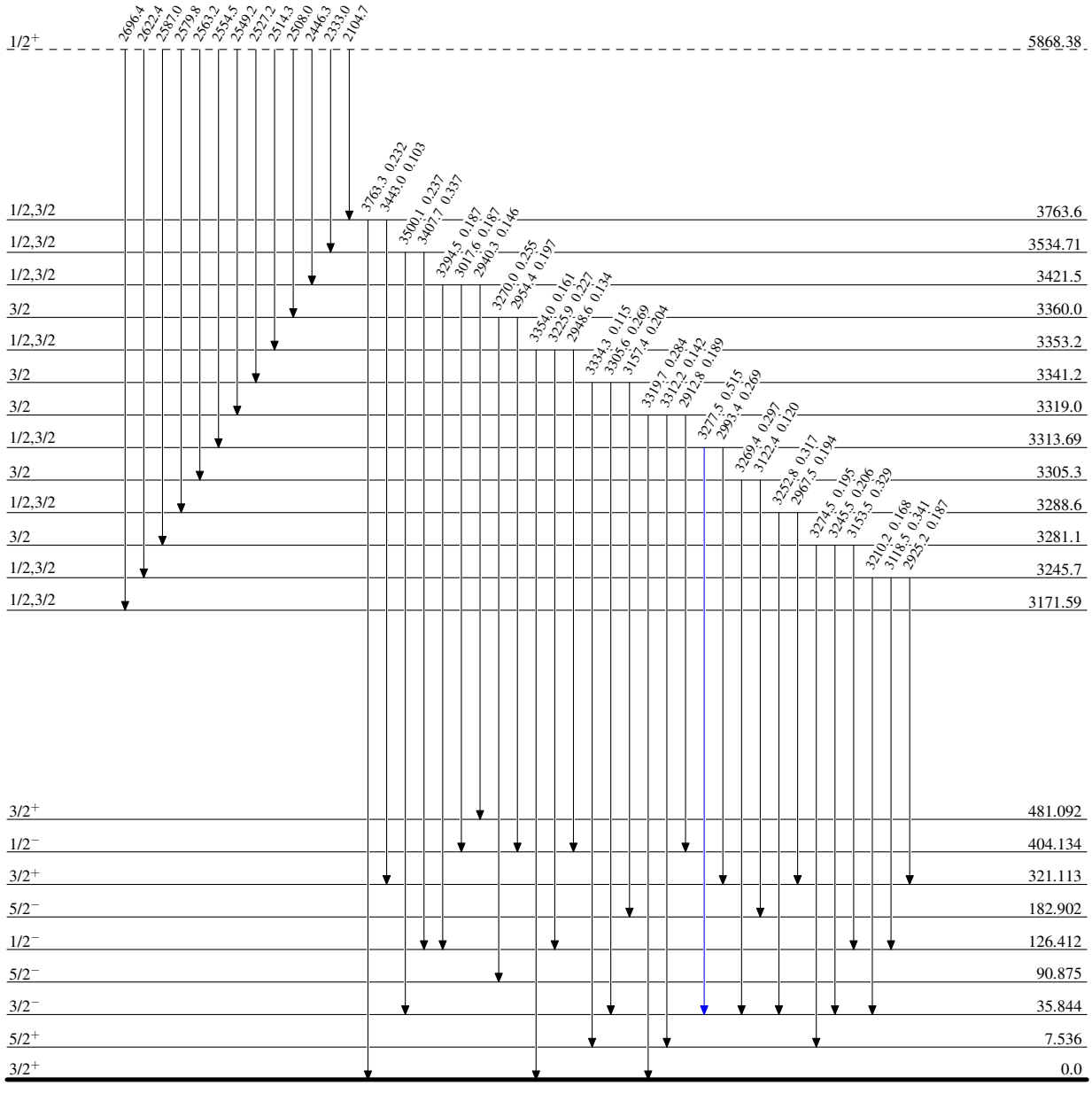
Intensities: Relative I_γ

Legend

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

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

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



$^{153}_{62}Sm_{91}$

^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02

Level Scheme (continued)

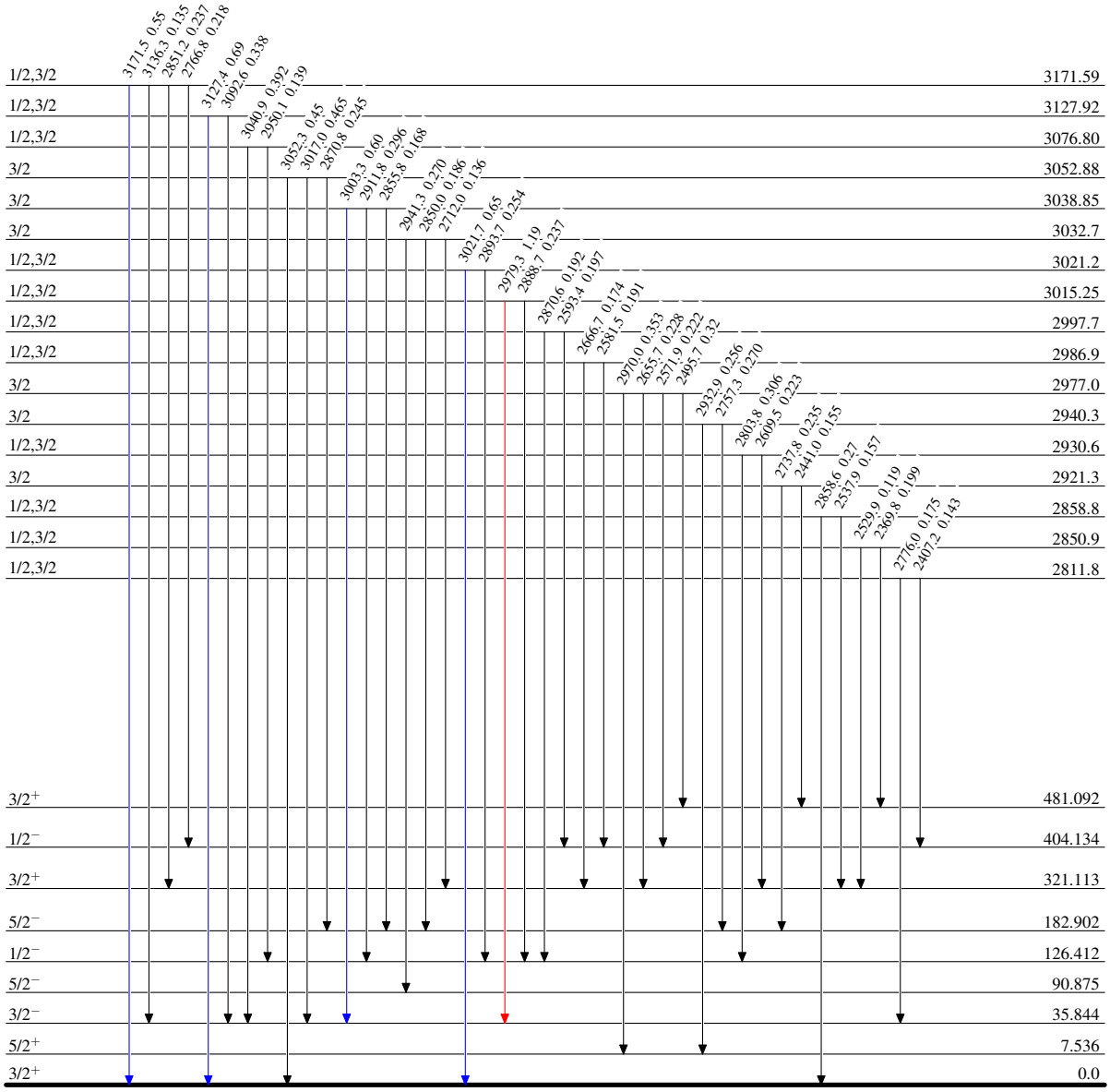
Intensities: Relative I_γ

Legend

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

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

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



$^{153}_{62}Sm_{91}$

^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02

Level Scheme (continued)

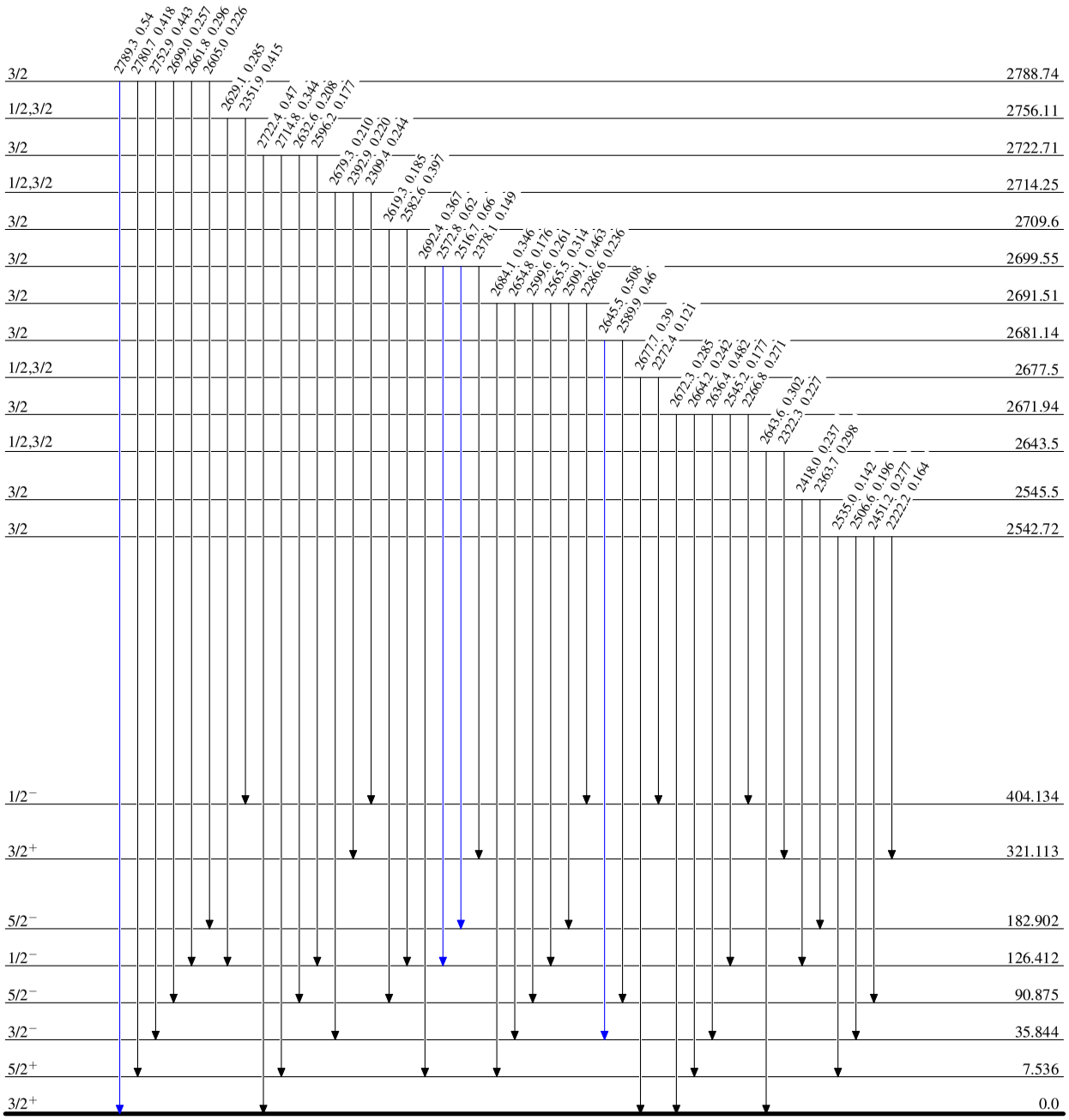
Intensities: Relative I_γ

Legend

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

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

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



$^{153}_{62}Sm_{91}$

^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02

Level Scheme (continued)

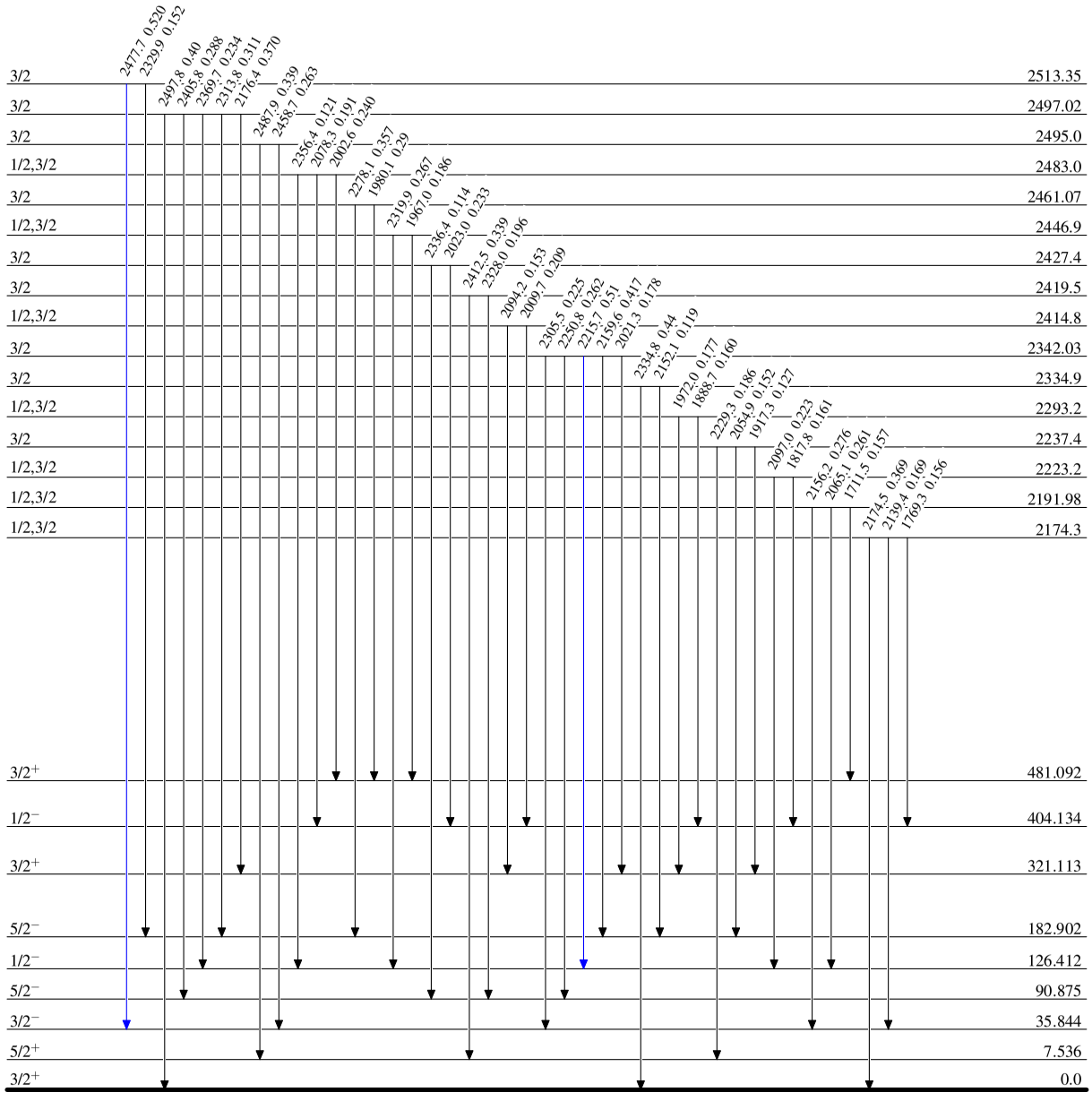
Intensities: Relative I_γ

Legend

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

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

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



$^{153}_{62}Sm_{91}$

^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02

Level Scheme (continued)

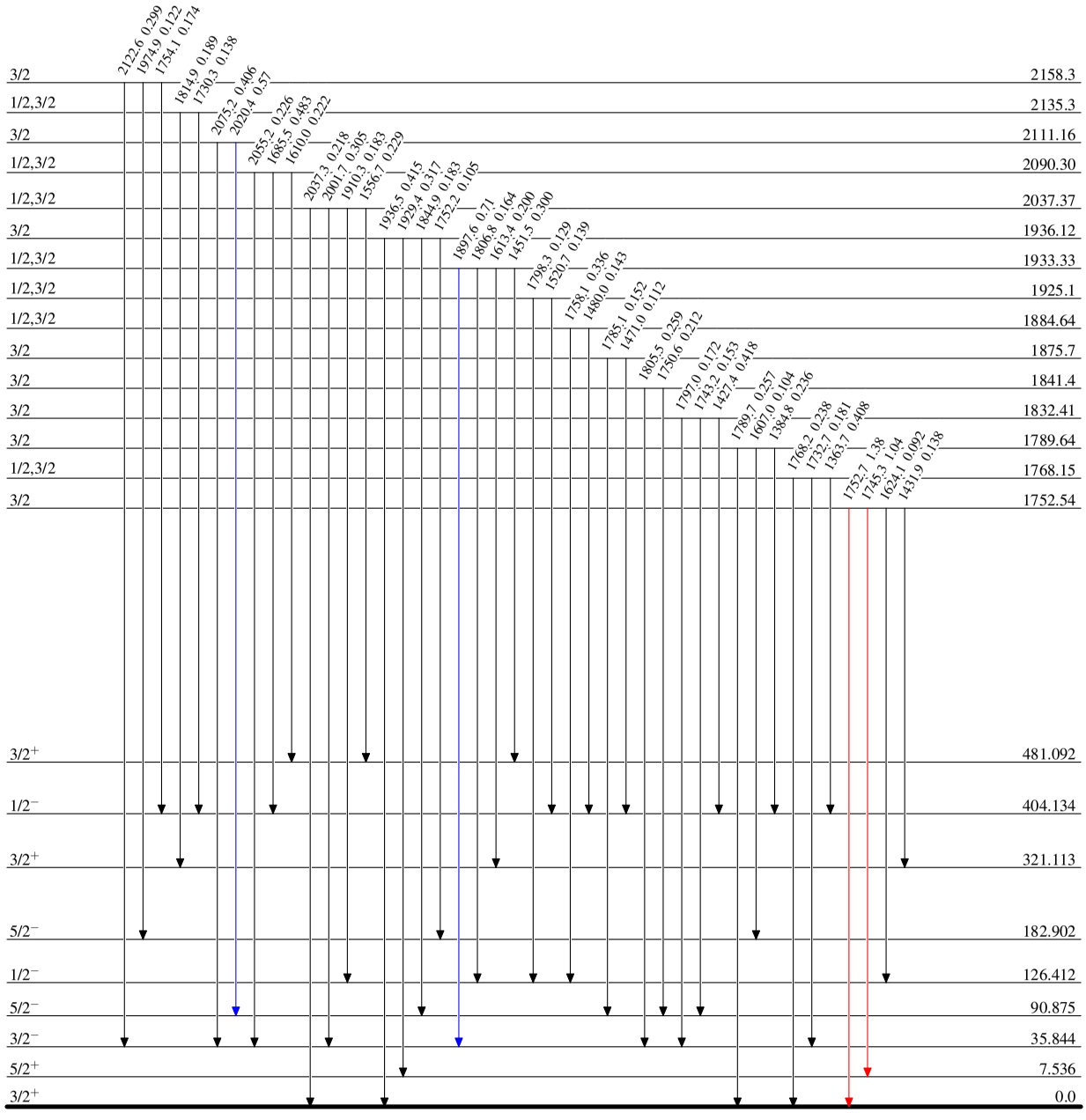
Intensities: Relative I_γ

Legend

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

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

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



$^{153}_{62}Sm_{91}$

^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02

Level Scheme (continued)

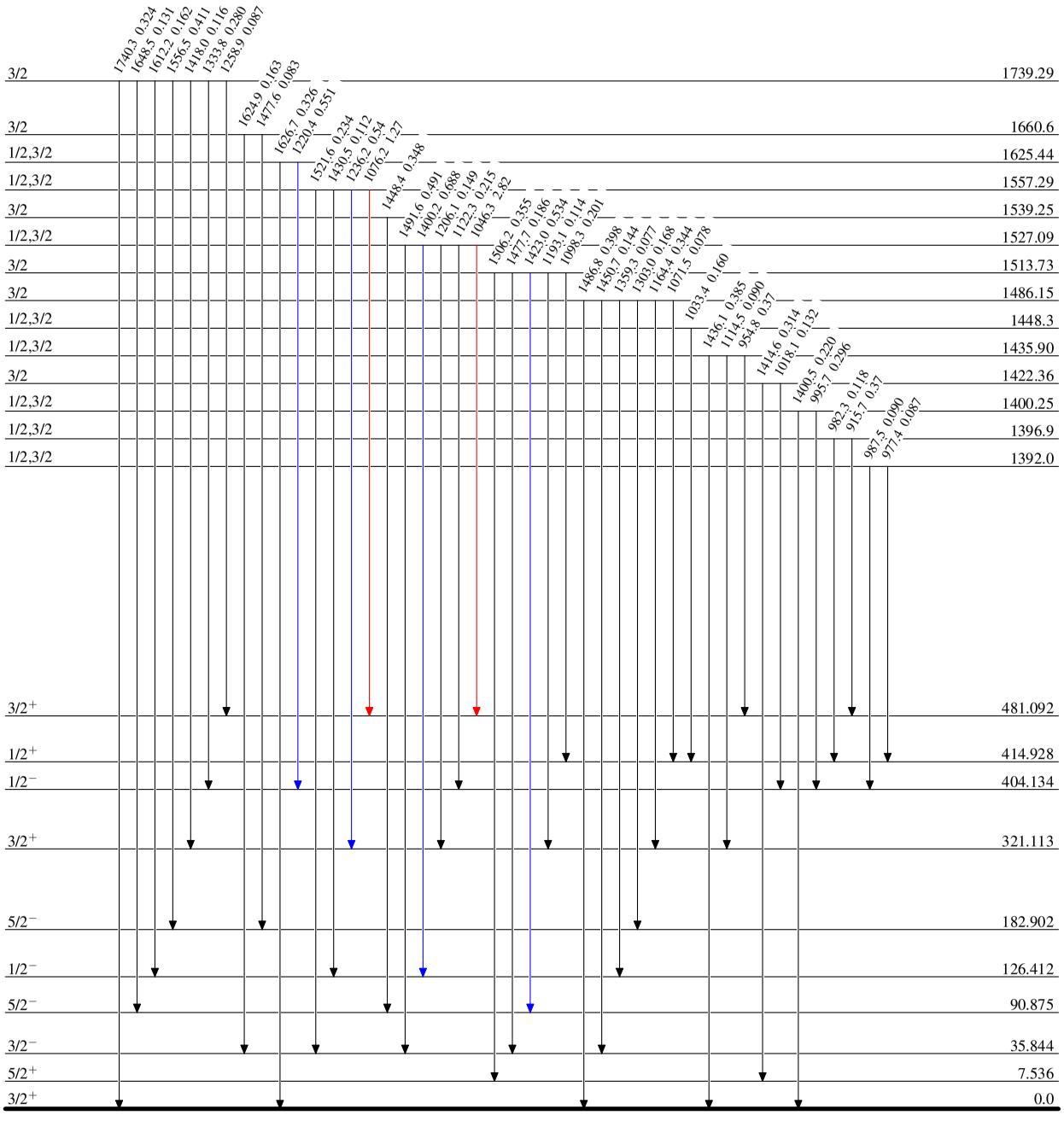
Intensities: Relative I_γ

Legend

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

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

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



$^{153}_{62}Sm_{91}$

^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02

Level Scheme (continued)

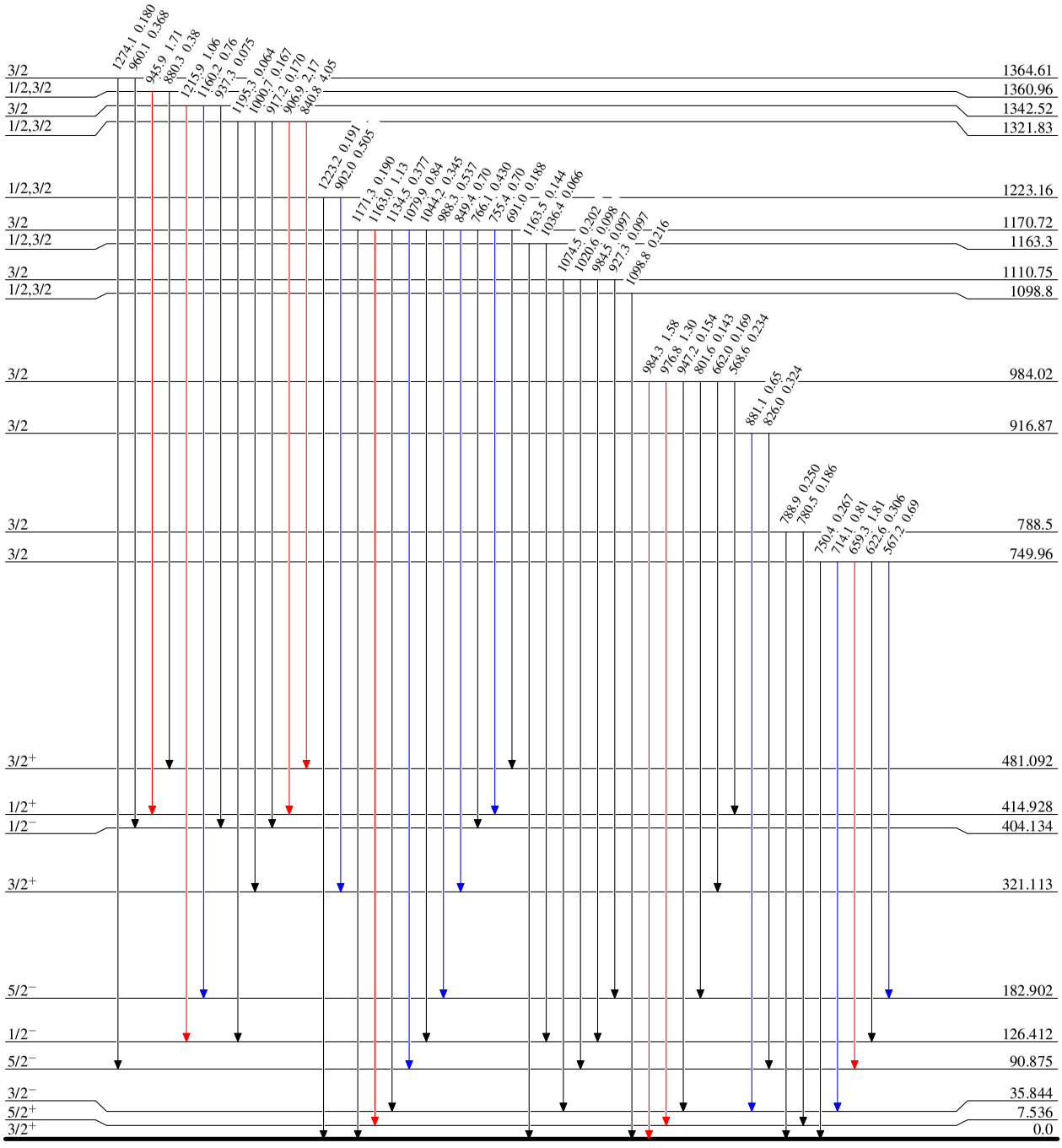
Intensities: Relative I_γ

Legend

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

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

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



$^{153}_{62}Sm_{91}$

^{152}Sm(n,γ) E=th: two γ cascade 2019Ng02

Level Scheme (continued)

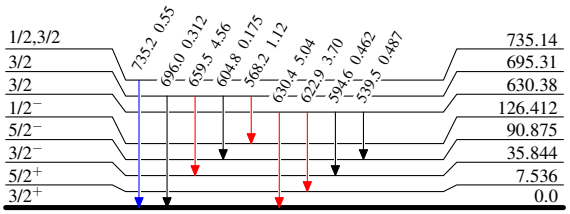
Intensities: Relative I_γ

Legend

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

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

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



$^{153}_{62}Sm_{91}$